RESOLUTION NO. 12-9

RESOLUTION OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT CERTIFYING THE PROGRAM EIR, MAKING CEQA FINDINGS OF FACT, ADOPTING A STATEMENT OF OVERRIDING CONSIDERATIONS, ADOPTING A MITIGATION MONITORING AND REPORTING PROGRAM, AND APPROVING STRATEGIC WATER RESOURCES PLAN

WHEREAS, the Palmdale Water District ("District") completed a Strategic Water Resources Plan dated March 2010 ("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 (the SWRP is attached hereto as Exhibit A); and

WHEREAS, the District's Board of Directors now proposes to approve the SWRP; and

WHEREAS, the District conducted a preliminary environmental study and determined that the SWRP and activities contemplated under it may result in significant environmental impacts in some circumstances and thus necessitated preparation of a Program Environmental Impact Report ("PEIR") for the SWRP; and

WHEREAS, on October 28, 2010, the District published and distributed a Notice of Preparation of the PEIR for the SWRP, and the PEIR was assigned State Clearinghouse Number 2010101091; and

WHEREAS, on August 25, 2011, 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 August 25, 2011 through and including October 8, 2011, and scheduled a public meeting on August 31, 2011 to receive comments on the Draft PEIR; and

WHEREAS, the District received three comment letters (which are included in the Final PEIR), and, as required under the California Environmental Quality Act, Public Resources Code sections 21000 et seq. ("CEQA"), has provided responses to those comment letters and, where appropriate, has revised the Final PEIR to address the issues raised in those comment letters, with the Final PEIR submitted herewith as Exhibit B; and

WHEREAS, under CEQA Guidelines section 15090, a lead agency must certify a Final PEIR prior to making a decision on a proposed project; and

WHEREAS, the District's Board of Directors has reviewed and considered the Final PEIR for the SWRP and all supporting documentation.

NOW, THEREFORE, BE IT RESOLVED, that the Palmdale Water District's Board of Directors hereby resolves, finds and certifies as follows:

1. The Final PEIR for the SWRP has been completed in compliance with CEQA and the CEQA Guidelines.

2. The Final PEIR for the SWRP and the findings set forth therein reflect the Board of Directors' independent review, analysis and judgment.

3. The Board of Directors has reviewed and considered all information in the Final PEIR for the SWRP as required by CEQA Guidelines section 15090.

4. The Board of Directors makes the findings of fact concerning the SWRP attached as Exhibit C to this resolution, in accordance with Public Resources Code section 21081(a), and that certain environmental impacts are reduced to less than significant levels by mitigation measures incorporated into the SWRP.

5. The Board of Directors adopts the Mitigation Monitoring and Reporting Program, attached as Exhibit D, to this resolution, in accordance with Public Resources Code section 21081.6(a)(1).

6. That the Board adopts the Statement of Overriding Considerations, which identifies the specific benefits of the project that outweigh the project's significant and unavoidable impacts that are acceptable in light of the project's benefits, attached as Exhibit E;

7. The custodian of the documents or other material which constitutes the record of proceedings upon which this resolution is based is:

Jon Pernula, Water & Energy Resources Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, California 93550

8. District staff is authorized and directed to file a Notice of Determination concerning the Final EIR and other documents in accordance with CEQA's requirements.

9. The Board of Directors approves the Strategic Water Resources Plan dated March 2010.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Palmdale Water District held on July 25, 2012.

Gordon Dexter, President of
the Board of Directors of the
PALMDALE WATER DISTRICT

ATTEST:

Robert Alvarado, Secretary of
the Board of Directors of the
PALMDALE WATER DISTRICT

EXHIBIT "A"

Palmdale Water District

Strategic Water Resources *Plan*

Final Report
March 2010

RMC
Water and Environment

Strategic Water Resources Plan
Final Report

Prepared by:

RMC
Water and Environment

In Association with:

A&N Technical Services

Wildermuth Environmental

March 2010

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List of Abbreviations

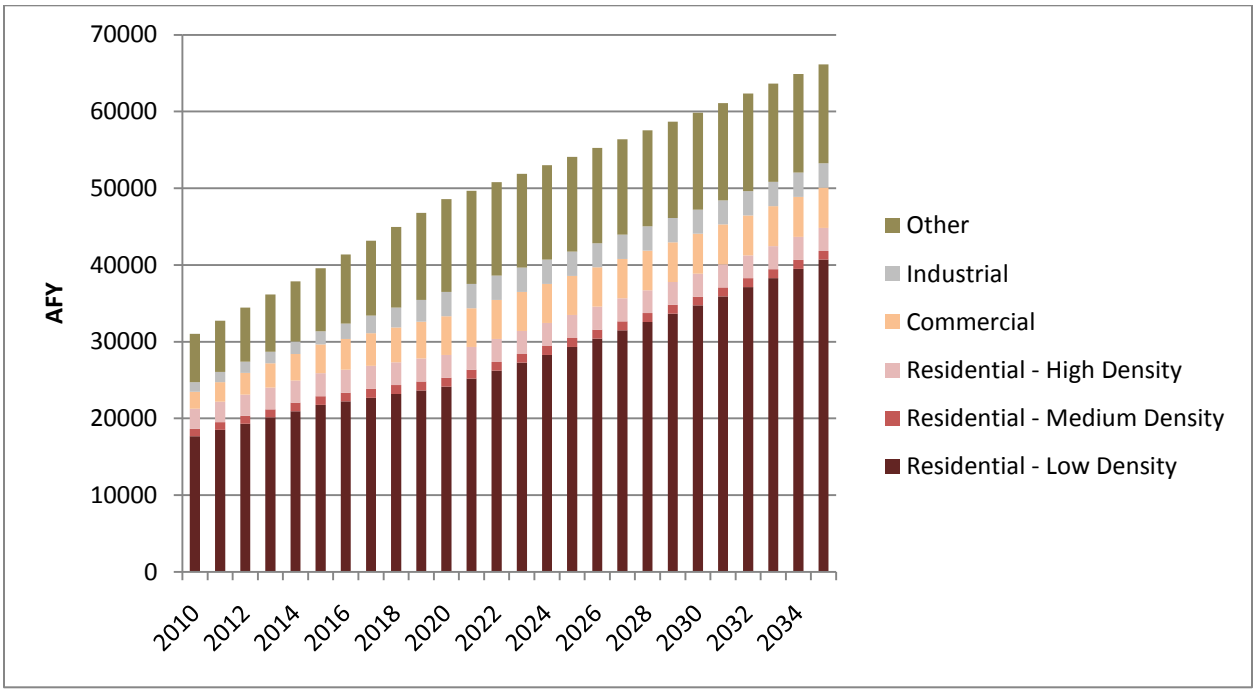
afy	acre-feet per year
ASR	aquifer storage recovery
AVEK	Antelope Valley-East Kern
AVSWCA	Antelope Valley State Water Contractors Association
BMP	Best Management Practice
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CUWCC	California Urban Water Conservation Council
DWR	Department of Water Resources
EIR	Environmental Impact Report
ES	Executive Summary
gpd	gallons per day
gpm	gallons per minute
GW	Groundwater
GWR	Groundwater Recharge
GWR-RW	Recycled Water Groundwater Recharge
IW	Imported Water
LACSD	Los Angeles County Sanitation District
LADWP	Los Angeles Department of Water and Power
mgd	million gallons per day
MWD	Metropolitan Water District of Southern California
NPV	Net Present Value
O&M	Operations & Maintenance
OWUE	Office of Water Use Efficiency
PWD	Palmdale Water District
RW	Recycled Water
RWQCB	Regional Water Quality Control Board
SAT	Soil-Aquifer Treatment
SRF	State Revolving Fund
SWP	State Water Project
SWRCB	State Water Resources Control Board
SWRP	Strategic Water Resources Plan
SWRP	Strategic Water Resources Plan
TM	Technical Memorandum
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
UWMP	Urban Water Management Plan

Executive Summary

ES-1 Overview

Palmdale Water District (PWD) has prepared this Strategic Water Resources Plan (SWRP) to establish guiding objectives and identify necessary steps in order to meet the projected future needs of its customers. Over the next 25 years, the population residing within PWD's current service area is expected to more than double. Correspondingly, anticipated supply needs to meet the water demands of these customers is expected to more than double as illustrated in **Figure ES-1** below.

Figure ES-1-1: Projected PWD Supply Needs from 2010 to 2035



Palmdale Water District has a number of water resource options available to it in order to meet these needs as illustrated in **Figure ES-2**. These include imported water, groundwater, local runoff, recycled water, conservation and water banking. To understand where PWD should be placing its emphasis, PWD has developed this plan that considered all the different options available to it, evaluated these options with respect to a variety of factors including cost, reliability, flexibility, implementability and sustainability. Through this evaluation process, PWD has developed the following recommended water resource strategy.

Figure ES-1-2: Mixture of Water Resource Options for Palmdale Water District

ES-2 Recommended Strategy

The recommended strategy for the SWRP is summarized as follows:

- Acquire and/or develop new imported supplies
- Create a combination of local surface spreading facilities to percolate untreated State Water Project (SWP) water and Aquifer Storage Recovery (ASR) wells to inject potable water
- Add additional pumping capacity to achieve a target of delivering 70 percent of supply to customers through groundwater pumping.
- Pursue a recycled water exchange program with nearby agriculture in-lieu of groundwater pumping

In addition, PWD will begin to embark on a strategy to diversify its supplies and provide for near-term drought reliability with the following steps:

- Expand conservation programs
- Recover storage capacity in Littlerock Reservoir through sediment removal
- Implement a recycled water system for non-potable uses (e.g. primarily irrigation but possibly some industrial uses)
- Further research using treated recycled water to replenish the groundwater basin as is now being done in Orange County through advanced water treatment processes, blending with SWP water, and surface spreading and percoloation

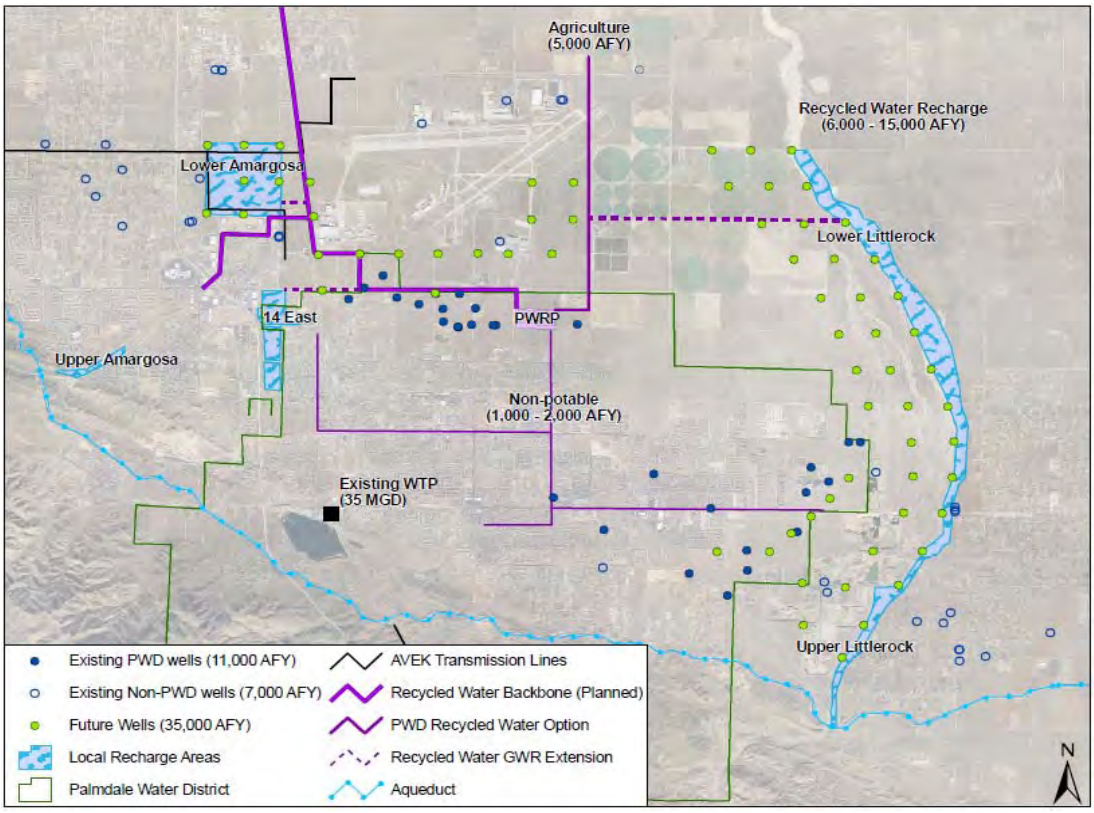
The specific targets for which PWD should strive are summarized in **Table ES-1**. **Figure ES-2** illustrates what future facilities may look like under this recommended strategy.

Table ES-1-1: Water Resource Targets for Recommended Local Storage Strategy

Water Supply Elements	Current	Target for 2035
Imported Water	12,000 afy (average)	36,000 to 47,000 afy (average)[1]
Groundwater Pumping	12,000 afy (average)	47,000 afy (average)
Surface Water Treatment Capacity	35 mgd	35 mgd
ASR Injection Capacity	None	6,000 gpm (800 AF/month)
Surface Recharge Capacity	None	35,000 afy (average)
Local Storage Capacity	None	120,000 af
Recycled Water		1,800 afy
- Non-potable	None	
- Exchange with agriculture	None	0 to 5,000 afy[1]
- Groundwater recharge	None	0 to 15,000 afy[1]
Active Conservation Programs	250 afy	2,600 afy
Passive Conservation Programs	None[2]	3,600 afy
Littlerock Reservoir	4,000 afy (average)	4,500 afy (average)
External Water Banking	None	Consider on an opportunistic basis

[1] The volume of imported water used will depend on how much recycled water is used for in-lieu groundwater exchange with agriculture and/or groundwater recharge.
[2] Prior passive conservation measures (e.g. plumbing code changes) were not evaluated but have been taken into account in future demand projections.

Figure ES-1-3: Proposed Future Facilities



To help guide PWD in achieving these targets, the following strategic objectives have been established. (**Table ES-2**).

Table ES-1-2: Recommended Strategic Objectives for PWD

Water Resource Element	Strategic Objective
Imported Water	• Firm up existing Table A supplies so that imported water is available at historical average levels • Create and maintain options for future acquisition of imported water as need arises • Protect both existing supplies and future opportunities by being proactive and a leader as operation and management of the SWP system continues to evolve
Groundwater Pumping and Recharge	• Be able to meet 70 percent of demands through pumping within ten years (i.e. by 2020). • Do not further draft the local groundwater basin • Establish and operate recharge facilities to offset both proposed pumping increases and potential loss of groundwater pumping due to adjudication
Water Banking	• Establish ability to bank available imported water as soon as possible • Focus first on developing storage within the groundwater basin local to PWD • Pursue partners to participate in developing PWD storage facilities including other AVSWCA members and other entities (e.g. MWD, LADWP) • Consider water banking in locations outside PWD if cost effective AND the project produces a value-added benefit (such as additional aqueduct delivery capacity)
Recycled Water	• Maximize the use of recycled water within PWD's service area to limit the need for more imported water • Develop a non-potable distribution system to be able to deliver tertiary treated recycled water for irrigation and, where feasible, industrial and commercial uses. • Develop and implement ways to use recycled water to increase available groundwater supply
Littlerock Reservoir	• Create and maintain additional storage capacity for water resource and recreational benefit through sediment removal • Maintain the quality of water in Littlerock Reservoir • Continue to explore ways to use Littlerock Reservoir for water supply reliability, power generation, and other benefits
Conservation	• Implement conservation programs to achieve savings that at least match the cost offset of acquiring, transporting and treating new supplies • Continue to expand conservation efforts on a regular basis (e.g. every 3-5 years), attracting outside funding to help expand programs • Achieve the conservation targets that are expected to be established through the proposed "20 x 2020" program (i.e. 20 percent per capita reduction in water use statewide by 2020) • 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 • Provide leadership to other Antelope Valley water purveyors in crafting consistent regional conservation programs and messaging

ES-3 Recommended Implementation Plan

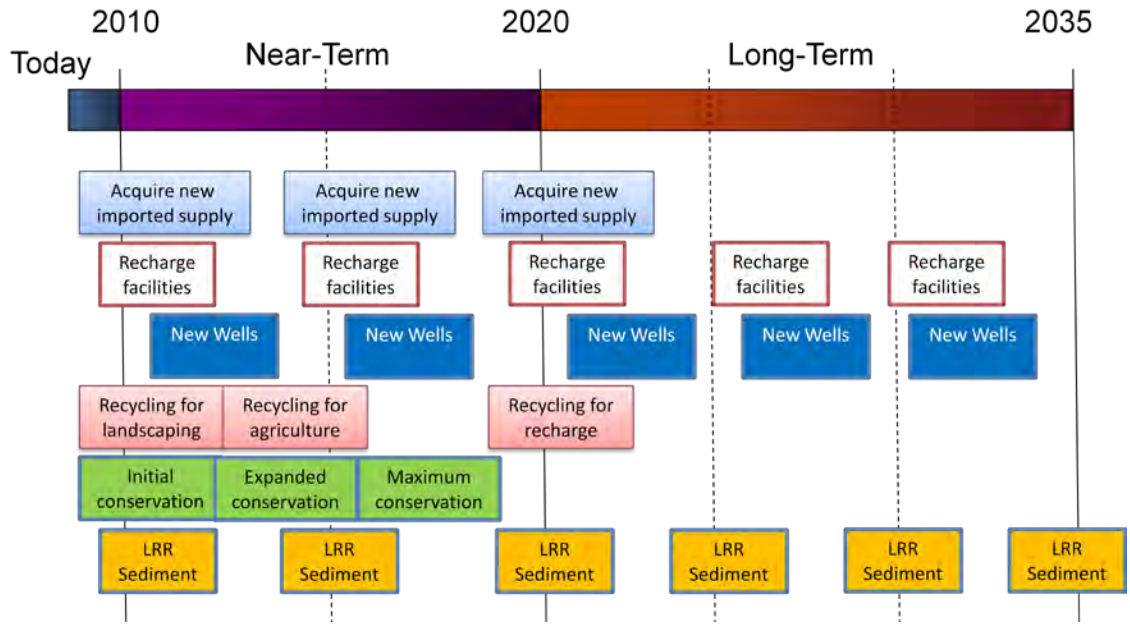
For each water resource element, implementation actions have been identified and are summarized in **Table ES-3**. The full schedule for implementation is outlined in detail in Chapter 3.

Table ES-1-3: Implementation Actions by Water Resource Element

Water Resource Element	Implementation Actions
Imported Water	1. Acquire new imported supplies 2. Be proactive with State Water Project system management and operation 3. Negotiate for additional conveyance capacity 4. Maintain flexibility for future water treatment facilities
Groundwater Pumping and Recharge	1. Install new wells, including ASR wells in the North Well Field area 2. Install surface recharge facilities
Water Banking	1. Develop local recharge and recovery capabilities 2. Develop partnership strategy 3. Explore added benefits of outside banking opportunities
Recycled Water	1. Secure recycled water agreement 2. Participate in developing a salt and nutrient management plan 3. Implement non-potable recycled water system 4. Implement agriculture reuse/groundwater exchange project 5. Conduct further research for using recycled water for groundwater recharge
Littlerock Reservoir	1. Remove sediments as previously evaluated 2. Take measures to prevent Quagga mussel infestation 3. Further evaluation of storage and power options
Conservation	1. Implement and consistently expand targeted conservation programs 2. Continue program of water budgets for customers 3. Monitor and report effectiveness of conservation programs 4. Regularly review and coordinate PWD and City of Palmdale ordinances and policies 5. Coordinate communications with other Antelope Valley water purveyors 6. Pursue grant funding to improve program cost effectiveness

Figure ES-4 below summarizes the proposed implementation schedule for the recommended stragey. In general, the bulk of new activity is expected to take place between 2010 and 2020 as a means to shore up existing supplies, meet projected near-term future demands, and lay the groundwork for meeting long-term demands.

Figure ES-1-4: Summarized Implementation Schedule



Note: PWD has the option to either acquire new imported supplies in 2021 or to implement groundwater recharge with recycled water.

In addition to these specific implementation actions, PWD should undertake a series of global action items including:

1. Prepare a programmatic Environmental Impact Report (EIR) for the Strategic Water Resources Plan
2. Implement a water resource developer fee to fund capital development costs of new supplies
3. Update water rates in five years to incorporate changes in O&M costs

ES-4 Costs and Financing

Table ES-4 below summarizes the costs associated with the proposed facilities. These costs are based on use of imported water for groundwater recharge rather than recycled water. If recycled water is to be used instead, for planning purposes the costs could be considered the same.

Table ES 1-4: Summary of Costs for Recommended Strategy by Water Resource Element

Water Resource Element	Capital Costs	O&M Costs	Total Costs	Net Present Value
Imported Water	$347 million	$12-19 million/yr	$757 million	$426 million
Groundwater Pumping	$109 million	$1-6 million/yr	$227 million	$119 million
Groundwater Recharge	$34 million	$0.2-1 million/yr	$49 million	$32 million
Recycled Water	$49 million	$0.4-0.9 million/yr	$66 million	$42 million
Conservation	$0	$0.5-1.1 million/yr	$11 million	$4.1 million
Littlerock Reservoir	$6 million	$0.5-$1.4 million/yr	$23 million	$14 million
Total	$545 million	$14-29 million/yr	$1,130 million	$665 million

Notes: Costs are in 2008 dollars. Costs are based upon strategy IW70 which relies largely on new imported supplies. Overall costs are similar if utilizing recycled water instead. O&M costs shown illustrate the range of costs between 2011 and 2035. NPV is based upon a 5% annual discount rate.

In order to fund the costs of facilities and acquisitions of new water supplies, the principles followed by this plan are as follows:

- New customers establishing new connections must pay for new supplies and the infrastructure to deliver those supplies. This includes funding new imported water acquisition, recharge and recovery facilities, and recycled water facilities.
- 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 of improvements to maintain Littlerock Reservoir, of PWD's share of improvements to the Delta, and of improvements needed to meet water quality standards.
- Those customers choosing to use more than their allotment need to contribute more to help fund water reliability projects including conservation and recycling.
- Current and future customers are to pay for all O&M costs as well as fixed costs of existing systems.
- Other system enhancements, such as possible hydropower generation from Littlerock Reservoir, 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 $16,005 to $17,607 beginning as soon as possible 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 in order to continue to cover O&M expenses associated with the SWRP.
- Further evaluate using property tax assessment(s) to fund potential future fixed costs associated with SWP improvements if and when the improvements become more likely.
- Pursue grant funding 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.

Chapter 1 Introduction

1.1 Purpose of the Strategic Water Resources Plan

The purpose of the Palmdale Water District (PWD) Strategic Water Resources Plan (SWRP) is to develop a sound water supply strategy to meet the demands of both current and future customers through the year 2035. The development of the SWRP is consistent with the mission, vision and core values of PWD which are:

- ***Mission****: The Mission of the Palmdale Water District is to provide high quality water to our current and future customers at a reasonable cost.*
- ***Vision:*** *The PWD will strive for excellence in providing high quality, reasonably priced water in a growing Antelope Valley by being a strong advocate for our customers in local water issues, public education, asset management, water conservation, planning and securing additional water supplies, continuing our commitment to operate efficiently with the help of emerging technologies, challenging, motivating and rewarding our employees and offering premium customer service in all that we do.*
- ***Core Values:*** *Efficiency, fiscal responsibility, natural resource management, integrity, customer service, water conservation, continuous improvement, stakeholder trust, a safe, productive and rewarding workplace.*

Key questions to which this SWRP provides answers include the following:

- ✓ How much water will we need?
- ✓ Where will water come from?
- ✓ What facilities will be needed?
- ✓ What will it cost and where will money come from?
- ✓ What happens when circumstances change?

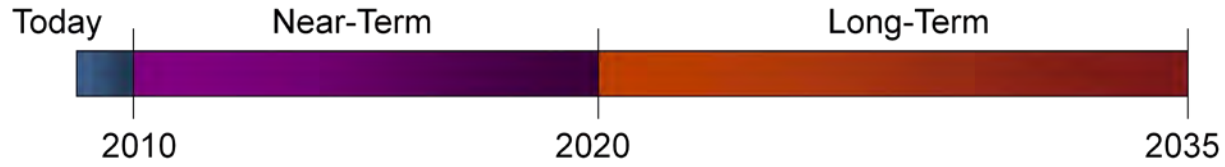
1.2 Overview

The SWRP includes the following three key elements:

- **Recommended Water Resource Strategy**: Provides future vision for how PWD will meet its water supply needs through 2035
- **Implementation Plan**: Provides an outline and schedule of the activites that will need to take place
- **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 Resource Plan Timeline



In developing the SWRP, a number of activities were undertaken between October 2008 and July 2009 as illustrated in **Figure 1-2**. These included:

- Data compiliation and review
- Demand modeling analysis
- Options development
- Conservation modeling
- Groundwater modeling
- Alternatives development
- Water resource and hydrologic modeling
- Cost development
- Alternatives evaluation
- Strategic plan development
- Staff and board briefings
- Board workshops
- Discussions with involved stakeholders

Results from these activities are summarized in three documents: the Options Report, the Alternatives Evaluation Technical Memorandum, and the Strategic Water Resources Plan.

Figure 1-2: Strategic Water Resources Plan Development Activities

1.3 Using and Updating the SWRP

The SWRP is meant to serve as a guide to the PWD Board and staff as it develops and updates a variety of other planning documents including its urban water management plan, water system master 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 formally updated every 5 years prior to the preparation of the PWD's Urban Water Management Plan (UWMP).

Chapter 2 Recommended Water Resource Strategy

2.1 Projected Water Supply Needs

Based on projected growth from population projections and land use build-out, supply needs for the PWD system are expected to increase from approximately 30,000 afy in 2010 to 65,000 afy in 2035 as illustrated in **Figure 2-1**. The main driver for these needs is presumed to be single-family residential development. However, projected future needs, particularly those in the near-term, should continue to be monitored and adjusted in response to changes in the rate of housing development as well as major new industrial customers such as solar and other power facilities.

Figure 2-1: Projected PWD Supply Needs from 2010 to 2035

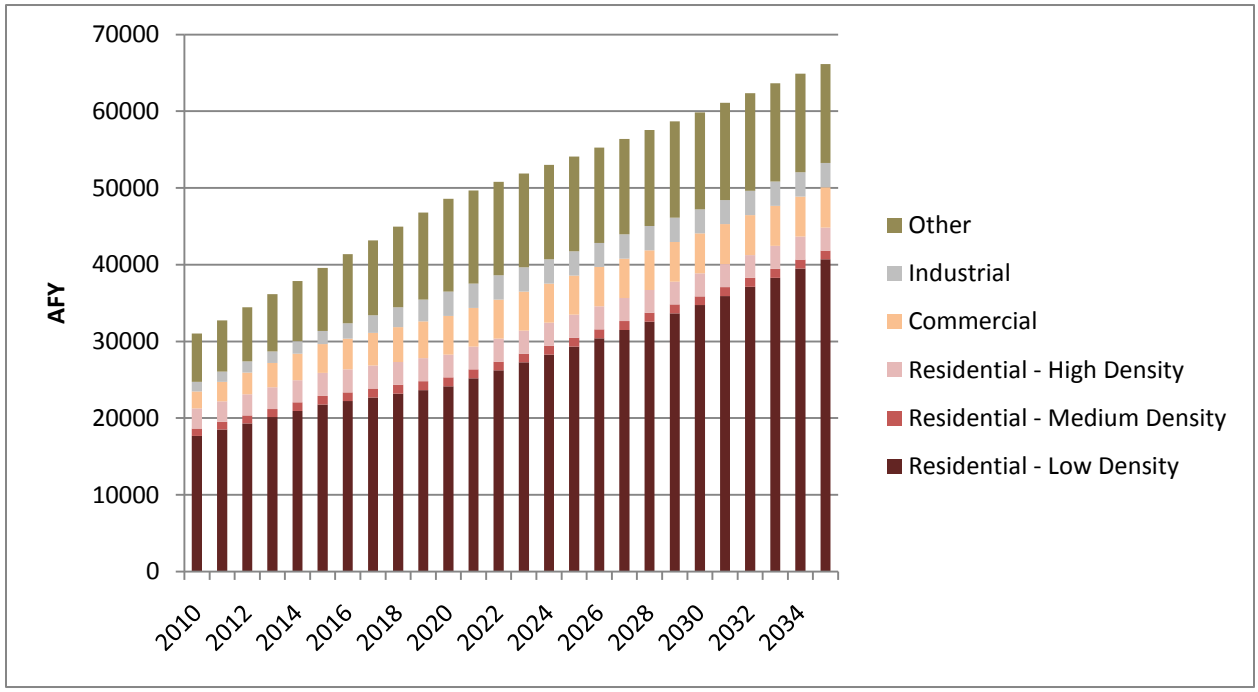


Figure 2-2 illustrates the assumed projected growth in housing used in the demand analysis. At this time, population and housing growth is flat due to the current economic recession and it may be multiple years before growth returns to recent historical levels. For planning purposes, this SWRP assumes that growth will return to the trend line shown in **Figure 2-2**, recognizing that there will be fluctuations in housing growth rates through the planning horizon of 2035.

Figure 2-2: Projected Housing Growth for PWD – 1990 to 2035

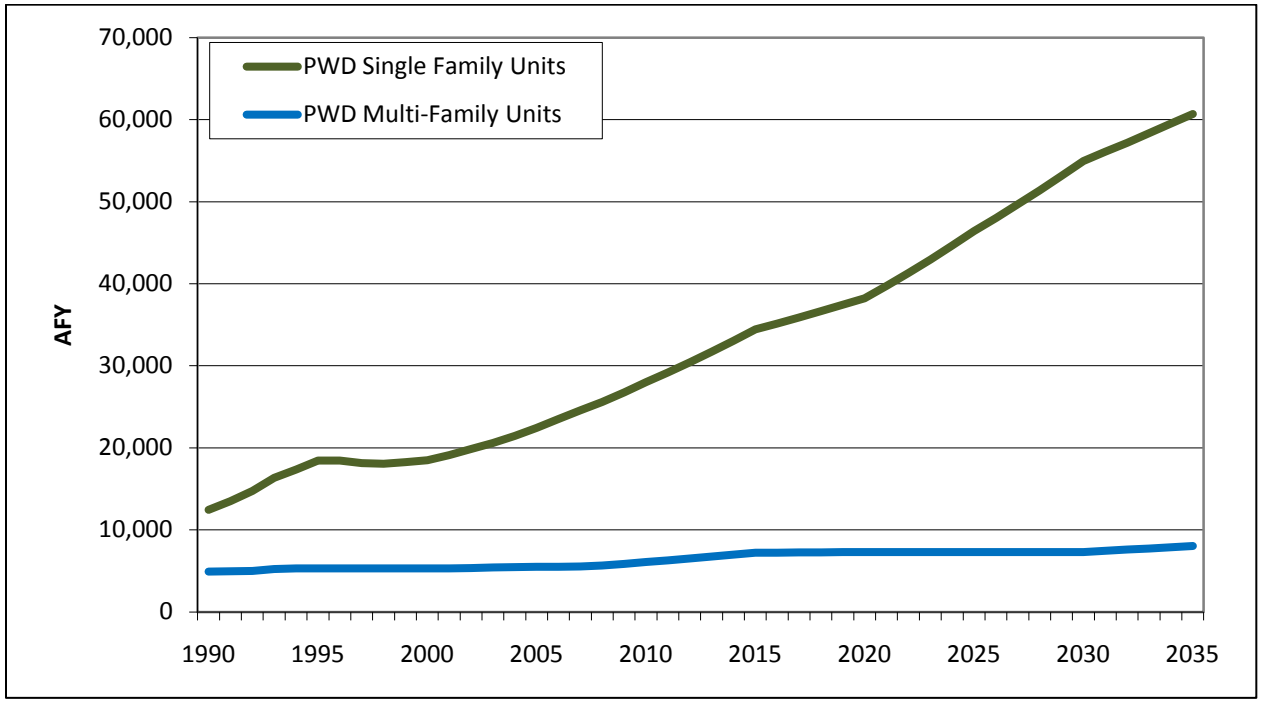
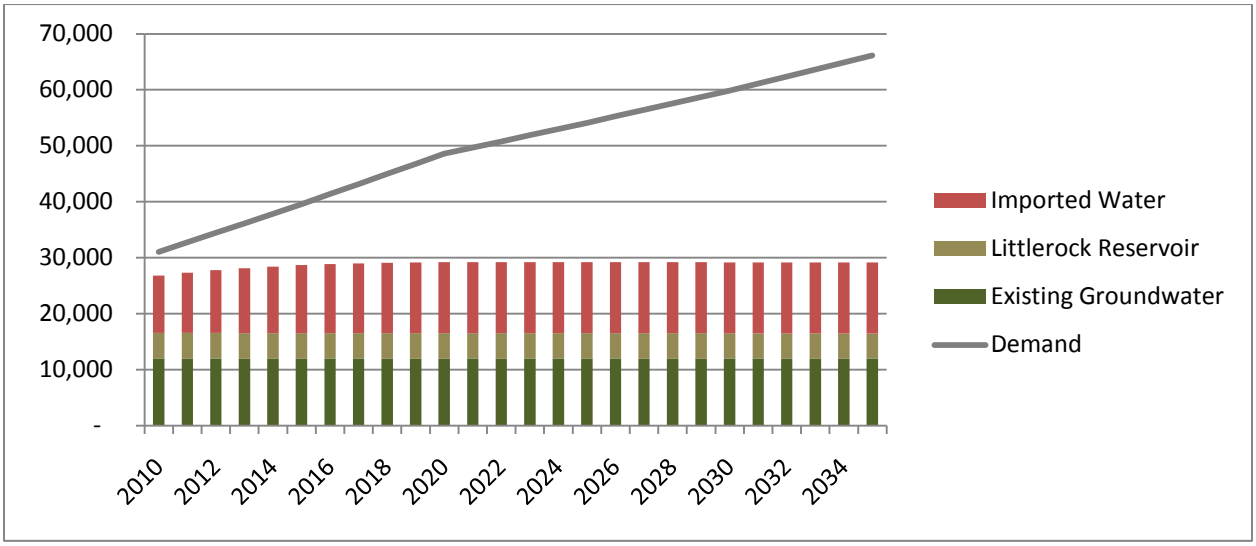


Figure 2-3 shows illustrates PWD's current available supplies under average water supply conditions. With a projected system demand of approximately 30,000 afy in 2010, even PWD's average supplies will be insufficient to meet the projected level of demand. The condition will be even worse if current drought conditions continue. Also, if growth were to return quickly to the area served by PWD, there is currently insufficient supply available to meet these new demands.

The result of this analysis is that PWD must begin to develop new water supplies immediately to provide a reliable water supply for its existing customers. In addition, these results also highlight the need for PWD to establish an aggressive water resource development program to be able to meet the needs of future residents and business interests.

Figure 2-3: Current Supplies Available to Meet Demands Under Average Conditions



2.2 Recommended Water Resource Strategy

2.2.1 Process for Developing Recommended Strategy

In order to meet the projected future supply need of an additional 35,000 to 40,000 afy in 2035, and to meet immediate supply needs and near-term supply needs, PWD must undertake the following measures:

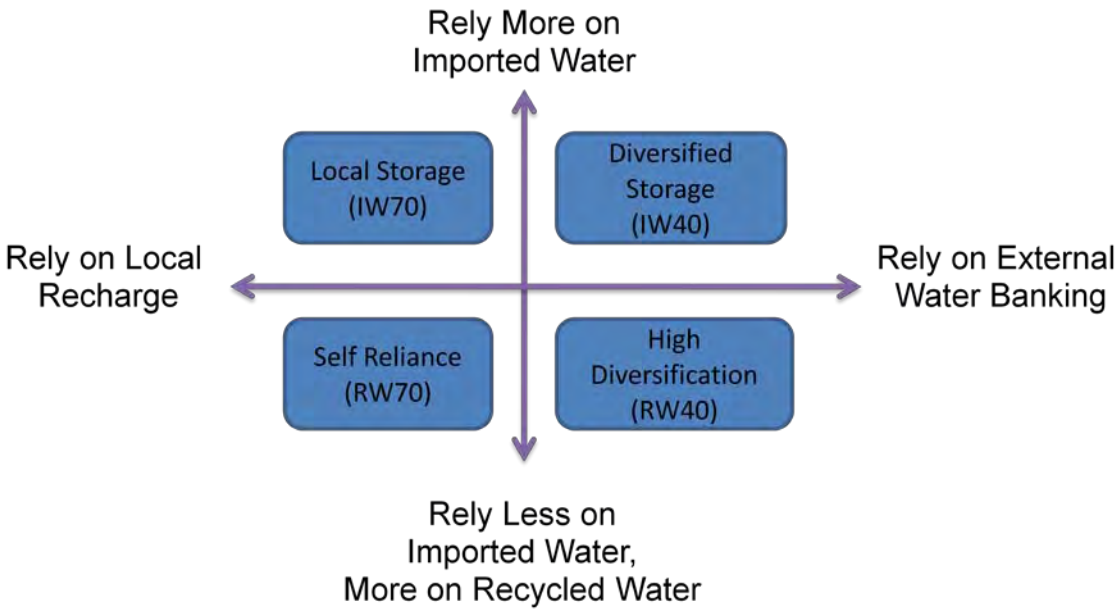
- Acquire new imported supplies
- Develop banking and storage
- Maximize recycled water

Other important conclusions to boost near-term supply reliability and maintain resources long-term are:

- Continue to expand conservation efforts as aggressively as possible
- Maintain Littlerock Reservoir through sediment removal

To develop a recommended water resource strategy for PWD, four general alternatives were evaluated, each providing a different emphasis on either more imported water versus less imported water, and more local groundwater storage versus groundwater banking outside of PWD's service area. **Figure 2-4** illustrates the four alternatives relative to these different endpoints. Each alternative is described in more detail in the Alternatives Evaluation Technical Memorandum (TM).

Figure 2-4: Water Resource Alternatives Considered



Based on the evaluation presented in the Alternatives Evaluation TM and preferences expressed by the PWD Board of Directors and staff, the recommended alternative consists of the following directions:

- Pursue local groundwater storage and recovery (i.e. Local Storage alternatives, or IW70)
- Take steps to limit PWD's dependence on imported water by maximizing use of recycled water
- Continue to expand conservation efforts and maintain Littlerock Reservoir through sediment removal

2.2.2 Description of Recommended Strategy

The recommended strategy for the SWRP is summarized as follows:

- Acquire and/or develop new imported supplies
- Create a combination of local surface spreading facilities to percolate untreated State Water Project (SWP) water and ASR wells to inject potable water
- Add additional pumping capacity to achieve a target of delivering 70 percent of supply to customers through groundwater pumping.
- Pursue a recycled water exchange program with nearby agriculture in-lieu of groundwater pumping.

In addition, PWD will begin to embark on a strategy to diversify its supplies and provide for near-term drought reliability with the following steps:

- Expand conservation programs
- Recover storage capacity in Littlerock Reservoir through sediment removal
- Implement a recycled water system for non-potable uses (e.g. primarily irrigation but possibly some industrial uses)
- Further research using treated recycled water to replenish the groundwater basin as is now being done in Orange County through advanced water treatment processes, blending with SWP water, and surface spreading and percoloation.

Table 2-1 summarizes the current supplies and future targets associated with different elements of this recommended strategy.

Table 2-1: Water Resource Targets for Recommended Local Storage Strategy

Water Supply Elements	Current	Target for 2035
Imported Water	12,000 afy (average)	36,000 to 47,000 afy (average)[1]
Groundwater Pumping	12,000 afy (average)	47,000 afy (average)
Surface Water Treatment Capacity	35 mgd	35 mgd
ASR Injection Capacity	None	6,000 gpm (800 AF/month)
Surface Recharge Capacity	None	35,000 afy (average)
Local Storage Capacity	None	120,000 af
Recycled Water		
- Non-potable	None	1,800 afy
- Exchange with agriculture	None	0 to 5,000 afy[1]
- Groundwater recharge	None	0 to 15,000 afy[1]
Active Conservation Programs	250 afy	2,600 afy
Passive Conservation Programs	None[2]	3,600 afy
Littlerock Reservoir	4,000 afy (average)	4,500 afy (average)
External Water Banking	None	Consider on an opportunistic basis

[1] The volume of imported water used will depend on how much recycled water is used for in-lieu groundwater exchange with agriculture and/or groundwater recharge.
[2] Prior passive conservation measures (e.g. plumbing code changes) were not evaluated but have been taken into account in future demand projections.

2.2.3 Schedule of Implementation

The figures below illustrate the schedule for how supplies and facilities are to be expanded over time to deliver water to meet water supply needs. **Figure 2-5** illustrates the delivery mechanisms while **Figure 2-6** illustrates the acquisition and storage of supplies over time. Further details about implementation are provided in Chapter 3.

Figure 2-5: Implementation Schedule for Delivering Supplies

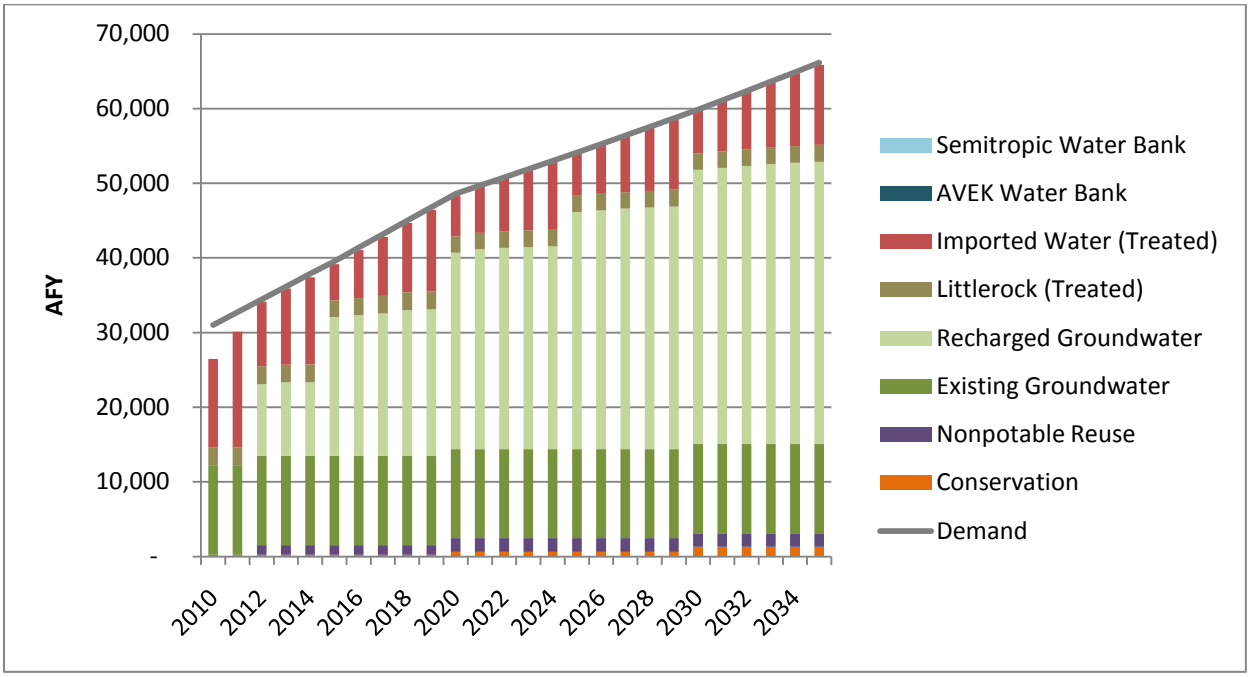
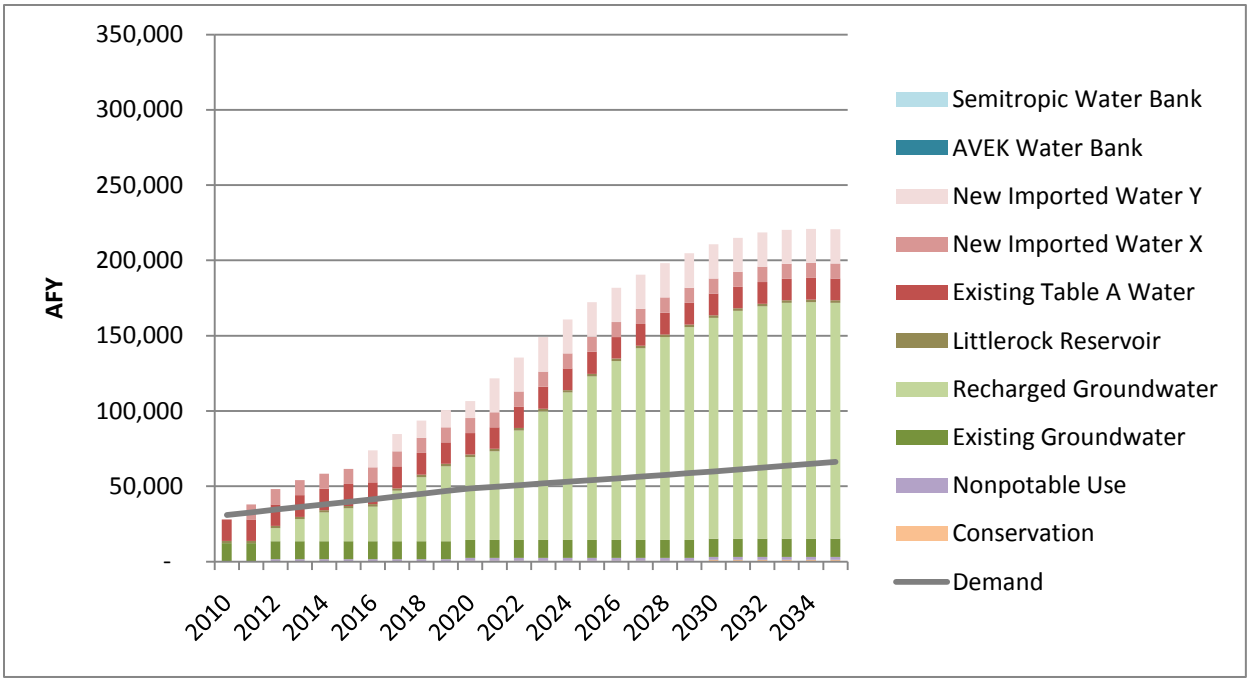


Figure 2-6: Implementation Schedule for Acquiring and Storing Supplies



Chapter 3 Implementation Plan

3.1 Introduction

This section outlines an implementation plan for the SWRP. The purpose for this implementation plan includes the following:

- Articulate the objectives to be achieved with each water resource strategy
- Identify 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 lie out in the future and how PWD will address (i.e. adjudication)

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
- Water banking
- Conservation
- Littlerock Reservoir

3.2 Imported Water

3.2.1 Strategic Objective

PWD's strategic objective with regard to managing and acquiring imported water is:

- Firm up existing Table A supplies so that imported water is available at historical average levels
- Create and maintain options for future acquisition of imported water as need arises
- Protect both existing supplies and future opportunities by being proactive and a leader as operation and management of the SWP system continues to evolve

3.2.2 Strategies to Implement

To achieve these strategic objectives, PWD will need to pursue the following four strategies:

1. Acquire New Imported Water Supplies

PWD will need to acquire new imported water supplies two to three more times within the next 15 years. When acquiring those supplies, recommendations for PWD are:

- Acquire and/or develop permanent supplies and avoid (when possible) short-term or fixed duration contracts for dry year supplies.
- When acquiring new permanent supplies, focus on those that develop new supplies (as opposed to a re-allocation of an existing supply) and ensure that the supply is tied to a senior water right.
- Develop recharge and/or storage in parallel with any future imported water acquisition (addressed in more detail in Section 3.3).
- Once recharge facilities are on-line, acquire wet year/excess supplies for storage when available in the near-term to build up storage account(s).

2. Be Proactive with 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, changes to water exchange/transfer policy and oversight, and expiration of current SWP contracts in 2035. 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.

3. Negotiate for Additional Conveyance Capacity

Within 10 years, annual average delivery of imported water to PWD will exceed the capacity to which PWD has a right to in the SWP system. Currently, California Department of Water Resources (DWR) policy is to allow contractors to transport water through the system if capacity is available. However, capacity currently available in the system may not be in the future as contractors use their capacity to transport water to and from various water banks and storage areas. As such, PWD should begin working now to develop agreements to utilize available capacity of other contractors. Mechansims for doing this may include partnerships on storing water or possibly on acquiring new supplies.

4. 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. This would include maintaining land owned by PWD for a future treatment plant.

3.2.3 Uncertainties

Despite taking steps to limit its reliance on imported water, PWD will nevertheless remain heavily dependent on imported water for a significant and irreplaceable portion of its water supply. As such, PWD must continue to follow and be prepared to respond to uncertainties that may limit PWD's access to imported water or result in excessive new costs. These uncertainties and PWD's recommended responses are outlined in **Table 3-1**.

Table 3-1: Recommended Responses to Uncertainties with Imported Water

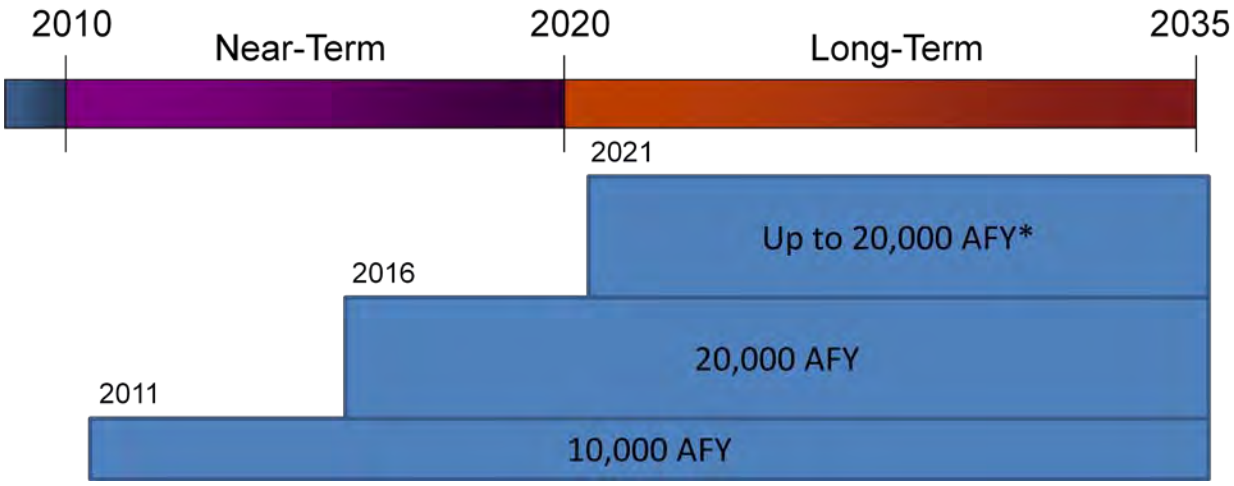
Element	Uncertainties and Impact	PWD Response
1. Delta Environmental Issues	Ongoing issues of water quality and ecological impacts may further restrict Delta exports. While plans are being discussed about how to mitigate these issues and restore conveyance capacity, there is currently no evidence to suggest that a solution can be reached.	Pursue strategy to limit reliance on imported water to current levels.
2. Infrastructure Improvements to the SWP System	Addition of new storage facilities and conveyance facilities will improve reliability but increase cost.	Continue to monitor the costs associated with these improvements in comparison to other non-SWP supplies PWD may acquire.
3. Climate Change	Predicted climate change may further reduce reliability of imported supplies.	Advocate for system improvements necessary to maintain reliability at current levels. Pursue strategy to limit reliance on imported water to current levels.
4. Population Growth	Currently, population growth in PWD's service area would be considered flat by historical measures. Near-term demand projections presume growth will return to historical growth rates within the next 5 years. However, given the depth of the current economic downturn, it is not clear when the region will see a return to growth.	Proceed with plans to acquire new imported supplies but incorporate strategies to delay acquisition if necessary until projected demand reaches needed levels.

3.2.4 Schedule

Figure 3-1 illustrates the implementation schedule for imported water. Prior to completing each acquisition, PWD will need to undertake the following actions that, together, may take between 2 and 5 years to complete:

- Opportunity identification
- Development, planning and engineering
- CEQA documentation preparation
- Financing

Figure 3-1: Imported Water Implementation Schedule for Securing Firm-Yield Supplies



* depends on volume of recycled water used for groundwater recharge.

3.2.5 Imported Water Costs

Project imported water costs (in 2008 dollars) are as follows:

Capital costs:	$347 million
O&M costs (per year):	$12 million (2011) to $19 million (2035)
Total costs:	$757 million
Net present value:	$426 million

Costs include cost to acquire or develop new supplies and costs to deliver new supplies. Under the recommended strategy, no additional water treatment facilities are needed.

3.3 Groundwater

3.3.1 Strategic Objective

PWD's strategic objectives with regard to managing and developing groundwater are:

- Be able to meet 70 percent of demands through pumping within ten years (i.e. by 2020)
- Do not further draft the local groundwater basin
- Establish and operate recharge facilities to offset proposed pumping increases and potential loss of groundwater pumping due to adjudication

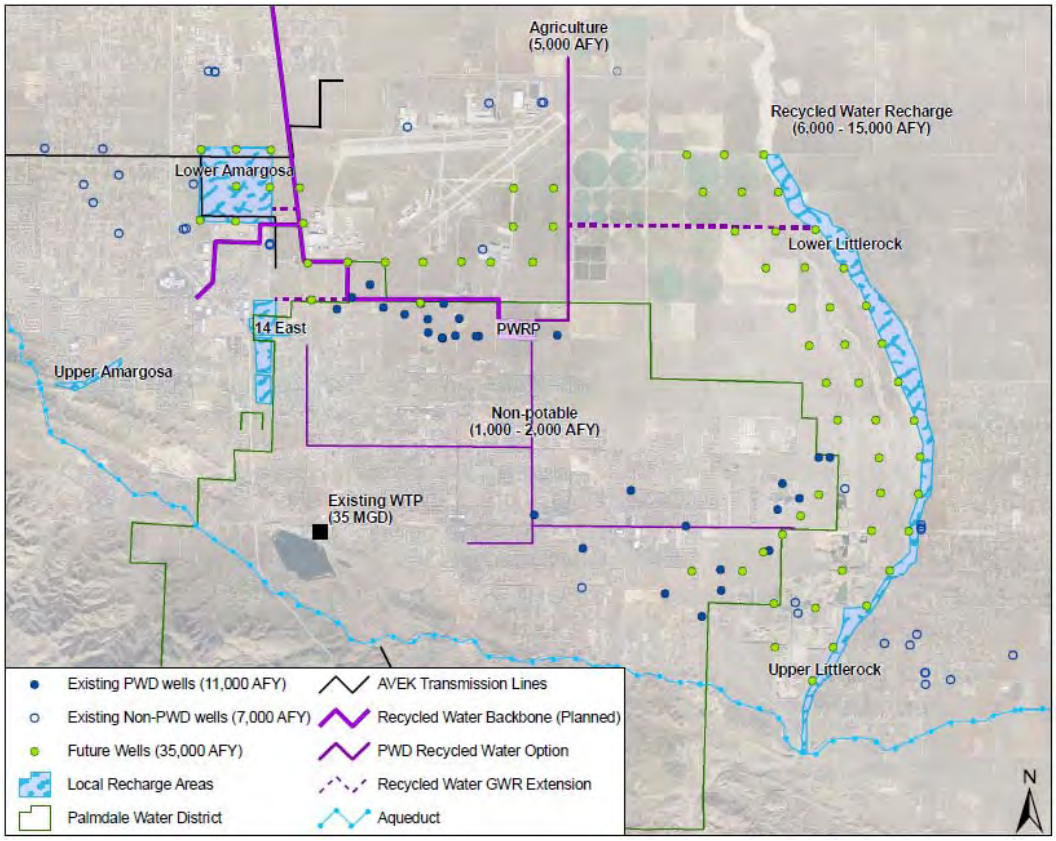
3.3.2 Strategies to Implement

There are two basic strategies to be implemented in order to achieve the groundwater strategic objectives.

1. Install New Wells, Including ASR

To meet future demands, PWD should proceed with a schedule of installing additional well capacity, focusing initially in their North Wellfield area and then expanding to the East Wellfield area (**Figure 3-2**). In addition, each new well installed in the North Wellfield should have the capability for both extraction and injection (i.e. aquifer storage and recovery, or ASR). This will allow PWD to take advantage of available well capacity during the winter months for injection when excess surface water and treatment capacity may be available.

Figure 3-2: Proposed Well and Groundwater Recharge Siting



2. Install Surface Recharge Facilities

In addition to ASR, PWD should proceed with developing surface recharge facilities for recharging the local groundwater basin. Surface recharge facilities allow the groundwater basin to be recharged at a higher rate when larger quantities of imported water are available. In addition, water recharged via surface spreading and percolation precludes the need for treatment to potable standards, thus saving treatment costs and chemical usage. Lastly, surface spreading facilities provide the opportunity to blend imported water with recycled water for percolation, a general requirement by the California Department of Public Health (CDPH).

3.3.3 Uncertainties

The recharge and recovery of water into the local groundwater basin will require further analysis but, based upon studies and operating experience, appears highly feasible. Remaining uncertainties thus include the outcome of the ongoing adjudication process and the ultimate approach the RWQCB will take to manage salt in the region. These uncertainties and PWD's recommended responses are outline in **Table 3-2**.

Table 3-2: Recommended Responses to Uncertainties with Groundwater

Element	Uncertainties and Impact	PWD Response
1. Adjudication	The outcome of the adjudication may limit how much PWD can pump due to natural replenishment.	Develop recharge facilities so that PWD can replenish the groundwater basin and allow PWD to maintain current pumping.
2. Salt Management	Importing more water from the Delta will increase the salt load on the groundwater basin. For recycling projects, the SWRCB has requested development of salt management plans for affected basins. At a minimum, the importation of water will need to be included in such plans.	Work with the Lahontan RWQCB to craft an appropriate salt management approach to the local basin. Maintain possible strategies to remove salt (e.g. reverse osmosis treatment of recycled water).

3.3.4 Schedule

Figure 3-3 outlines the implementation schedule for the installation of new wells. When installing new wells, activities which PWD will need to undertake include the following:

- Well siting and new land acquisition (if needed)
- Planning, CEQA documentation and permitting for ASR
- Design, construction and testing

PWD should allow for 3 years of preparatory work before facilities can be fully operational. One particular issue may be obtaining a permit from the RWQCB for ASR. Los Angeles County Waterworks District No. 40 experienced some difficulty in obtaining a permit for their ASR facilities due to concern from the RWQCB about disinfection by-products in drinking water, in particular trihalomethanes.

Figure 3-3: New Well Installation Implementation Schedule

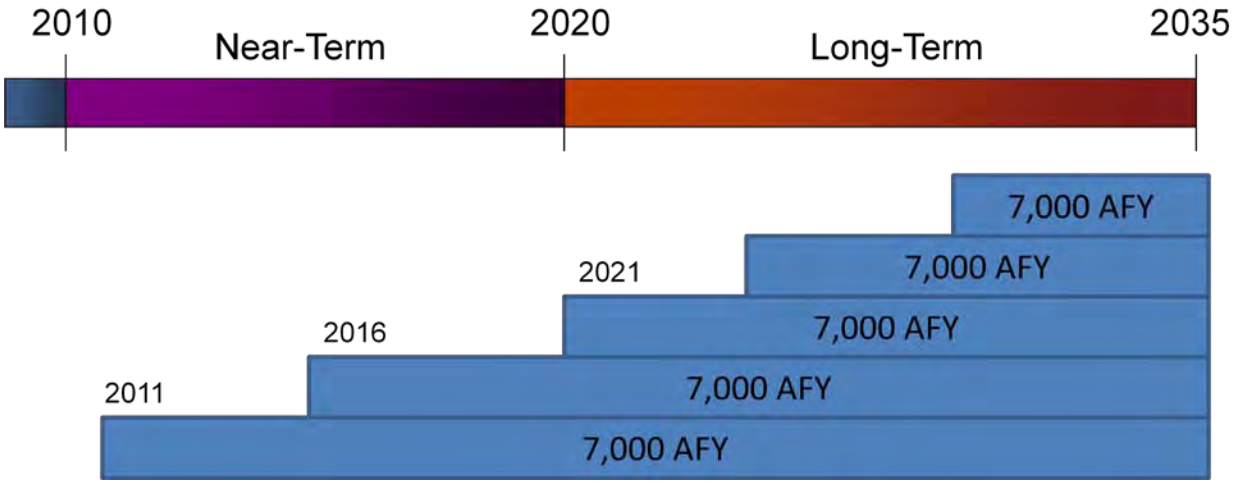


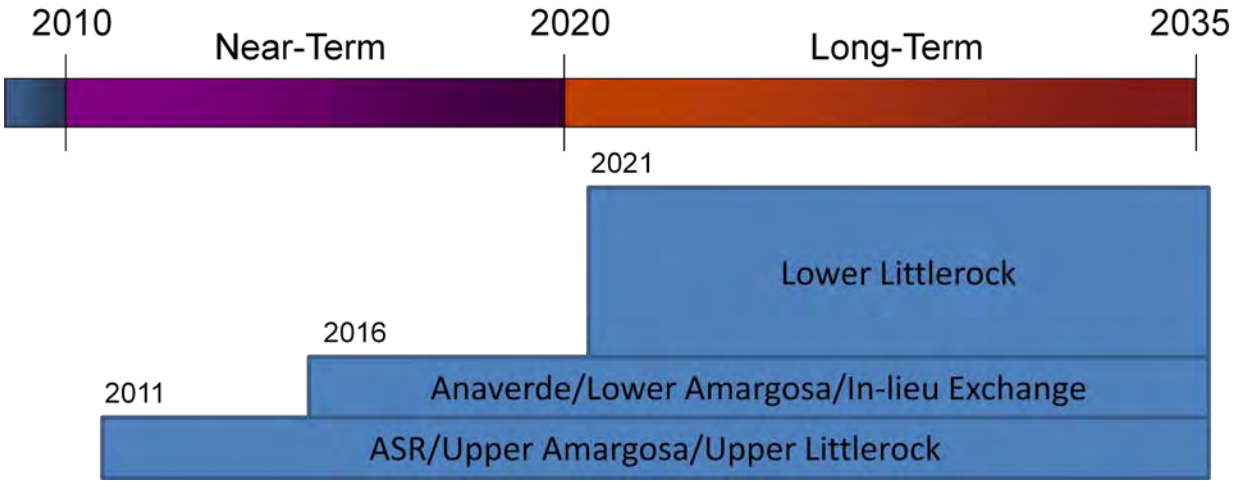
Figure 3-4 illustrates the implementation schedule for creating new recharge facilities. The initial focus of surface recharge facilities should be those close to the aqueduct, on sites that are more readily available and recharge the North Well Field area. Steps which PWD will need to proceed through to develop recharge facilities include:

- More refined siting analysis and new land acquisition (where needed)
- Exchange agreement(s) with AVEK for delivery of SWP water outside the PWD service area
- Recharge feasibility studies, including groundwater monitoring and percolation tests, site facility plans and more refined groundwater modeling and an operating plan
- Outreach, CEQA documentation and permitting
- Design and construction

PWD should estimate between 2 to 4 years to complete these steps and have facilities on line. Opportunities that PWD should try to capitalize on include the City of Palmdale's Upper Amargosa Creek recharge project and property which PWD currently owns or could readily acquire.

At this time, the City of Palmdale has been developing a 20-acre project in the Upper Amargosa Creek area. The project is estimated to be able to recharge 14,720 afy. Currently the City has completed a draft EIR and facility site plan, and will soon be installing groundwater monitoring wells.

Figure 3-4: Recharge Facilitiy Implementation Schedule



3.3.5 Groundwater Costs

Projected groundwater development costs (in 2008 dollars) are as follows:

Groundwater Pumping

Capital costs: $109 million

O&M costs (per year): $1.6 million (2011) to $6.1 million (2035)

Total costs: $227 million

Net present value: $119 million

Costs include installation of new wells (including ASR capabilities) and related infrastructure including pumping, piping and wellhead chlorination.

Groundwater Recharge

Capital costs: $34 million

O&M costs (per year): $0.2 million (2012) to $0.9 million (2035)

Total costs: $49 million

Net present value: $32 million

Costs include cost to acquire land, construction and operation of recharge basins, and new turnouts and conveyance facilities to deliver water to recharge basins.

3.4 Recycled Water

3.4.1 Strategic Objective

PWD's strategic objectives with regard to recycled water are:

- Maximize the use of recycled water within PWD's service area to limit the need for more imported water
- Implement a non-potable distribution system to be able to deliver tertiary treated recycled water for irrigation and, where feasible, industrial and commercial uses
- Pursue delivery of recycled water to nearby agriculture as an in-lieu supply for pumped groundwater
- Continue to research the use of recycled water for groundwater recharge and salt removal (when coupled with advanced treatment)

3.4.2 Strategies to Implement

To achieve these strategic objectives, PWD will need to implement the following strategies.

1. Secure Agreement for Recycled Water

Recycled water is currently provided by the Sanitation Districts of Los Angeles County (LACSD) as the owner and operator of the Palmdale Water Reclamation Plant (as well as the Lancaster Water Reclamation Plant). In order to have access to recycled water, PWD will need to obtain an agreement from LACSD. **Table 3-3** below lists those who currently have agreements with LACSD for recycled water.

Table 3-3: Parties with Current Agreements with LACSD for Recycled Water

Party	Amount
Los Angeles County Waterworks District No. 40	13,500 afy
City of Lancaster	950 afy
City of Palmdale	2,000 afy
Total	**16,450 afy**

Alternatively, PWD may also obtain access as a third party through already existing agreements. Currently Los Angeles County Waterworks District No. 40 has an agreement with LACSD for 13,500 afy of recycled water. The City of Lancaster has an agreement for 950 afy and the City of Palmdale has an agreement for 2,000 afy. At this time, none of these parties have the facilities in place to utilize all of this recycled water and no guarantees that they will in the future. In addition, some of the demands to be supplied by the various parties have been double-counted, which artificially increases total demand on recycled water from LACSD.

2. Participate in Developing a Salt and Nutrient Management Plan

Recently approved SWRCB policy requires the development of salt and nutrient management plans for basins that will be using recycled water. The purpose of this requirement is to address environmental concerns associated with the concentration of salts and nutrients as the use of recycled water expands. Because the Antelope Valley is a closed hydrologic basin, essentially all salts transported to the valley remain whether through wastewater, imported water, fertilizer, water softeners, or other sources of salt. In order to secure a permit from the RWQCB to use recycled water, permittees must commit to either developing, or participating in, the development of salt and nutrient management plans for the basin, culminating in the necessary Basin Plan amendments by 2014.

Because this SWRP involves the increased use of two salt-bearing water supplies—imported water and recycled water—PWD will need to be involved in both the development and implementation of a salt management plan. At this time, each RWQCB and parties within affected basins are beginning to work together to determine the scope of these salt and nutrient management plans.

3. Develop Non-Potable System

PWD should proceed with developing a non-potable delivery system for recycled water and raw water from Lake Palmdale as potential supplemental supply. While the yield of such a system is relatively low compared to PWD's larger future supply needs, such as system can be readily implemented to provide near-term supply reliability and ensure large landscaped areas, such as City parks and schools, can continue to be irrigated even under to most of severe drought conditions so that the investment in landscaping is maintained.

To implement a non-potable system, PWD will need to accomplish the following:

- Complete recycled water master/facilities plan
- Prepare CEQA documentation and permitting
- Prepare recycled water use resolution
- Commit to and participate in developing a salt management plan
- Pursue grant and loan funding to help finance construction of the system
- Design and construct Phase 1 facilities

4. Develop Agriculture Reuse

To help improve groundwater storage in the basin area near its wells, PWD should pursue implementing a recycled water exchange program with local agriculture interests to provide in-lieu groundwater recharge. To implement this program, PWD should immediately proceed with the following:

- Obtain interest from local agricultural parties
- Develop necessary agreement(s) between agricultural parties, PWD and LACSD
- Prepare facilities plan, CEQA documentation and permitting
- Design and construct facilities.

5. Further Research Groundwater Recharge with Recycled Water

The most significant and most reliable use for recycled water for PWD is groundwater recharge with recycled water. Because PWD will be constructing facilities for recharging imported water via surface spreading, facilities and blend supplies will already be in place to be used for recharge with recycled water.

That said, the process for obtaining regulatory and public approval is lengthy and frequently complicated. Recharge with recycled water has been successfully implemented in many places in Southern California and is being considered in many more places because of its reliability, demonstrated performance, and its relative cost effectiveness and environmental footprint as compared to imported water. However, public opposition has led to the rejection of groundwater recharge with recycled water in a handful of locations and should not be underestimated.

Because both research and public outreach in the Antelope Valley on the topic has been minimal, it will be necessary for PWD, in combination with partners, to embark on thoughtful and comprehensive investigation of groundwater recharge with recycled water. The objective of this process will be to prove the science and technology, gain approval from regulators, and gain acceptance from the public.

To proceed with this investigation, PWD will need to accomplish the following:

- Participate in recycled water recharge pilot study with Lancaster and other partners
- Continue to research latest technology and issues associated with groundwater recharge
- Proceed with pilot testing of advanced treatment processes
- Evaluate hydrogeology at possible recharge sites to assess travel times to nearby wells and effectiveness of soil-aquifer treatment (SAT), if needed
- Have research results reviewed by industry experts
- Regularly brief the Lahontan RWQCB and the public

If the outcome of this research is successful, subsequent steps will be:

- Develop regional partnership strategy to achieve water supply and salt management goals
- Continue to conduct public outreach
- Pursue external grant funding
- Prepare detailed facility plans
- Prepare necessary CEQA documentation and permitting
- Design and construct facilities
- Perform start up and monitoring

3.4.3 Uncertainties

Recycled water will be a new supply for PWD. As such, there are a number of uncertainties which PWD will need to address. Key uncertainties are outlined in **Table 3-4**.

Table 3-4: Recommended Responses to Uncertainties with Recycled Water

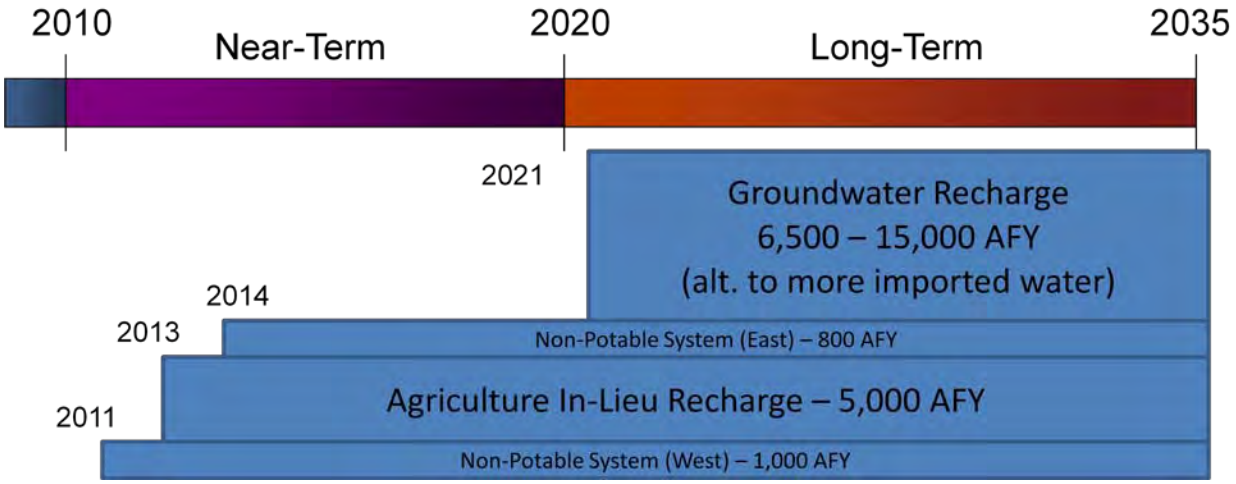
Element	Uncertainties and Impact	PWD Response
1. Ability to Secure Recycled Water	LACSD may not provide PWD with a recycled water agreement citing that current supplies may already committed, though future supply increases are yet to be subscribed for.	Work with the City of Palmdale, LA County Waterworks District No. 40 and City of Lancaster to develop a strategy for using or sharing a portion of their contracted amounts. Unsubscribed future amounts should be contracted for use by PWD.
2. Public Perception	The public commonly has health and safety concerns with the use of recycled water—particularly for groundwater recharge—despite well established regulation and use of recycled water for non-potable and indirect potable uses.	Create a public communication plan to obtain comments and feedback, and to address concerns.
3. Agricultural Interest	Nearby agriculture may not be interested in exchanging recycled water for groundwater for multiple reasons including perception and protection of groundwater rights. In addition, it is unclear what rights PWD may have in an in-lieu exchange prior to settling the adjudication.	Pursue groundwater recharge strategies.
4. Salt Management	Importing more water from the Delta will increase the salt load on the groundwater basin. For recycling projects, the SWRCB has requested development of salt management plans for affected basins. At a minimum, the importation of water will need to be included in such plans.	Work with the Lahontan RWQCB to craft an appropriate salt management approach to the local basin. Maintain possible strategies to remove salt (e.g. reverse osmosis treatment of recycled water).

3.4.4 Schedule

Figure 3-5 illustrates the implementation schedule for water recycling facilities. The initial focus of recycled water will be for non-potable use and for agriculture in-lieu recharge. The process for completing the design, environmental clearance, permitting and construction of these facilities is estimated to take 2-3 years.

Subsequent focus of recycled water will be on expanding the non-potable system to serve additional customers and, if determined feasible, groundwater recharge. The process needed to obtain both the regulatory approval and public acceptance of groundwater recharge with recycled water is expected to take 10 years based on similar experience in other Southern California settings including Orange County, Inland Empire, and the Central and West basin areas of southern Los Angeles County.

Figure 3-5: Recycled Water Implementation Schedule



3.4.5 Projected Cost

Projected costs for developing a non-potable system are as follows:

Non-Potable System Only

Capital costs: $49 million

O&M costs (per year): $0.4 million (2012) to $0.9 million (2035)

Total costs: $66 million

Net present value: $42 million

Costs include installation of new recycled water pipelines and laterals, pumping facilities, storage, and retrofits.

If groundwater recharge with recycled water were to proceed to implementation, the projected costs are as follows:

Groundwater Recharge with Recycled Water and Non-Potable System

Capital costs: $219 million

O&M costs (per year): $0.5 million (2012) to $5.5 million (2035)

Total costs: $311 million

Net present value: $171 million

Costs include cost to build advanced treatment facilities, process brine from reverse osmosis treatment, and pipelines to convey recycled water to surface spreading facilities.

Costs for agriculture in-lieu recharge have not been provided due to the current uncertainty of how such a project would be implemented.

3.5 Water Banking

3.5.1 Strategic Objectives

PWD's strategic objectives with regard to water banking are:

- Establish ability to bank available imported water as soon as possible
- Focus first on developing storage within the groundwater basin local to PWD
- Pursue partners to participate in developing PWD storage facilities including other AVSWCA members and other entities (e.g. MWD, LADWP)
- Consider water banking in locations outside PWD if cost effective AND the project produces a value-added benefit (such as additional aqueduct delivery capacity)

3.5.2 Strategies to Implement

To achieve these strategic objectives, PWD will need to implement the following three strategies.

1. Develop Local Recharge and Recovery Capabilities

In order to firm up near-term supplies, it is critical that PWD establish facilities to recharge and bank available imported water as soon as possible, ideally within two years. This will allow PWD to take advantage of wet year or any excess water that may be available through the SWP or through a new imported water exchange agreement. The implementation plan for these facilities is provided in Section 3.3.

2. Develop Partnership Strategy

With proposed recharge and recovery facilities now identified to meet PWD's future needs, PWD should develop a partnership strategy to reach out to outside parties who may have a need to bank water. These could include other entities in the Antelope Valley (e.g. AVEK) or entities to the South of PWD (e.g. MWD). The purpose of engaging outside partners would be to help offset capital and operating costs, gain economies of scale, further increase water levels in the groundwater basin, and/or allow PWD to exchange storage capacity for aqueduct delivery capacity.

Subsequent to implementing this partnership strategy, PWD should develop a proposal that can be readily shared with potential partners that describes the project.

3. Explore Added Benefits of Outside Banking

While the primary recommended direction for PWD is to establish water banking within its local groundwater basin, opportunities may be presented to PWD that it should consider on a case-by-case basis. These opportunities could include banking water north of the Delta as part of an imported water acquisition/exchange program or banking water elsewhere in the Antelope Valley such as with an AVEK-developed bank. While the cost and value of other banking facilities need to be taken into account, PWD should also look for and be able to quantify other benefits associated with these opportunities.

3.5.3 Uncertainties

As with recycled water, PWD currently does not operate or participate in any kind of banking operation. As such, there are potentially a number of uncertainties with which PWD may need to deal. These are outlined in **Table 3-5**.

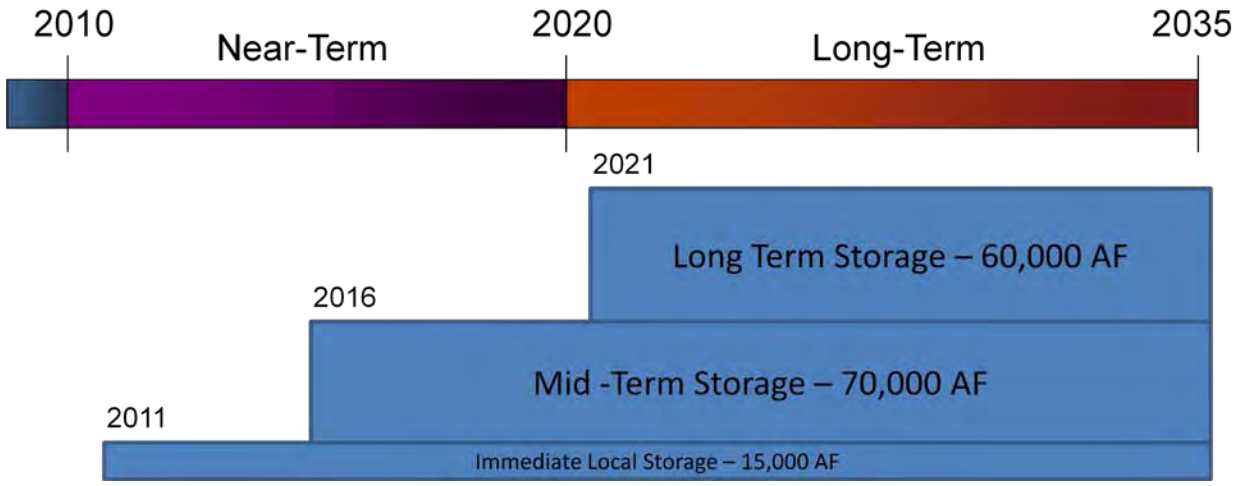
Table 3-5: Recommended Responses to Uncertainties with Water Banking

Element	Uncertainties and Impact	PWD Response
1. Getting local recharge facilities up and operating	Despite best efforts, PWD may not be able to have recharge facilities in place if excess water is available through either its existing SWP entitlement or new exchange.	Develop contingency plans to store excess water (e.g. have exchange partner carryover to next year) and/or use excess water in-lieu of water from Littlerock Reservoir.
2. Working with AVSWCA to develop joint banking facilities	The AVSWCA has been discussing developing joint water banking facilities but to date has not proposed how it would develop, own, and/or operate such facilities. As such, it remains difficult to evaluate what the benefit(s) would be.	Assist AVSWCA with developing a plan for shared development, ownership and operation of banking facilities.
3. Availability of imported supplies for banking	While important to store imported water for future use, there remains concern about the reliability of imported supplies. While current restricitions have been taken into account for this plan, new environmental issues in the Delta may arise which may further restrict imported deliveries. In addition, there are no clear indications that the recent lack of success of State government to implement comprehensive solutions for the Delta will be overcome in the near-future.	Closely monitor environmental developments in the Delta. Work with AVSWCA and other State Water Contractors to advocate for solutions that maintain and/or improve SWP reliability. Continue to research ways to maximize using recycled water to limit reliance on imported water.

3.5.4 Schedule

Figure 3-6 illustrates the recommended water banking targets for PWD in order to provide sufficient supplies to meet single-dry year and multiple dry year demands. The increases in storage targets coincide with proposed supply increases due to new imported water transfers and possibly groundwater recharge with recycled water.

Figure 3-6: Water Banking Implementation Schedule



3.5.5 Projected Cost

The costs associated with local water banking have been incorporated into the groundwater implementation plan (see Section 3.3.5). Because no external water banking is proposed at this time, there is no added cost projected.

3.6 Conservation

3.6.1 Strategic Objective

PWD's strategic objectives with regard to conservation are:

- Implement conservation programs to achieve savings that at least match the cost offset of acquiring, transporting and treating new supplies
- Continue to expand conservation efforts on a regular basis (e.g. every 3-5 years), attracting outside funding to help expand programs
- Achieve the conservation targets that are expected to be established through the proposed "20 x 2020" program (i.e. 20 percent per capita reduction in water use statewide by 2020)
- 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
- Be a leader of conservation in the Antelope Valley in crafting consistent regional conservation programs and messaging

3.6.2 Strategies to Implement

As presented in the Options Report, passive conservation measures due to plumbing and building code changes, as well as the City of Palmdale's Ordinance 1362 (limiting installation of grass and requiring native landscaping) are expected to yield a significant conservation savings (approximately 3,600 afy by 2035). Nevertheless, additional savings are possible through an active conservation program and very well may be necessary to meet pending 20 x 2020 conservation requirements. In addition, by implementing conservation measures, PWD may be able to delay the need to acquire new supplies, saving millions of dollars in financing costs.

To achieve the five strategic objectives listed above, PWD should implement the following strategies:

1. Implement and Consistently Expand Targeted Conservation Programs

Given that the current and future demands of PWD customers are and will be largely from single-family residential development and large landscaped areas (e.g. parks and schools), PWD should implement targeted conservation programs focused toward these customers. **Table 3-6** lists three proposed levels of effort for conservation programs, each achieving increased savings but at increased cost. As success of programs is demonstrated at the current level, the program should be expanded to subseqeuent levels.

Table 3-6: Active Conservation Measures

Current		Expanded		Maximum	
ET Controller					
• Start with existing pilot survey, controllers • HydroPoint WeatherTRAK Irrigation Survey Controller installation	19afy $347/af	• Customer cost $14.99/month for 5 years	38afy $380/af	• No fees to customer	122afy $1297/af
Landscape Management					
• Start with existing Smart Controller Rebate	30afy $429/af	• Reduce fee to $2.00/mo	30afy $1044/af	• Eliminate fees	44afy $1731/af
Large Landscape					
• Continue information & contact at schools and parks • Add all other large landscape sites • Add incentives for retrofits	13afy $277/af	• Increase incentive • Add landscape design services	38afy $954/af	• Increase incentive	134afy $1062/af
Turf Replacement					
• Continue new program at $.40/sq ft	62afy $188/af	• Increase to $1.00/sq ft • Add substantial advertising	123afy $470/af	• Increase to $2.00/sq ft	265afy $939/af
High Efficiency Toilets					
• Offer $60 per HE toilet, all eligible • Targeted marketing: Multi-family, old housing stock (pre-1992)	76afy $126/af	• Add direct installation of confirmed old toilets	380afy $565/af	• Add commercial sector	520afy $587/af
High Efficiency Clothes Washers					
• Offer $100 rebate per washer sold, no confirmation	9afy $616/af	• Offer $150 rebate per washer sold, w/ confirmation • With elec., gas, and wastewater increase rebate	17afy $975/af	• Offer $200 rebate per washer sold, w/ confirmation • With elec., gas, and wastewater increase rebate	85afy $1284/af
MP Rotator Nozzles					
• Offer $4 rebate per installed nozzle • Landscape contractor training	8afy $79/af	• Offer free nozzles w/ confirmed installation and tracking • Landscape contractor certification	23afy $79/af	• Direct install to increase participation	75afy $79/af
CII Audits and Incentives					
• Offer survey and $400/af incentive	1afy $385/af	• Offer survey and $700/af incentive	2afy $673/af	• Offer survey and $1200/af incentive	17afy $1154/af

2. Continue Program of Water Budgets for Customers

Establishing customer water budgets has been shown to achieve as much as 10 percent savings through behavior modification and price effects. The current water budget which PWD has established for its customers is based on land use type (i.e. residential, commercial or industrial use), and the amount estimated to be used indoors and outdoors.

3. Monitor and Report Effectiveness of Conservation Programs

With the recent implementation of water budgets, conservation ordinances and policies, and passive conservation measures, PWD should begin to systematically track and report conservation savings on an annual basis. PWD is a signatory to the California Urban Water Conservation Council (CUWCC) and, as a signatory to the Memorandum of Understanding, has committed to reporting progress in implementing 14 "best management practices" (BMPs) identified for conserving water. In addition to these reporting requirements, PWD should track 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
- Monitor progress toward potential 20 x 2020 conservation targets
- Develop a conservation track record for use when pursuing grant funds
- Benchmark progress as compared to other water districts

4. 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 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.

5. 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 others' programs.

6. 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) Office of Water Use Efficiency (OWUE) and the U.S. Bureau of Reclamation (USBR). Many water agencies in California who are viewed as leaders in conservation are consistently successful in obtaining grant funding for as much as 50 percent of their programs. 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 grants funds become available.

3.6.3 Uncertainties

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. Table 3-7 lists the uncertainties related to conservation.

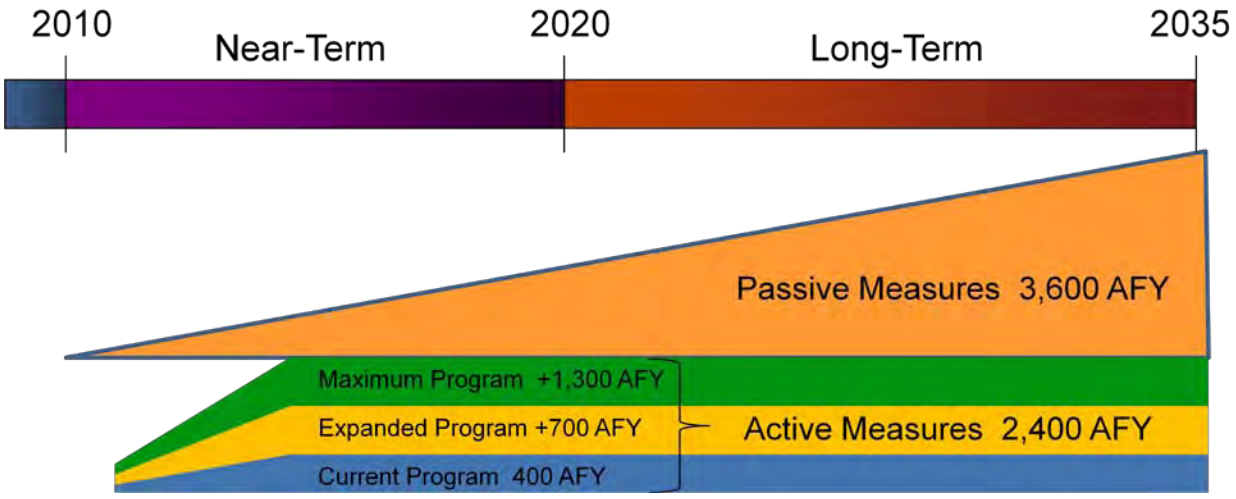
Table 3-7: Recommended Responses to Uncertainties with Conservation

Element	Uncertainties and Impact	PWD Response
1. 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.
2. Availability of grant funding	In recent years, grant funds for conservation have been available through State Propositions 50 and 84, through the CALFED program and USBR. However, future funding sources are not guaranteed and, if available, are often highly competitive to obtain.	Be prepared to pursue grant funding when available but make plans to continue implementing programs assuming no outside funding.

3.6.4 Schedule

Figure 3-7 illustrates the proposed implementation schedule for conservation measures. One key assumptions in the schedule is the penetration of measures associated with new development. In addition, the schedule recognizes that each set of measures generally takes 3 to 5 years to reach full effectiveness. Given the lack in time to see results, the schedule shows a 2 year evaluation period before expanding the conservation program to the subsequent level.

Figure 3-7: Conservation Implementation Schedule



3.6.5 Projected Cost

Table 3-8 summarizes the projected annual costs associated with implementing active conservation measures at the three identified levels.

Table 3-8: Conservation Program Projected Costs

	Net Yield (afy)	Marginal Unit Cost	Estimated Annual Total Program Cost[1]
Current Program	40	$250	$105,000
Expanded Program	1,100	$560	$490,000
Maximum Program	2,400	$850	$1,550,000

[1] Does not include costs associated with conservation coordinator, marketing, education programs or added enforcement measures. Includes programs and costs identified in Table 3-6.

3.7 Littlerock Reservoir

3.7.1 Strategic Objective

PWD's strategic objectives with regard to maintaining Littlerock Reservoir are:

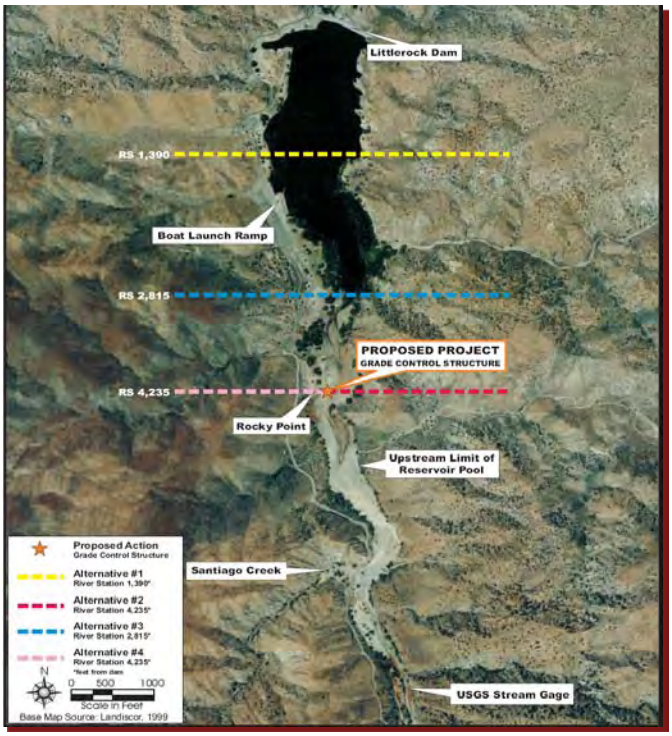
- Create and maintain additional storage capacity for water resource and recreational benefit through sediment removal
- Maintain the quality of water in Littlerock Reservoir
- Continue to explore ways to use Littlerock Reservoir for water supply reliability, power generation, and other benefits

3.7.2 Strategies to Implement

To achieve these objectives, the following strategies are proposed:

1. Remove Sediment as Previously Evaluated

PWD should proceed as soon as possible with one of the proposed sediment removal plans identified in the EIR prepared for the project. Without removing and mitigating the build up of sediment, it is estimated that Littlerock Reservoir will lose 1,000 af of storage by 2035 (a third of its current storage capacity) and the annual cost to purchase additional water to make up for this lost yield will be $2.5 million. In addition to the added cost, the loss of local reservoir capacity reduces PWD's flexibility to manage imported water deliveries and to have local surface supply available in case imported supplies are curtailed.



2. Take Measures to Prevent Quagga Mussel Infestation

The value of supply from Littlerock Reservoir is significant to PWD and, as such, adequate measures need to be taken to protect it. Because recreational boating is currently allowed on the reservoir, there exists the possibility of infestation of Quagga mussels. This invasive species was recently introduced to the United States and has subsequently taken hold in the Great Lakes and in reservoirs along the Colorado River system. The mussels attached to submerged structures including outlet towers, gates, and other facilities, requiring routine and expensive underwater cleaning and disruption to operations. They are spread from one water body to another by attaching to the hull of boats or residing in other submerged portions of boats. The only known effective way to eradicate the Quagga mussels is to completely drain facilities for a minimum of 7 days in order to kill the larvae.

To prevent infestation of Lake Palmdale, PWD recently implemented a program that requires the inspection and, in some case, quarantine of boats prior to allowing them onto the lake. PWD has recently discussed working with the National Forest Service, which maintains access to Littlerock Reservoir, to develop a similar inspection program. PWD should conclude those efforts as soon as possible.

3. Further Evaluate Storage and Power Options

Littlerock Reservoir has the opportunitiy to provide additional benefits. The strategic plan conceptually consideres using Littlerock Reservoir for possible storage of excess SWP water when available. In addition, the strategic plan also consideres the possibility of generating hydropower. The cursory evaluation performed suggested that both concepts have both cost and water supply merit and should be considered further, particularly in light of the need for storage when wet year water is available through the SWP system, the opportunity to mitigate seepage losses by enclosing the entire Palmdale Ditch, ongoing increases in power costs, and the opportunity to create a "green" power generation project.

Uncertainties

Table 3-9 outlines key uncertainties to be addressed with improvements to Littlerock Reservoir.

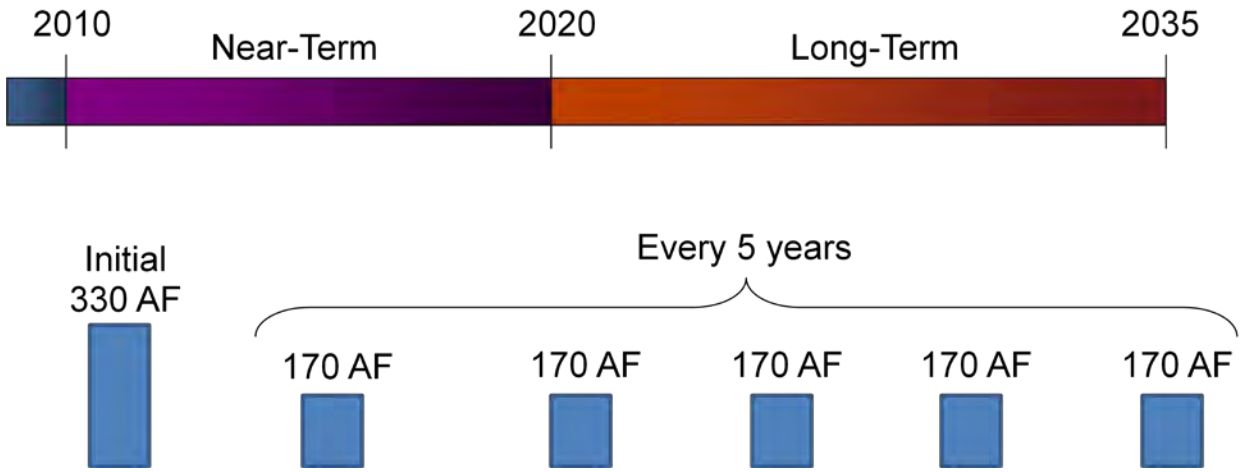
Table 3-9: Recommended Responses to Uncertainties with Littlerock Reservoir

Element	Uncertainties and Impact	PWD Response
1. Sediment disposal	To date, it has been presumed that sediment dredged from Littlerock Reservoir could be disposed of in spent gravel pits in the upper reach of Littlerock Creek at no additional cost to PWD. If an agreement to dispose of sediment cannot be reached, PWD will need to explore more costly disposal options elsewhere.	Negotiate and secure an agreement as soon as possible with gravel pit owner to dispose of dredged sediment.
2. Contamination	Contamination from Quagga mussels or other sources would require that PWD take Littlerock Reservoir offline to avoid contaminating Lake Palmdale. In addition, Little rock Reservoir would probably need to be drained (if even possible) to remove them.	Have sufficient groundwater pumping capacity available to make up for lost water from Littlerock Reservoir in the event it must be taken off line.

3.7.3 Schedule

Figure 3-8 below illustrates the proposed implementation schedule for removing sediment from Littlerock Reservoir.

Figure 3-8: Sediment Removal Schedule for Littlerock Reservoir



3.7.4 Projected Cost

The projected costs for sediment removal from Littlerock Reservoir are summarized below.

Capital costs: $6 million

O&M costs (per year): $0.5 million (for treatment) to $1.4 million (includes sediment removal)

Total costs: $23 million

Net present value: $14 million

Costs include construction of grade control structure, initial sediment removal, ongoing sediment removal every 5 years, and annual costs to treat water at the Palmdale Water Treatment Plant.

3.8 Implementation Plan Summary

This implementation plan outlines an ambitious plan to meet the needs of its customers through a combination of new supplies, local groundwater storage, water recycling and conservation. **Table 3-10** outlines the strategic objectives PWD should use to guide its future decision-making.

Table 3-10: Recommended Strategic Objectives for PWD

Water Resource Element	Strategic Objective
Imported Water	• Firm up existing Table A supplies so that imported water is available at historical average levels • Create and maintain options for future acquisition of imported water as need arises • Protect both existing supplies and future opportunities by being proactive and a leader as operation and management of the SWP system continues to evolve
Groundwater Pumping and Recharge	• Be able to meet 70 percent of demands through pumping within ten years (i.e. by 2020) • Do not further draft the local groundwater basin • Establish and operate recharge facilities to offset both proposed pumping increases and potential loss of groundwater pumping due to adjudication.
Water Banking	• Establish ability to bank available imported water as soon as possible • Focus first on developing storage within the groundwater basin local to PWD • Pursue partners to participate in developing PWD storage facilities including other AVSWCA members and other entities (e.g. MWD, LADWP) • Consider water banking in locations outside PWD if cost effective AND the project produces a value-added benefit (such as additional aqueduct delivery capacity)
Recycled Water	• Maximize the use of recycled water within PWD's service area to limit the need for more imported water • Develop a non-potable distribution system to be able to deliver tertiary treated recycled water for irrigation and, where feasible, industrial and commercial uses • Develop and implement ways to use recycled water to increase available groundwater supply
Littlerock Reservoir	• Create and maintain additional storage capacity for water resource and recreational benefit through sediment removal • Maintain the quality of water in Littlerock Reservoir • Continue to explore ways to use Littlerock Reservoir for water supply reliability, power generation, and other benefits
Conservation	• Implement conservation programs to achieve savings that at least match the cost offset of acquiring, transporting and treating new supplies • Continue to expand conservation efforts on a regular basis (e.g. every 3-5 years), attracting outside funding to help expand programs • Achieve the conservation targets that are expected to be established through the proposed "20 x 2020" program (i.e. 20 percent per capita reduction in water use statewide by 2020) • 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 • Provide leadership to other Antelope Valley water purveyors in crafting consistent regional conservation programs and messaging

To achieve these strategic objectives, **Table 3-11** summarizes the recommended implementation actions to be taken.

Table 3-11: Recommended Implementation Actions by Water Resource Element

Water Resource Element	Implementation Actions
Imported Water	1. Acquire new imported supplies 2. Be proactive with State Water Project system management and operation 3. Negotiate for additional conveyance capacity 4. Maintain flexibility for future water treatment facilities
Groundwater Pumping and Recharge	1. Install new wells, including ASR wells in the North Well Field area 2. Install surface recharge facilities
Water Banking	1. Develop local recharge and recovery capabilities 2. Develop partnership strategy 3. Explore added benefits of outside banking opportunities
Recycled Water	1. Secure recycled water agreement 2. Participate in developing a salt and nutrient management plan 3. Implement non-potable recycled water system 4. Implement agriculture reuse/groundwater exchange project 5. Conduct further research for using recycled water for groundwater recharge
Littlerock Reservoir	1. Remove sediments as previously evaluated 2. Take measures to prevent Quagga mussel infestation 3. Further evaluate storage and power options
Conservation	1. Implement and consistently expand targeted conservation programs 2. Continue program of water budgets for customers 3. Monitor and report effectiveness of conservation programs 4. Regularly review and coordinate PWD and City of Palmdale ordinances and policies 5. Coordinate communications with other Antelope Valley water purveyors 6. Pursue grant funding to improve program cost effectiveness

Based upon the recommended strategy (IW70), the estimated costs to implement this strategy are summarized in **Table 3-12**. It should be noted that the overall cost between strategies IW70 (which emphasizes more imported water) and RW70 (which emphasizes more recycled water) are essentially the same for planning purposes. As such, by using IW70 as a guide to develop a financing strategy, PWD will be able to use the same (or very similar) financing strategy to fund RW70. The financing plan is discussed in further detail in Chapter 4.

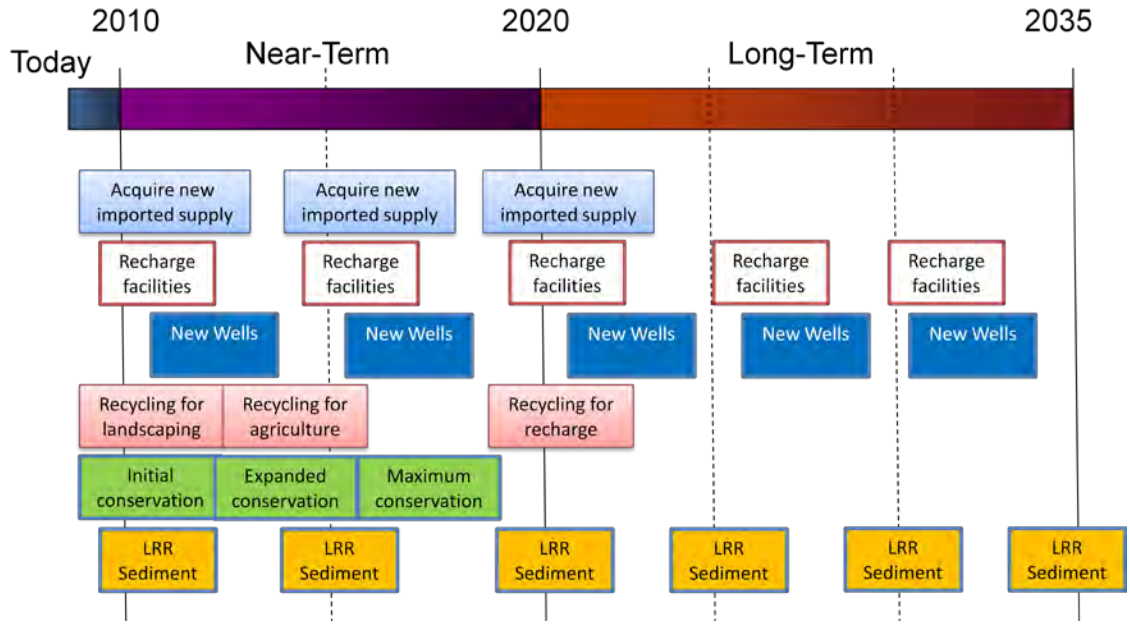
Table 3-12: Summary of Costs for Recommended Strategy by Water Resource Element

Water Resource Element	Capital Costs	O&M Costs	Total Costs	Net Present Value
Imported Water	$347 million	$12-19 million/yr	$757 million	$426 million
Groundwater Pumping	$109 million	$1-6 million/yr	$227 million	$119 million
Groundwater Recharge	$34 million	$0.2-1 million/yr	$49 million	$32 million
Recycled Water	$49 million	$0.4-0.9 million/yr	$66 million	$42 million
Conservation	$0	$0.5-1.1 million/yr	$11 million	$4.1 million
Littlerock Reservoir	$6 million	$0.5-$1.4 million/yr	$23 million	$14 million
Total	$545 million	$14-29 million/yr	$1,130 million	$665 million

Notes: Costs are in 2008 dollars. Costs are based upon strategy IW70 which relies largely on new imported supplies. Overall costs are similar if utilizing recycled water instead. O&M costs shown illustrate the range of costs between 2011 and 2035. NPV is based upon a 5% annual discount rate.

Figure 3-9 below illustrates the proposed schedule for when facilities will be brought on-line or other actions taken.

Figure 3-9: Schedule for Implementing Water Resource Elements of the Plan



Chapter 4 Financing Plan

4.1 Introduction

The purpose of the financing plan for the Strategic Water Resources Plan 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.

4.1.1 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 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. This includes funding new imported water acquisition, recharge and recovery facilities, and recycled water facilities.
- 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 of improvements to maintain Littlerock Reservoir, of PWD's share of improvements to the Delta, and of improvements needed to meet water quality standards.
- Those customers choosing to use more than their allotment need to contribute more to help fund water reliability projects including conservation and recycling.
- Current and future customers are to pay for all O&M costs as well as fixed costs of existing systems.
- Other system enhancements, such as possible hydropower generation from Littlerock Reservoir, 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.

4.1.2 Financing Options

PWD has the following financing options available to fund improvements recommended in the SWRP. These options are:

- **Water Supply Connection Fee**: Connection fees are generally associated with the need to develop new facilities to meet new system demands. Currently PWD assesses a capital improvement project (CIP) connection fee that is designed to pay for new distribution system infrastructure. This fee, however, does not take into account the costs to acquire and deliver new water supplies to PWD. A new water supply connection fee would serve this purpose.
- **Water Rates**: Water rates are designed to produce revenues to cover a variety of costs. 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.

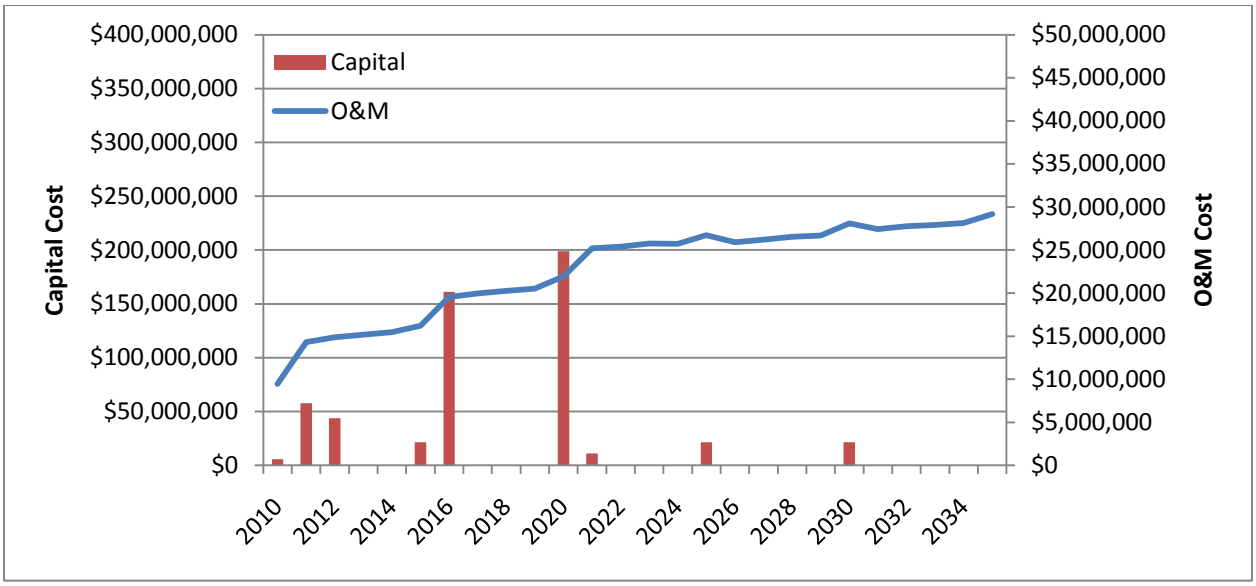
- **State Revolving Fund (SRF) Loan**: The USEPA provides states with funding for the SRF loan program to provide low-interest loans for clean water improvement (i.e. wastewater) and drinking water programs. Historically, loans for the drinking water program are limited to low-income communities facing 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 to fund fixed costs associated with the State Water Project. A similar 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 (e.g. Proposition 50 and 84) 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 vast 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 associated with acquiring new imported supplies, neither of these will be significant to cause a substantial change in financing approach.

4.2 Projected Cash Flow Requirements

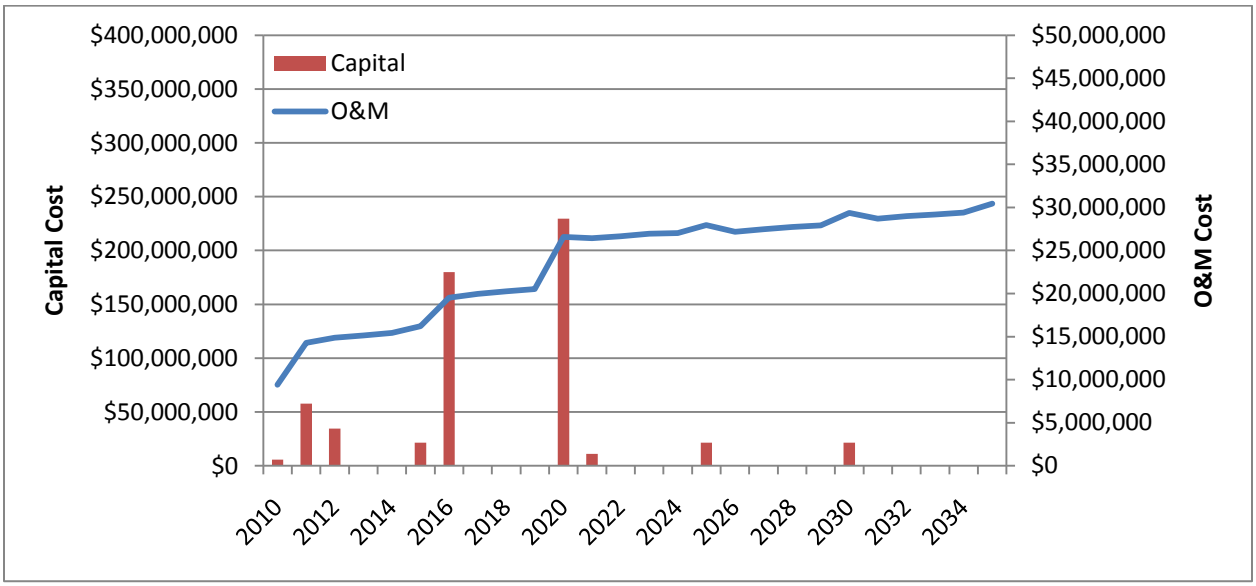
Projected cash flows for the recommended strategy (IW70) are illustrated in **Figure 4-1** below. It is important to note that the bulk of capital expenditures occur over the next 10 to 12 years.

Figure 4-1: Project Capital Outlays and O&M Costs for Imported Water Strategy (IW70)



If PWD were instead to pursue a strategy that maximized the use of recycled water primarily through groundwater recharge with advanced water treatment (i.e. strategy RW70), the projected cash flow and O&M costs would be similar to those for IW70 as illustrated in **Figure 4-2** below.

Figure 4-2: Project Capital Outlays and O&M Costs Recycled Water Strategy (RW70)



4.3 Financing Strategies

This section outlines proposed financing strategies for the recommended local storage strategy (IW70) and the alternative recycled water strategy (RW70).

4.3.1 Water Supply Connection Fee

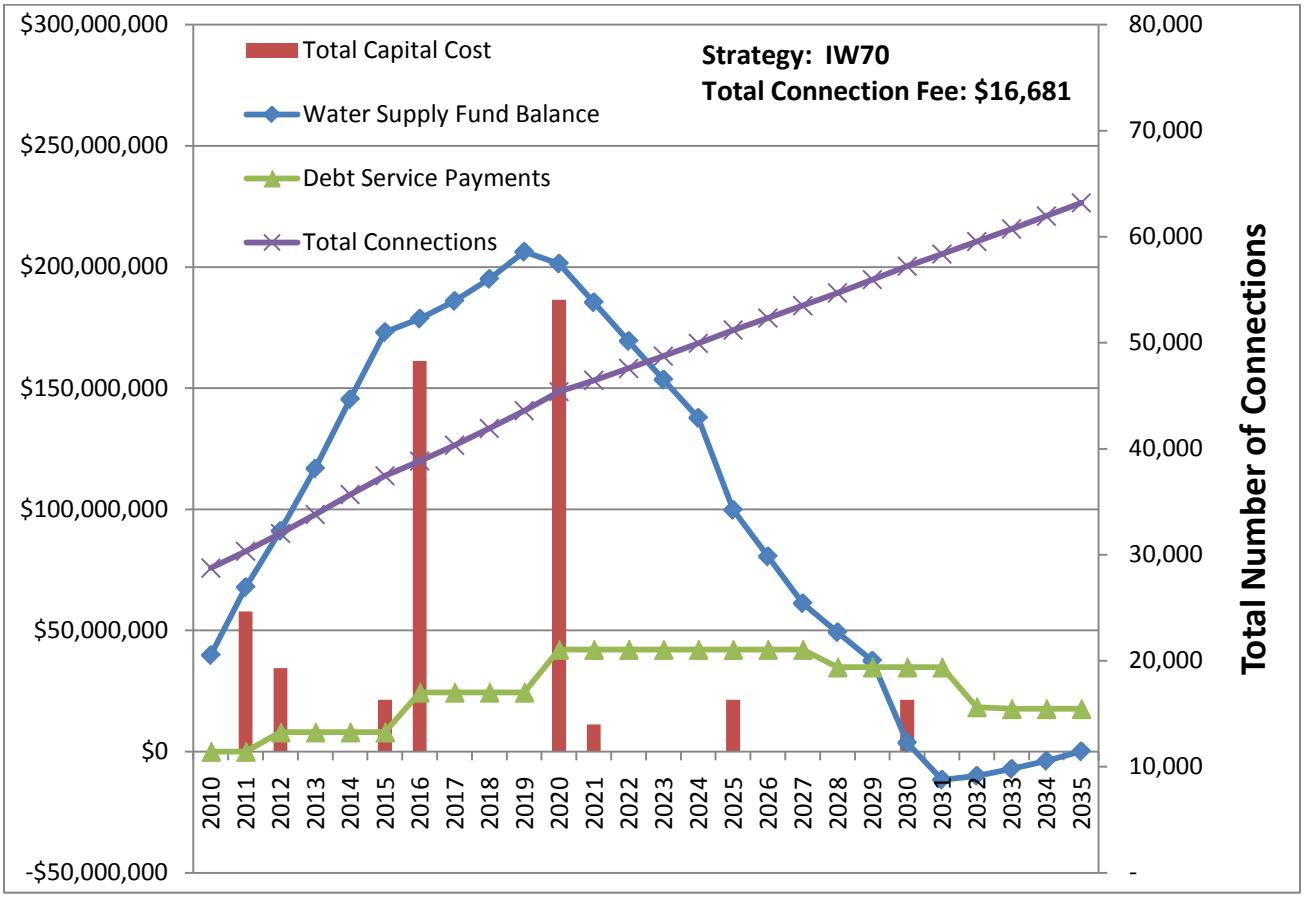
The analysis below has been used to identify at what level water supply connection fees should be set to recover capital and financing costs with the development of new water supplies.

Local Storage Strategy (IW70)

In order to meet these projected capital needs for this strategy, a model was prepared to evaluate a proposed combination of connection fee and debt to finance these capital outlays. Information and results from this model are provided in detail in **Appendix A**. The results of this evaluation indicate that a water supply connection fee of $16,681 per connection would be needed to fund the capital and debt service costs through 2035. The relationship between capital costs, debt service, connection fees and growth in connections is illustrated below in **Figure 4-3**. The connection fee was set such that a Water Supply Fund would achieve a near-zero balance by 2035.

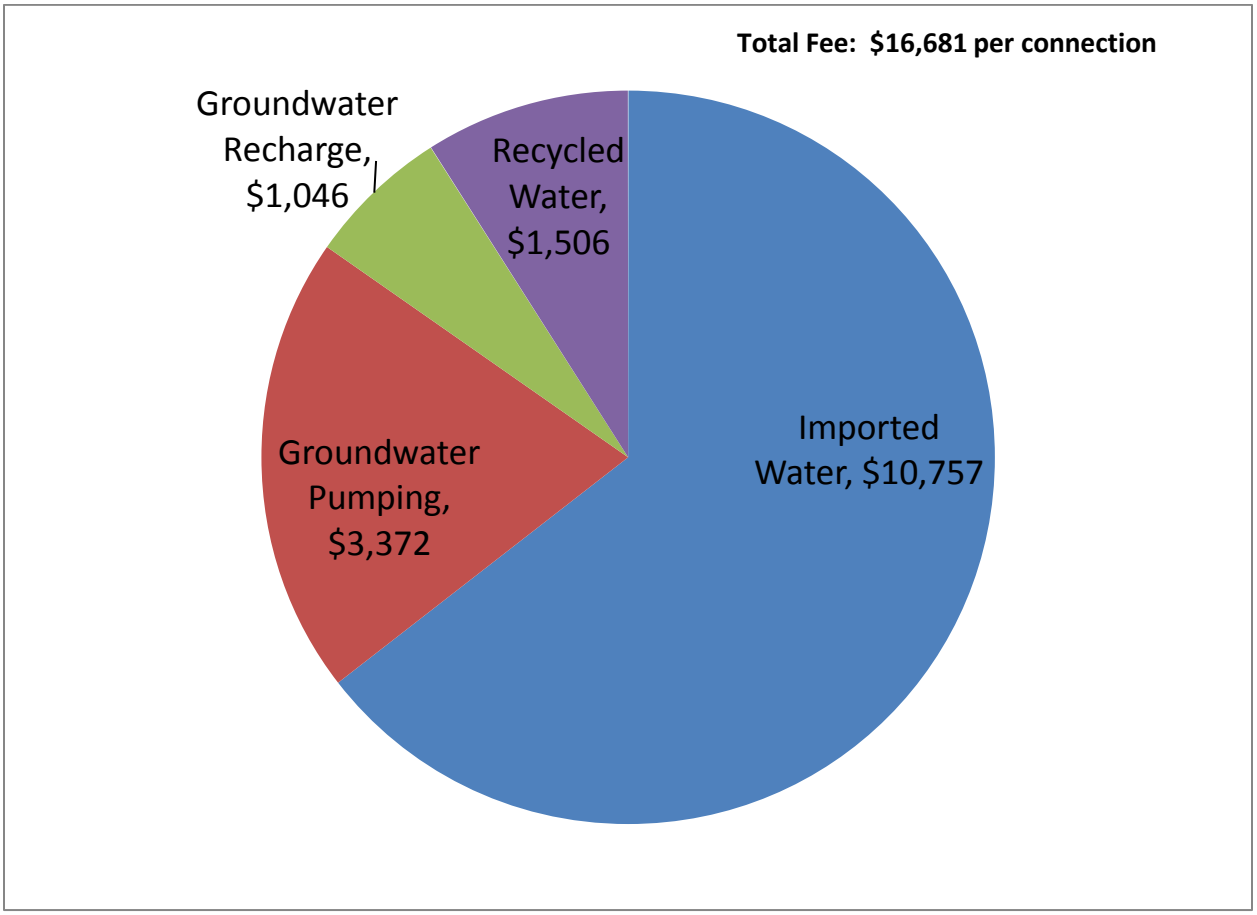
For planning purposes, this analysis was designed to identify an appropriate connection fee. It should be noted that the precise mixture of debt to cash expenditures for capital outlays shown in **Figure 4-3** has not been optimized to ensure that the water supply fund balance is always positive and sufficient to meet debt coverage ratio requirements (generally 150% of annual debt service).

Figure 4-3: Relationship Between Number of Connections and Financing Elements for Strategy IW70



In terms of the relationship between capital costs, **Figure 4-4** below illustrates what portion of each connection fee is related to particular capital improvements. For strategy IW70, nearly two-thirds of the cost is associated with acquiring new imported supplies.

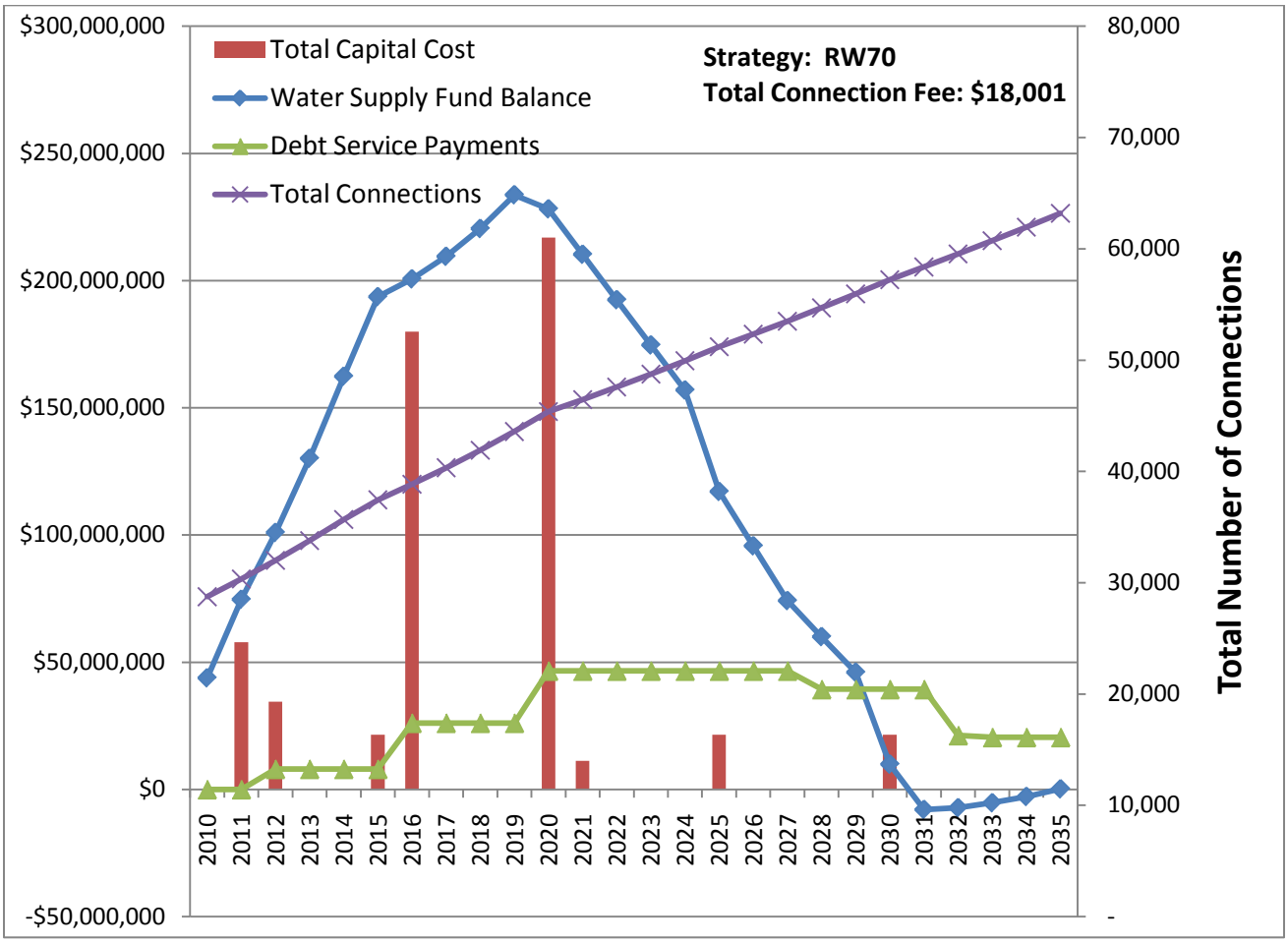
Figure 4-4: Breakdown of Water Supply Connection Fee by Water Resource Capital Cost (IW70)



Self-Reliance Strategy (RW70)

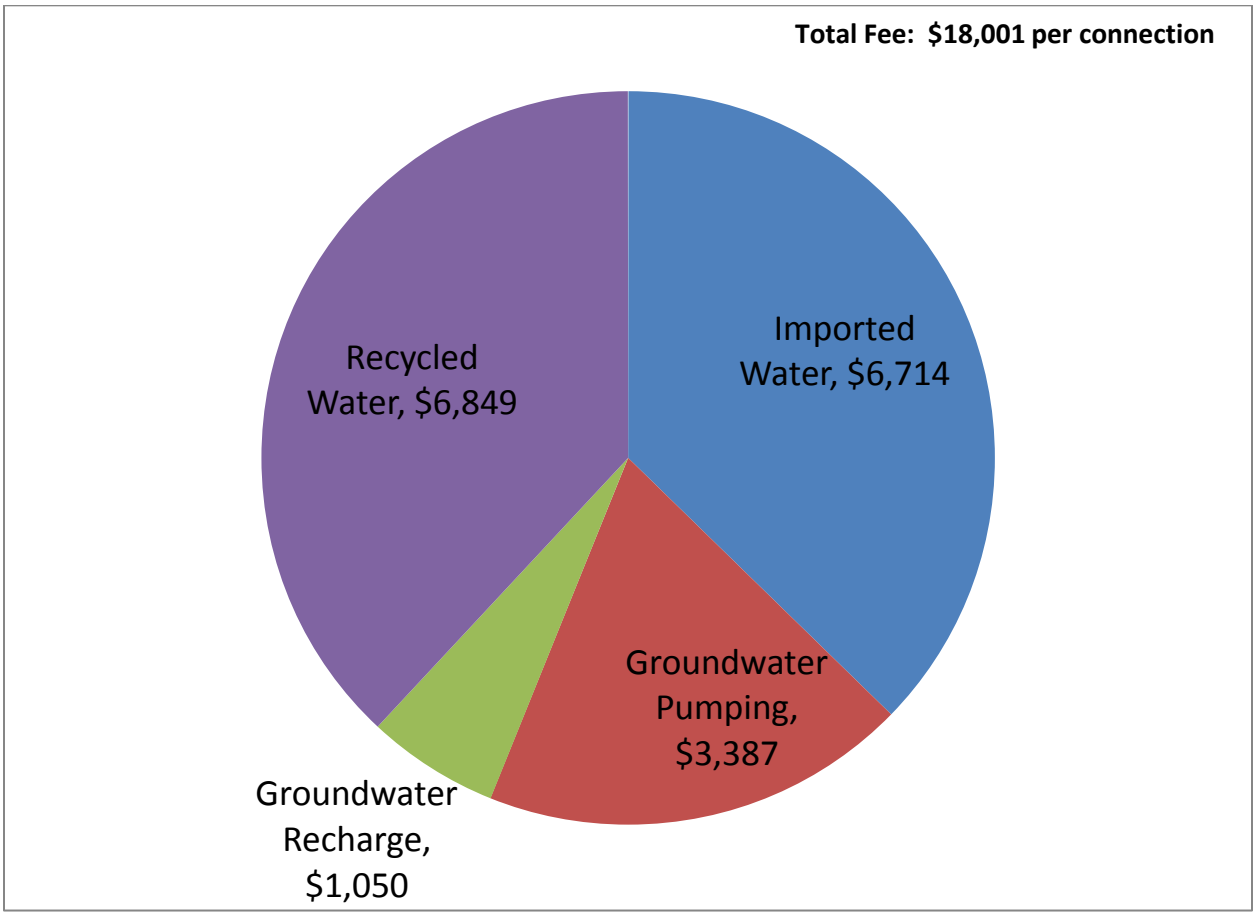
In order to meet these projected capital needs for this strategy, a water supply connection fee of $18,001 per connection would be needed to fund the capital and debt service costs through 2035. The relationship between capital costs, debt service, connection fees and growth in connections for this strategy is illustrated in **Figure 4-5**. As with the previous analysis, the connection fee was set such that a Water Supply Fund would achieve a near-zero balance by 2035 and the precise mix of debt to cash outlays has not been optimized.

Figure 4-5: Relationship Between Number of Connections and Financing Elements for Strategy RW70



In terms of the relationship between capital costs, **Figure 4-6** illustrates what portion of each connection fee is related to particular capital improvements. Not surprisingly, the breakdown between imported water and recycled water in this strategy (RW70) is nearly equivalent.

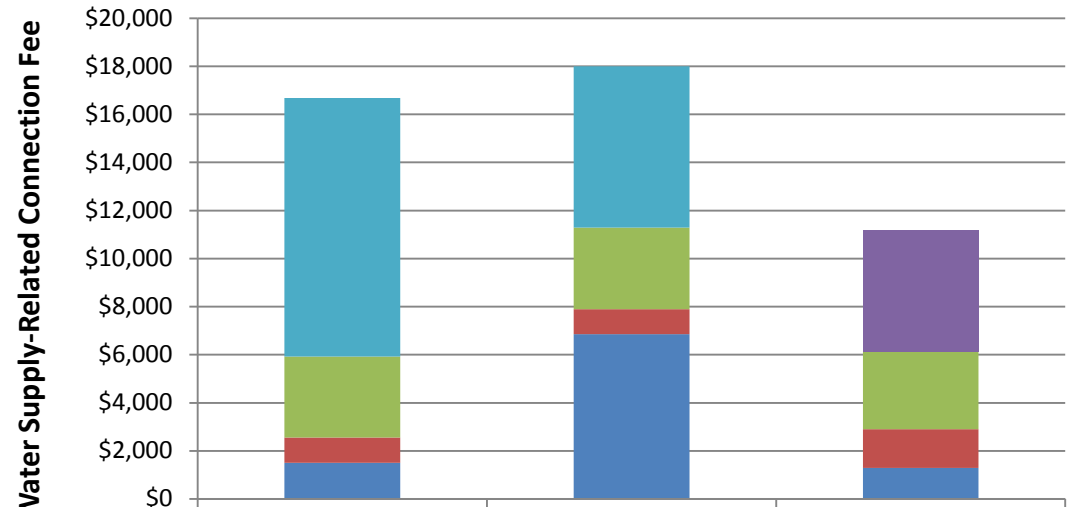
Figure 4-6: Breakdown of Water Supply Connection Fee by Water Resource Capital Cost (RW70)



Comparison to Other Connections Fees

To provide perspective as to the significance of these proposed connection fees, similar fees currently charged by Waterworks District No. 40 and AVEK were reviewed. **Figure 4-7** below shows a comparison of the proposed PWD water supply connection fees to these fees. While these other fees are currently lower than the proposed PWD fees, these costs do not include costs associated with acquiring new water supplies. In addition, the fee charged to recover costs for recycled water development may be low as the analysis used to determine this fee did not take into account the costs to construct lateral pipelines or facility retrofits. Given these caveats, the proposed connection fees to fund capital costs of PWD's SWRP appear to be reasonable and consistent with costs charged elsewhere in the Antelope Valley.

Figure 4-7: Comparison of Proposed PWD Water Supply Connection Fee to AVEK and Waterworks District No. 40 Water Supply-Related Connection Fees



	PWD (IW70)	PWD (RW70)	WWD40
imported water acquisition	$10,757	$6,714	$0
imported water delivery	$0	$0	$5,064
groundwater facilities	$3,372	$3,387	$3,222
water banking/recharge	$1,046	$1,050	$1,611
recycled water	$1,506	$6,849	$1,289

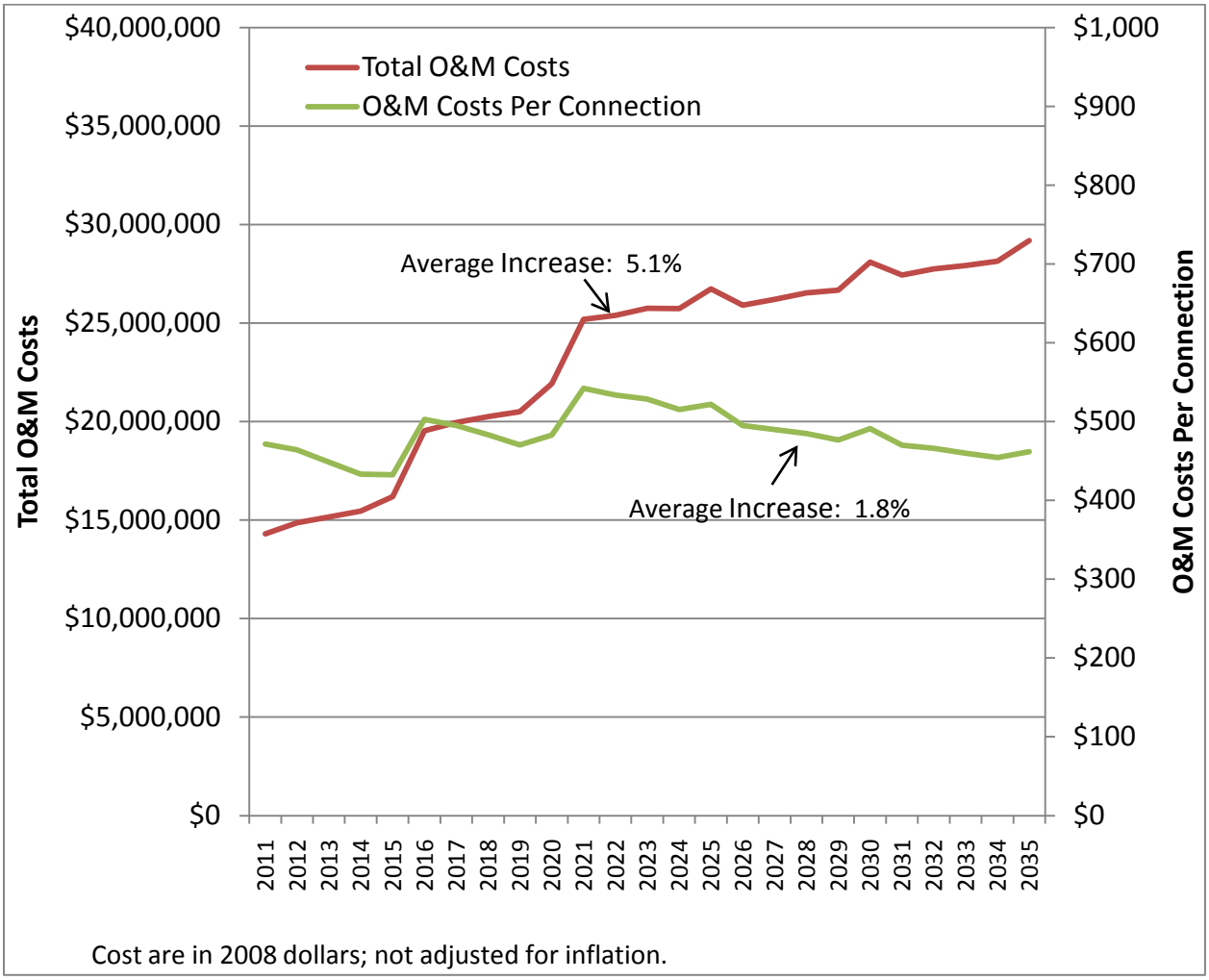
Notes:
1. Imported water acquistion: not included in WWD40 or AVEK fee.
2. Imported delivery fee: Connection fee charge by AVEK. For PWD, imported delivery fee is included in cost of groundwater and recharge fee.
3. WWD40 recycled water fee does not include costs for laterals or retrofits. For RW70, bulk of recycled fee designed to cover advance treatment costs for groundwater recharge.

4.3.2 Water Rates

The SWRP presumes that water rates will be used to cover ongoing O&M costs associated with new supplies. 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 4-8 below illustrates projected average O&M costs (in 2008 dollars) from 2011 to 2035 and projected costs per connection. Results show that while O&M costs increase on average at 5.1% annually, the cost per connection increases on average 1.8% annually.

Figure 4-8: Projected O&M Costs and Costs Per Connection for Recommended Strategy (IW70)



4.4 Financing Plan Summary

To summarize, the recommended financing strategy for the SWRP involves the following steps:

- Implement a water supply connection fee for new connections of $16,881 to $18,001 beginning as soon as possible 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 in order to continue to cover O&M expenses associated with the SWRP.
- Further evaluate using property tax assessment(s) to fund potential future fixed costs associated with SWP improvements if and when the improvements become more likely.
- Pursue grant funding 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.

Appendix A - Financing Model Results

Table A-1

Strategic Water Resource Plan Cash Flows

Based on Strategy IW70

	Total Costs			Imported Water			Groundwater Pumping			Groundwater Recharge			Water Banking			Recycled Water			Conservation			Littlerock Reservoir		
Year	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total
2010	$5,901,638	$9,444,578	$15,346,216	$0	$7,245,339	$7,245,339	$0	$1,605,370	$1,605,370	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$56,007	$56,007	$5,901,638	$537,862	$6,439,500
2011	$57,900,086	$14,304,552	$72,204,637	$46,667,419	$12,106,537	$58,773,956	$0	$1,605,370	$1,605,370	$11,232,667	$0	$11,232,667	$0	$0	$0	$0	$0	$0	$0	$56,007	$56,007	$0	$536,637	$536,637
2012	$43,792,600	$14,858,616	$58,651,216	$0	$10,761,808	$10,761,808	$22,880,000	$2,850,691	$25,730,691	$0	$232,818	$232,818	$0	$0	$0	$20,912,600	$432,300	$21,344,900	$0	$56,007	$56,007	$0	$524,992	$524,992
2013	$0	$15,154,414	$15,154,414	$0	$11,034,147	$11,034,147	$0	$2,869,168	$2,869,168	$0	$236,676	$236,676	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$526,117	$526,117
2014	$0	$15,457,938	$15,457,938	$0	$11,336,602	$11,336,602	$0	$2,870,271	$2,870,271	$0	$236,906	$236,906	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$525,853	$525,853
2015	$21,450,000	$16,196,531	$37,646,531	$0	$10,023,115	$10,023,115	$21,450,000	$3,866,157	$25,316,157	$0	$446,771	$446,771	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$1,372,180	$1,372,180
2016	$161,232,667	$19,537,064	$180,769,731	$150,000,000	$14,202,822	$164,202,822	$0	$3,896,023	$3,896,023	$11,232,667	$453,007	$11,685,673	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$496,905	$496,905
2017	$0	$19,956,640	$19,956,640	$0	$14,575,795	$14,575,795	$0	$3,921,292	$3,921,292	$0	$458,282	$458,282	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$512,964	$512,964
2018	$0	$20,258,679	$20,258,679	$0	$14,806,724	$14,806,724	$0	$3,968,314	$3,968,314	$0	$468,100	$468,100	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$527,233	$527,233
2019	$0	$20,510,248	$20,510,248	$0	$15,033,741	$15,033,741	$0	$3,983,278	$3,983,278	$0	$471,224	$471,224	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$533,698	$533,698
2020	$199,062,000	$21,917,688	$220,979,688	$150,000,000	$13,952,249	$163,952,249	$21,450,000	$4,748,262	$26,198,262	$0	$630,939	$630,939	$0	$0	$0	$27,612,000	$851,600	$28,463,600	$0	$363,822	$363,822	$0	$1,370,816	$1,370,816
2021	$11,232,667	$25,185,948	$36,418,615	$0	$18,039,778	$18,039,778	$0	$4,804,959	$4,804,959	$11,232,667	$642,777	$11,875,443	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$483,012	$483,012
2022	$0	$25,398,582	$25,398,582	$0	$18,225,774	$18,225,774	$0	$4,822,763	$4,822,763	$0	$646,494	$646,494	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$488,129	$488,129
2023	$0	$25,755,290	$25,755,290	$0	$18,556,619	$18,556,619	$0	$4,835,480	$4,835,480	$0	$649,149	$649,149	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$498,621	$498,621
2024	$0	$25,739,259	$25,739,259	$0	$18,515,024	$18,515,024	$0	$4,848,196	$4,848,196	$0	$651,804	$651,804	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$508,813	$508,813
2025	$21,450,000	$26,727,892	$48,177,892	$0	$18,004,281	$18,004,281	$21,450,000	$5,375,230	$26,825,230	$0	$761,839	$761,839	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$1,371,119	$1,371,119
2026	$0	$25,902,933	$25,902,933	$0	$18,033,899	$18,033,899	$0	$5,402,935	$5,402,935	$0	$767,624	$767,624	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$483,053	$483,053
2027	$0	$26,208,140	$26,208,140	$0	$18,305,789	$18,305,789	$0	$5,430,467	$5,430,467	$0	$773,372	$773,372	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$483,089	$483,089
2028	$0	$26,526,410	$26,526,410	$0	$18,598,255	$18,598,255	$0	$5,445,362	$5,445,362	$0	$776,482	$776,482	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$490,889	$490,889
2029	$0	$26,675,284	$26,675,284	$0	$18,715,520	$18,715,520	$0	$5,458,555	$5,458,555	$0	$779,236	$779,236	$0	$0	$0	$0	$851,600	$851,600	$0	$363,822	$363,822	$0	$506,551	$506,551
2030	$21,450,000	$28,095,384	$49,545,384	$0	$17,935,697	$17,935,697	$21,450,000	$5,950,366	$27,400,366	$0	$881,918	$881,918	$0	$0	$0	$0	$851,600	$851,600	$0	$1,104,460	$1,104,460	$0	$1,371,343	$1,371,343
2031	$0	$27,444,249	$27,444,249	$0	$18,135,812	$18,135,812	$0	$5,980,834	$5,980,834	$0	$888,279	$888,279	$0	$0	$0	$0	$851,600	$851,600	$0	$1,104,460	$1,104,460	$0	$483,263	$483,263
2032	$0	$27,752,913	$27,752,913	$0	$18,407,610	$18,407,610	$0	$6,011,302	$6,011,302	$0	$894,640	$894,640	$0	$0	$0	$0	$851,600	$851,600	$0	$1,104,460	$1,104,460	$0	$483,301	$483,301
2033	$0	$27,917,783	$27,917,783	$0	$18,535,578	$18,535,578	$0	$6,041,769	$6,041,769	$0	$901,001	$901,001	$0	$0	$0	$0	$851,600	$851,600	$0	$1,104,460	$1,104,460	$0	$483,374	$483,374
2034	$0	$28,142,277	$28,142,277	$0	$18,730,431	$18,730,431	$0	$6,061,962	$6,061,962	$0	$905,217	$905,217	$0	$0	$0	$0	$851,600	$851,600	$0	$1,104,460	$1,104,460	$0	$488,607	$488,607
2035	$0	$29,191,302	$29,191,302	$0	$18,861,849	$18,861,849	$0	$6,076,470	$6,076,470	$0	$908,246	$908,246	$0	$0	$0	$0	$851,600	$851,600	$0	$1,104,460	$1,104,460	$0	$1,388,677	$1,388,677
Totals	$543,471,657	$590,260,595	$1,133,732,252	$346,667,419	$410,680,794	$757,348,213	$108,680,000	$118,730,849	$227,410,849	$33,698,000	$15,462,801	$49,160,801	$0	$0	$0	$48,524,600	$17,084,000	$65,608,600	$0	$10,825,053	$10,825,053	$5,901,638	$17,477,098	$23,378,736

Table A-2

Developer Fee Assessment

Based on Strategy IW70 — 2007 Connections: 26,351 — Inflation Rate: 3%

Estimated Capital Expenditures — Conn Fee Factor: 1.143 (to cover capital cost + interest on debt)

Year	Capital Expenditures to Be Covered					Projected Total Connections	Projected New Connections Annually	Cummulative New Connections	Proposed Water Supply Conn Fee	Water Supply Conn Fee Collected Annually	Total Cummulative Water Supply Fees	Proposed Water Supply Conn Fee (inflated)
	Imported Water	Groundwater Pumping	Groundwater Recharge	Recycled Water	Total Capital Cost							
2010	$0	$0	$0	$0	$0	28,745	2394	2394	$16,681	$39,933,907	$39,933,907	$16,681
2011	$46,667,419	$0	$11,232,667	$0	$57,900,086	30,334	1589	3983	$16,681	$26,499,893	$66,433,800	$17,182
2012	$0	$22,880,000	$0	$20,912,600	$43,792,600	32,015	1682	5664	$16,681	$28,055,609	$94,489,409	$17,697
2013	$0	$0	$0	$0	$0	33,796	1781	7445	$16,681	$29,706,872	$124,196,281	$18,228
2014	$0	$0	$0	$0	$0	35,682	1886	9331	$16,681	$31,459,826	$155,656,107	$18,775
2015	$0	$21,450,000	$0	$0	$21,450,000	37,446	1764	11095	$16,681	$29,423,128	$185,079,235	$19,338
2016	$150,000,000	$0	$11,232,667	$0	$161,232,667	38,844	1397	12493	$16,681	$23,311,726	$208,390,961	$19,918
2017	$0	$0	$0	$0	$0	40,328	1485	13977	$16,681	$24,763,574	$233,154,535	$20,516
2018	$0	$0	$0	$0	$0	41,907	1579	15556	$16,681	$26,334,771	$259,489,305	$21,131
2019	$0	$0	$0	$0	$0	43,588	1681	17237	$16,681	$28,038,277	$287,527,583	$21,765
2020	$150,000,000	$21,450,000	$0	$27,612,000	$199,062,000	45,379	1792	19028	$16,681	$29,886,977	$317,414,559	$22,418
2021	$0	$0	$11,232,667	$0	$11,232,667	46,458	1078	20107	$16,681	$17,990,700	$335,405,259	$23,091
2022	$0	$0	$0	$0	$0	47,577	1119	21226	$16,681	$18,673,673	$354,078,933	$23,783
2023	$0	$0	$0	$0	$0	48,739	1161	22388	$16,681	$19,375,193	$373,454,125	$24,497
2024	$0	$0	$0	$0	$0	49,944	1205	23593	$16,681	$20,104,373	$393,558,499	$25,232
2025	$0	$21,450,000	$0	$0	$21,450,000	51,195	1251	24844	$16,681	$20,862,313	$414,420,811	$25,989
2026	$0	$0	$0	$0	$0	52,325	1131	25974	$16,681	$18,860,311	$433,281,122	$26,768
2027	$0	$0	$0	$0	$0	53,493	1167	27142	$16,681	$19,474,973	$452,756,095	$27,572
2028	$0	$0	$0	$0	$0	54,698	1206	28347	$16,681	$20,110,414	$472,866,509	$28,399
2029	$0	$0	$0	$0	$0	55,943	1245	29592	$16,681	$20,767,533	$493,634,042	$29,251
2030	$0	$21,450,000	$0	$0	$21,450,000	57,229	1286	30878	$16,681	$21,447,075	$515,081,117	$30,128
2031	$0	$0	$0	$0	$0	58,374	1145	32023	$16,681	$19,093,641	$534,174,759	$31,032
2032	$0	$0	$0	$0	$0	59,541	1167	33190	$16,681	$19,473,558	$553,648,317	$31,963
2033	$0	$0	$0	$0	$0	60,732	1191	34381	$16,681	$19,864,760	$573,513,077	$32,922
2034	$0	$0	$0	$0	$0	61,946	1215	35595	$16,681	$20,263,484	$593,776,561	$33,910
2035	$0	$0	$0	$0	$0	63,185	1239	36834	$16,681	$20,665,971	$614,442,532	$34,927
Totals	$346,667,419	$108,680,000	$33,698,000	$48,524,600	$537,570,019		36,834			$614,442,532		
Unburdened Cost/Conn	$9,412	$2,951	$915	$1,317	$14,594							
Burdened Cost/Conn	$10,757	$3,372	$1,046	$1,506	$16,681							
% Total Fee	64%	20%	6%	9%	100%							

Note: All costs and developer fees are in 2008 dollars. Developer fee established to recover capital and debt service costs. Fee would be escalated annually for inflation (3%) as shown to far right.

Assumes no net new connections between end of 2007 and start of 2010.

Table A-3

Debt Financing and Payback Summary

Based on strategy IW70

Municipal Debt Financing
Rate: 4%
Term (yrs): 15

SRF Loan Financing (for recycled water)
Rate: 2.50%
Term (yrs): 20 Debt 1
Term (yrs): 15 Debt 2
RW Commodity Rate: $1,000 AF

Interest on Fund Balance
Rate: 4%

	Capital Expenditures				Muni 1 Debt		Muni 2 Debt		Muni 3 Debt		SRF		Total				
Year	Imported Water	Groundwater Pumping	Groundwater Recharge	Recycled Water	Debt	Debt Service	Debt	Debt Service	Debt	Debt Service	Debt	Debt Service	Debt	Debt Service	Developer Fee Collected Annual	Recycled Water Delivered (AF)	Recycled Water Revenues	Water Supply Fund Net Balance w/Interest
2010	$0	$0	$0	$0								$0		$0	$39,933,907	-		$41,531,264
2011	$46,667,419	$0	$11,232,667	$0	$80,780,086							$0	$80,780,086	$0	$26,499,893	-		$70,752,403
2012	$0	$22,880,000	$0	$20,912,600		$7,265,450					$20,912,600	$1,341,483	$20,912,600	$8,606,933	$28,055,609	800	$800,000	$94,641,122
2013	$0	$0	$0	$0		$7,265,450						$1,341,483		$8,606,933	$29,706,872	800	$800,000	$121,202,703
2014	$0	$0	$0	$0		$7,265,450						$1,341,483		$8,606,933	$31,459,826	800	$800,000	$150,649,820
2015	$0	$21,450,000	$0	$0		$7,265,450	$182,682,667					$1,341,483	$182,682,667	$8,606,933	$29,423,128	800	$800,000	$179,156,656
2016	$150,000,000	$0	$11,232,667	$0		$7,265,450		$16,430,680				$1,341,483		$25,037,613	$23,311,726	800	$800,000	$185,359,999
2017	$0	$0	$0	$0		$7,265,450		$16,430,680				$1,341,483		$25,037,613	$24,763,574	800	$800,000	$193,321,398
2018	$0	$0	$0	$0		$7,265,450		$16,430,680				$1,341,483		$25,037,613	$26,334,771	800	$800,000	$203,235,298
2019	$0	$0	$0	$0		$7,265,450		$16,430,680	$182,682,667			$1,341,483	$182,682,667	$25,037,613	$28,038,277	800	$800,000	$215,317,400
2020	$150,000,000	$21,450,000	$0	$27,612,000		$7,265,450		$16,430,680		$16,430,680	$27,612,000	$3,571,607	$27,612,000	$43,698,417	$29,886,977	800	$800,000	$210,398,199
2021	$0	$0	$11,232,667	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$17,990,700	1,700	$1,700,000	$193,846,102
2022	$0	$0	$0	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$18,673,673	1,700	$1,700,000	$177,342,213
2023	$0	$0	$0	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$19,375,193	1,700	$1,700,000	$160,907,749
2024	$0	$0	$0	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$20,104,373	1,700	$1,700,000	$144,574,254
2025	$0	$21,450,000	$0	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$20,862,313	1,700	$1,700,000	$106,067,676
2026	$0	$0	$0	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$18,860,311	1,700	$1,700,000	$86,246,753
2027	$0	$0	$0	$0		$7,265,450		$16,430,680		$16,430,680		$3,571,607		$43,698,417	$19,474,973	1,700	$1,700,000	$66,272,242
2028	$0	$0	$0	$0				$16,430,680		$16,430,680		$3,571,607		$36,432,967	$20,110,414	1,700	$1,700,000	$53,715,677
2029	$0	$0	$0	$0				$16,430,680		$16,430,680		$3,571,607		$36,432,967	$20,767,533	1,700	$1,700,000	$41,340,253
2030	$0	$21,450,000	$0	$0				$16,430,680		$16,430,680		$3,571,607		$36,432,967	$21,447,075	1,700	$1,700,000	$6,868,535
2031	$0	$0	$0	$0				$16,430,680		$16,430,680		$3,571,607		$36,432,967	$19,093,641	1,700	$1,700,000	($9,121,622)
2032	$0	$0	$0	$0						$16,430,680		$3,571,607		$20,002,287	$19,473,558	1,700	$1,700,000	($8,268,364)
2033	$0	$0	$0	$0						$16,430,680		$2,230,123		$18,660,803	$19,864,760	1,700	$1,700,000	($5,578,984)
2034	$0	$0	$0	$0						$16,430,680		$2,230,123		$18,660,803	$20,263,484	1,700	$1,700,000	($2,367,355)
2035	$0	$0	$0	$0						$16,430,680		$2,230,123		$18,660,803	$20,665,971	1,700	$1,700,000	$1,391,324
Totals	$346,667,419	$108,680,000	$33,698,000	$48,524,600	$80,780,086	$116,247,197	$182,682,667	$262,890,881	$182,682,667	$262,890,881	$48,524,600	$63,853,122	$494,670,019	$705,882,081	$614,442,532	32,700	$32,700,000	

Notes:
Target is to achieve zero balance in Water Supply Fund by 2035.
Assumes recycled water sales return to water supply fund.
Groundwater pumping capital expenditures in 2025 and 2030 are paid from water supply fund reserves; not debt financed.

Table A-4

SRF Financing for Recycled Water Program

Based on strategy IW70

Rate: 2.50%

Term (yrs): 20 Debt 1

15 Debt 2

Year	Capital Cost: Recycled Water	Debt Service 1	Debt Service 2	Total Debt Service w/SRF
2010	$0			$0
2011	$0			$0
2012	$20,912,600	$1,341,483		$1,341,483
2013	$0	$1,341,483		$1,341,483
2014	$0	$1,341,483		$1,341,483
2015	$0	$1,341,483		$1,341,483
2016	$0	$1,341,483		$1,341,483
2017	$0	$1,341,483		$1,341,483
2018	$0	$1,341,483		$1,341,483
2019	$0	$1,341,483		$1,341,483
2020	$27,612,000	$1,341,483	$2,230,123	$3,571,607
2021	$0	$1,341,483	$2,230,123	$3,571,607
2022	$0	$1,341,483	$2,230,123	$3,571,607
2023	$0	$1,341,483	$2,230,123	$3,571,607
2024	$0	$1,341,483	$2,230,123	$3,571,607
2025	$0	$1,341,483	$2,230,123	$3,571,607
2026	$0	$1,341,483	$2,230,123	$3,571,607
2027	$0	$1,341,483	$2,230,123	$3,571,607
2028	$0	$1,341,483	$2,230,123	$3,571,607
2029	$0	$1,341,483	$2,230,123	$3,571,607
2030	$0	$1,341,483	$2,230,123	$3,571,607
2031	$0	$1,341,483	$2,230,123	$3,571,607
2032	$0	$1,341,483	$2,230,123	$3,571,607
2033	$0		$2,230,123	$2,230,123
2034	$0		$2,230,123	$2,230,123
2035	$0		$2,230,123	$2,230,123
Totals	$48,524,600	$28,171,148	$35,681,974	$63,853,122

Table A-5

Operating and Maintenance Costs Evaluation

Based on Strategy IW70

Year	Total O&M Costs	% change	Imported Water	Groundwater Pumping	Groundwater Recharge	Water Banking	Recycled Water	Conservation	Littlerock Reservoir	Total Connections	Annual Cost/Conn	% change
2010	$9,444,578		$7,245,339	$1,605,370	$0	$0	$0	$56,007	$537,862	28,745	$329	
2011	$14,304,552	51%	$12,106,537	$1,605,370	$0	$0	$0	$56,007	$536,637	30,334	$472	44%
2012	$14,858,616	4%	$10,761,808	$2,850,691	$232,818	$0	$432,300	$56,007	$524,992	32,015	$464	-2%
2013	$15,154,414	2%	$11,034,147	$2,869,168	$236,676	$0	$432,300	$56,007	$526,117	33,796	$448	-3%
2014	$15,457,938	2%	$11,336,602	$2,870,271	$236,906	$0	$432,300	$56,007	$525,853	35,682	$433	-3%
2015	$16,196,531	5%	$10,023,115	$3,866,157	$446,771	$0	$432,300	$56,007	$1,372,180	37,446	$433	0%
2016	$19,537,064	21%	$14,202,822	$3,896,023	$453,007	$0	$432,300	$56,007	$496,905	38,844	$503	16%
2017	$19,956,640	2%	$14,575,795	$3,921,292	$458,282	$0	$432,300	$56,007	$512,964	40,328	$495	-2%
2018	$20,258,679	2%	$14,806,724	$3,968,314	$468,100	$0	$432,300	$56,007	$527,233	41,907	$483	-2%
2019	$20,510,248	1%	$15,033,741	$3,983,278	$471,224	$0	$432,300	$56,007	$533,698	43,588	$471	-3%
2020	$21,917,688	7%	$13,952,249	$4,748,262	$630,939	$0	$851,600	$363,822	$1,370,816	45,379	$483	3%
2021	$25,185,948	15%	$18,039,778	$4,804,959	$642,777	$0	$851,600	$363,822	$483,012	46,458	$542	12%
2022	$25,398,582	1%	$18,225,774	$4,822,763	$646,494	$0	$851,600	$363,822	$488,129	47,577	$534	-2%
2023	$25,755,290	1%	$18,556,619	$4,835,480	$649,149	$0	$851,600	$363,822	$498,621	48,739	$528	-1%
2024	$25,739,259	0%	$18,515,024	$4,848,196	$651,804	$0	$851,600	$363,822	$508,813	49,944	$515	-2%
2025	$26,727,892	4%	$18,004,281	$5,375,230	$761,839	$0	$851,600	$363,822	$1,371,119	51,195	$522	1%
2026	$25,902,933	-3%	$18,033,899	$5,402,935	$767,624	$0	$851,600	$363,822	$483,053	52,325	$495	-5%
2027	$26,208,140	1%	$18,305,789	$5,430,467	$773,372	$0	$851,600	$363,822	$483,089	53,493	$490	-1%
2028	$26,526,410	1%	$18,598,255	$5,445,362	$776,482	$0	$851,600	$363,822	$490,889	54,698	$485	-1%
2029	$26,675,284	1%	$18,715,520	$5,458,555	$779,236	$0	$851,600	$363,822	$506,551	55,943	$477	-2%
2030	$28,095,384	5%	$17,935,697	$5,950,366	$881,918	$0	$851,600	$1,104,460	$1,371,343	57,229	$491	3%
2031	$27,444,249	-2%	$18,135,812	$5,980,834	$888,279	$0	$851,600	$1,104,460	$483,263	58,374	$470	-4%
2032	$27,752,913	1%	$18,407,610	$6,011,302	$894,640	$0	$851,600	$1,104,460	$483,301	59,541	$466	-1%
2033	$27,917,783	1%	$18,535,578	$6,041,769	$901,001	$0	$851,600	$1,104,460	$483,374	60,732	$460	-1%
2034	$28,142,277	1%	$18,730,431	$6,061,962	$905,217	$0	$851,600	$1,104,460	$488,607	61,946	$454	-1%
2035	$29,191,302	4%	$18,861,849	$6,076,470	$908,246	$0	$851,600	$1,104,460	$1,388,677	63,185	$462	2%
Totals	$590,260,595		$410,680,794	$118,730,849	$15,462,801	$0	$17,084,000	$10,825,053	$17,477,098			

Avg. annual increase: 5.1%

Avg. annual increase 1.8%

Table A-6

Strategic Water Resource Plan Cash Flows

Based on Strategy RW70

	Total Costs			Imported Water			Groundwater Pumping			Groundwater Recharge			Water Banking			Recycled Water			Conservation			Littlerock Reservoir		
Year	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total	Capital	O&M	Total
2010	$5,901,638	$9,418,997	$15,320,635	$0	$7,245,995	$7,245,995	$0	$1,605,370	$1,605,370	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$56,007	$56,007	$5,901,638	$511,625	$6,413,263
2011	$57,900,086	$14,283,723	$72,183,808	$46,667,419	$12,108,669	$58,776,088	$0	$1,605,370	$1,605,370	$11,232,667	$0	$11,232,667	$0	$0	$0	$0	$0	$0	$0	$56,007	$56,007	$0	$513,676	$513,676
2012	$34,617,700	$14,856,706	$49,474,406	$0	$10,782,636	$10,782,636	$22,880,000	$2,850,478	$25,730,478	$0	$232,773	$232,773	$0	$0	$0	$11,737,700	$432,300	$12,170,000	$0	$56,007	$56,007	$0	$502,512	$502,512
2013	$0	$15,151,789	$15,151,789	$0	$11,053,802	$11,053,802	$0	$2,869,168	$2,869,168	$0	$236,676	$236,676	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$503,836	$503,836
2014	$0	$15,447,886	$15,447,886	$0	$11,348,562	$11,348,562	$0	$2,870,271	$2,870,271	$0	$236,906	$236,906	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$503,840	$503,840
2015	$21,450,000	$16,193,052	$37,643,052	$0	$10,042,399	$10,042,399	$21,450,000	$3,864,857	$25,314,857	$0	$446,500	$446,500	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$1,350,989	$1,350,989
2016	$179,982,667	$19,533,888	$199,516,554	$168,750,000	$14,221,956	$182,971,956	$0	$3,894,429	$3,894,429	$11,232,667	$452,674	$11,685,341	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$476,522	$476,522
2017	$0	$19,954,961	$19,954,961	$0	$14,592,767	$14,592,767	$0	$3,921,292	$3,921,292	$0	$458,282	$458,282	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$494,314	$494,314
2018	$0	$20,257,510	$20,257,510	$0	$14,824,072	$14,824,072	$0	$3,967,535	$3,967,535	$0	$467,937	$467,937	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$509,659	$509,659
2019	$0	$20,505,109	$20,505,109	$0	$15,052,570	$15,052,570	$0	$3,980,646	$3,980,646	$0	$470,675	$470,675	$0	$0	$0	$0	$432,300	$432,300	$0	$56,007	$56,007	$0	$512,910	$512,910
2020	$229,476,000	$26,584,795	$256,060,795	$0	$13,949,207	$13,949,207	$21,450,000	$4,776,390	$26,226,390	$0	$636,812	$636,812	$0	$0	$0	$208,026,000	$5,508,600	$213,534,600	$0	$363,822	$363,822	$0	$1,349,964	$1,349,964
2021	$11,232,667	$26,434,763	$37,667,429	$0	$14,649,393	$14,649,393	$0	$4,807,228	$4,807,228	$11,232,667	$643,250	$11,875,917	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$462,470	$462,470
2022	$0	$26,647,692	$26,647,692	$0	$14,838,202	$14,838,202	$0	$4,822,763	$4,822,763	$0	$646,494	$646,494	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$467,812	$467,812
2023	$0	$26,964,009	$26,964,009	$0	$15,128,967	$15,128,967	$0	$4,835,480	$4,835,480	$0	$649,149	$649,149	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$477,992	$477,992
2024	$0	$27,008,623	$27,008,623	$0	$15,147,907	$15,147,907	$0	$4,848,196	$4,848,196	$0	$651,804	$651,804	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$488,294	$488,294
2025	$21,450,000	$27,958,122	$49,408,122	$0	$14,597,069	$14,597,069	$21,450,000	$5,375,230	$26,825,230	$0	$761,839	$761,839	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$1,351,561	$1,351,561
2026	$0	$27,174,025	$27,174,025	$0	$14,667,224	$14,667,224	$0	$5,402,935	$5,402,935	$0	$767,624	$767,624	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$463,820	$463,820
2027	$0	$27,453,258	$27,453,258	$0	$14,912,877	$14,912,877	$0	$5,430,467	$5,430,467	$0	$773,372	$773,372	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$464,119	$464,119
2028	$0	$27,743,192	$27,743,192	$0	$15,174,367	$15,174,367	$0	$5,445,362	$5,445,362	$0	$776,482	$776,482	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$474,559	$474,559
2029	$0	$27,910,676	$27,910,676	$0	$15,312,027	$15,312,027	$0	$5,458,555	$5,458,555	$0	$779,236	$779,236	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$363,822	$363,822	$0	$488,435	$488,435
2030	$21,450,000	$29,348,201	$50,798,201	$0	$14,550,195	$14,550,195	$21,450,000	$5,950,366	$27,400,366	$0	$881,918	$881,918	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$1,104,460	$1,104,460	$0	$1,352,661	$1,352,661
2031	$0	$28,696,546	$28,696,546	$0	$14,748,972	$14,748,972	$0	$5,980,834	$5,980,834	$0	$888,279	$888,279	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$1,104,460	$1,104,460	$0	$465,400	$465,400
2032	$0	$28,983,351	$28,983,351	$0	$14,995,909	$14,995,909	$0	$6,011,302	$6,011,302	$0	$894,640	$894,640	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$1,104,460	$1,104,460	$0	$468,440	$468,440
2033	$0	$29,165,077	$29,165,077	$0	$15,143,662	$15,143,662	$0	$6,041,769	$6,041,769	$0	$901,001	$901,001	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$1,104,460	$1,104,460	$0	$465,584	$465,584
2034	$0	$29,390,797	$29,390,797	$0	$15,339,777	$15,339,777	$0	$6,061,962	$6,061,962	$0	$905,217	$905,217	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$1,104,460	$1,104,460	$0	$470,782	$470,782
2035	$0	$30,449,988	$30,449,988	$0	$15,481,853	$15,481,853	$0	$6,076,470	$6,076,470	$0	$908,246	$908,246	$0	$0	$0	$0	$5,508,600	$5,508,600	$0	$1,104,460	$1,104,460	$0	$1,370,359	$1,370,359
Totals	$583,460,757	$613,516,737	$1,196,977,494	$215,417,419	$359,911,036	$575,328,455	$108,680,000	$118,754,727	$227,434,727	$33,698,000	$15,467,786	$49,165,786	$0	$0	$0	$219,763,700	$91,596,000	$311,359,700	$0	$10,825,053	$10,825,053	$5,901,638	$16,962,135	$22,863,773

Table A-7

Developer Fee Assessment

Based on RW70 Strategy | 2007 Connections: 26,351 | Inflation Rate: 3%

Estimated Capital Expenditures | Conn Fee Factor: 1.148 (to cover capital cost + interest on debt)

Year	Capital Expenditures to Be Covered					Projected Total Connections	Projected New Connections Annually	Proposed Water Supply Conn Fee	Water Supply Conn Fee Collected Annually	Total Cummulative Water Supply Fees	Proposed Water Supply Conn Fee (inflated)
	Imported Water	Groundwater Pumping	Groundwater Recharge	Recycled Water	Total Capital Cost						
2010	$0	$0	$0	$0	$0	28,745	2394	$18,001	$43,092,220	$43,092,220	$18,001
2011	$46,667,419	$0	$11,232,667	$0	$57,900,086	30,334	1589	$18,001	$28,595,729	$71,687,950	$18,541
2012	$0	$22,880,000	$0	$11,737,700	$34,617,700	32,015	1682	$18,001	$30,274,485	$101,962,435	$19,097
2013	$0	$0	$0	$0	$0	33,796	1781	$18,001	$32,056,344	$134,018,779	$19,670
2014	$0	$0	$0	$0	$0	35,682	1886	$18,001	$33,947,936	$167,966,715	$20,260
2015	$0	$21,450,000	$0	$0	$21,450,000	37,446	1764	$18,001	$31,750,159	$199,716,874	$20,868
2016	$168,750,000	$0	$11,232,667	$0	$179,982,667	38,844	1397	$18,001	$25,155,415	$224,872,289	$21,494
2017	$0	$0	$0	$0	$0	40,328	1485	$18,001	$26,722,088	$251,594,377	$22,138
2018	$0	$0	$0	$0	$0	41,907	1579	$18,001	$28,417,548	$280,011,925	$22,803
2019	$0	$0	$0	$0	$0	43,588	1681	$18,001	$30,255,782	$310,267,707	$23,487
2020	$0	$21,450,000	$0	$208,026,000	$229,476,000	45,379	1792	$18,001	$32,250,693	$342,518,400	$24,191
2021	$0	$0	$11,232,667	$0	$11,232,667	46,458	1078	$18,001	$19,413,558	$361,931,958	$24,917
2022	$0	$0	$0	$0	$0	47,577	1119	$18,001	$20,150,546	$382,082,503	$25,664
2023	$0	$0	$0	$0	$0	48,739	1161	$18,001	$20,907,547	$402,990,051	$26,434
2024	$0	$0	$0	$0	$0	49,944	1205	$18,001	$21,694,398	$424,684,449	$27,227
2025	$0	$21,450,000	$0	$0	$21,450,000	51,195	1251	$18,001	$22,512,281	$447,196,731	$28,044
2026	$0	$0	$0	$0	$0	52,325	1131	$18,001	$20,351,945	$467,548,675	$28,886
2027	$0	$0	$0	$0	$0	53,493	1167	$18,001	$21,015,220	$488,563,895	$29,752
2028	$0	$0	$0	$0	$0	54,698	1206	$18,001	$21,700,916	$510,264,811	$30,645
2029	$0	$0	$0	$0	$0	55,943	1245	$18,001	$22,410,006	$532,674,817	$31,564
2030	$0	$21,450,000	$0	$0	$21,450,000	57,229	1286	$18,001	$23,143,292	$555,818,109	$32,511
2031	$0	$0	$0	$0	$0	58,374	1145	$18,001	$20,603,729	$576,421,838	$33,486
2032	$0	$0	$0	$0	$0	59,541	1167	$18,001	$21,013,693	$597,435,531	$34,491
2033	$0	$0	$0	$0	$0	60,732	1191	$18,001	$21,435,834	$618,871,365	$35,526
2034	$0	$0	$0	$0	$0	61,946	1215	$18,001	$21,866,093	$640,737,458	$36,591
2035	$0	$0	$0	$0	$0	63,185	1239	$18,001	$22,300,411	$663,037,869	$37,689
Totals	$215,417,419	$108,680,000	$33,698,000	$219,763,700	$577,559,119		36,834		$663,037,869		
Unburdened Cost/Conn	$5,848	$2,951	$915	$5,966	$15,680						
Burdened Cost/Conn	$6,714	$3,387	$1,050	$6,849	$18,001						
% Total Fee	37%	19%	6%	38%	100%						

Note: All costs and developer fees are in 2008 dollars. Developer fee established to recover capital and debt service costs. Fee would be escalated annually for inflation (3%) as shown to far right.

Assumes no net new connections between end of 2007 and start of 2010.

Table A-8

Debt Financing and Payback Summary

Based on strategy RW70

Municipal Debt Financing
Rate: 4%
Term (yrs): 15

SRF Loan Financing (for recycled water)
Rate: 2.50%
Term (yrs): 20 Debt 1
Term (yrs): 15 Debt 2
RW Commodity Rate: $1,000 AF

Interest on Fund Balance
Rate: 4%

	Capital Expenditures				Muni 1 Debt		Muni 2 Debt		Muni 3 Debt		SRF		Total					
Year	Imported Water	Groundwater Pumping	Groundwater Recharge	Recycled Water	Debt	Debt Service	Debt	Debt Service	Debt	Debt Service	Debt	Debt Service	Debt	Debt Service	Developer Fee Collected Annual	Recycled Water Delivered (AF)	Recycled Water Revenues	Water Supply Fund Net Balance w/Interest
2010	$0	$0	$0	$0								$0		$0	$43,092,220	-		$44,815,909
2011	$46,667,419	$0	$11,232,667	$0	$80,780,086							$0	$80,780,086	$0	$28,595,729	-		$76,348,104
2012	$0	$22,880,000	$0	$11,737,700		$7,265,450					$11,737,700	$752,940	$11,737,700	$8,018,390	$30,274,485	800	$800,000	$103,380,368
2013	$0	$0	$0	$0		$7,265,450						$752,940		$8,018,390	$32,056,344	800	$800,000	$133,347,055
2014	$0	$0	$0	$0		$7,265,450						$752,940		$8,018,390	$33,947,936	800	$800,000	$166,479,665
2015	$0	$21,450,000	$0	$0		$7,265,450	$201,432,667					$752,940	$201,432,667	$8,018,390	$31,750,159	800	$800,000	$198,651,892
2016	$168,750,000	$0	$11,232,667	$0		$7,265,450		$18,117,076				$752,940		$26,135,465	$25,155,415	800	$800,000	$206,410,716
2017	$0	$0	$0	$0		$7,265,450		$18,117,076				$752,940		$26,135,465	$26,722,088	800	$800,000	$216,109,232
2018	$0	$0	$0	$0		$7,265,450		$18,117,076				$752,940		$26,135,465	$28,417,548	800	$800,000	$227,958,967
2019	$0	$0	$0	$0		$7,265,450		$18,117,076	$240,708,667			$752,940	$240,708,667	$26,135,465	$30,255,782	800	$800,000	$242,194,456
2020	$0	$21,450,000	$0	$208,026,000		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$32,250,693	800	$800,000	$236,558,484
2021	$0	$0	$11,232,667	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$19,413,558	1,700	$1,700,000	$218,282,453
2022	$0	$0	$0	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$20,150,546	1,700	$1,700,000	$200,041,849
2023	$0	$0	$0	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$20,907,547	1,700	$1,700,000	$181,858,902
2024	$0	$0	$0	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$21,694,398	1,700	$1,700,000	$163,766,962
2025	$0	$21,450,000	$0	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$22,512,281	1,700	$1,700,000	$123,493,943
2026	$0	$0	$0	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$20,351,945	1,700	$1,700,000	$101,671,253
2027	$0	$0	$0	$0		$7,265,450		$18,117,076		$21,649,602		$752,940		$47,785,068	$21,015,220	1,700	$1,700,000	$79,665,461
2028	$0	$0	$0	$0				$18,117,076		$21,649,602		$752,940		$40,519,618	$21,700,916	1,700	$1,700,000	$65,048,630
2029	$0	$0	$0	$0				$18,117,076		$21,649,602		$752,940		$40,519,618	$22,410,006	1,700	$1,700,000	$50,584,579
2030	$0	$21,450,000	$0	$0				$18,117,076		$21,649,602		$752,940		$40,519,618	$23,143,292	1,700	$1,700,000	$13,996,583
2031	$0	$0	$0	$0				$18,117,076		$21,649,602		$752,940		$40,519,618	$20,603,729	1,700	$1,700,000	($4,388,078)
2032	$0	$0	$0	$0						$21,649,602		$752,940		$22,402,542	$21,013,693	1,700	$1,700,000	($4,240,005)
2033	$0	$0	$0	$0						$21,649,602				$21,649,602	$21,435,834	1,700	$1,700,000	($2,863,924)
2034	$0	$0	$0	$0						$21,649,602				$21,649,602	$21,866,093	1,700	$1,700,000	($985,331)
2035	$0	$0	$0	$0						$21,649,602				$21,649,602	$22,300,411	1,700	$1,700,000	$1,420,097
Totals	$215,417,419	$108,680,000	$33,698,000	$219,763,700	$80,780,086	$116,247,197	$201,432,667	$289,873,211	$240,708,667	$346,393,638	$11,737,700	$15,811,735	$534,659,119	$768,325,780	$663,037,869	32,700	$32,700,000	

Notes:
Target is to achieve zero balance in Water Supply Fund by 2035.
Assumes recycled water sales return to water supply fund.
Groundwater pumping capital expenditures in 2025 and 2030 are paid from water supply fund reserves; not debt financed.

Table A-9

SRF Financing for Recycled Water Program

Based on strategy RW70

Rate: 2.50%

Term (yrs): 20 Debt 1

15 Debt 2

Year	Capital Cost: Recycled Water	Debt Service 1	Debt Service 2	Total Debt Service w/SRF
2010	$0			$0
2011	$0			$0
2012	$11,737,700	$752,940		$752,940
2013	$0	$752,940		$752,940
2014	$0	$752,940		$752,940
2015	$0	$752,940		$752,940
2016	$0	$752,940		$752,940
2017	$0	$752,940		$752,940
2018	$0	$752,940		$752,940
2019	$0	$752,940		$752,940
2020	$0	$752,940	$0	$752,940
2021	$0	$752,940	$0	$752,940
2022	$0	$752,940	$0	$752,940
2023	$0	$752,940	$0	$752,940
2024	$0	$752,940	$0	$752,940
2025	$0	$752,940	$0	$752,940
2026	$0	$752,940	$0	$752,940
2027	$0	$752,940	$0	$752,940
2028	$0	$752,940	$0	$752,940
2029	$0	$752,940	$0	$752,940
2030	$0	$752,940	$0	$752,940
2031	$0	$752,940	$0	$752,940
2032	$0	$752,940	$0	$752,940
2033	$0		$0	$0
2034	$0		$0	$0
2035	$0		$0	$0
Totals	$11,737,700	$15,811,735	$0	$15,811,735

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Palmdale Water District
Strategic Water Resources Plan
Final Program Environmental Impact Report

Published under separate cover as Draft PEIR
(*included as Appendix A of this document on attached CD*)

Included in this Final PEIR

Appendices

CHAPTER 8
Introduction

This Final Program Environmental Impact Report (PEIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code Section 21000 et seq.) and *CEQA Guidelines* (California Administrative Code Section 15000 et seq.). The Final PEIR incorporates, by reference, the Draft PEIR (included here as **Appendix A**) prepared by Palmdale Water District (PWD) for the Strategic Water Resources Plan (SWRP or proposed project) (State Clearinghouse No. 2010101091) as it was originally published and the following chapters, which include revisions made to the Draft PEIR.

8.1 CEQA Requirements

CEQA Guidelines specify that the Final PEIR shall consist of the following:

- The Draft PEIR or a revision of that draft;
- Comments and recommendations received on the Draft PEIR;
- A list of persons, organizations, and public agencies commenting on the Draft PEIR;
- The response of the Lead Agency to significant environmental points raised in the review and consultation process; and
- Any other information added by the Lead Agency.

This Final PEIR document for the Strategic Water Resources Plan presents:

- The written and oral comments received on the Draft PEIR along with a response to each comment (Chapter 9); and
- Revisions made to the Draft PEIR in response to comments received (Chapter 10).

8.2 Public Participation Process

A Notice of Preparation (NOP) was published by the PWD on October 28, 2010. The NOP was made available in print and electronic form and circulated to federal, state, and local agencies, as well as other interested parties for a 30-day comment period. Due to undeliverable NOPs, some recipients were notified at a later date of the comment period, and therefore PWD extended the comment period for an additional two weeks through December 10, 2010 in order to provide ample opportunity for input during the scoping period for the EIR. All previously-notified interested parties were notified of the extension with an additional notice. The NOP discussed the SWRP Recommended Strategy, identified the SWRP study area, and provided a brief and

preliminary list of environmental issue areas that could be impacted. A public scoping meeting was held on November 17, 2010 to receive comments on the NOP.

The Notice of Availability (NOA) of the Draft PEIR was posted with the County Clerk in Los Angeles County and the State Clearinghouse on August 26, 2011. The Draft PEIR was circulated to federal, state, and local agencies and interested parties, to review and issue comments on its contents. Copies of the Draft PEIR were made available to the public at the following locations:

- Palmdale Water District office (2029 East Avenue Q, Palmdale, CA 93550)
- Palmdale Water District website (www.palmdalewater.org)
- Palmdale City Library (700 E. Palmdale Blvd., Palmdale, CA 93550)

The Draft PEIR was circulated for public review from August 25, 2011 through October 8, 2011. All comments received on the Draft PEIR are addressed in Chapter 9, Response to Public Comments, which together with the Draft PEIR and changes and corrections to the Draft PEIR (Chapter 10), constitute the Final PEIR.

8.3 Final PEIR Certification and Approval

As the Lead Agency, PWD has the option to make the Final PEIR available for public review prior to considering the project for approval (*CEQA Guidelines* §15089(b)). The Final PEIR must be available to commenting agencies at least 10 days prior to consideration for certification by the PWD Board of Directors.

Prior to considering the project for approval, PWD will review and consider the information presented in the Final PEIR, will certify that the Final PEIR has been adequately prepared in accordance with CEQA, and will certify that the Final PEIR reflects PWD's independent judgment and analysis (*CEQA Guidelines* §15090). Prior to approving the project, PWD also shall make Findings regarding any significant environmental effects identified in the Final PEIR, and if necessary, adopt Statements of Overriding Considerations regarding these impacts (*CEQA Guidelines* §15091, §15093). Once the Final PEIR is certified and Findings are adopted, PWD may proceed to consider project approval (*CEQA Guidelines* §15092). Once the project is approved, PWD will file a Notice of Determination (NOD) with Los Angeles County and the State Clearinghouse (*CEQA Guidelines* §15094).

8.4 Notice of Determination

Pursuant to Section 15094 of the *CEQA Guidelines*, PWD will file a NOD with the State Clearinghouse and Los Angeles County Clerk within five working days of project approval.

CHAPTER 9
Response to Public Comments

This chapter contains the response to the comment letters received during the public review period for the Draft PEIR. The letters have been bracketed and numbered and are presented in the order listed in **Table 9-1**. The comment letters can be found in **Appendix B** of this Final PEIR. The responses to comments are provided below and are labeled to correspond to the comment numbers and letters that appear in the margins of the comment letters.

Where the responses indicate additions or deletions to the text of the Draft PEIR, such changes are provided in Chapter 10 of this Final PEIR. The revisions do not substantially alter the conclusions in the Draft PEIR.

Comment letter(s) were received from the following agencies and interested parties during the public review period for the Draft PEIR:

TABLE 9-1
AGENCIES, ORGANIZATIONS, AND PUBLIC COMMENTS RECEIVED

Commenting Person/Agency	Date of Comment
State Agencies	
Native American Heritage Commission	September 20, 2011
California Department of Water Resources	October 7, 2011
Local Agencies	
City of Palmdale	October 7, 2011

Native American Heritage Commission

Response to Comment NAHC-1

The comment discusses the state and federal statutes relating to Native American historic properties and cultural resources and states that the lead agency is required to comply with CEQA regarding the preparation of an EIR for any potential significant impacts to historical or archaeological resources. The comment states there were no Native American cultural resources that were identified within one-half mile of the area of potential effect in the project vicinity based on the NAHC Sacred Lands File search. The comment suggests early consultation with Native American tribes and provides a list of Native American contacts.

The exact location of planned improvements under the proposed project is not yet known at this time. Therefore, the analysis of project impacts in this PEIR is conducted at a programmatic-level in accordance with *CEQA Guidelines* Section 15168. Accordingly, prior to the implementation of

any improvements recommended under the proposed program, a separate CEQA document would be prepared for each project element and evaluated at a project-level in accordance with *CEQA Guidelines* Sections 15161 and 15378(a). The required coordination and consultation with Native American tribes would also occur during this time pursuant to *CEQA Guidelines* Section 15064.5 and Public Resources Code Section 5097.98. Furthermore, the program-level assessment of potential impacts on important cultural resources in this Final PEIR (see Section 3.4, Cultural Resources) includes Native American coordination and preliminary cultural research for identifying existing resources and settings. Mitigation measures are also provided, where applicable, to minimize any potential impacts to cultural resources to a less than significant level prior to program implementation.

California Department of Water Resources

Response to Comment DWR-1

The comment states that the use of the term "water rights" is confusing in the context given on pages 2-4 and 2-5 of the Project Description, "Action 1: New Imported Supplies". The comment suggests substituting "water supplies" as the permanent transfer of Table A or the short term transfer of other water supplies. The comment states the use of the phrase "acquiring new imported water rights" is appropriate when referring to "acquisition of pre-1914 surface water rights" as described elsewhere in the PEIR, but not to permanent Table A transfers or short-term transfers of other water supplies. In response to this comment, the text referring to "water rights" associated with the discussion of Table A transfers or short-term transfers in the Project Description of the PEIR has been updated to read "water supplies." The text on page ES-3 of the Draft PEIR has been updated to reflect the above changes and is incorporated in this Final PEIR

Response to Comment DWR-2

The comment requests that the PEIR mention how agreements among PWD, DWR, and any other parties involved will be executed as needed to obtain the additional imported supplies described in the "Imported Supplies" section of the Executive Summary and in the Project Description "Action 1: New Imported Supplies." Language has been added to the text of the Executive Summary (page ES-4) and Project Description (page 2-4) of the Final PEIR that clarifies that agreements would be executed between PWD and applicable parties to obtain the additional imported supplies. These changes are included in Chapter 10 of this Final PEIR.

Response to Comment DWR-3

The comment requests that any turnout structures under any proposed project within DWR right-of-way be specifically and fully described within the Project Description and incorporated into the Environmental Setting, as detailed environmental documentation for the proposed turnout(s) will ultimately be required to obtain DWR's authorization. The comment states that any connection to State Water Project (SWP) facilities requires a formal request to DWR's State Water Project Analysis Office for design review and approval, in addition to an O&M and construction agreement for the facility. The exact location of planned improvements under the proposed program is not yet known at this time. Therefore, the analysis of program impacts in this PEIR is conducted at a programmatic-level in accordance with *CEQA Guidelines* Section

15168. Accordingly, prior to the implementation of any improvements recommended under the proposed program, a separate CEQA document would be prepared for each program element and evaluated at a project-level in accordance with *CEQA Guidelines* Sections 15161 and 15378(a).

Response to Comment DWR-4

The comment states that any utility crossing the California Aqueduct, site clearing and/or grading associated with the proposed water treatment plant at 47th Street East will require an encroachment permit from DWR. The comment provides information on obtaining an encroachment permit from DWR and requests that project proponents provide DWR with a copy of any subsequent environmental documentation available for public review. PWD shall coordinate with DWR and prepare and submit any require encroachment permits to DWR regarding program components within DWR right-of-ways, where necessary. PWD shall provide copies of subsequent environmental documentation associated with the proposed program that is available for public review. The comment does not require any changes to the content of the Final PEIR and therefore, PWD deems this comment as fully addressed.

City of Palmdale

Response to Comment City-1

This overall comment introduces and summarizes the commenter's concerns presented in greater detail in the comments that follow.

Concerning the suggestion that the analysis is inadequate and is not supported by substantial evidence, the PEIR reflects a good faith effort to investigate and disclose environmental impacts of the project (see *CEQA Guidelines* §§ 15003(i), 15151). Section 1.2 of the Draft PEIR states that the document is intended to be a program-level document that focuses on management strategies and implementation actions that are in the conceptual or planning phase. The PEIR is intended to serve as a first-tier environmental document, and makes a good faith effort to analyze the overall effects of implementing the proposed plan to provide reliable water supply for future demand. Section 1.4 of the Draft PEIR identifies 12 environmental resource areas that were analyzed in the Draft PEIR: aesthetics; air quality and greenhouse gas emissions; biological resources; cultural resources; geology, soils, seismicity and mineral resources; hazards and hazardous materials; hydrology and water quality; land use, agricultural resources, and forestry; noise; recreation; transportation and traffic; and utilities and public services. As described above, the DEIR is intended to be a program-level analysis of management strategies and implementation actions that would require construction of various water facilities and infrastructure, of which the specific locations and design elements are, in many cases, yet to be determined. The environmental setting of the program is described in Chapter 3 using information from literature reviews, internet sources, government sources, aerial photos, and information provided by the Palmdale Water District. Where appropriate, individual resource sections in Chapter 3 describe a resource-specific region of influence which forms the basis for the environmental analysis. The individual sections in Chapter 3 provide the environmental setting and regulatory framework, describe the individual and cumulative impacts to the various resources anticipated as a result of the program, and identify mitigation measures designed to reduce or

eliminate such impacts. In summary, the program-level PEIR compiles an adequate inventory of resources; provides adequate baseline information and a description of the environmental setting; sufficiently evaluates potential program impacts against established thresholds of significance; and identifies mitigation measures to reduce any significant impacts.

With regard to the concern of deferring the formulation of mitigation measures, the DEIR identified a number of mitigation measures that require the preparation of more detailed mitigation measures after certification of the EIR, which is acceptable under CEQA provided that practical considerations make it difficult to develop the plan at this stage of the planning process, and commitments are made to implement measures that would satisfy specified performance standards at the time of approval. *Sacramento Old City Association v. City Council* (1991) 229 Cal. App.3d 1011, 1028-1029. The mitigation measures proposed in the Draft PEIR are sufficiently detailed to allow for meaningful agency and public review.

With regard to the concern that the water supply analysis was inadequate, the Recommended Strategy assessed in the Draft PEIR is the acquisition of new water supply to meet future demand. The central purpose of the SWRP is to identify and obtain new water supplies in order to meet future demands. As noted on page ES-1 of the Draft PEIR, the SWRP:

> *"….outlines a programmatic plan for developing and diversifying PWD's water supply over the next 25 years through 2035. The SWRP anticipates that during that time, despite the current economic recession, the population within its service area will double. Currently, existing supplies are inadequate to meet the projected demand of a growing population. The SWRP therefore establishes a strategy to match overall annual water demand on a year-to-year basis. The SWRP identifies a Recommended Water Resource Strategy that would provide increased water supply reliability and redundancy by increasing the number of water sources available to supplement the system when an individual source of water is unavailable or restricted. The proposed strategy calls for acquisition of additional imported supplies; new groundwater recharge and recovery facilities; aquifer storage and recovery (ASR) wells; potential use of recycled water for agricultural irrigation, groundwater recharge, and other municipal and industrial end uses; expansion of conservation programs; and recovery of storage capacity in Littlerock Reservoir. "*

To this effect, the Draft PEIR, as a whole, makes a good-faith effort to analyze the effects of the SWRP on water supply within the District's service area.

With regard to the comment requiring that the Draft PEIR be recirculated under CEQA, if significant new information is added to an EIR after commencement of public review but prior to certification of the final document, the agency must issue a new notice and must "recirculate" the revised document, or portions of the document, for additional comment and consultation (Pub. Res. Code § 21092.1; *CEQA Guidelines* § 15088.5; *Laurel Heights Improvement Ass'n. v. Regents of Univ. of Cal. (Laurel Heights II)*, 6 Cal.4th 1112, 1129 (1993)). Recirculation requirements were addressed by the California Supreme Court in *Laurel Heights II*. The Court's holding is now reflected in *CEQA Guidelines* Section 15088.5, which requires recirculation of an

EIR only when "significant new information" is added to the document. Examples of the type of new information that is significant enough to require recirculation include:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

As addressed in Chapters 3 and 4, the program-level EIR compiles an adequate inventory of resources; provides adequate baseline information and a description of the environmental setting; sufficiently evaluates potential program impacts against established thresholds of significance; and identifies mitigation measures to reduce any significant impacts. As such, the environmental document is in compliance with CEQA. In addition, revisions to the Final PEIR would not result in a new significant environmental impact or substantially increase the severity of an environmental impact indentified in the Draft PEIR. Therefore, recirculation is not required under CEQA.

Response to Comment City-2

The commenter makes a general statement that the Draft PEIR is inadequate under CEQA and that improper determinations were made on the significance of the impacts, thus requiring recirculation. The commenter further states that to address these deficiencies, the analyses in the EIR must be substantially revised, resulting in the need to recirculate the EIR. The comment does not provide specifics on how the analysis is deficient. Please see Response to Comment City-1.

Response to Comment City-3

The commenter states that the PEIR defers the analysis of the SWRP's project components. The commenter is also concerned that the program-level CEQA document will be used to grant approvals to projects. See Response to Comment City-1. The proposed program consists of management strategies and implementation actions that would, at some point in the future, require construction of various water facilities and infrastructure at various locations. The specific locations and design elements of these facilities have yet to be finalized. As such, the proposed program is evaluated in this Draft PEIR at a program level, in accordance with *CEQA Guidelines*, Section 15168. As stated in Chapter 1, the Draft PEIR analysis is not intended to focus on the site-specific construction and operational details of each management strategy and project included in the Strategic Water Resources Plan (SWRP). Rather, this Draft PEIR serves as a first-tier environmental document that focuses on the effects of implementing the overall SWRP as a plan to provide reliable water supply for future demand. Impacts resulting from individual projects or management actions associated with the SWRP will require additional analysis and a

subsequent environmental document, as specific projects or actions are further refined. An example of this recognition can be found in Section 3.2, Air Quality (page 3.2-18), which states, "Construction of the individual projects could occur at any point over the planning period. The phasing and duration of individual construction projects is unknown. Construction of multiple projects could occur simultaneously. *Individual projects are subject to subsequent project-level environmental review* [emphasis added] at which time a more detailed analysis of construction-related emissions may be undertaken to evaluate the need for additional mitigation." In addition, to future clarify this point, text has been added to the introduction under Chapter 3 stating that an environmental document under CEQA will be prepared for subsequent actions or activities proposed in the SWRP prior to implementation.

Response to Comment City-4

The commenter makes the general statement that the Draft PEIR lacks sufficient analysis and evidence for finding that an impact will be less than significant. See Response to Comment City-1. The resource analyses in Chapter 3, Sections 3.1 through 3.12: (1) outline the significance criteria associated with a resource, (2) describe the potential impacts of the program on the resource in light of the significance criteria, and (3) propose mitigation measures to reduce potentially significant effects on a resource, and (4) identify the significance determination after application of any mitigation measures.

Response to Comment City-5

The commenter states that the Draft PEIR does not perform the necessary environmental analysis but rather defers this analysis by requiring studies as part of mitigation measures; and that by deferring analysis, the document fails to disclose the environmental impacts of the program. Under applicable case law, as discussed below, it is adequate to recognize a potential significant effect, adopt a measure that commits the lead agency to mitigate, and describe the performance criteria for mitigation, if the plans, design details, or precise means to mitigate are not practical to define at the time of project approval. Details of the project components of the SWRP (such as exact location, ground disturbance area, etc.) are not known at this time. Project components identified in the SWRP will require additional environmental documentation prior to construction. The commitment to mitigate may properly be accompanied by a list of potential approaches or concepts to achieve the avoidance or lessening of the significant effect to demonstrate that the eventually selected measures are reasonably expected to be feasible and effective. It is also adequate to require compliance with environmental regulations as mitigation when there is reasonable expectation based on meaningful information that compliance will result in the effect being mitigated.

Case law that supports this approach includes *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275-1276. In that case, the court determined that the Lead Agency may defer defining the specifics of mitigation measures if the agency commits to the mitigation, the EIR specifies performance standards, and the agency lists the alternatives to be considered, analyzed, and possibly incorporated in the mitigation plan. In *Defend the Bay*, the court upheld as adequate a mitigation measure that required the applicant to (1) consult with the USFWS and CDFG; (2) conduct surveys during the breeding season to determine if the birds are in fact present;

(3) obtain a determination regarding the long-term value of the habitat area; (4) obtain permits from the USFWS and CDFG; and (5) coordinate avoidance measures as required by USFWS and CDFG.

The Lead Agency here believes that the mitigation measures proposed in the Draft PEIR comply with the standards set forth in *Defend the Bay* and are sufficiently detailed under CEQA to allow for meaningful agency and public review. For example, mitigation measure TR-1 requires that a Traffic Control/Management Plan be prepared and submitted for approval prior to construction. As part of this mitigation measure, specific information or standards are identified that shall be included in the Plan.

Response to Comment City-6

The commenter states that many of the mitigation measures are inadequate and vague. See Response to Comments City-1 and City-5. In making this argument, the commenter refers to the case of *Kings County Farm Bureau v. City of Hanford* (1990) 221 Ca1.App3d 692, 727. This reference is not germane as it refers to an EIR that was intended to serve as the final project-level analysis for a coal-fired cogeneration plant. Here, the CEQA analysis is a Program EIR, which is a first-tier document for an agency program or series of actions that can be characterized as one large project. Program EIRs generally analyze broad environmental effects with the acknowledgement that site-specific environmental review may be required for particular aspects or portions of the program when those aspects are proposed for implementation. In *Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, the Court of Appeal upheld the validity of a program EIR against attacks claiming the document lacked sufficient detail regarding various subjects. The court therein held that the specificity of an EIR's discussion of mitigation measures should be proportionate to the specificity of the underlying project. For those impacts not susceptible to precise mitigation measures at the plan state, it is enough for the agency to commit to making project advancement contingent on meeting specific performance criteria, and then to rely on the commitment as evidence that potential significant impacts will be mitigated.

The commenter also takes issues with the following mitigation measures:

- BIO-1d – Commenter states that this mitigation measure needs to identify what efforts will be taken to minimize impacts on special status species. Mitigation measures BIO-1a through BIO-1g work in tandem to reduce potential impacts on special status species. These mitigation measures include strategies for avoiding, minimizing, and mitigating potential impacts through such actions as creating buffer zones, conducting protocol surveys, avoiding species by means of jack-and-bore construction, and preserving off-site lands.

- BIO-4a through BIO-4d – Commenter requests that an additional mitigation measure be added that requires the project to comply with Chapter 14.04 of the City of Palmdale Municipal Code. Mitigation Measure BIO-4e has been added to the Final PEIR that requires the project to be in compliance with this ordinance (see Chapter 10).

- HAZ-4 – Commenter requests that this mitigation measure be revised to require that PWD coordinate with the appropriate agency to obtain any necessary approvals of the

Traffic Control Plan and encroachment permits. The mitigation measure has been revised in the Final PEIR accordingly (see Chapter 10).

- HYD-5 – Commenter states that the Groundwater Supply Monitoring Program should include the conditions that would trigger the requirement to reduce and/or stop pumping and that deepening any wells would not be mitigation for adverse impacts on drawdown. Mitigation Measure HYD-5 in the Final PEIR has been revised to eliminate deepening of wells and to describe a Groundwater Monitoring and Management Program (GMMP) that would ensure no net loss of groundwater occurs in the Basin as a result of PWD's groundwater banking activities. This would be achieved using monitoring data to confirm that recharge volumes exceed planned withdrawals. As described in the Draft PEIR discussion of Impact 3.7-2, groundwater levels in the Basin would not change substantially with implementation of the SWRP because the basic net water balance of the basin would not be altered. Further detailed description of groundwater modeling completed for the SWRP has been included in Section 3.7 of the Final PEIR (see Chapter 10).

In addition, as noted under the discussion in the Draft PEIR, Impact 3.7-2:

> *"Although the project is not anticipated to substantially alter groundwater levels over time, wells near the new recharge and extraction facilities would likely experience greater fluctuations during project operation. As such, it is possible that operation of groundwater extraction and recharge facilities could alter groundwater recharge in a way that would temporarily lower the groundwater table on a localized level."*

Drawdown in close proximity to the proposed extraction wells would not necessarily reflect drawdown of the Basin as a whole. To address localized impacts of project operation on neighboring wells, the revised Mitigation Measure HYD-5 provides a framework for monitoring groundwater levels around PWD's proposed facilities to determine the potential area of effect for recharge and extraction activities, determining acceptable ranges in fluctuations of groundwater levels, and identifying thresholds for groundwater levels, below which pumping would be curtailed by PWD (see Chapter 10).

- REC-1 – Commenter states that any PWD facilities built on City owned land are subject to City approval, and requests that this is noted in the mitigation measure. Mitigation Measure REC-1 has been revised in the Final PEIR to recognize that approval from the City will be required should future project components be built on City-owned lands (see Chapter 10).

- TR-1 – Commenter requests that this mitigation measure be revised to add two bullet points pertaining to the Traffic Control Plan. The commenter also requests that the mitigation measure include a statement that the PWD shall obtain the necessary encroachment permits. The mitigation measure in the Final PEIR has been revised to include the two recommended bullet points (see Chapter 10). The statement regarding encroachment permits has not been added as the bullet points pertain to the contents of

the Traffic Control Plan, and this requirement is covered under Mitigation Measure HAZ-4, as revised.

Response to Comment City-7

The commenter states that the mitigation measures to lessen impacts do not contain adequate mandatory language to make them enforceable, and therefore are invalid under CEQA. The mitigation measures in the Draft PEIR contain both mandatory (i.e., "shall") and voluntary (i.e. "should", "if feasible") language that appropriately respond to the issue and the authority of responsible party(s) under consideration.

Response to Comment City-8

The commenter suggests that the baseline for the project is not properly defined. See Response to Comment City-12. Text has been added to Section 3.7 of the Final PEIR to provide further information and clarification regarding the existing environmental setting as it relates to groundwater pumping. The additions provide a discussion of the adjudication proceedings and decisions issued to date. In accordance with Section 15125 of the *CEQA Guidelines*, the PEIR includes a description of the known physical groundwater conditions in the vicinity of the SWRP as they exist at the time the Notice of Preparation was published, including historical pumping and overdraft conditions.

Response to Comment City-9

The commenter suggests that a full 45 days was not allowed for public review of the Draft PEIR, as required under CEQA. The noticed public review period for the Draft PEIR was August 25, 2011 through October 8, 2011, a 45-day period. Because the 45th day fell on a Saturday, PWD accepted any comment letters through Monday, October 10, 2011. No comment letters were received by PWD on or after October 10, 2011. PWD has fulfilled its obligation as lead agency, to provide a 45-day public review period under CEQA.

Response to Comment City-10

The commenter states that the project description in the Draft PEIR is not consistent or accurate under CEQA. As required by *CEQA Guidelines*, Section 15124, and as set forth in Chapter 2 of the Draft PEIR, the project description describes the proposed project objectives, strategies, and actions of the SWRP. Included in the project description are the likely project components needed to implement the SWRP, some more detailed than others based on the known information at the time of preparation of the SWRP. PWD, as Lead Agency, finds the project description to be adequate under CEQA.

Response to Comment City-11

The commenter notes that the City of Palmdale, as a Responsible Agency, finds the EIR inadequate and objects to its use of the EIR for future project approvals by the City. Per CEQA Section 21091(d)(2)(A), this is not considered a substantive comment on an environmental issue. The comment is noted and no further response is required.

Response to Comment City-12

The commenter states the Draft PEIR does not adequately analyze water supply impacts. The central purpose of the SWRP is to identify and obtain new water supplies in order to meet future demands. Therefore, the Recommended Strategy would provide those water supplies to new development proposed within PWD's service area. While the SWRP assumes that population in the service area would increase, the plan does not, in itself, propose any new development, and thus the Draft PEIR does not provide environmental review or clearance for any specific development proposals. The SWRP acknowledges the potential uncertainties associated with the acquisition of various water supplies, including ongoing Delta environmental issues, the need for development of storage/banking facilities for imported water supplies, and the potential adjudication affecting groundwater supplies. Construction and operation of the proposed facilities presented in the Draft PEIR would not occur until uncertainties have been addressed and the water supplies secured. If water supplies were not obtained in accordance with the Recommended Strategy, the potential environmental impacts identified in the Draft PEIR associated with construction of water supply infrastructure would not be realized. The proposed plan in the Draft PEIR is contingent on the availability of these supplies. Therefore, unlike the *Vineyard* case, the proposed program does not include project-level development and any underlying projects would not proceed without identified water supplies.

Under the Recommended Strategy, SWP availability would be based on the purchase or transfer of water rights (i.e., water that is already allocated/used pursuant to those pre-existing rights) from existing users. If additional SWP rights are not obtained, those components of the proposed plan would not be implemented and no impacts would occur. Thus, while the Recommended Strategy sets a target of obtaining 47,000 AFY of additional imported water by 2035 (refer to Action 1 in Project Description), the underlying projects included in the proposed program that would acquire that additional imported water will be reviewed for impacts at such time as those projects are undertaken.

The Recommended Strategy establishes a target of recharging 35,000 AFY to the groundwater basin by 2025 (refer to Action 6 in Project Description). However, under the Recommended Strategy, groundwater availability is based on implementation of future recharge activities, both using imported and recycled water supplies. If recharge does not occur, the proposed project would not be implemented and no impacts would occur. Because of the uncertainties associated with the potential adjudication, the SWRP and Draft PEIR acknowledge that the District is unlikely to be able to increase pumping volumes without recharge.

Regarding the cumulative impacts associated with water demands, text has been added to Chapter 4 of the Final PEIR that includes the analysis of the cumulative impact of obtaining the water supply needed for the proposed program in conjunction with water needed for other plans or projects, which fall into the timeframe of cumulative impact requirements as described within Section 15130 of the *CEQA Guidelines*. The Draft PEIR acknowledges that there are three potential water supply sources that would be required for implementation of the SWRP, including SWP water, groundwater, and recycled water. SWP water would be sourced through purchase or transfer of existing water rights, and therefore would not create a significant impact with regards

to water supply other than potential transport of SWP water supplies from existing users. Any potential impacts associated with transporting SWP water for the SWRP would be analyzed in a separate CEQA project-level environmental document once the specific transfers or purchases are identified. Furthermore, the Draft PEIR (refer to Impact 3.7-2) indicates that implementation of the SWRP would extract only as much groundwater as is recharged to the AVGB (35,000 AFY); therefore the SWRP is not anticipated to change the overall water balance within the AVGB. In addition, Mitigation Measure HYD-5, as revised, addresses localized impacts on any affected wells by developing a framework to determine the area of potential effect around PWD extraction facilities and to identify thresholds in groundwater levels, below which PWD would curtail pumping activities. The program's contribution to cumulative groundwater impacts would be less than significant because implementation of revised Mitigation Measure HYD-5 would ensure that withdrawals from the AGVB do not exceed replenishment or do not further overdraft the basin or violate any judgment or legal agreements, such as an adjudication agreement or stipulated judgment. All construction and operational impacts related to recycled water will be addressed in a separate CEQA environmental document. Chapters 3.7 and 4.0 of the Final PEIR have been revised to clarify the role of recycled water in relation to the implementation of the SWRP (see Chapter 10). Implementation of recycled water conveyance and storage facilities would distribute available recycled water supplies to appropriate users and would reduce dependence on both imported and groundwater supplies, which is a cumulatively beneficial impact.

Text has been added to Section 3.7 of the Final PEIR to provide further information and clarification regarding the existing environmental setting as it relates to groundwater pumping (see Chapter 10). The additions provide a discussion of the adjudication proceedings and decisions issued to date. In accordance with Section 15125 of the *CEQA Guidelines*, the text includes a description of the known physical groundwater conditions in the vicinity of the SWRP as they exist at the time the Notice of Preparation was published, including historical pumping and overdraft conditions. However, as described above, the SWRP would not change the overall water balance within the AVGB regardless of existing conditions, because it would implement activities that recharge as much groundwater as is extracted. Impact 3.7-2 addresses overdraft conditions, summarizing the results of modeling efforts completed for the SWRP in 2009. As demonstrated in Impact 3.7-2, modeling efforts have demonstrated that implementation of the SWRP would not appreciably change water levels within the AVGB compared to existing conditions. However, revised Mitigation Measure HYD-5 ensures that groundwater levels would be maintained through implementation of a GMMP that would ensure no net loss of groundwater occurs in the Basin as a result of PWD's groundwater banking activities. This would be achieved using monitoring data to confirm that recharge volumes exceed planned withdrawals. Revised Mitigation Measure HYD-5 also provides for mitigation of any localized impacts.

In accordance with Section 15130 of the *CEQA Guidelines*, the Draft PEIR includes a discussion of impacts with respect to past, present, and probable future projects producing related or cumulative impacts. As described within Chapter 4, Cumulative Impacts, revised Mitigation Measure HYD-5 would ensure that implementation of the SWRP does not generate a significant incremental effect with regards to groundwater overdraft within the AVGB or violate any legal

agreements associated with the AVGB. Furthermore, if water supply entitlements for SWP water are not obtained, proposed SWP facilities would not be constructed or utilized. Therefore, the SWRP would not generate a cumulatively considerable contribution to groundwater overdraft or SWP water supplies.

The SWRP does identify increasing rates and fees as a means for financing the proposed actions. PWD will follow all applicable laws related to increases in water rates, including Proposition 218.

Response to Comment City-13

The commenter suggests that the Draft PEIR fails to properly analyze each source of water supply identified under the SWRP. In order to meet future water demands, the SWRP proposes obtaining 1) imported water from the SWP, 2) groundwater, and 3) recycled water. The central purpose of the SWRP is to identify and obtain new water supplies in order to meet future demands. To this effect, the Draft PEIR, as a whole, makes a good-faith effort to analyze the effects of the SWRP on water supply within the District's service area.

(1) State Water Project

Under the Recommended Strategy, SWP availability to PWD would involve the purchase or transfer of water rights (water that is already allocated/used) from existing users. If SWP rights are obtained for use within PWD's service area, no new or increased diversions from the SWP would result and there would be no resulting environmental impacts. Construction of additional conveyance and pumping infrastructure may be necessary to transport SWP water supplies from existing users. However, specific purchase or transfer locations are currently unknown and any potential impacts associated with that transporting of SWP water for the SWRP would be analyzed in a separate CEQA project-level environmental document once the project-specific details are identified. This Draft PEIR addresses the environmental impacts of water supply conveyance and pumping infrastructure at a programmatic level.

The Draft PEIR is not obligated, under CEQA, to address the environmental impacts associated with SWRP delivery and reliability, including recent biological opinions and federal court decisions. Issues associated with SWP delivery to existing contractors have been addressed by the State Department of Water Resources separately.

(2) Groundwater

The commenter's claims of PWD's groundwater pumping are drastically overstated. As indicated throughout the Draft PEIR, and described in detail in PWD's 2010 Urban Water Management Plan, without implementation of the SWRP, PWD anticipates pumping 12,000 AFY through 2035 based on the modeled pumping capacity of the AVGB. With implementation of the SWRP, PWD anticipates recharging and pumping an additional 35,000 AFY, averaged tri-annually (every three year basis). As such, while the SWRP plans for increased groundwater pumping to a total of 47,000 AFY (12,000 AFY existing groundwater supply plus 35,000 AFY replenishment supply), any increase in pumping over existing conditions would not alter the existing water supply balance of the AVGB due to

planned recharge activities. Therefore, the SWRP would not result in withdrawals of 43 percent of the safe yield of the AVGB, because planned recharge activities would ensure that PWD balances withdrawals with replenishment. Furthermore, revised Mitigation Measure HYD-5 ensures that this outcome would be maintained by requiring PWD to manage its groundwater banking activities such that no net loss of groundwater occurs.

Text has been added to the Final PEIR to provide further information regarding the adjudication proceedings and decisions issued to date. However, because the adjudication has not been completed nor pumping restrictions established, the PEIR is not obligated, under CEQA, to analyze the consistency of the SWRP with the potential adjudication.

Potential impacts associated with groundwater contamination resulting from construction activities, surface recharge, ASR injection, and groundwater production are addressed in Impact 3.7-1. Mitigation Measure HYD-2 requires establishment of a Groundwater Quality Monitoring Program to ensure that proposed activities do not substantially degrade groundwater quality. Mitigation Measure HYD-3 ensures that PWD will participate in development of a Salt and Nutrient Management Plan for the AVGB, which is designed to minimize potential impacts of salt buildup in the basin related to recharge of imported and treated water supplies. Mitigation Measure HYD-4 requires that PWD prepare a groundwater injection operations protocol to minimize potential impacts to the AVGB.

Potential impacts associated with groundwater volume and elevation are addressed in Impact 3.7-2. The Recommended Strategy includes groundwater recharge, recovery, and banking activities designed to increase PWD's groundwater supplies by 35,000 AFY by 2035. Groundwater modeling indicates that the proposed pattern of recharge and extraction does not appreciably change regional water levels relative to existing conditions, but rather indicates that seasonal fluctuations in groundwater levels are on the order of 10 feet for both existing (baseline) conditions and proposed project conditions (refer to Figures 3.7-4 and 3.7-5 in the Draft PEIR). Mitigation Measure HYD-5, as revised, ensures that this outcome would be maintained through implementation of the SWRP by requiring PWD to monitor its recharge, extraction, and banking activities to confirm that recharge volumes exceed planned withdrawals. Under revised Mitigation Measure HYD-5, localized impacts at pumping sites would be mitigated on a site-by-site basis. In addition, the Draft PEIR acknowledges that declining groundwater levels have caused subsidence of the ground surface within the Antelope Valley. Section 3.5.1 and Impact 3.5-3 have been revised in the Final PEIR to expand on the discussion of subsidence and the proposed groundwater activities.

As described above, proposed mitigation measures in the Draft PEIR address anticipated impacts associated with implementation of the Recommended Strategy. Some of those mitigation measures require further study, analysis, or monitoring once specific projects or actions are further identified and/or refined, to accurately characterize and reduce the anticipated impacts. Deferral of mitigation until a specific program component has been defined and is ready to move forward is acceptable for a Programmatic EIR, given that the

Draft PEIR reflects a good faith effort to investigate and disclose environmental impacts of the SWRP (see *CEQA Guidelines* §§ 15003(i), 15151).

Potential impacts associated with soil and groundwater contamination are also addressed in Impacts 3.6-2 and 3.6-4. Operation of the wellhead treatment facilities would be subject to State regulations addressing the storage, use, and/or transport of regulated substances. Should contaminated soil or groundwater be discovered during construction, Mitigation Measure HAZ-1 will require implementation of a Contingency Plan to address contaminated materials. Impact 3.6-4 acknowledges the potential for contaminated soils to occur adjacent to Edwards Air Force Base and Mitigation Measure HAZ-3 requires preparation of an environmental site assessment at groundwater pumping sites near Edwards Air Force Base. A further regulatory agency search indicated that the Antelope Valley Environmental Collection Center is not listed as a documented spill site. As such, the protocols established by the County of Los Angeles Department of Public Works for this site would be sufficient in addressing potential impacts for hazards and hazardous materials related to this site.

The Final PEIR revisions to Section 3.7 contain an overview of groundwater and overdraft conditions within the AGVB, as well as a summary of the adjudication proceedings and decisions issued to date. Analysis presented in the Draft PEIR relies on preliminary hydrogeologic modeling completed for the SWRP (refer to Figures 3.7-4 3.7-5 in the DEIR). The Draft PEIR demonstrates that over the fifty-four year modeled period (2010 through 2055), water levels under SWRP conditions were projected to be generally close to (within 20 feet) of baseline (existing) conditions. The reason that groundwater levels do not change substantially under SWRP conditions is because proposed groundwater recharge, recovery, and banking activities are not anticipated to alter the overall water balance of the AVGB. Although preliminary hydrogeologic modeling has been completed, further monitoring efforts would be implemented (refer to Mitigation Measure HYD-5) to ensure that implementation of the SWRP does not pose a significant threat to groundwater supplies within the AVGB. Furthermore, project-level environmental documentation would be required prior to implementation of groundwater recharge, recovery, and banking activities. Such analyses would be completed in accordance with CEQA and other relevant statutes, and would analyze the potential impacts associated with recharge and pumping rates associated with specific program components.

The SWRP and Draft PEIR specify that the proposed groundwater recharge supply would be a combination of imported and recycled water. The SWRP and Draft PEIR both include discussion of the legal agreements (e.g., purchases or transfers) and infrastructure needed to establish these proposed recharge areas. This Draft PEIR is a programmatic analysis of the SWRP as a water supply program; project-level analysis would be conducted once specific sites are selected for the proposed surface recharge and injection well facilities. This is disclosed in several places within the Draft PEIR, notably within Section 1.2, Purpose of the Environmental Impact Report. Mitigation Measure HYD-4 requires that PWD prepare a groundwater injection operations protocol to minimize potential impacts to the AVGB; this

protocol shall be dependent on the specific site conditions selected for the injection wells when their exact locations are determined.

(3) Recycled Water

Construction and operation of any recycled water facilities, including PWD's right and ability to secure recycled water supplies will be addressed in a separate CEQA document. The DEIR does not address recycled water facilities and their potential environmental impacts. No recycled water facilities would be implemented under the SWRP prior to their full and complete evaluation under CEQA. Because PWD's Recycled Water Master Plan IS/MND has not been adopted by PWD, the DEIR has been revised to remove the "incorporation by reference" of that document and its environmental analysis. No recycled water facilities would be implemented prior to their full and complete evaluation under CEQA in a separate document. The DEIR revisions to Section 3.7, Hydrology and Water Quality do acknowledge the City's plans for recycled water use.

The use of raw (untreated) water from Lake Palmdale as a non-potable supply source for PWD's Recycled Water Master Plan will be addressed under CEQA in a separate document. Under the Recommended Strategy, Lake Palmdale would be used to store additional SWP supplies; use of this reservoir for increased imported water storage would not impact or change existing storage of surface water. Additionally, sediment removal activities associated with expanding capacity at Little Rock Reservoir will also be addressed under CEQA in separate project-level EIR or EIS.

a) Regulatory Regime for Various Water Sources

The Draft PEIR contains a thorough description of the regulatory framework for water supply, water quality, and groundwater (refer to Section 3.7, Hydrology and Water Quality), including the City's applicable General Plan policies. Revisions have been incorporated to summarize Los Angeles County policies within the Antelope Valley Areawide General Plan. As noted on Page 2-11 of the Draft PEIR:

> *All recycled water that would be used for groundwater recharge would meet the specific requirements of the Draft California Water Recycling Regulations that are issued by the California Department of Public Health, and California Title 22 requirements.*

As described above, implementation of any recycled water components will be addressed in a separate CEQA document; the regulatory regime for recycled water will also be discussed in greater detail in that separate CEQA document.

Furthermore, Section 3.7, Hydrology and Water Quality provides a description of the potential adjudication of the AVGB, which will establish the future framework governing groundwater supplies within the AVGB. Mitigation Measure HYD-5, as revised, includes requirements that PWD adhere to the provisions of any adjudication judgment or agreement or any other legal agreement pertaining to the AVGB when implementing the SWRP.

Response to Comment City-14

The commenter asserts that the Draft PEIR concludes that Plan operations would conflict with AVAQMD rules and regulations; however, the statement in question is a bullet in a list of operational significance criteria rather than specific Plan significance determinations. Operational criteria air pollutant impacts are described in Impact 3.2-2. It was determined that operational mobile emissions would be negligible and that stationary equipment would be subject to the AVAQMD permitting requirements. The permitting process includes compliance with appropriate rules and regulations.

In regards to the reduction of NO_x to less than significant levels, that is primarily achieved through Mitigation Measure AQ-1g, which would require construction of program facilities in non-overlapping phases to stay below AVAQMD thresholds of significance for NO_x. Table 3.2-6 shows emissions for each program component and sums the emissions to depict complete phase overlap. Controlling the component construction schedule to minimize daily overlap would reduce emissions accordingly.

Response to Comment City-15

The commenter suggests that the Draft PEIR does not properly analyze the impact of ground-disturbing activities. With respect to liquefaction and subsidence, liquefaction is addressed on page 3.5-18 and 3.5-19 of the Draft PEIR. As discussed therein, the proposed mitigation would require PWD for any individual project to complete a site specific survey with respect to liquefaction potential, as well as other seismic considerations, and provide recommendations for the minimization of anticipated seismic hazards. Consistent with the scope of a programmatic EIR, as discussed above, pages 3.5-18 and 3.5-19 provide an overview of the nature and magnitude of potential impacts related to liquefaction, including a review of potentially affected facilities and locations. Additional detailed surveys are outside the scope of this PEIR, because precise facility locations are not yet known. In general, liquefaction potential may increase at recharge sites during recharge operations. However, the proposed recharge program is not expected to result in an increase in near-surface groundwater, such that additional liquefaction potential would occur outside of these sites.

That subsidence has occurred on site as a result of historic groundwater overdraft is acknowledged on page 3.7-5 of the Draft PEIR, which states that as of 1992, more than 290 square miles of the Antelope Valley had subsided by at least a foot. Mitigation related to groundwater subsidence is also addressed on page 3.7-23 of the Draft PEIR, with respect to mitigation that would implement a groundwater injection operations protocol. Fluctuations in groundwater level would be minimized via implementation of the revised Mitigation Measure HYD-5, which would implement a groundwater supply monitoring program that would address water level fluctuations. Overall, the SWRP would result in a stabilization to slight increase in groundwater levels over time. Therefore, substantial additional subsidence as a result of Plan implementation is not anticipated.

With respect to City policies related to mineral resource zones, the Draft PEIR identifies the location of a mineral resource zone that may be impacted by the construction of new facilities

proposed in the SWRP (Figure 3.5-4) and applicable mineral resource policies in the City of Palmdale's General Plan, Environmental Resources Element. While the location of new facilities are only conceptual at this time, Mitigation Measure GEO-3 would require that the construction and operation of any new facilities comply with the City of Palmdale's policies associated with continued access to known mineral resources.

Response to Comment City-16

The commenter suggests that the impacts from potential hazards and hazardous materials on sensitive receptors are not adequately analyzed. The Draft PEIR clearly articulates that some sensitive receptors, including schools, may be impacted by construction and operation of SWRP facilities (refer to Impact 3.6-3). However, because the specific location of SWRP facilities is yet unknown, specific sensitive receptors and their distances to the SWRP components will be disclosed as part of subsequent CEQA project-level environmental documentation.

Impact 3.6-3 does analyze how exposure to the facilities and associated operations (including chemical handling and transport) may potentially affect sensitive receptors at schools. Compliance with Mitigation Measures HAZ-1 and HAZ-2 would ensure that potential risks to sensitive receptors at schools due to accidental release or discovery of hazardous materials are managed through containment, disposal, and/or other responses. All response measures shall be in compliance with federal and California OSHA regulations for hazardous materials, which ensure that risks to the public are minimized to less than significant levels. The Mitigation Monitoring and Reporting Plan adopted along with the Final PEIR will ensure enforcement of Mitigation Measure HAZ-2.

California law prohibits smoking in all enclosed places of employment. All SWRP facilities would comply with applicable California laws, so it was not deemed necessary to include a smoking ban as mitigation.

The Draft PEIR acknowledges the routine use, transport, and storage of treatment chemicals at the proposed water treatment plant (refer to Impacts 3.6-1 and 3.6-2) and proposes application of mitigation measures to reduce potential impacts. However, the specific nature and extent of chemicals to be used at that proposed water treatment plant are yet unknown and will be assessed as part of subsequent project-level analysis. The overview provided on pages 3.6-12 and 3.6-13 of the Draft PEIR is therefore considered sufficient to characterize the nature and magnitude of potential impacts related to hazardous materials transport, use, and disposal under CEQA with respect to a programmatic-level environmental analysis.

Response to Comment City-17

The commenter states that the Draft PEIR is inconsistent in identifying the number of new wells under the SWRP. The Recommended Strategy includes several different types of groundwater wells, including 4-12 aquifer storage/recovery (ASR) wells and 60-90 groundwater production wells for a total of 64-102 wells, as identified in Chapter 2. There are places in the Draft PEIR where the numbers of wells are not consistent. However, the anticipated flux of water into and out of the groundwater basin was evaluated irrespective of the number of wells. The Final PEIR (Chapters 2 and 4, and Section 3.7) has been revised to correct or clarify any inconsistencies in

the quantity of the different wells. The SWRP provides a range of production wells that may be constructed, based on specific site conditions for well sites. The SWRP clearly articulates the maximum pumping volumes that would be achieved and the Draft PEIR thoroughly evaluates the potential hydrogeological and water quality impacts (refer to Impacts 3.7-1 and 3.7-2) resulting from pumping activities.

With respect to flood analysis, as noted on page 3.7-27 of the Draft PEIR, no FEMA delineated flood zones are located within the Program area. Other potential sources of flooding are identified, and include storage tanks and the Littlerock Reservoir. As discussed on Page 3.7-27 of the Draft PEIR, sufficient freeboard would be maintained in the proposed tanks to avoid flooding during earthquakes. Additional evaluation of these facilities would be required at the project level, when sufficient siting-level information is available with respect to these facilities. With respect to sediment removal at Littlerock Reservoir, such activities would not interfere with the engineering design or structural integrity of the Littlerock Dam, and that underlying project will have its own specific CEQA and NEPA review. Therefore, no change in potential for catastrophic release of waters is anticipated, beyond that currently present under existing conditions. No further discussion is warranted.

Response to Comment City-18

The commenter states that the Draft PEIR identifies a potential significant impact arising from the conversion of agricultural land to non-agricultural uses as it relates to water transfers or leases. Per Impact 3.8-2 and the discussion that follows in the Draft PEIR, the acquisition of new water rights through means of transfers or leases is not considered to result in a significant impact. The document acknowledges that new water rights could be transferred or leased from lands that are designated Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, and, as such, may result in reduced productivity. However, the Draft PEIR goes on to state that:

> *"….the affected agricultural lands would remain in agricultural zones and could be irrigated with water from other sources (such as groundwater), used for grazing or other agricultural-related purposes, or fallowed consistent with normal agricultural practices. In addition, the agricultural lands may be removed from active production depending on its productivity and life-cycle consistent with normal agricultural practices. Therefore, the transfer of water may not necessarily result in the conversion of agricultural land to non-agricultural use. Once PWD develops specific transfer or lease agreements, additional CEQA documentation may be prepared to evaluate indirect effects to agricultural resources, if any."*

To better clarify the intent of the lead agency, the last sentence in the above text has been revised in the Final PEIR to read: "Once PWD develops specific transfer or lease agreements, additional CEQA documentation shall be prepared to evaluate the effects to agricultural resources, if any."

Based on the above reasoning and the fact that subsequent project-level analysis will occur, it has been determined by the lead agency that potential impacts from the conversion of agricultural land to non-agricultural uses is less than significant, for the purposes of this program-level environmental document.

Response to Comment City-19

The commenter states that the Draft PEIR inappropriately delays the analysis of Plan's potential impact on bikeways and that Mitigation Measure REC-2 must include the City as a reviewing agency. See Response to Comment City-5. There is a detailed discussion of the existing and planned bikeways in the vicinity of the Project (Section 3.10.1). The Draft PEIR clearly recognizes that future construction of conveyance pipelines within road rights-of-way has the potential to affect Class I, II, or III bikeways near or along pipeline routes. While Figure 2-2 conceptually shows the backbone of the future recycled water pipelines, the document is clear that the ultimate location of these facilities would be determined during the design phase and would be evaluated in subsequent CEQA review (see Section 1.3.2). While the Draft PEIR recognizes that the City of Palmdale is an "applicable jurisdiction" as it relates to the Traffic Control Plan (see page 2-13, third paragraph), Mitigation Measure REC-2 has been revised to specifically require approval from the applicable agency with jurisdiction over the affected bikeways prior to the construction of any new facilities.

Response to Comment City-20

The commenter states that the Draft PEIR does not provide a complete listing of all the federal, state, and local agencies that may have jurisdictional authority over the Project. In Section1.3.2, the Draft PEIR lists the potential regulatory agencies that may have permitting or approval authority over the implementation of future project components of the Plan (Table 1-1). It is made clear to the reader that this list may be expanded for these individual activities (facilities) during the design and implementation phases, and subsequent CEQA review. No further changes to Table 1-1 are necessary.

Response to Comment City-21

Commenter indicates that the cumulative impacts analysis does not explain the methodologies utilized in support of the cumulative analysis. The commenter also suggests that the conclusion on the cumulative impact from NO_x is not adequately supported by evidence. The Draft PEIR acknowledges the requirements of CEQA with respect to cumulative analysis on page 4-1. Methods are discussed on pages 4-1 through 4-4, which delineate a geographic scope for the cumulative analysis, a list of projects considered, project timing considerations, and related projects.

Regarding cumulative impacts from NO_x, per *CEQA Guidelines* Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed program's incremental effects are cumulatively considerable. Thus, if other projects are cumulatively significant, even in an area that is nonattainment for ozone, it does not mean that impacts from the proposed program are also cumulatively significant. As described in Impact 4-1 of the Draft PEIR, short-term construction emissions would be less than significant with mitigation and long-term operation emissions would be negligible and would not result in a cumulatively considerable impact.

Response to Comment City-22

The commenter states that there is no substantial evidence in the Draft PEIR that the SWRP would stabilize groundwater basins and minimize overdraft and, thereby, would remove the threat of inadequate water supplies in terms of stymieing population growth. The DEIR does conclude that the Recommended Strategy would help to remove water supply availability as one obstacle to further development and population growth, in accordance with local planning documents, within PWD boundaries. Provision of adequate water supply is required, per Senate Bill 610 and Assembly Bill 221, for approval of new development above a certain size. Once proposed SWRP water supplies are secured and necessary facilities are developed, PWD would be able to confirm availability of supply necessary to meet City of Palmdale and Los Angeles County General Plan growth projections.

Responses to Comments City-12 and City-13 address groundwater overdraft conditions, the adjudication, and the potential limitations to future groundwater development. Should groundwater restrictions be established and water supply limited to a greater extent than proposed in the Recommended Strategy, the Recommended Strategy would not fully remove impediments to future growth and additional water supply planning would be needed. In this case, the potential secondary impacts presented in the DEIR would be lower than anticipated. This does not warrant further analysis under CEQA.

CEQA does not obligate PWD to revise or update its SWRP based on the outcomes of future adjudication or litigation; the DEIR is based on the existing setting at the time the DEIR is published. Therefore, Mitigation Measure GROWTH-1 has not been revised. Should future actions impact the Recommended Strategy, those changes will be reflected in any project-level analysis conducted for specific program components.

Response to Comment City-23

The commenter suggests that the Draft PEIR does not provide sufficient information on each alternative to allow for a meaningful comparison of the proposed program against the alternatives. The Draft PEIR contains a reasonable range of alternatives that are analyzed at a level of adequacy required under CEQA. Table 6-3 is a matrix comparison of the proposed program to each alternative with respect to program objectives and impacts on particular resources. In addition, Section 6.9 discusses the differences in the degree of impacts of the alternatives as compared to the proposed program.

Response to Comment City-24

The commenter states that the topic of irreversible environmental changes has not been addressed in the Draft PEIR and the PEIR needs to be revised accordingly. The subject matter was inadvertently omitted from the Draft PEIR at the time of circulation. A new Chapter 5A has been added to the Final PEIR to address this issue. Sources and uses of resources and the proposed program's potential direct and indirect, temporary and permanent impacts on these resources are covered under Chapter 3 of the Draft PEIR. The evaluation of irreversible environmental changes associated with the proposed program does not change the findings in Chapter 3 of the Draft PEIR, and does not result in new significant environmental impacts.

Response to Comment City-25

The commenter states that the Draft PEIR must be recirculated because the document is inadequate under CEQA and addressing the commenter's previous comments will result in the finding of new significant environmental impacts. Please see Response to Comment City-1.

Response to Comment City-26

The commenter reiterates that the Draft PEIR is deficient under CEQA and needs to be recirculated. Please see Response to Comment City-1.

CHAPTER 10
Revisions to the Draft PEIR

This chapter presents revisions to the Draft PEIR based on comments received during the formal comment period. The following corrections and changes are made to the Draft PEIR, and are incorporated herein as part of the Final PEIR. Revised language or new language is underlined. Deleted language is indicated by ~~strikethrough~~ text. Revisions in this chapter do not change any of the conclusions presented in the Draft PEIR.

10.1 Revisions to Draft PEIR in Response to Comments Received

The changes below were made to the Draft PEIR in response to comments received. These corrections and clarifications do not significantly alter the proposed program, change the Draft PEIR's significance conclusions, or result in a conclusion that substantially more adverse environmental impacts will result from the proposed program.

Specifically, *CEQA Guidelines* Section 15088.5 requires the lead agency to recirculate an EIR only when significant new information is added to the EIR after public notice is given of the availability of the Draft EIR for public review. New information added to an EIR is not significant unless the EIR has 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 that the project's proponents have declined to implement (*CEQA Guidelines* Section 15088.5).

In summary, significant new information consists of: (1) disclosure of a new significant impact; (2) disclosure of a substantial increase in the severity of an environmental impact; (3) disclosure of a feasible project alternative or mitigation measure considerably different from the others previously analyzed that would clearly lessen environmental impacts of the project, but the project proponent declines to adopt it; and/or (4) the Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded (*CEQA Guidelines* Section 15088.5). Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications to an adequate EIR (*CEQA Guidelines* Section 15088.5).

The changes below present information that clarifies the scope of the proposed program and the analysis of the proposed program's impacts, but do not fundamentally alter the significance conclusions presented in the Draft PEIR circulated for public review. Additionally, the changes

present information and analysis in response to requests from commenters. This analysis, however, merely provides further details on the analysis already provided in the Draft PEIR.

Page ii of the Table of Contents:

Page ES-3, text revised:

Imported Supplies

Under the Recommended Strategy, PWD would acquire up to approximately 37,000 AFY by 2035, by acquiring new surface water ~~rights~~ supplies through permanent transfers, multi-year leases, and short-term transfers. The initial 10,000 AFY of new imported water supply would maximize PWD's current Table A allocation of 21,300 AFY on an annual basis and would make use of PWD's existing remaining capacity in the aqueduct.[1] Amounts over and above the initial 10,000 afy, up to 25,000 afy, would be acquired through permanent transfers or multi-year leases of other state water contractors' Table A allocations, which would require PWD to acquire or otherwise access additional aqueduct capacity of those contractors. The last increments of imported water could be acquired through additional transfers or leases; through a proposed delta conveyance project or other SWP improvements that could lead to an increase in SWP allocations; through acquisition of pre-1914 surface water rights; or through other short-term transfers of wet year water when available. These water supplies likely would be wheeled through the SWP when capacity is available.

Page ES-4, text revised:

To achieve an expanded allocation of imported water supplies, additional aqueduct turnout and additional conveyance and storage facilities would be needed. This would include turnouts on the East Branch of the California Aqueduct or Lake Palmdale; pipelines to convey raw SWP water to existing or new storage tanks, surface impoundments, recharge facilities, or surface water treatment facilities; and booster pump stations. Agreements would be executed between PWD, DWR, and other applicable interested parties, as needed, to obtain the additional imported supplies as described under the SWRP Recommended Strategy in this PEIR.

Page 2-4, text revised:

Action 1: New Imported Supplies

Under the Recommended Strategy, PWD would acquire approximately 25,000 AFY of additional imported supplies by 2020 and 37,000 AFY by 2035, by acquiring new

[1] In essence, the first 10,000 AFY of imported supply would make use of PWD's existing remaining capacity in the aqueduct (approximated as the difference between PWD's current Table A allocation of 21,300 AFY and current average PWD withdrawal from the aqueduct of approximately 12,000 AFY).

imported water ~~rights~~ supplies through permanent transfers, multi-year leases, and short-term transfers. Additional supplies could also be made available through a proposed delta conveyance project and other SWP improvements that could lead to an increase in SWP allocations. PWD would also consider short-term transfers of wet year water when available. Agreements would be executed between PWD, DWR, and other applicable interested parties, as needed, to obtain the additional imported supplies as described under the SWRP Recommended Strategy in this PEIR.

Page 2-6, text revised:

Action 2: Recycled Water Master Plan for Non-Potable Uses

Potential recycled water users and uses have been identified in the Palmdale region, including municipal, industrial, and private agricultural end users, and groundwater recharge (RMC, 2009). The Recommended Strategy includes implementation of a Recycled Water Master Plan (RWMP) that would deliver 2,800 AFY of non-potable water to end users such as golf courses, parks, schools and local farmers, through a series of local distribution pipelines and laterals, storage tanks, and pump stations. Potential environmental impacts associated with implementation of the RWMP were evaluated in the PWD Recycled Water Master Plan Mitigated Negative Declaration (MND) (PWD, 2010). The MND for the RWMP was circulated for public review for a 30-day period that ended on March 1, 2010 (SCH No. 2010011089). Certification of the MND and approval of the RWMP are ~~is~~ pending a determination of the recycled water purveyor within the limits of the City of Palmdale, which is currently the subject of litigation between PWD and the City of Palmdale. If that litigation determines that the City of Palmdale is to be the recycled water provider to those parts of PWD that lie within the City's boundaries, then the RWMP and MND will be revised accordingly. ~~The MND for the RWMP is hereby incorporated by reference into this PEIR, including all mitigation measures.~~

Page 2-15, text revised:

Energy Consumption

Operation of the proposed program ~~project~~ would result in an increase in energy consumption, requiring approximately 25 million kilowatt hours (kWh) per year to run the treatment plant (assuming operation 50 weeks per year) and approximately 285 kWh per year to run each well. Assuming the Recommended Strategy would involve construction and operation of up to ~~100~~102 new wells, up to 28,500 kWh per year would be required to operate the new wells.

Pages ES-15 and 3.3-20, revised text under Impact 3.3-4 discussion:

Impacts to Joshua trees and other native plant species would be considered less than significant with the implementation of **Mitigation Measures BIO-4a through BIO-4~~d~~e**.

…

BIO-4e: The design and implementation of identified project components in the SWRP and related CEQA documentation shall comply with Chapter 14.04 of the City of Palmdale Municipal Code, or any successor ordinance.

Page 3.5-4, text added immediately following the "Expansive soils" discussion:

Land Subsidence

According to DWR (2004), groundwater pumping in the Antelope Valley Groundwater Basin has led to subsidence of the ground surface. Earth fissures have appeared as a result in Lancaster and on Edwards Air Force Base. By 1992, 292 square miles of the Antelope Valley had subsided more than one foot (DWR, 2004). This subsidence has permanently reduced aquifer-system storage by about 50,000 acre-feet (DWR, 2004 and references cited therein).

Pages ES-18 and 3.5-18, revised text under Impact 3.5-3, "Soil Stability" discussion:

With respect to land subsidence, the Program area and its vicinity has been subject to land subsidence resulting from withdrawal of underlying groundwater. As discussed previously, land subsidence in portions of the basin, in particular in the vicinity of Lancaster, has been sufficient to create surface fissures. Land subsidence occurs as a direct result of lowering groundwater levels beyond their historic range, such that aquifer sediments irreversibly compact. Thus, land subsidence is a direct result of groundwater overdraft. Avoidance of continued groundwater drawdown would thereby result in avoidance of further land subsidence. As discussed in Chapter 3.7, Impact 3.7-2, implementation of Mitigation Measure HYD-5 would ensure that the SWRP would not result in further drawdown of the aquifer. Therefore, implementation of mitigation measure HYD-5 would also ensure that potentially significant impacts associated with land subsidence would be avoided.

Mitigation Measures

~~None required.~~ Implement Mitigation Measure HYD-5.

Impact Significance After Mitigation: Less than Significant.

Page 3.5-2, reference added:

California Department of Water Resources, 2004. Antelope Valley Groundwater Basin. California's Groundwater Bulletin 118.

Page 3.6-1, "Environmental Database Review" discussion:

The records search revealed multiple listed and active sites within the program ~~project~~ area, including the United States Air Force Plant 42, which is on the Cortese List – a list of hazardous waste facilities subject to corrective action. The Antelope Valley Environmental Collection Center is a hazardous and electronic hazardous waste ~~site~~ collection center for household hazardous waste that is owned and operated by the Los Angeles County

Department of Public Works, and located within the City of Palmdale. A specific search for this site determined that it is not listed as an active spill site, and has no record of previous hazardous materials-related spills.

Page 3.6-15, Impact 3.6-3, "Hazardous Materials Near Schools" discussion:

Adherence to requirements set forth in **Mitigation Measures HAZ-1** and **HAZ-2** would ensure that potential risks to sensitive receptors at schools due to accidental release or discovery of hazardous materials are managed through containment, disposal, and/or other responses. All response measures shall be in compliance with federal and California OSHA regulations for hazardous materials, which would ensure that risks to the public are minimized to less than significant levels.

Page 3.6-17, revised Mitigation Measure HAZ-4:

HAZ-4: Maintain Emergency Access During Construction. In conjunction with **Mitigation Measure TR-1,** prior to initiating construction of proposed facilities, PWD shall prepare and implement a Traffic Control Plan that contains comprehensive strategies for maintaining emergency access during construction. Strategies shall include, but are not limited to, maintaining steel trench plates at the construction sites to restore access across open trenches and identification of alternate routing around construction zones. In addition, police, fire, and other emergency service providers shall be notified of the timing, location, and duration of the construction activities and the location of detours and lane closures. The PWD shall ensure that the Traffic Control Plan and other construction activities are consistent with the Los Angeles County Operational Area Emergency Response Plan. The PWD shall coordinate with the City of Palmdale and Los Angeles County in obtaining approval of the Traffic Control Plan and any necessary encroachment permits.

Page 3.7-4, text added to end of "Groundwater" discussion and within "Groundwater Overdraft" discussion:

DWR's Bulletin 118 for the AVGB indicates that from 1975 to 1998, groundwater levels within the AVGB fluctuated from an increase of 84 feet to a decrease of 66 feet (DWR, 2004). Bulletin 118 also reports that in the early 1990s, approximately 25,803 acre-feet (AF) of water was extracted for urban purposes (year 1995 data) and 1,006 AF of groundwater was extracted for agricultural purposes (year 1992 data) (DWR, 2004).

Modeling completed as part of development of the SWRP indicated that the current sustainable level of pumping for PWD is approximately 12,000 acre-feet per year given existing conditions within the AVGB (RMC, 2010). Modeling efforts also demonstrated that the availability of groundwater supplies does not vary substantially on an annual basis (RMC, 2010). Recent groundwater pumping data show that PWD has produced approximately 10,310 AF of groundwater per year since 1995 (PWD, 2011). PWD currently operates twenty-five (25) active wells within its service area, which all pump water from the AVGB (PWD, 2011). Specifically, twelve (12) groundwater wells pump from the Lancaster Sub-unit, ten (10) wells pump from the Pearland Sub-unit, and three (3) wells pump from the San Andreas Rift Zone (PWD, 2011).

Groundwater Overdraft

Severe groundwater overdraft has occurred in portions of the region, including Antelope and Victor Valleys in the South Lahontan Basin (Lahontan RWQCB, 2005a). Implementation of the SWP in the 1970s resulted in stabilization of groundwater levels in some areas of the Antelope Valley, though groundwater levels in general have continued to fall. From the 1990s to present, agricultural uses have significantly increased groundwater production and exacerbated the drop in groundwater levels across the basin (Los Angeles County Waterworks District No. 40 and Quartz Hill Water District, 2011). In 1999, agricultural interests filed litigation seeking to determine rights to groundwater (see Adjudication below). In September 2010, as part of the ongoing adjudication proceedings, Judge Jack Komar determined that the "safe yield" of the basin is 110,000 acre-feet per year (AFY) and that the basin has been in a state of overdraft for over 50 years.

Page 3.7-4, text added immediately following the "Groundwater Overdraft" discussion:

Adjudication

The Antelope Valley Groundwater Cases (Superior Court of California, County of Santa Clara, 2005) involve hundreds of parties in a consolidated case, that includes two class action lawsuits (Case #1-05-CV-049053), and includes many Antelope Valley property owners. The groundwater litigation has proceeded to-date in three phases:

1. *Phase 1 – Determination of geographical jurisdictional limits.* In November 2006, Superior Court Judge Jack Komar concluded that the alluvial basin as described in DWR Bulletin 118 should be the basin jurisdictional boundary for the purposes of the limitation (Superior Court of California, County of Santa Clara, 2006).

2. *Phase 2 – Hydrologic nature of Antelope Valley.* In November 2008, Judge Komar concluded that there is sufficient hydrologic connection between all groundwater sub-basins in Antelope Valley that all shall be included within the adjudication area (Superior Court of California, County of Santa Clara, 2008).

3. *Phase 3 – Status of aquifer and overdraft condition.* In September 2010, Judge Komar determined that the "safe yield" of the basin is 110,000 AFY and that the basin has been in a state of overdraft for over 50 years (Superior Court of California, County of Santa Clara, 2011).

Although the Superior Court has found that the AVGB is in overdraft, there are not yet restrictions on pumping and the basin's water rights have not yet been adjudicated. However, if the adjudication case does not settle before any later phases of the trial, those later phases are expected to result in rulings regarding the prescriptive groundwater rights of the purveyors, and setting forth the terms of a physical solution.

Page 3.7-4, text added immediately following "Groundwater Quality" discussion:

Recycled Water

Recycled water is not currently available within the program area. However, multiple jurisdictions, including PWD, Los Angeles County Sanitation Districts (LACSD), City of Palmdale, City of Lancaster, and Los Angeles County Waterworks District No. 40 (LACWWD40), are working on activities that would potentially provide recycled water within the program area.

As proposed in the Recommended Strategy, PWD is completing multiple activities that would allow distribution of recycled water for groundwater recharge, landscape irrigation, and other non-potable uses. PWD anticipates providing approximately 1,000 AF of recycled water by 2015, and approximately 12,000 AF by 2035 (PWD, 2011). Wastewater that would potentially become recycled water within PWD's service area is currently collected and treated by LACSD (PWD, 2011). All PWD activities associated with the provision, treatment, and use of recycled water would be addressed in separate project-level environmental review.

The City of Palmdale does not currently provide recycled water service, but has a goal of providing 2,000 AF of recycled water within its jurisdiction (City of Palmdale, 2011). In 2009, the City of Palmdale took actions that would allow it to operate and maintain the wastewater collection system that serves its jurisdiction from the Los Angeles County Department of Public Works Sewer Maintenance District (City of Palmdale, 2009). The City of Palmdale in 2009 also adopted a resolution that declared it to be the recycled water provider to all areas within its boundaries that are not served by LACWWD40. PWD and the City are now engaged in litigation regarding the City's right to provide recycled water service within PWD's existing service area. In connection with the City's efforts to provide recycled water, it is also working with LACWWD40 to design and construct facilities that would allow the City to connect to the Antelope Valley Backbone, which is a multi-jurisdictional recycled water conveyance system within and in proximity to the program area (Los Angeles County Waterworks District No. 40 and Quartz Hill Water District, 2011).

Page 3.7-8, text added:

Local

Antelope Valley Areawide General Plan

The *Antelope Valley Areawide (AVA) General Plan* was developed by the County of Los Angeles in 1986 to address coordinated general planning issues within the Antelope Valley Area. The *AVA General Plan* applies to unincorporated areas within the Antelope Valley, within proximity to the metropolitan areas of Lancaster, Palmdale, and Quartz Hill. The *AVA General Plan* (County of Los Angeles Department of Regional Planning, 1986) includes the following policies addressing water quality, water supply, and flooding:

Policy 15: Designate areas of the 100-year flood as delineated on mapping provided by the Federal Emergency Management Agency of the Federal Insurance Administration or areas mapped by the (Los Angeles) Department of Public Works as "Flood Plain Management Area."

Policy 23: Protect underground water supplies by enforcing controls on source pollutants.

Policy 39: Ensure conservation of natural resources through the establishment of public programs to encourage continued agricultural production and to control energy consumption, mineral extraction, groundwater recharge, construction, and other public private activities which affect the future availability and quality of such resources.

Policy 101: Develop and use groundwater sources to their safe yield limits.

Policy 102: Use imported water, when available, to relieve overdrafted groundwater basins and maintain their safe yield for domestic uses outside of urban areas.

Policy 103: Encourage utilization of flood waters and reclaimed wastewater for groundwater recharge.

Policy 108: Permit the use of floodways for those recreational uses not involving structures or improvements (except checkdams) that could obstruct the natural flow of floodwater.

Policy 109: Prohibit expansion of existing structures (other than checkdams or other flood control facilities) in floodways.

Policy 110: Require that all newly constructed residences and public facilities located in the flood fringe be suitably flood-proofed.

Policy 114: As an interim policy, pending construction of regional drainage facilities, require installation of appropriate systems and facilities to retain the increase in storm runoff due to development on the project site or equivalent mitigating measures.

Policy 133: Protect the viability of surface water since it provides a habitat for fish and other water-related organisms, as well as being an important environmental components for land-based plants and animals.

Policy 145: Maintain, where feasible, aquifer recharge zones to assure water quality and quantity.

Policy 148: Protect and manage watershed areas to maximize water yield in combination with public needs for fire protection, maintenance of habitat, and recreation.

Policy 149: Encourage a sustained yield management approach for renewable resources which includes consideration of watershed conservation, scenic quality, habitat protection, and recreation.

Page 3.7-14, text added:

ASR Injection Facilities

To fulfill groundwater pumping goals set as part of the Recommended Strategy, PWD would install aquifer storage and recovery (ASR) wells to increase the amount of additional imported water that would be stored in the local groundwater basin. ASR wells would be used for both injection of treated imported water into the groundwater aquifer and extraction of stored groundwater. PWD anticipates constructing between four (4) and twelve (12) ASR wells with a total maximum injection capacity of 6,000 gallons per minute by 2035, and has identified potential areas to install these wells within the North Well Field and the East Well Field areas (refer to Figure 2-1).

Page 3.7-22, revised Mitigation Measure HYD-4:

HYD-4: Groundwater Injection Operations Protocol. PWD shall prepare a protocol for the injection and extraction of stored groundwater to define operational parameters and conditions under which injection and/or extraction operations are to be modified and/or cease. This protocol shall be dependent on the specific site conditions selected for the injection wells. This protocol shall be implemented in order to minimize any potential impacts to the AVGB that may result in significant changes to either groundwater quality (i.e. increased concentrations of constituents of concern) and/or groundwater levels (i.e. decreased groundwater levels resulting in adverse impacts such as land subsidence).

Page 3.7-22, revised text under Impact 3.7-2, "Groundwater Supplies" discussion:

Operation of the proposed program ~~project~~ would involve groundwater storage and recovery as required to store additional water supplies generated as a result of implementation of the Recommended Strategy. Additional water supplies may include imported water from the SWP, treated surface water sources from Lake Palmdale, and recycled water produced by LACSD No. 20. Recharge activities are anticipated to occur in and alongside existing stream channels, as well as several off-stream basins (refer to Figure 2-1). Water may be recharged until water levels rise to ground surface, at which time no additional recharge is possible. ~~The project will involve extraction of as much water as is recharged, and therefore is not anticipated to change the overall water balance within the AVGB.~~

Modeling efforts demonstrated that the existing pumping capacity of the AVGB would allow PWD to pump approximately 12,000 AFY. It is possible that through adjudication of the AVGB and other potential circumstances regarding the AVGB, PWD's estimated pumping capacity may be reduced in the future. As such, groundwater recharge, recovery, and banking activities proposed as part of the SWRP are designed to function independently of the existing capacity of the AVGB, and are not anticipated to change the overall water balance of the AVGB. One of the goals of the SWRP is to implement activities that would increase PWD's groundwater supplies by 35,000 AFY by 2035.

Under program ~~project~~ conditions, as much as 105,000 AF of treated water will be recharged over a three year period ~~month period once every three years~~, and that would therefore result in an average annual artificial recharge of 35,000 AFY. Therefore, because PWD would only extract up to as much water as is recharged (35,000 AFY), the program is not anticipated to change the overall water balance within the AVGB regardless of existing conditions.

Furthermore, recharge activities are not anticipated to substantially lower the local groundwater table. Recharged water is anticipated to be extracted using existing wells, as well as ~~through~~ up to ~~66~~102 newly constructed wells.

Page 3.7-23 – 3.7-24, revised Mitigation Measure HYD-5:

~~**HYD-5: Groundwater Supply Monitoring Program.** As specific groundwater recharge and extraction projects are developed, PWD shall implement a Groundwater Supply Monitoring Program to ensure that implementation of the SWRP does not pose a significant threat to groundwater supplies within the AVGB. This program shall include modeling efforts that will identify and assess water level fluctuations near proposed project facilities. The program shall also provide details regarding existing wells located near project facilities, including structural details, well use, and operational characteristics (including pumping rates and associated drawdown). Results of detailed modeling in these areas shall be used to assess potential site-specific impacts.~~

~~In the event that modeling efforts demonstrate that potential impacts to local groundwater supplies would occur as a result of implementation of the SWRP, PWD shall implement all necessary actions to mitigate for this impact. Such mitigation may include deepening wells or pump settings, and/or supplying local well users with water from project wells at times when drawdown from their wells is excessive.~~

HYD-5: Groundwater Monitoring and Management Program. PWD shall manage its groundwater banking activities such that no net loss of groundwater occurs. Prior to the initiation of construction of any individual groundwater banking project, PWD shall prepare and adhere to the requirements of a Groundwater Monitoring and Management Program (GMMP). The purpose of the GMMP will be to ensure that implementation of the SWRP does not result in a net depletion in groundwater storage or a significant reduction in groundwater levels in the vicinity of SWRP facilities. The GMMP shall employ monthly monitoring of groundwater wells and groundwater levels around SWRP recharge and extraction facilities. The number of monitoring wells and their locations shall be defined in the GMMP. The number and location of monitoring wells shall be such that it will enable accurate characterization of groundwater levels on an ongoing basis and determine the area of potential effect (APE) around SWRP recharge and extraction.

Program operations shall be scheduled such that groundwater levels would not be reduced below an explicit threshold level to be defined in the GMMP. The threshold shall

be based on: (1) the ability of groundwater levels to recover to their lowest recorded drawdown levels by spreading water over a two-year period; (2) the potential for groundwater withdrawals to impede access to groundwater at neighboring wells within the APE, and (3) any adjudication requirements or other legal agreements associated with the Antelope Valley Groundwater Basin. In the event that groundwater levels are reduced to below the threshold, pumping shall be curtailed until such time as water levels again surpass threshold levels. The method for curtailing pumping shall be detailed in the GMMP.

Page 3.7-28 – 3.7-29, references added:

City of Palmdale. 2009. *Palmdale Sewer Maintenance District – Sewer System Management Plan.* Prepared for the City of Palmdale by RMC Water and Environment in association with Larson Consulting. May 2009. Available: http://www.cityofpalmdale.org/departments/publicworks/engineering/Palmdale%20Sewer%20System%20Management%20Plan.pdf

City of Palmdale. 2011. *City of Palmdale Public Works, Recycled Water* (webpage). Retrieved December 1, 2011. Available: http://www.cityofpalmdale.org/departments/publicworks/utilities/index.html

Los Angeles County Department of Regional Planning. 1986. *Antelope Valley Areawide General Plan – A Component of the Los Angeles County General Plan.* Available: http://planning.lacounty.gov/assets/upl/data/pd_antelope-valley.pdf

Palmdale Water District. 2005. *Palmdale Water District 2005 Urban Water ~~Master~~ Management Plan.* Prepared for the Palmdale Water District by Carollo Engineers. December 2005. Available: http://scag.ca.gov/rcp/pdf/uwmp/LosAngeles/Palmdale2005_UWMP.pdf

Palmdale Water District. 2011. *Palmdale Water District 2010 Urban Water Management Plan.* Prepared for the Palmdale Water District by RMC Water and Environment. June 2011. Available: http://www.palmdalewater.org/PDF/Reports_Studies/Planning/Final_2010_UWMP.pdf

RMC Water and Environment (RMC). 2010. *Final Technical Memorandum – Strategic Water Resources Plan: Alternatives Analysis.* Prepared for the Palmdale Water District by RMC Water and Environment. March 2010.

Superior Court of California, County of Santa Clara. 2005. *1-05-CV-049053: Antelope Valley Groundwater Cases (JCCP 4408).* Filed September 22, 2005. Available: http://www.scefiling.org/cases/casehome.jsp?caseId=19

Superior Court of California, County of Santa Clara. 2006. *Order After Hearing on Jurisdictional Boundaries, signed by Judge Jack Komar*. Filed November 3, 2006. Available: http://www.scefiling.org/document/document.jsp?documentId=919

Superior Court of California, County of Santa Clara. 2008. *Order After Phase Two Trial on Hydrologic Nature of Antelope Valley, signed by Judge Jack Komar*. Filed

November 12, 2008. Available: http://www.scefiling.org/document/document.jsp?documentId=17954

Superior Court of California, County of Santa Clara. 2011. *Statement of Decision Phase Three Trial, signed by Judge Jack Komar*. Filed July 13, 2011. Available: http://www.scefiling.org/document/document.jsp?documentId=49786

Page 3.8-20, revised text:

Once PWD develops specific transfer or lease agreements, additional CEQA documentation ~~may~~ shall be prepared to evaluate the ~~indirect~~ effects to agricultural resources, if any.

Page 3.10-7, revised Mitigation Measure REC-1:

REC-1: For implementation actions that would construct new facilities on public lands designated as open spaces or parkland, PWD shall obtain approval from ~~coordinate with~~ the appropriate recreation or park agency prior to construction of any new facilities. This shall include approval from the City of Palmdale for any new facilities proposed to be located on City-owned lands. ~~to identify ways~~Measures to minimize impacts of project construction and operation on recreational activities~~. Measures~~ may include but are not limited to:

Page 3.10-7, revised Mitigation Measure REC-2:

REC-2: For implementation actions that would construct pipelines or other new facilities within designated bikeways, PWD shall obtain approval of the circulation and detour plans from ~~coordinate with~~ the applicable agency with jurisdiction over the affected bikeways prior to construction of any new facilities, ~~to determine whether the circulation and detour plans are required~~ to minimize access impacts ~~to access~~ to local bikeways. Circulation and detour plans may include the use of signage and flagging of cyclists through and/or around the construction zone.

Page 3.11-10, revised Mitigation Measure TR-1:

TR-1: PWD shall require the construction contractor to prepare and implement a Traffic Control/Traffic Management Plan subject to approval by the appropriate local jurisdiction prior to construction. The plan shall:

- Comply with the California Manual of Uniform Traffic Control Devices, latest edition.
- Identify the layout of the traffic measures, lane closures, turn restrictions, and detours.
- Identify hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance on traffic flow.
- Specify both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption.
- Identify limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements.

- Identify all access and parking restrictions.
- Maintain access and minimize disruption to residence and business driveways at all times to the extent feasible.
- Layout a plan for notifications and a process for communication with affected residents and businesses prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints;
- For construction activities within one-quarter mile of a school facility, include a plan to coordinate all construction activities with the Antelope Valley Union High School District and Palmdale School District, at least two months in advance. The Antelope Valley Union High School District and the Palmdale School District shall be notified of the timing, location, and duration of construction activities. The implementing agencies shall require its contractor to maintain vehicle, pedestrian, and school bus service during construction through inclusion of such provisions in the construction contract; and
- Specify street restoration requirements pursuant to agreements with the local jurisdictions.

Page 4-7, revised text under Impact 4-4, "Hydrology and Water Quality – project construction" cumulative impacts discussion:

The contribution of the proposed program ~~project~~ to short-term hydrology and water quality impacts would be less than significant after implementation of the aforementioned mitigation measures, and therefore the proposed program's incremental effect would not be cumulatively considerable.

Page 4-8, revised text under Impact 4-5, "Groundwater Quality" cumulative impacts discussion:

Other projects would be subject to similar regulations as the projects that comprise the proposed program ~~project~~ and likely would be required to implement monitoring programs and participate in the AVGB Salt and Nutrient Management Plan as well. In addition, other projects would be required to adhere to regulations associated with the California Anti-Degradation Policy (Resolution Number 68-16), which requires that water quality within water sources such as the AVGB be maintained to the maximum extent possible. With implementation of Mitigation Measures HYD-2, HYD-3, and HYD-4, the proposed program ~~project~~ would have an incremental effect that would not be considered ~~have a~~ cumulatively considerable ~~impact on~~ regarding groundwater quality due to recharge of imported or treated water.

Page 4-9, revised text under Impact 4-6, "Groundwater Levels" cumulative impacts discussion:

Groundwater Levels

Impact 4-6: Operation of the proposed groundwater recharge and recovery facilities together with similar projects in the Antelope Valley could result in cumulative impacts to groundwater levels. (Less than Significant with Mitigation)

Operation of the proposed program ~~project~~ would result in recharge of up to 105,000 AF of water ~~over a three month period once~~ every three years, or an average annual recharge of up to 35,000 AFY. Recharged water may include imported water from the SWP, treated surface water sources from Lake Palmdale, and recycled water produced by LACSD No. 20. Imported water from the SWP would be obtained through water transfers or purchases of existing rights, and therefore would not require additional allocations or result in activities that would cumulatively impact existing SWP water users. Treated surface water sources from the Little Rock Reservoir and recycled water produced by LACSD No. 20 would be considered in separate environmental impact analyses. As indicated within this PEIR, if the water rights or permitting necessary to obtain recycled water and treated surface water are not available to PWD at time of implementation, such activities would not be implemented and potential impacts would not occur. As such, the use of treated surface water and recycled water would not cumulatively impact existing water users, and any project-specific impacts associated with such water sources would be addressed further in project-level environmental documents.

Recharge activities are anticipated to occur in and alongside existing stream channels, as well as several off-stream basins (refer to Figure 2-1). Recharged water is anticipated to be extracted using existing wells, as well as ~~through up to 66~~ from 64 to 102 newly constructed wells. The proposed program ~~project~~ would involve extraction of as much water as is recharged and therefore is not anticipated to change the overall water balance within the AVGB. When considered together with other groundwater recharge/recovery projects in the Antelope Valley, the proposed program ~~project~~ would not affect groundwater levels in a manner that would be cumulatively considerable on a regional, long-term basis. As indicated in detail within Chapter 3.7, modeling efforts have indicated that groundwater recharge and recovery activities associated with the Recommended Strategy would not appreciably change water levels within the AVGB compared to existing conditions. Modeling of the AVGB demonstrates that groundwater levels within the AVGB have an existing fluctuation of approximately 10 feet, which would be maintained after implementation of groundwater recharge and extraction activities associated with the Recommended Strategy. ~~In addition, the intent of the proposed project is to recharge water in excess of extraction in order to correct for existing overdraft conditions in the AVGB. This would be considered a benefit to the basin.~~

At a localized level, proposed recharge and extraction facilities associated with the Recommended Strategy could be located near similar facilities for other related projects. As a result, when considered together, the projects could have cumulative impacts on groundwater levels, either in the form of groundwater mounding or lowering of the groundwater table due to simultaneous well operation and groundwater extraction. The

potential for the proposed program ~~project~~ together with related projects to impact local groundwater levels ~~may~~ will be evaluated in subsequent CEQA documentation as specific surface spreading facility locations and well locations are identified and operational protocols are developed. Implementation of **Mitigation Measure HYD-5** (as described in Chapter 3.7, Hydrology and Water Quality) would ensure impacts to groundwater levels due to the simultaneous operation of geographically-proximate recharge and/or recovery projects are ~~modeled~~ monitored and evaluated. Furthermore, Mitigation Measure HYD-5 requires PWD to adhere to all requirements set forth within any judgment or other legal agreements pertaining to the AVGB, such as adjudication agreements or a stipulated judgment. Mitigation Measure HYD-5 also contains performance-level requirements that will prohibit PWD from completing groundwater recharge and recovery activities that would result in withdrawals from the AVGB beyond its sustainable yield. With implementation of Mitigation Measure HYD-5, the proposed program would have an incremental effect that would not be considered cumulatively considerable regarding groundwater levels due to potential groundwater recharge, recovery, and banking activities.

Chapter 5A has been added to the Draft PEIR. The Table of Contents also reflects this addition. Chapter 5A is incorporated herein and made a part of this Final PEIR. Page 5A-1 now marks the start of Chapter 5A:

CHAPTER 5A
Irreversible Environmental Changes

Section 15126.2(c) of the *CEQA Guidelines* requires a discussion of any significant irreversible environmental changes that would be caused by a proposed project, including the use of non-renewable resources. This section has been added subsequent to the publication of the Draft PEIR to address this topic. The commitment of resources and potential environmental impacts associated with the proposed project is discussed in greater detail in Chapter 3 of the Draft EIR. No new significant environmental impacts have been identified as a result of the analysis below.

Approach

Significance Threshold

For purposes of this section, per Section 15126.2(c) of the *CEQA Guidelines*, a project would result in an irreversible and irretrievable commitment of resources if it:

- Involves a large commitment of non-renewable resources;
- Creates primary and secondary impacts that would generally commit future generations to similar uses;
- Involves uses in which irreversible damage would result from any potential environmental accidents associated with the project; or
- Proposes consumption of resources that were not justified (e.g., the project involves the wasteful use of energy).

Methodology

The significant irreversible impact analysis consists of an evaluation of construction and operation activities and the identification of any non-renewable resources consumed during these activities. The proposed program calls for acquisition of additional imported water supplies; new groundwater recharge and recovery facilities; aquifer storage and recovery (ASR) wells; potential use of recycled water for agricultural irrigation, groundwater recharge, and other municipal and industrial end uses; expansion of conservation programs; and recovery of storage capacity in Littlerock Reservoir.

Analysis of Commitment of Resources

Biological Resources

Construction and operational activities associated with the proposed program would result in direct and indirect loss of habitat. The removal of vegetation and wildlife habitat in the proposed program area for construction of the spreading basins, pipeline conveyance system, groundwater wells, pump stations, storage tanks, and treatment plant, and the periodic maintenance of the proposed program components, are all considered an irreversible and irretrievable commitment of these resources. Implementation of mitigation measures would ensure resources are not significantly impacted. The proposed program would not be wasteful in acreage affected and would not constitute a commitment of a significant amount of land in the program area.

Geology and Soils

Soil erosion and topsoil loss during and following construction activities of the proposed facilities associated with the proposed program would be reduced per the implementation of mitigation measures to ensure impacts are less than significant, as discussed in Section 3.5. Nonetheless, it is likely that some exposed soils would be removed due to the use of heavy machinery for grading, trenching, well drilling, facilities installation, and other proposed activities. Furthermore, potential increases in erosion could result in changes to nearby topography, drainage patterns, and vegetation patterns. Therefore, construction activities would result in irreversible and irretrievable commitment of losses to geology and soil resources. However, the effect would not be wasteful and would be justified by the utility of the proposed program.

Mineral Resources

Construction of water facilities proposed under the program would involve grading activities that would result in the consumption and loss of sand, gravel, rock and other minerals to fabricate construction materials such as steel and concrete. The extraction of mineral resources for various end uses and purposes, most of them construction and development-related, are considered to be non-renewable resources that will be precluded from future uses. Therefore, construction activities will result an irreversible and irretrievable commitment of losses to mineral resources. However, the use of these materials does not constitute a wasteful use of resources, but would be the intended use of such resources. The use of construction materials is not considered a significant impact.

Public Services and Utilities

Construction and operation of the proposed program would consume fossil fuels, a non-renewable resource to generate energy for vehicles during construction, and to operate pumps for the life of the proposed project. The PWD has determined that the use of energy to provide enough water to meet projected demand (growth serving) and to enhance the reliability of water supply is not a wasteful use of irretrievable resources.

EXHIBIT "C"

FINDINGS AND FACTS IN SUPPORT OF FINDINGS

PALMDALE WATER DISTRICT
STRATEGIC WATER RESOURCES PLAN
(State Clearinghouse No. 2010101091)

I. Description of the Program

The Palmdale Water District (PWD) as the Lead Agency proposes to implement the Strategic Water Resources Plan (SWRP or proposed program). The proposed program would apply to PWD's 47-square mile water district service area, which is located in the Antelope Valley area of Los Angeles County, CA. The SWRP outlines a programmatic plan for developing and diversifying PWD's water supply over the next 25 years through 2035. The SWRP anticipates that during that time, despite the current economic recession, the population within its service area will double. Currently, existing supplies are inadequate to meet the projected demand of a growing population. The SWRP therefore establishes a strategy to match overall annual water demand on a year-to-year basis.

The SWRP identifies a Recommended Water Resource Strategy (Recommended Strategy) that would provide increased water supply reliability and redundancy by increasing the number of water sources available to supplement the system when an individual source of water is unavailable or restricted. The Recommended Strategy calls for acquisition of additional imported supplies; new groundwater recharge and recovery facilities; aquifer storage and recovery (ASR) wells; potential use of recycled water for agricultural irrigation, groundwater recharge, and other municipal and industrial end uses; expansion of conservation programs; and recovery of storage capacity in Littlerock Reservoir.

The SWRP Recommended Strategy would increase potential water supplies in PWD's service area from approximately 30,000 AFY to up to 67,000 AFY to meet projected demand in 2035. The Recommended Strategy consists of two primary components with nine individual but interconnected implementation actions as presented in Table 1.

The proposed program includes some facilities that would be located outside of PWD boundaries in either the City of Palmdale or unincorporated Los Angeles County. Therefore, the "project area" includes both the PWD service area and any outlying areas where program facilities may be built.

TABLE 1

RECOMMENDED STRATEGY IMPLEMENTATION ACTIONS

Water Supply	
1.	Acquire and/or develop new imported supplies
2.	Implement a recycled water system for non-potable uses including irrigation and possibly some industrial
3.	Pursue recycled water exchange program with nearby agriculture in lieu of groundwater pumping
4.	Recover storage capacity in Littlerock Reservoir through sediment removal
5.	Expand conservation programs
Groundwater Storage and Recovery	
6.	Create local raw water spreading facilities to percolate SWP water into the local aquifer
7.	Create aquifer storage and recovery (ASR) wells to inject and extract potable water into the local aquifer
8.	Expand groundwater pumping with new groundwater production wells to achieve a target of delivering 70 percent of demand to customers
9.	Use treated recycled water to replenish the groundwater basin

II. Compliance with the California Environmental Quality Act

PWD is

On August 26, 2011, PWD filed a Notice of Completion (NOC) of the Draft PEIR with the Governor's Office of Planning and Research. A 45-day public review period was established for the Draft PEIR (August 25, 2011 through October 8, 2011). A public meeting was held at PWD on August 31, 2011. A Notice of Availability (NOA) of the Draft PEIR and the date of the public meeting were published concurrently with the distribution of the Draft PEIR. Written comments on the Draft PEIR were received.

PWD has reviewed the written comments received from interested persons, organizations and agencies and prepared detailed responses to the comments directed to significant environmental issues. The comments, responses, and revisions to the Draft PEIR, together with the Draft PEIR, comprise the Final PEIR.

III. Findings Regarding Potentially Significant Environmental Impacts

The PEIR addressed the environmental resources for which the proposed program could result in potentially significant effects: aesthetics; air quality and greenhouse gas (GHG) emissions; biological resources; cultural resources; geology, soils, seismicity, and mineral resources; hazards and hazardous materials; hydrology and water quality; land use, agricultural resources, and forestry; noise; recreation; transportation and traffic; and utilities and public services. According to the results of the PEIR analysis, implementation of the proposed program with proposed mitigation measures would ensure that impacts to the environmental resources would be less than significant.

The PEIR reviewed combined cumulative impacts associated with the proposed program in conjunction with effects of past, present, and reasonably-foreseeable future projects in the same

geographic area. It was noted in the PEIR that the geographic area may vary, depending on the issue area discussed and the geographic extent of the potential impact. The PEIR included a list of past, present, and reasonably foreseeable future capital improvement, development, and other construction projects located in the service area of PWD and the greater Antelope Valley area, depending on the environmental resource being considered. The PEIR analysis concluded that the proposed program would not have any cumulatively significant impacts with the implementation of the proposed mitigation measures.

CEQA provides that when an EIR identifies any significant environmental effects that would occur if the program is approved or carried out, the agency must make a finding or findings for each of the identified significant effects, accompanied by a brief explanation of the rational for each finding. The possible types of findings are:

Finding 1	Changes or alterations have been required in, or incorporated into, the program which mitigate or avoid the significant effects on the environment.
Finding 2	Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
Finding 3	Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.

CEQA provides that when making findings, a public agency must adopt a reporting and monitoring program for the changes to the program that it has adopted or made conditions of approval in order to mitigate or avoid significant program-related impacts on the environment. In accordance with CEQA, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the proposed program. The MMRP is designed to ensure compliance during implementation of the approved program through ongoing monitoring and reporting of adopted mitigation measures as well as environmental commitments incorporated into the program. The primary goal of the MMRP is to ensure that during final design, construction, and operation, the program will avoid or reduce potentially significant environmental impacts.

The facts listed herein in support of findings summarize the basis for the findings, as set forth more fully in the Draft PEIR, Final PEIR, and appendices thereto. For convenience of reference, impacts and mitigation measures are referenced by designations given in the Draft PEIR (*e.g.*, "3.1-1"). The full text of each mitigation measure is contained in the MMRP. By specific topic area, the findings and facts in support of the findings are as follows:

A. Aesthetics

POTENTIAL EFFECTS: Potential effects examined include: the potential to impact scenic vistas [3.1-1]; the potential to impact the visual character or quality of the sites and surroundings [3.1-

2]; and the potential to create a new source of lighting that could affect nighttime views in the area [3.1-3].

FINDINGS: Adherence to the mitigation measures listed in the PEIR will reduce impacts 3.1-1, 3.1-2, and 3.1-3 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.1-1: Construction of recharge facilities currently proposed in areas east of State Route 14, within the Lower Amargosa Creek and along Anaverde Creek, could have potential significant impacts to scenic views from publically-accessible areas along Sierra Highway, a City-designated scenic highway. Mitigation Measure AES-1 would require landscaping and revegetation of recharge basin berms and vegetation screening for ancillary facilities to reduce impacts to less than significant levels. As a result, impacts to scenic vistas would be reduced to a less than significant level.

Construction of conveyance pipelines would be located underground and would not be visible from publically-accessible vantage points. The proposed ASR and productions wells would generally be housed within single-story buildings, with heights of 10 to 15 feet and located in areas that generally are flat, proximate to land already developed, and not expected to obstruct scenic vistas. Impacts would be less than significant.

Production wells generally would be located in more open space areas. Production well housing in the southern portion of Littlerock Creek could be visible from Pearblossom Highway (SR-138) and other production wells would be visible from various public vantage points. Mitigation Measure AES-1 would require a landscape plan for production wells to screen facilities from public view and reduce impacts to less than significant levels. Mitigation Measure AES-2 and AES-3 would require aboveground buildings to be designed to minimize contrasting features and blend with the surrounding landscape. Impacts to scenic vistas would less than significant with mitigation.

The proposed treatment plant could obstruct views of the San Gabriel Mountains when viewed from Pearblossom Highway, a City-designated scenic highway, located north of the proposed location of the plant. Mitigation Measure AES-1 through AES-3 would minimize impacts to a less than significant level.

Impact 3.1-2: Proposed aboveground facilities constructed in urban areas, such as ASR wells, pipelines, and storage tanks, would be constructed on or adjacent to existing developed and built up landscapes. The proposed grade control structure to be constructed within the Angeles National Forest would be submerged for a large percentage of the year and would only be visible during the dry season by visitors of Littlerock Reservoir. Impacts would be less than significant.

Aboveground facilities constructed in open spaces may contrast with the visual character of the area and potentially remove notable desert vegetation. Mitigation Measures AES-1 through AES-3 requires incorporating unique design features for above-ground facilities that would blend structures with the surrounding landscape. Impacts to the visual character of the project sites would be less than significant with mitigation.

Impact 3.1-3: Visible nighttime lighting would be limited to the exterior of the proposed aboveground water facilities. 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. Nighttime construction, such as 24-hour drilling required during construction of new wells, would cause a potentially significant impact. Mitigation Measure AES-5 would require that nighttime construction lighting be shielded and pointed away from surrounding light-sensitive land uses. Recharge basins could result in the potential for glare from reflective surface waters. However, surface waters in the basins would not be visible from neighboring property, and therefore the potential for impacts due to glare is low. The proposed treatment plant could include large uninterrupted expanses of glass or other highly-reflective building material. Implementation of Mitigation Measure AES-6 would ensure the treatment plant is designed to minimize glare or reflection, including non-glare exterior materials or coatings. Currently, the County of Los Angeles does not have an outdoor nighttime lighting ordinance, but an ordinance to establish a "rural lighting" zoning overlay to manage and preserve the natural darkness of night skies was approved on December 14, 2010. Implementation of Mitigation Measure AES-7 would also ensure any future development associated with the proposed program complies with existing and future lighting ordinances. Impacts associated with light or glare would be less than significant with mitigation.

MITIGATION MEASURES: AES-1 through AES-7

B. Air Quality

POTENTIAL EFFECTS: Potential effects examined include: the potential for construction activities to generate short-term emissions of criteria pollutants [3.2-1]; the potential for operational activities to generate criteria air pollutant emissions that would contribute to existing nonattainment conditions and degrade air quality [3.2-2]; the potential to expose sensitive receptors to substantial pollutant concentrations [3.2-3]; the potential to create objectionable odors affecting a substantial number of people [3.2-4]; and the potential to result in cumulatively considerable increases in GHG emissions and conflict with State goals for GHG reductions [3.2-5].

FINDINGS: Impacts 3.2-2, 3.2-3 and 3.2-4 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce impacts 3.2-1 and 3.2-5 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:
Impact 3.2-1: Construction emissions from concurrent construction of all program components during the worst-case year would not exceed the Antelope Valley Air Quality Management District (AVAQMD) daily significance thresholds for reactive organic gases (ROG), CO, $PM_{2.5}$ and PM_{10}. However, emissions of NO_x would exceed daily significance thresholds. Implementation of Mitigation Measures AQ-1a through AQ-1g would ensure impacts are reduced to a less than significant level. Mitigation Measure AQ-1a through AQ-1g requires that general contractors implement a fugitive dust control program; ensure construction equipment is properly tuned and maintained; minimize exhaust emissions during construction activities; use electricity from power poles rather than temporary generators; limit construction vehicle idling to no more

than five minutes; utilize coatings and solvents consisting with applicable rules and regulations; and implement construction of components in non-overlapping phases to minimize daily emissions of NOx. Impacts associated with short-term emissions of criteria pollutants would be less than significant with mitigation.

Impact 3.2-2: Operational emissions would not exceed Antelope Valley Air Quality Attainment Plan (AVAPCD's) thresholds of significance, due to the negligible increase in vehicle trips associated with the Recommended Strategy. Program-generated emissions are not anticipated to result in a substantial contribution to a potential violation of National Ambient Air Quality Standards (NAAQS), California Ambient Air Quality Standards (CAAQS), or the nonattainment conditions. Impacts would be less than significant, and no mitigation measures are required.

Impact 3.2-3: Short-term construction and long-term operational mobile-source impacts of the proposed program on CO concentrations would not result in or contribute to an air quality violation. Long-term operation of the proposed program would not result in any non-permitted sources of toxic air emissions. Impacts would be less than significant, and no mitigation measures are required.

Impact 3.2-4: The proposed program, including the potable water treatment plant, would not have odor emitting operations. Impacts would be less than significant, and no mitigation measures are required.

Impact 3.2-5: The import of additional water and the construction and operation of new pipelines, wells, recharge basins, pump stations, and a potable water treatment plant could be energy intensive. However, the proposed program also includes groundwater recharge, aquifer storage, and recycled water use that would increase the number of local water sources available and require less imported water. This would be considered an inherently energy efficient strategy. Mitigation Measure AQ-2 would require both energy efficient equipment and off-peak operation of the PWD system, both of which would reduce the overall energy requirements associated with the proposed program. Mitigation Measure AQ-3 would require PWD to promote and encourage the use of recycled water as a potable offset to importing water and would reduce the overall energy requirements associated with the Recommended Strategy and with Implementation Action 1. Impacts associated with cumulative increases in GHG emissions would be less than significant with mitigation.

MITIGATION MEASURES: AQ-1 through AQ-3

C. Biological Resources

POTENTIAL EFFECTS: Potential effects examined include: the potential for construction and operation activities to adversely impact candidate, sensitive, or special-status species [3.3-1]; the potential for construction and operation activities to adversely impact wildlife movement or migratory wildlife corridors [3.3-2]; the potential for construction and operation activities to adversely impact special-status plant species [3.3-3]; the potential for construction and operation activities to adversely impact sensitive natural communities [3.3-4]; and the potential for construction and operation to adversely impact riparian habitats [3.3-5].

FINDINGS: Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.3-1 through 3.3-5 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.3-1: Nine special-status wildlife species have the potential to occur in the vicinity of the program. Mitigation Measures BIO-1a through BIO-1g would avoid potential impacts to special-status species or reduce impacts to a less than significant level. Mitigation Measures BIO-1a through BIO-1g would require that prior to construction activities, habitat assessments and pre-construction surveys be conducted to determine the potential for special-status species and listed wildlife species to occur onsite at program component locations. If there is potential for special-status species to occur, then measures to ensure avoidance would be implemented.

Impact 3.3-2: Common and special-status birds, migratory birds and raptors, and bats are known to nest or forage in habitats found within the potential locations for program components. In particular, the federally-endangered least Bell's vireo has potential to occur and has been sighted in areas near Palmdale Lake. The willow riparian habitats that occur along Upper Littlerock Creek may also provide potentially suitable habitat for least Bell's vireo. Implementation of Mitigation Measures BIO-2a and BIO-2b would reduce impacts on common and special-status birds, migratory birds and raptors, and bats to less than significant levels. Mitigation Measure BIO-2a requires a qualified biologist to conduct a pre-construction survey for breeding and nesting birds; active nest sites located during the pre-construction survey shall be avoided with approved non-disturbance buffer zones. Mitigation BIO-2b requires buffer zones to be clearly demarcated prior to ground disturbance activities.

Mitigation Measure BIO-2c requires a qualified biologist to conduct a survey for bat roost sites prior to construction activities and to establish a buffer if a bat roost is identified. Mitigation Measures BIO-2a through BIO-2c would reduce potential direct and indirect impacts to nesting and migratory birds, raptor species, and bats to a level of less than significant. Impacts to migratory birds, raptor species, and bats would be less than significant with mitigation.

Impact 3.3-3: Two special-status plant species found within and nearby the program area include the short-joint beavertail cactus (*Opuntia basilaris ssp. brachyclada*) and sagebrush loeflingia (*Loeflingia squarrosa var. artemisiarum*). In addition, construction may occur in or adjacent to natural communities near Littlerock Creek, which contains native desert habitats. Mitigation Measures BIO-3a through BIO-3f would reduce impacts to special-status plant species to less than significant levels by requiring pre-construction plant surveys, avoidance of any special-status plant species if found, or implementation of a restoration program for any unavoidable impacts to special-status plants. Impacts would be less than significant with mitigation.

Impact 3.3-4: Some Joshua trees, which are considered a threatened community by the CNDDB, may be encroached upon or removed as a result of program-related construction activities. Mitigation Measures BIO-4a through BIO-4e would reduce impacts to Joshua tree woodlands by requiring either avoidance of Joshua trees, development and implementation of a desert vegetation preservation plan, and compliance with Chapter 14.04 of the City of Palmdale Municipal Code. Impacts would be less than significant with mitigation.

Impact 3.3-5: Construction through areas with wetland features or other State jurisdictional features could require RWQCB and CDFG approval. Once project facility locations and designs are determined, Mitigation Measure BIO-5a would require jurisdictional delineations to identify exact locations and areas of impacts to wetlands or other jurisdictional drainages. PWD could be required to obtain California Fish and Game Code Section 1602 compliance in the form of a completed Streambed Alteration Agreement or written documentation from the CDFG that an agreement is not required. Mitigation Measures BIO-5b through BIO-5d would ensure compliance with state and federal regulations relating to potentially jurisdictional features, including desert wash habitat vegetation that may fall under CDFG jurisdiction. Mitigation includes avoidance of wetlands or drainage when feasible or implementation of a restoration plan for unavoidable impacts. Impacts would be less than significant with mitigation.

MITIGATION MEASURES: BIO-1 through BIO-5

D. Cultural Resources

POTENTIAL EFFECTS: Potential effects examined include: the potential for construction activities to adversely affect known and unknown cultural resources [3.4-1]; the potential for construction activities to adversely impact human remains [3.4-2]; and the potential for construction activities to adversely impact known or unknown paleontological resources [3.4-3].

FINDINGS: Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.4-1 through 3.4-3 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.4-1: The project area is characterized as moderately high to highly sensitive for archaeological sites. Once project facility locations are determined, Mitigation Measure CUL-1a would require a cultural resources survey for all components that require ground disturbance. Mitigation Measure CUL-1b would require that a project-specific historic architectural study for affected existing structure of 50 years old or greater. Mitigation Measure CUL-1c requires that PWD avoid cultural resources once identified. Mitigation Measure CUL-1d requires PWD to retain archaeological monitors during ground-disturbing activities. Impacts to cultural resources would be less than significant with mitigation.

Impact 3.4-2: Human remains could be encountered unexpectedly during construction, excavation, and grading activities. Mitigation Measure CUL-2a would reduce impacts to a less than significant level by requiring that no further ground disturbing activities shall occur if human remains are discovered until the County Coroner has made necessary findings as to the origin and disposition of the remains. If the remains are of Native American descent, the Native American Heritage Commission (NAHC) would be notified to identify the Most Likely Descendent and determine the disposition of the remains. Impacts would be less than significant with mitigation.

Impact 3.4-3: Portions of the project area are identified as highly sensitive for paleontological resources. Once project facility locations are determined, Mitigation Measure CUL-3a would require a qualified paleontologist to conduct a paleontological resources study. Mitigation

Measure CUL-3b requires PWD to avoid paleontological resources once identified. Mitigation Measure CUL-3c requires PWD to retain paleontological monitors during ground-disturbing activities. Impacts to paleontological resources would be less than significant with mitigation.

MITIGATION MEASURES: CUL-1 through CUL-3

E. Geology, Soils and Mineral Resources

POTENTIAL EFFECTS: Potential effects examined include: the potential for exposure of people or structures to strong seismic ground shaking or seismic-related ground failure [3.5-1]; the potential for substantial soil erosion or loss of topsoil [3.5-2]; the potential for the program to be located on unstable soil [3.5-3]; the potential for the program to be located on expansive soils [3.5-4]; and the potential for the program to impact known mineral resources [3.5-5].

FINDINGS: Impact 3.5-3 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.5-1, 3.5-2, 3.5-4, and 3.5-5 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.5-1: The proposed program is located in a seismically active area that has potential to experience fault rupture, strong ground shaking and seismic-related liquefaction. All program facilities would be designed in accordance with the recommendations of a site-specific geotechnical investigation and in compliance with the California Building Code (CBC) seismic building code requirements that include criteria to prevent any seismic damage. Implementation of Mitigation Measure GEO-1 would require that a design-level geotechnical investigation be completed prior to the approval of construction plans for any individual project implemented under the proposed program. Impacts would be less than significant with mitigation.

Impact 3.5-2: The areas in which program components may likely be constructed are identified as having the Soil Erosion Potential of NS-None to Slight to M-Moderate. Implementation of the proposed program would need to comply with SCAQMD Rule 403 for dust control that would ensure the prevention and/or management of the loss of topsoils and wind erosion. Mitigation Measure HYD-1 requires the development and implementation of best management practices (BMPs) during program construction that would include erosion control measures to protect the topsoil during construction, including particular measures to protect surface waters in the vicinity that may potentially be impacted. Mitigation Measure GEO-2 would ensure that topsoil materials excavated during construction are reused, to the extent feasible, for construction of program components and not hauled offsite and that stockpiled soils would be managed through best management practices to prevent wind erosion. Impacts associated with soil erosion and topsoil loss would be less than significant with mitigation.

Impact 3.5-3: Construction of proposed water facilities would be within areas of relatively low relief, or approximately less than 15 percent slope. Impacts associated with soil stability and landslides would be less than significant.

Impact 3.5-4: Construction of future production wells and other proposed ancillary water facilities potentially may be located in two areas that are identified as having moderate soil expansion potential. However, all proposed facilities would be designed in accordance with the recommendations of a site-specific geotechnical investigation required by Mitigation Measure GEO-1. Impacts associated with expansive soils would be less than significant with mitigation.

Impact 3.5-5: Proposed construction of recharges facilities and production wells would not require the need for regionally-significant aggregate resources. However, facilities may potentially be located adjacent to sand and gravel mining activities along Avenue S, east of 70th Street East. Recharge facilities and production wells associated with certain implementation actions under the Recommended Strategy may potentially be located in the Littlerock Wash Mineral Resource Zone (MRZ)-2. Mitigation Measure GEO-3 requires that facilities located adjacent to the known MRZ-2 comply with City policies associated with continued access to these areas and installation of a buffer around the development to prevent interruptions or impacts to existing mining operations. Impacts associated with mineral resources would be less than significant with mitigation.

MITIGATION MEASURES: GEO-1 through GEO-3; HYD-1

F. Hazards & Hazardous Materials

POTENTIAL EFFECTS: Potential effects examined include: the potential for construction activities to create accidental hazardous conditions exposing the public or environment through routine transport, use or disposal of hazardous materials [3.6-1]; the potential to create a significant hazard involving the release of hazardous materials into the environment [3.6-2]; the potential to emit hazard emissions within one-quarter mile of a school [3.6-3]; the potential for the program to be located on a site listed as a hazardous materials site [3.6-4]; the potential for the program to interfere with an adopted emergency plan or evacuation plan [3.6-5]; and the potential to expose people and structures to a significant risk or loss, injury or death due to wildland fires [3.6-6].

FINDINGS: Impact 3.6-1 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.6-2, 3.6-3, 3.6-4, 3.6-5 and 3.6-6 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:
Impact 3.6-1: Construction activities would temporarily require the transport, use, and disposal of hazardous materials including gasoline, diesel fuel, hydraulic fluids, paint, and other similarly related materials. Operation of the proposed wellhead treatment facilities and new treatment plant would require routine transport and use of new chemicals for purposes of treatment of potable water. PWD shall be required to comply with all relevant and applicable federal, State and local laws and regulations that pertain to the transport, storage, and use of hazardous materials during construction and operation of proposed facilities. Impacts regarding hazardous materials transport, use and disposal would be less than significant.

Impact 3.6-2: Construction of the proposed program could result in the exposure of construction workers and residents to potentially contaminated soils or groundwater due to improper removal of existing hazardous materials on site and/or leakage from existing septic disposal systems in the area. Mitigation Measure HAZ-1 and HAZ-2 would reduce these impacts to a less than significant level by requiring that prior to construction a Contingency Plan for contaminated soils or groundwater and a Hazardous Materials Management Spill Prevention and Control Plan are prepared.

PWD would also be required to prepare a Risk Management Plan (RMP), Hazardous Materials Business Plan (HMBP), and Emergency Response Plan (ERP) for the proposed treatment plant to be kept on file with the Los Angeles County Fire Department. Implementation of the RMP, HMBP, and ERP would reduce potential risks to the public and environment due to accidental release of hazardous materials during program operation to less than significant levels. Impacts associated with accidental upset of hazardous materials would be less than significant with mitigation.

Impact 3.6-3: Construction activities could involve hazardous materials or substances and potentially emit hazardous emissions or handle hazardous materials, substances, or waste within a quarter mile of a school. Mitigation Measures HAZ-1 and HAZ-2 would reduce the impact to a less than significant level by requiring the preparation of a Contingency Plan for contaminated soils or groundwater and a Hazardous Materials Management Spill Prevention and Control Plan. Mitigation Measure TR-1 requires that a Traffic Control Plan be prepared and implemented o ensure that construction activities do not impact local schools. Impacts associated with hazardous materials near schools would be less than significant with mitigation.

Impact 3.6-4: The US Air Force Plant (AFP 42) site, located within the project area, is listed as an active State response site on a list of hazardous waste facilities subject to corrective action. During program construction, it is possible that contaminated soil and/or groundwater could be encountered during excavation, thereby posing a health threat to construction workers, the public, and the environment. Mitigation Measures HAZ-1, HAZ-2, and HAZ-3 would reduce the impact to a less than significant level by requiring the preparation of a Contingency Plan for contaminated soils or groundwater, Hazardous Materials Management Spill Prevention and Control Plan, and a Phase I Environmental Site Assessment (ESA) and a if necessary a Phase II ESA for soil and groundwater contamination in areas where production wells and pipelines are located within the vicinity AFP 42. Impacts would be less than significant with mitigation.

Impact 3.6-5: Construction activities associated with the Recommended Strategy could potentially block access to roadways and driveways for emergency vehicles and interfere with an adopted emergency response plan or emergency evacuation plan. Mitigation Measure HAZ-4 would reduce this impact to a less than significant level by requiring that in conjunction with Mitigation Measure TR-1, a Traffic Control Plan is prepared and implemented that contains comprehensive strategies for maintaining emergency access. PWD would ensure that the Traffic Control Plan is consistent with the Los Angeles County Operational Area Emergency Response Plan. Impacts would be less than significant with mitigation.

Impact 3.6-6: Proposed facilities would be located primarily within paved and unpaved roadway ROWs or immediately adjacent to vacant lands. Lands adjacent to the proposed facilities are largely urbanized and undeveloped desert lands; however, small portions of the southern project area are designated as "Wildland Area with Substantial Fire Risk" that could create hazardous fire conditions and expose people to wildfire risks during construction and operation of program components. Mitigation Measure HAZ-5 would reduce wildland fire impacts to a less than significant level by requiring the implementation of fire hazard reduction measures including clearing of dried vegetation or materials that could ignite, equipping construction equipment with a spark arrestor, and having access to functional fire extinguishers. Impacts would be less than significant with mitigation.

MITIGATION MEASURES: HAZ-1 through HAZ-5; and TR-1

G. Hydrology and Water Quality

POTENTIAL EFFECTS: Potential effects examined include: the potential for the program to violate water quality standards or waste discharge requirements [3.7-1]; the potential to deplete groundwater supplies [3.7-2]; the potential to substantially alter the existing drainage patterns of a site or area through alteration of the course of a stream or river that would result in erosion or siltation [3.7-3]; the potential to alter the exiting drainage pattern of facility sites that would increase surface runoff or flooding [3.7-4]; the potential to contribute or create runoff water that would exceed planned storm water drainage systems [3.7-5]; and the potential to expose people or structures to a significant risk of loss, injury or death involving flooding [3.7-6].

FINDINGS: Impact 3.7-6 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.7-1through 3.7-5 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:
Impact 3.7-1: Construction activities associated with program components could violate water quality standards if excess sediment loads were to enter receiving water bodies, including the Antelope Valley Ground Basin (AVGB) or the Los Angeles Aqueduct. Construction activities could potentially involve the use of hazardous materials such as fuel and other chemicals that could potentially enter receiving water bodies if spilled or stored improperly. Although the proposed program would not be subject to the general construction storm water National Pollutant Discharge Elimination System (NPDES) permit under Clean Water Act (CWA) Section 402, implementation of Mitigation Measure HYD-1 would require that PWD implement BMPs to reduce the potential for storm water runoff from construction sites to deliver pollutants into adjacent water bodies or groundwater. In addition, Mitigation Measures HAZ-1 and HAZ-2 would reduce construction-related water quality impacts to less than significant levels.

Operation of program components would involve groundwater recharge (spreading and injection), storage, and recovery activities to store additional water supplies generated as a result of implementation of the Recommended Strategy. Replenishment water supply may include imported water from the State Water Project (SWP), treated surface water, and/or recycled water. Groundwater recharge, storage, and recovery proposed by the Recommended Strategy could

potentially violate water quality standards for groundwater or waste discharge requirements. All groundwater activities would be subject to water quality objectives for groundwater throughout the South Lahontan Hydrologic Region, based on the maximum contaminant limits (MCLs) and secondary MCLs specified for drinking water in Title 22 of the California Code of Regulations. Recharge with recycled water would be subject to requirements of the Water Recycling Regulations issued by the California Department of Public Health as well. Recharge, storage, and recovery activities could degrade the quality of local groundwater over time if replenishment water contained constituents of concern that exceed MCLs or secondary MCLs, or if total dissolved solids (TDS) were substantially greater than the TDS of local groundwater. The significance of such impacts would be reduced to less than significant levels with implementation of Mitigation Measure HYD-2, HYD3, and HYD-4, which would require PWD to develop and implement a Groundwater Monitoring Program; prepare and/or participate in the preparation of a Salt Nutrient Management Plan (SNMP) for the AVGB; and prepare a Groundwater Injection Operations Protocol for the injection and extraction of stored groundwater, respectively.

Mitigation Measure HYD-2 requires PWD to develop and implement a Groundwater Quality Monitoring Program to monitor the impact of groundwater recharge strategies identified in the SWRP on groundwater quality and to ensure that groundwater storage and recovery activities doe not substantially degrade groundwater quality. In addition, HYD-2 requires program components to operate under the Waste Discharge Requirements (WDRs) established by the Lahontan RWQCB. If necessary, HYD-2 could require PWD to construct and maintain an additional water treatment plant to protect groundwater quality and associated beneficial uses.

Mitigation Measure HYD-3 requires participation in preparation of a Salt and Nutrient Management Plan for the AVGB, which would minimize potential impacts of salt buildup in the basin related to recharge of imported and treated water supplies, including recycled water. Such plans are required under the SWRCB's Recycled Water Policy in basins using significant amounts of reclaimed water.

Mitigation Measure HYD-4 requires preparation of a protocol for the injection and extraction of stored groundwater to define operational parameters and conditions und which injection and/or extraction operations are to be modified and/or cease, including water quality conditions or groundwater levels.

Impact 3.7-2: The proposed program will involve extraction of as much water as is recharged, and is not anticipated to change the overall water balance within the AVGB. The proposed program is not anticipated to substantially alter groundwater levels over time, but neighboring wells near the new recharge and extraction facilities would likely experience greater fluctuations during program operation. As a result, it is possible that operation of proposed groundwater extraction and recharge facilities could temporarily lower the groundwater table on a localized level. Mitigation Measure HYD-5 would reduce this impact to less than significant level by requiring that PWD implement a Groundwater Monitoring and Management Program to ensure that implementation of the SWRP does not result in a net depletion in groundwater storage in the AVGB or impede access to groundwater by neighboring well operators.

Impact 3.7-3: The proposed program includes construction of facilities with relatively small footprints, such as pipeline extensions, storage tanks, wells, and pump stations, which would not substantially alter the drainage patterns of their sites. Larger facilities, such as the new proposed treatment plant, could potentially alter site drainage patterns that could result in substantial erosion or siltation within or outside of the project area. However, such larger facilities would include surfaces and onsite drainage features that capture and direct storm water to minimize increases in offsite runoff. The proposed grade control structure would reduce erosion and siltation by implementing an improvement within the bed of Littlerock Creek that would provide stability and resistance to erosive and scouring forces that otherwise would result in downstream sedimentation. Overall, impacts associated with erosion or siltation due to operation of larger facilities would be considered less than significant.

Construction of all program components could result in erosion or siltation within or outside of the component area. Compliance with the BMPs to be implemented in accordance with Mitigation Measure HYD-1 would ensure that construction-related impacts to water quality associated with erosion or siltation are reduced to a less than significant level.

Impact 3.7-4: Construction of program components with relatively small footprints, such as pipeline extensions, storage tanks, wells, and pump stations, would add small amounts of impervious surfaces, but with post-construction restoration the resulting onsite or offsite flooding with be less than significant. Proposed pipelines generally would be located within existing roadway ROWs that already consist of impervious surfaces. Restoration of the ground surface following construction would return the surface to its pre-project condition. The resulting onsite or offsite flooding would be less than significant. The proposed grade control structure would be below ground and would not alter the drainage patterns of the site at Littlerock Reservoir. There would be no change to the potential for onsite or offsite flooding.

Larger facilities that would be built as part of the proposed program, including a new water treatment plant and aqueduct turnouts, potentially could have greater flooding impacts due to the alteration of existing site drainage patterns. Onsite drainage features would be developed to capture and direct runoff to new or existing storm water drainage facilities to move storm water offsite or retain it onsite in a manner that would avoid any flooding. In accordance with Mitigation Measure HYD-6, PWD would be required to submit a drainage plan to either the City of Palmdale or County of Los Angeles Department of Public Works to verify that drainage would not contribute to runoff that would result in flooding. Impacts would be less than significant with mitigation.

In addition, operational activities could alter the course of streams or rivers, such as Amargosa Creek, Littlerock Creek, or the Palmdale Ditch, due to expansions in conveyance facilities to deliver additional surface flows to program facilities, and due to expansion of local recharge areas within the creeks. Such alterations could affect existing drainage patterns and flooding. Implementation of Mitigation Measure HYD-6 would reduce impacts to flooding by requiring that the drainage plan demonstrate that alterations to the course of a stream or river would not result in flooding within or outside of the project area. Impacts would be less than significant with mitigation.

Impact 3.7-5: The proposed program could contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. As described above, for relatively small facilities and pipelines, increases in runoff would be less than significant. For larger facilities, Mitigation Measure HYD-6 would ensure that proposed facilities would not contribute runoff that would exceed the capacity of existing or planned storm water drainage systems. Impacts would be less than significant with mitigation.

Impact 3.7-6: There are no lands within the program area that are designated as 100-year flood zones. Therefore, the proposed program would not place structures in a flood hazard area that would impede or redirect flood flows.

Proposed storage tanks would be designed according to seismic design standards set forth by the American Water Works Association and the CBC. Sufficient freeboard would be maintained in the storage tanks to allow for water sloshing during an earthquake. The potential risk of loss, injury, or death involving flooding from release of water to the surrounding environment due to tank failure would be less than significant. No mitigation is required.

The proposed program would remove accumulated sediment from Littlerock Reservoir to reclaim storage capacity behind Littlerock Dam. It is anticipated that operation of the dam and the maximum water surface elevation would not change as a result of sediment removal activities. It is also anticipated that the proposed program would not introduce a new risk relative to existing conditions that would result in the failure of a levee or dam. As such, impacts are considered less than significant. No mitigation is required.

MITIGATION MEASURES: HYD-1 through HYD-6

H. Land Use, Agricultural Resources and Forestry

POTENTIAL EFFECTS: Potential effects examined include: the potential to convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance or other agricultural lands to non-agricultural uses [3.8-1]; the potential for water importation through SWP to convert farmland to non-agricultural use [3.8-2]; the potential to conflict with the Los Angeles County Airport Land Use Plan policies [3.8-3]; and the potential to conflict with County development policies within Sensitive Ecological Area #49 [3.8-4].

FINDINGS: Impact 3.8-2 and 3.8-4 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.8-1 and 3.8-3 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.8-1: Based on conceptual facility siting, proposed production wells could be located on land that is designated as Prime Farmland, in the area west of Lower Littlerock Creek. The results of the Land Evaluation and Site Assessment (LESA) indicate that significant impacts to agricultural resources would occur due to the conversion of agricultural resources to non-

agricultural uses. Mitigation Measure LU-1 would reduce impacts to less than significant by requiring that PWD ensure that proposed program facilities do not limit the use of Prime Farmland or result in the conversion of significant acres of land to non-agricultural use as determined through use of the LESA model.

Impact 3.8-2: The proposed importation of water through the SWP could result in the conversion of farmland to non-agricultural use if imported water supplies were transferred or leased from lands throughout the state that are designated by the California Department of Conservation as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, or non-designated farmland that is otherwise in agricultural production. Transferring or leasing water supplies may affect productivity of such agricultural lands due to scarcity of irrigation water; however, these lands would remain in agricultural zones and could be irrigated with water from other sources (such as groundwater), used for grazing or other agricultural-related purposes, or fallowed consistent with normal agricultural practices. In addition, the agricultural lands may be removed from active production depending on its productivity and life-cycle consistent with normal agricultural practices. Therefore, the transfer of water may not necessarily result in the conversion of agricultural land to non-agricultural use. Impacts would be less than significant.

Impact 3.8-3: Construction and operation of several of the program components could occur within the airport influence area (AIA) for Palmdale Regional Airport (PMD), including recharge basins in the Lower Amargosa and Lower Littlerock areas, ASR wells, production wells and pipelines. Recharge basins and production wells are proposed within the Accident Potential Zones (APZs) associated with the Los Angeles/Palmdale Regional Airport (PMD). PWD would notify the airport of proposed construction activities in advance and participate in the FAA's 7460 process to ensure that the proposed construction equipment does not pose hazards to aviation. Ongoing coordination with the airport would be required to ensure that proposed construction activities do not disrupt airport operations and to ensure that appropriate notice is provided to aviators using the airport. Mitigation Measures LU-2, LU-3, and LU-4 would minimize potential effects associated with construction activities by requiring submittal of future plans to the Los Angeles County Airport Land Use Commission (ALUC) for review; preparation of an airport construction safety plan; and submittal of the final project component design plans for airspace analysis and review.

Long-term impacts associated with operation of proposed facilities would be based on the height of new structures. Once the locations of aboveground facilities are determined, Mitigation Measures LU-2 and LU-4 would require PWD to submit program design plans to Los Angeles County ALUC and PMD airport staff to ensure facility locations and heights would not pose a hazard to aviation and to participate in the FAA's Part 7460 process.

The proposed recharge basins could conflict with safety policies of the Los Angeles County Airport Land Use Plan by constructing facilities within the AIA that would attract birds and conflict with FAA policy. Mitigation Measure LU-5 would reduce impacts to less than significant levels by requiring that PWD coordinate with the PMD to develop a Wildlife Hazard Monitoring Plan to monitor, evaluate, and mitigate hazards associated with land uses surrounding the airport.

Impact 3.8-4: PWD would be required to obtain a Sensitive Ecological Area Conditional Use Permit (SEACUP) for construction of program facilities within Sensitive Ecological Area (SEA) #49 and would submit an application to the SEA Technical Advisory Committee (SEATAC) for review and comment. SEATAC's recommendations would be submitted to the Los Angeles County Planning Commission for consideration prior to approval of the SEACUP. With issuance of the SEACUP, no conflicts with the County SEA land use policies would be anticipated for construction of recharge basins. Impacts would be less than significant.

MITIGATION MEASURES: LU-1 through LU-5

I. Noise

POTENTIAL EFFECTS: Potential effects examined include: the potential for construction activities to increase noise levels at nearby sensitive receptor locations [3.9-1]; the potential for construction activities to expose persons and structures to generate groundborne vibration and noise [3.9-2]; the potential for operation activities to increase noise levels at nearby land uses [3.9-3]; and the potential for operation activities to expose employees to excessive noise levels [3.9-4].

FINDINGS: Impact 3.9-4 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.9-1 through 3.9-3 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.9-1: Construction of program components would generate noise. However, construction activities that occur between 6:30 a.m. and 8:00 p.m. on Monday through Saturday would be exempt from the City of Palmdale Municipal Code and Los Angeles County Code noise thresholds. If certain construction activities were to occur outside of these times/days, such as during 24-hour well drilling activities, sensitive receptors could be exposed to increased noise in excess of Code thresholds. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce impacts associated with construction noise to less than significant levels by requiring compliance with municipal and county code requirements related to noise, including acquisition of noise waivers for construction activities that would generate noise in excess of thresholds; implementing noise minimizing technologies and practices; notifying landowners and property occupants within 500 feet of the construction area of the construction schedule at least two weeks in advance of groundbreaking; and designating a Noise Complaint Coordinator to response to noise-related complaints.

Impact 3.9-2: Construction drilling could be required during well and pipeline installation that could cause excessive ground-borne vibration. Implementation of Mitigation Measure NOISE-3 would limit jack and bore drilling to at least 45 feet from sensitive receptors and 15 feet from any structures to avoid nuisance vibration experienced by sensitive receptors and avoid architectural damage to structures. Impacts associated with ground-borne vibration would be less than significant with mitigation.

Impact 3.9-3: Operation of program components would generate noise including maintenance vehicle trips and the operation of certain mechanical equipment such as stationary pumps, fans,

and generators. Program maintenance and inspection of facilities would also result in a minimal increase in traffic trips but would not generate a substantial increase in noise along local roadways. All facilities would be designed in accordance with noise ordinances of the relevant jurisdiction to ensure that noise thresholds do not exceed day and nighttime limitations for neighboring land uses. Mitigation Measure NOISE-4 would require a post-construction noise survey to ensure operation of new equipment is in compliance with local noise ordinances. Impacts associated with ambient noise levels would be less than significant with mitigation.

Impact 3.9-4: The proposed program could include the installation of new water facilities within two miles of the PMD and Air Force Plant 42. However, maintenance and inspection would be minimal for such facilities. Exposure to airport noise would be a less than significant impact.

MITIGATION MEASURES: NOISE-1 through NOISE-4

J. Recreation

POTENTIAL EFFECTS: Potential effects examined include: the potential that the program would include recreational facilities that would adversely affect the environment [3.10-1].

FINDINGS: Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.10-1 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:
Impact 3.10-1: The proposed grade control structure would be located within Littlerock Reservoir which serves as a recreational facility in addition to a water supply facility. The grade control structure would not impede the use of Littlerock Reservoir, adjacent public facilities, or picnic areas as a recreational facility. However, conveyance pipelines proposed within roadway rights-of-way would temporarily disrupt cyclists utilizing these paths. Specific locations of the proposed facilities are not yet finalized but once locations of the proposed facilities are determined, Mitigation REC-1 and REC-2 would minimize impacts to recreational facilities. Mitigation Measure REC-1 would require that PWD coordinate with appropriate recreation or park agency to minimize impacts and implement construction and operation measures such as posting of construction date signage, placement of fencing to isolate construction areas, and schedule construction activities to avoid peak recreational seasons. Operational measures would include vegetation screening, security fencing, and potential land swaps for large projects. Mitigation Measure REC-2 would require that PWD coordinate with applicable jurisdictions to determine whether circulation and detour plans are required to minimize impacts to access to local bikeways. Impacts to recreation would be less than significant with mitigation.

MITIGATION MEASURES: REC-1 and REC-2

K. Transportation and Traffic

POTENTIAL EFFECTS: Potential effects examined include: the potential to increase traffic volume on local roadways [3.11-1]; the potential to conflict with the Los Angeles County Congestion Management Program [3.11-2]; the potential for construction activities to conflict

with adopted policies, plans, or programs [3.11-3]; the potential to result in inadequate emergency access [3.11-4]; and the potential to increase hazards due to incompatible roadway uses [3.11-5].

FINDINGS: Impacts 3.11-2 and 3.11-5 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.11-1, 3.11-3, and 3.11-4 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 3.11-1: Operation of the proposed program would result in an addition of up to six daily round trips to/from the proposed treatment plant (or 12 daily individual trips) and would not have a substantial impact on local roadways. SR 138 near 47th Street East has approximately 21,000 ADT and 12 additional ADTs would be negligible. Impacts would be less than significant.

Temporary construction impacts to roadway capacity and circulation due to increases in trips per day on local and regional roadways could be significant. Pipeline installation in roadways may require lane or road closures to accommodate pipeline trench and staging areas. These activities may require encroachment permits from Caltrans, the County of Los Angeles, or the City of Palmdale. Preparation and implementation of a Traffic Control/Traffic Management Plan as described in Mitigation Measure TR-1would reduce temporary construction-related impacts to less than significant levels.

Impact 3.11-2: Construction of the proposed program would not conflict with the County Congestion Management Plan and would have no impact on Level of Service standards in the project area. Operational maintenance trips that would occur throughout the project area for various facilities would be intermittent and minimal. Impacts would be less than significant. No mitigation is required.

Impact 3.11-3: Operation of the proposed program would have no long-term impact on demand for alternative transportation or on alternative transportation facilities. Construction activities within ROWs may result in partial lane or roadway closures, delays in the Antelope Valley Transit Authority (AVTA) bus routes, and bike pathway and sidewalk closures within the program area. Mitigation Measure TR-2 would require consultation with local jurisdictions to develop plans to minimize any potential impacts to bicycle or pedestrian facilities. Mitigation Measure TR-3 would require consultation with the AVTA to minimize impacts to alternative transportation facilities and service. Impacts would be less than significant with mitigation.

Impact 3.11-4: 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. Mitigation Measure TR-4 would require coordination with emergency service providers at least one month prior to construction. Impacts would be less than significant with mitigation.

Impact 3.11-5: Oversize loads associated with construction would be in compliance with applicable California Vehicle Code Sections and California Street and Highway Codes. To reduce hazardous impacts on traffic, the construction contractor would be required to obtain permits from Caltrans and the respective jurisdiction that require specific limitations on all oversize

vehicles regarding size and weight. Impacts would be less than significant. No mitigation is required.

MITIGATION MEASURES: TR-1 through TR-3

L. Utilities and Public Services

POTENTIAL EFFECTS: Potential effects examined include: the potential to construct or expanded storm water drainage facilities to accommodate storm water runoff [3.12-1]; the potential for construction activities to generate solid waste and increase the demand for landfill capacity [3.12-2]; and the potential to require additional energy supplies [3.12-3].

FINDINGS: Impact 3.12-1 will be less than significant, requiring no mitigation. Adherence to the mitigation measures listed in the PEIR will reduce Impacts 3.12-2 and 3.12-3 to less than significant levels. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:
Impact 3.12-1: Construction of program facilities would result in an increase in impervious surface area, which could increase localized runoff, but not sufficiently enough to require new offsite storm water drainage facilities or the expansion of existing offsite storm water systems. Impacts are expected to be less than significant. No mitigation is required.

Impact 3.12-2: Construction of program facilities would generate solid waste, including excavated soils removed during construction of new facilities. Antelope Valley Landfill I and Landfill II would have sufficient capacity to receive solid waste generated during construction of the proposed program. Implementation of Mitigation Measures UTIL-1 and UTIL-2 would reduce impacts to landfills by requiring that program facility design and construction produce waste that could be recycled or reused; and that plans for recovering, reusing, and recycling wastes produced through construction, demolition, and excavation activities are prepared and implemented. Impacts would be less than significant with mitigation.

Impact 3.12-3: Operation of the proposed program would require energy to operate the proposed treatment plant and other new local facilities such as groundwater wells, pump stations, recharge facilities, and turnouts. These facilities would be served by SCE and Southern California Gas Company as the local energy providers. It is not expected that additional power generation facilities would be required to serve the proposed facilities.

Importing water is energy intensive. However, the proposed project would utilize the capacity of existing SWP facilities; the proposed project would not require expansion of aqueduct conveyance capacity or SWP pumping capacity. Additional water would be imported through the SWP when capacity is available. No new offsite electrical transmission or energy generation facilities would need to be built to accommodate the proposed project. As such, impacts to regional energy supplies and energy consumption would be less than significant.

In order to support the California Energy Action Plan II to reduce the state's overall energy usage, the proposed project would need to incorporate energy efficient equipment locally such as

PWD system pumps and lighting, to minimize energy impacts. In addition, scheduling PWD system pumps to operate as much as possible during off-peak energy demand periods would also be consistent with state policies for maximizing off-peak power usage for utilities. Mitigation Measure AQ-2 would require both energy efficient equipment and off-peak operation of the PWD system. Such energy efficiency measures would reduce the overall energy requirements associated with the proposed project.

In addition, 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. Recycled water would not be able to meet all increased demand, as it would only be used for direct non-potable applications or indirect potable applications. However, the use of recycled water could reduce overall energy use because the electricity required to distribute local recycled water would be substantially less than the electricity required to import the equivalent amount of potable water. Mitigation Measure AQ-3 would require PWD to promote and encourage the use of recycled water as a potable offset to importing water. Implementation of Mitigation Measure AQ-3 would reduce the overall energy requirements associated with proposed project. With implementation of Mitigation Measures AQ-2 and AQ-3, impacts to local and regional energy supplies would be considered less than significant.

MITIGATION MEASURES: UTIL-1 and UTIL-2; AQ-2 and AQ-3.

M. Cumulative Impacts

POTENTIAL EFFECTS: The analysis of cumulative impacts focuses on the effects of concurrent construction and operation of the proposed program with other spatially and temporally proximate projects. As such, the cumulative analysis relies on a list of related projects that have the potential to contribute to cumulative impacts in the program area. Related projects are all presumed to be implemented concurrently with the Recommended Strategy, between 2015 and 2035.

The proposed program, together with the related projects, which include infrastructure, commercial, civic, and residential development projects, may contribute to certain types of cumulative impacts to air quality [4-1], noise [4-2], traffic and transportation [4-3], and hydrology and water quality [4-4, 4-5, and 4-6]. There would be no cumulative impacts to aesthetics, biological resources, cultural resources, geology, soils and seismicity, hazards and hazardous materials, land use, agriculture and forestry resources, recreation, and utilities and public services.

FINDINGS: Along with regulatory programs designed to address certain cumulative impacts, adherence to the mitigation measures listed in Sections A through L above and this Section M, for the respective environmental resources discussed in those sections, will also reduce potentially significant cumulative impacts to a level that is less than significant and not cumulatively considerable. (Finding 1)

FACTS IN SUPPORT OF THE FINDINGS:

Impact 4-1: Construction of the proposed program along with the identified related projects would contribute additional emissions to existing conditions in the Mojave Desert Air Basin. The project area is in non-attainment for ozone and PM_{10}. Unmitigated emissions from construction equipment and worker trips could exceed the AVAQMD daily significance thresholds for NOx emissions. Mitigation Measures AQ-1a through AQ-1g would reduce construction-related emissions and require construction of program facilities in non-overlapping phases so as to keep daily emissions of NOx below the AVAQMD thresholds of significance. Implementation of these mitigation measures would reduce the impacts associated with construction of the proposed program to less than significant levels. Impacts would not be cumulatively considerable.

Impact 4-2: Construction of the proposed program, along with the identified related projects in the Antelope Valley could generate noise that would affect temporarily existing ambient noise conditions in the region. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would restrict construction activities to daytime hours, between 6:30 a.m. and 8:00 p.m. Monday through Saturday, and would require other measures to reduce the effects of construction noise on sensitive receptors to less than significant levels. With implementation of these mitigation measures, the impacts associated with construction of the proposed program would be less than significant and would not have a significant short-term incremental cumulative effect to noise when considered together with other geographically-proximate capital improvement projects. Implementation of Mitigation Measure NOISE-4 would ensure that such noise thresholds are not exceeded once program facilities are built and operational. The proposed program would not contribute to a cumulatively significant incremental increase in ambient noise conditions.

Impact 4-3: Construction of some capital improvement projects, such as roadway projects and storm drain projects could occur simultaneously and within the same streets as the proposed program. PWD would implement a Traffic Control/Traffic Management Plan (Mitigation Measure TR-1) for each program component as necessary to reduce construction-related effects of the proposed program to less than significant levels. The Traffic Control/Traffic Management Plan should also take into consideration the effects of other construction activities occurring simultaneously in the same geographic area. Mitigation Measure CUM-1 would require PWD to coordinate construction of the proposed program with other agencies in the Antelope Valley to ensure cumulative impacts to traffic and circulation are reduced to less than significant levels.

Operation of program facilities would not add a substantial number of commuter trips to local or regional roadways, nor make a significant contribution to cumulative impacts to traffic and transportation.

Impact 4-4: Concurrent construction of program components and related projects could result in increased erosion and subsequent sedimentation, with impacts to local drainages and/or storm drain capacity. Additionally, surface water quality could be affected by construction activities that result in the release of fuels or other hazardous materials to stream channels or storm drains, or discharge from excavation dewatering activities. Implementation of Mitigation Measure HYD-1 would require PWD to develop and implement storm water BMPs to minimize erosion and sedimentation. Implementation of Mitigation Measures HAZ-1 and HAZ-2 would minimize impacts to water quality by preventing discharge of contaminated groundwater or spills of

hazardous materials during construction. These mitigation measures would minimize the impact of construction of the proposed program to surface water. The contribution of the proposed program to short-term hydrology and water quality impacts would not be cumulatively considerable.

Impact 4-5: The use of recycled water for groundwater recharge by the proposed program and other groundwater recharge projects could have a cumulative effect on groundwater quality in the AVGB. Mitigation measures to reduce impacts to water quality in the groundwater basin could feasibly include blending requirements or advanced treatment processes. Mitigation requirements would be project specific and additional environmental documentation would be required prior to implementation of a groundwater recharge reuse project (GRRP). The recycled water would be required to meet the level of treatment determined by CDPH to sufficiently protect public health. With implementation of all CDPH requirements, the proposed program would not have a cumulatively considerable impact on groundwater quality due to recharge of recycled water.

The use of SWP water or treated potable water for groundwater recharge also could affect water quality in the AVGB. Implementation of Mitigation Measures HYD-2, HYD-3, and HYD-4 would ensure groundwater recharge activities associated with the proposed program would not have significant impacts to groundwater quality. Other projects would be subject to similar regulations as the proposed program and likely would be required to implement monitoring programs and participate in the AVGB Salt and Nutrient Management Plan as well. With implementation of Mitigation Measures HYD-2, HYD-3, and HYD-4, the proposed program would not have a cumulatively considerable impact on groundwater quality due to recharge of imported or treated water.

Impact 4-6: The proposed program would involve extraction of as much water as is recharged and therefore is not anticipated to change the overall water balance within the AVGB. When considered together with other groundwater recharge/recovery projects in the Antelope Valley, the proposed program would not affect groundwater levels in a manner that would be cumulatively considerable on a regional, long-term basis. The intent of the proposed program is to recharge water in excess of extraction in order to correct for existing overdraft conditions in the AVGB. This would be considered a benefit to the basin.

Once surface spreading facility locations and well locations are determined, implementation of Mitigation Measure HYD-5 would ensure impacts to groundwater levels due to the simultaneous operation of geographically-proximate recharge and/or recovery projects are evaluated and appropriate mitigation is developed as necessary.

MITIGATION MEASURES: CUM-1; AQ-1a though AQ-1g; NOISE-1, NOISE-2, and NOISE-4; TR-1; HYD-1through HYD-5; HAZ-1and HAZ-2; TR-1

N. Growth Inducement

POTENTIAL EFFECTS: Potential effects examined included direct and/or indirect growth inducement potential of the proposed program.

FINDINGS: The proposed program could result in the importation of more water than needed to meet demands and could directly impact growth. The proposed program would increase water supplies and remove an obstacle to growth that could indirectly contribute to secondary effects of such growth.

FACTS IN SUPPORT OF THE FINDINGS:
The Recommended Strategy provides water for planned growth. Implementation of the Recommended Strategy is mitigation for the effects of planned growth on groundwater resources and water supply services. Importing more water than needed to meet actual demands would be considered directly growth inducing. Mitigation Measure GROWTH-1 would ensure that water supplies do not exceed demands in the future to avoid causing direct growth inducement. GROWTH-1 requires PWD to update the implementation schedule for the SWRP every five years or as necessary to ensure that water supplies do not out-pace actual demands.

Mitigation Measure GROWTH-1 would not mitigate significant impacts associated with planned growth as identified by the City of Palmdale and County of Los Angeles. However, mitigation of such impacts is not within the authority or jurisdiction of PWD. Nonetheless, since the new water supplies would reduce an obstacle to growth, the proposed project would indirectly contribute to secondary effects of that growth to air quality; biological resources; hydrology, water supply, and water quality; land use, open space and agriculture; noise; and traffic. Some of these secondary effects are significant and unavoidable.

MITIGATION MEASURES: GROWTH-1

IV. Findings Regarding Alternatives to the Program

CEQA requires an EIR to describe a reasonable range of alternatives to the project or to the location of the project, which could feasibly attain the project objectives and to evaluate the comparative merits of the alternatives.

PWD conducted an alternatives screening analysis that led to the identification of the Recommended Strategy in the SWRP. The Alternatives Analysis Technical Memorandum (TM) (RMC, 2010) presented the alternatives that were developed for the SWRP and identified the evaluation process and criteria used to eliminate certain alternatives. It included three primary steps: (1) identifying a full suite of water supply and demand management options; (2) narrowing and refining options; and (3) evaluation using a system alternative decision tree.

Alternatives to the proposed program evaluated in the Draft PEIR included the No Project Alternative, the Diversified Storage Alternative (IW-40), Local Storage Alternative (IW-70), the High Diversification Alternative (RW-40), the Self Reliance Alternative (RW-70), and the Maximize Recycled Water + Conservation Alternative (MAX RW+CON).

A. No Project Alternative

FINDINGS: The No Project Alternative is not environmentally superior to the proposed program.

FACTS IN SUPPORT OF THE FINDINGS: The No Project Alternative would not implement the SWRP. Under the No Project Alternative, impacts associated with the proposed program would be avoided. However, none of the program objectives would be met under this alternative. The existing supply of water would not be enhanced by increased imported supply, increased groundwater storage, or increased use of recycled water and conservation. Future demands generated by a forecasted increase in population growth would not be met, and current deficiencies in groundwater supply would not be resolved. Exacerbated overdrafting of the groundwater basin would likely occur. PWD would not be able to adequately provide water services to its existing or projected customer base.

B. Diversified Storage Alternative (IW-40)

FINDINGS: The IW-40 Alternative is not environmentally superior to the proposed program.

FACTS IN SUPPORT OF THE FINDINGS: Under the IW-40 Alternative, program objectives would be met. The IW-40 Alternative would include less local surface recharge capacity (13,000 afy); have fewer impacts associated with construction of surface spreading facilities; include less local groundwater production (25,000 afy) than the proposed program; and require construction of fewer groundwater extraction facilities. Although short-tem construction impacts would be reduced, there are no potentially significant or significant and unavoidable impacts associated with construction of the proposed program that would be avoided by implementing IW-40 Alternative. Relative to the proposed program, Alternative IW-40 would require more imported water than the proposed program due to a lesser dependence on recycled water for direct non-potable uses and conservation. Importing water is energy intensive, thus, IW-40 Alternative would have greater impacts associated with energy demands and GHG emissions related to the use of electricity to import additional water into the PWD service area.

C. Local Storage Alternative (IW-70)

FINDINGS: The IW-70 Alternative is not environmentally superior to the proposed program.

FACTS IN SUPPORT OF THE FINDINGS: Under the IW-70 Alternative, program objectives would be met. The IW-70 Alternative includes the same amount of local surface recharge capacity (35,000 afy) as the proposed program but does not include the option for external groundwater banking, thus eliminating the need for construction of the new water treatment plant and any construction-related impacts. Although the IW-70 Alternative would have decreased impacts generally associated with construction activities, no potentially significant or significant and unavoidable impacts associated with construction of the proposed program would be avoided. Under the IW-70 Alternatives introduction of the use of hazardous materials onsite at the new WTP facility and potential impacts to scenic resources would be avoided. Under Alternative IW-70, more imported water than the proposed program would be required due to a lesser dependence on recycled water for direct non-potable uses and conservation. Importing water is energy intensive; thus Alternative IW-70 would have greater impacts associated with energy demands and GHG emissions related to the use of electricity to import additional water into the PWD service area.

D. High Diversification Alternative (RW-40)

FINDINGS: The RW-40 Alternative is not environmentally superior to the proposed program.

FACTS IN SUPPORT OF THE FINDINGS: Under the RW-40 Alternative, program objectives would be met. The RW-40 Alternative includes less local surface recharge capacity (13,000 afy) and thus would have fewer impacts associated with construction of surface spreading facilities. The RW-40 Alternative also includes less local groundwater production (25,000 afy) than the proposed program and would require construction of fewer groundwater extraction facilities. Although the RW-40 Alternative would have decreased impacts generally associated with construction activities, no potentially significant or significant and unavoidable impacts associated with construction of the proposed program would be avoided. Operation of the new WTP under Alternative RW-40 would require a commitment of new energy resources. Relative to the proposed program, Alternative RW-40 requires more imported water than the proposed program due to a lesser dependence on recycled water for direct non-potable and conservation. Alternative RW-40 Alternative would have greater impacts associated with energy demands and GHG emissions related to the use of electricity to import additional water into the PWD service area.

E. Self Reliance Alternative (RW-70)

FINDINGS: The RW-70 Alternative is not environmentally superior to the proposed program.

FACTS IN SUPPORT OF THE FINDINGS: Under the RW-70 Alternative, program objectives would be met. The RW-70 Alternative would include the same amount of local surface recharge capacity (35,000 afy) as the proposed program but does not include the option for external groundwater banking, thus eliminating the need for construction of the new water treatment plant and any construction-related impacts. Although Alternative RW-70 would have decreased impacts generally associated with construction activities, no potentially significant or significant and unavoidable impacts associated with construction of the proposed program would be avoided. In addition, Alternative RW-70 does not include a new water treatment plant; therefore impacts associated with the operation of the water treatment plant would be avoided. Alternative RW-70 would import a similar amount of water as the proposed program but would commit to greater use of recycled water for indirect potable reuse for groundwater recharge instead of direct non-potable uses and higher conservation.

F. Maximize Recycled Water + Conservation Alternative (MAX RW+CON)

FINDINGS: The MAX RW+CON Alternative is the environmentally superior alternative to the proposed program.

FACTS IN SUPPORT OF THE FINDINGS: Under the MAX RW+CON Alternative, program objectives would be met. The MAX RW+CON Alternative includes the same amount of local surface recharge capacity (35,000 afy) as the proposed program but does not include the option for external groundwater banking, thus eliminating the need for construction of the new water treatment plant and any construction-related impacts. Although the MAX RW+CON Alternative

would have decreased impacts generally associated with construction activities, no potentially significant or significant and unavoidable impacts associated with construction of the proposed program would be avoided. The MAX RW+CON Alternative minimizes the need for imported water by maximizing all other water supply components, including recycled water for direct and indirect potable offset and conservation. In addition, this alternative would reduce the impacts to energy use and GHG emissions associated with the importation of water under the proposed program. The MAX RW+CON Alternative is the only alternative that would reduce the amount of imported water necessary to meet future demand and thus would reduce the impact associated with GHG emissions as related to energy use.

Under Alternative MAX RW+CON, the use of recycled water would be maximized at up to 23,800 afy for either groundwater recharge (indirect potable use) or other direct non-potable offsets such as landscape or agricultural irrigation. The dedication to maximizing recycled water use, in particular using up to 15,000 afy for groundwater recharge, in addition to maximizing conservation activities would reduce the need for importing water and reduce certain potential impacts related to importing water, such as to agricultural resources, GHG emissions, and energy. The MAX RW+CON Alternative would reduce impacts on a relative basis and as such would be considered the environmentally superior alternative.

V. General Findings

A. The written Responses to Comments contained in the Final PEIR have adequately responded to the comments received on the Draft PEIR during the public review process.

B. Recirculation of the Draft PEIR following the preparation of the Responses to Comments is not required. The Responses to Comments and resulting revisions to the Draft PEIR do not add significant new information to the PEIR, including information showing any new significant impact from the proposed program, any increase in the severity of any impact, or any considerably different, feasible alternative.

FACTS IN SUPPORT OF THE FINDINGS: The Responses to Comments clarifies and amplifies the Draft PEIR's discussion of the analysis. Mitigation Measure BIO-4e was added to require compliance with Chapter 14.04 of the City of Palmdale Municipal Code and to ensure impacts to Joshua trees and other native plants are minimized to less than significant levels.

Mitigation Measure HAZ-4 was revised to ensure that PWD coordinates with the City of Palmdale and Los Angeles County in obtaining approval of the Traffic Control Plan and any necessary encroachment permits.

Mitigation Measure HYD-4 was revised to ensure that the protocol for the injection and/or extraction operations of stored groundwater is dependent on the specific site conditions selected for the injection wells.

The discussion of soil stability impacts under Impact 3.5-3 was revised to describe the occurrence of subsidence in the vicinity of Lancaster due to lowering of groundwater levels beyond their

historic range. The revised discussion cross references Mitigation Measure HYD-5, which would ensure that the SWRP does not result in further drawdown of the aquifer and ensure that potentially significant impacts associated with land subsidence are avoided.

Mitigation Measure HYD-5 was revised to focus on the specifics for implementing a groundwater monitoring and management program, including establishing protocols for identifying thresholds for groundwater levels, below which pumping would be curtailed .

Mitigation Measure REC-1 was revised to ensure approval from the City of Palmdale is obtained for implementation actions located on public lands designated as open spaces or parkland.

REC-2 was revised to ensure PWD obtains approval of the circulation and detour plans from applicable agencies with jurisdiction over affected bikeways.

Mitigation Measure TR-1 was revised to include compliance with the California Manual of Uniform Traffic Control Devices and to require the identification of traffic measures, lane closures, turn restrictions, and detours in the Traffic Control/Traffic Management Plan.

Other text revisions were made that merely clarify information presented in the Draft PEIR.

EXHIBIT "D"

Appendix A
Mitigation Monitoring and Reporting Program

ESA

MITIGATION MONITORING AND REPORTING PROGRAM

Palmdale Water District Strategic Water Resources Plan

Introduction

Section 15091(d) and Section 15097 of the CEQA Guidelines require a public agency to adopt a program for monitoring or reporting on the changes it has required in the project or conditions of approval to substantially lessen significant environmental effects. Accordingly, the Mitigation Monitoring and Reporting Program (MMRP) is hereby adopted for this project.

This MMRP summarizes the mitigation commitments identified in the Palmdale Water District Strategic Water Resources Plan Final Program EIR (State Clearinghouse No. 2010101091). Mitigation measures are presented in the same order as they occur in the Final EIR. The columns in the MMRP table provide the following information:

- **Mitigation Measure(s):** The action(s) that will be taken to reduce the impact to a less-than-significant level.
- **Implementation, Monitoring, and Reporting Action:** The appropriate steps to implement and document compliance with the mitigation measures.
- **Responsibility:** The agency or private entity responsible for ensuring implementation of the mitigation measure. However, until the mitigation measures are completed, The Palmdale Water District, as the CEQA Lead Agency, remains responsible for ensuring that implementation of the mitigation measures occur in accordance with the program (CEQA Guidelines, Section 15097(a)).
- **Monitoring Schedule:** The general schedule for conducting each monitoring task, either prior to construction, during construction and/or after construction.

MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE PALMDALE WATER DISTRICT STRATEGIC WATER RESOURCES PLAN

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
Aesthetics			
AES-1: During project design, a landscape plan shall be prepared for proposed recharge basins, production wells, and the treatment plant that 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	• Include mitigation measure in project design specifications. • The design engineer shall develop a landscape plan as described in AES-1 to be included in final construction plans and drawings. • Ensure the landscape plan is included in construction contractor specifications for implementation during the final site restoration and revegetation phase of project construction. • Retain copies of landscape plan and final construction plans and drawings in project file.	PWD	Before Construction
AES-2: 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.	• Include mitigation measure in project design specifications. • The design engineer shall design aboveground buildings/structures to have aesthetic qualities as described in AES-2. • Ensure design specifications are included in construction contractor specifications. • Retain copies of design and contractor specifications in project files.	PWD	Before Construction
AES-3: 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.	• Include mitigation measure in project design specifications. • The design engineer shall design aboveground buildings/structures to have color palettes and vegetation screening as described in AES-3. • Ensure design specifications are included in construction contractor specifications. • Retain copies of design and contractor specifications in project files.	PWD	Before Construction
AES-4: All new permanent exterior lighting associated with proposed project components shall be shielded and directed downward to avoid any light intrusion to surrounding uses.	• Include mitigation measure in project design specifications. • The design engineer shall design permanent exterior lighting associated with program facilities as described in AES-4. • Ensure design specifications are included in construction contractor specifications. • Retain copies of design and contractor specifications in project files.	PWD	Before Construction

MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE PALMDALE WATER DISTRICT STRATEGIC WATER RESOURCES PLAN

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
AES-5: Lighting used during nighttime construction, including any associated 24-hour well drilling, shall be shielded and pointed away from surrounding light-sensitive land uses.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AES-6: The proposed treatment plant shall be designed to include non-glare exterior materials and coatings to minimize glare or reflection.	• Include mitigation measure in project design specifications. • The design engineer shall design the treatment plant to include non-glare exterior materials and coatings. • Ensure design specifications are included in construction contractor specifications. • Retain copies of design and contractor specifications in project files.	PWD	Before Construction
AES-7: Development of the proposed project and associated facilities shall comply with existing and future lighting ordinances.	• Include mitigation measure in project design specifications. • The design engineer shall include specifications for lighting that complies with existing and future lighting ordinances. • Ensure design specifications are included in construction contractor specifications. • Retain copies of design and contractor specifications in project files.	PWD	Before Construction
Air Quality and Greenhouse Gas (GHG) Emissions			
AQ-1a: General contractors shall implement a fugitive dust control program pursuant to the provisions of AVAQMD Rule 403.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AQ-1b: All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction

MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE PALMDALE WATER DISTRICT STRATEGIC WATER RESOURCES PLAN

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
AQ-1c: General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues shall turn their engines off when not in use to reduce vehicle emissions. Construction activities shall be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AQ-1d: Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used to the extent feasible.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AQ-1e: All construction vehicles shall be prohibited from idling in excess of five minutes, both on- and off-site.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AQ-1f: PMD shall require the construction contractor to utilize coatings and solvents that are consistent with applicable AVAQMD rules and regulations.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AQ-1g: PMD shall implement construction of project components in non-overlapping phases to minimize daily emissions of NOx below the AVAQMD thresholds of significance (i.e. 137 lbs/day).	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction
AQ-2: 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.	• Include mitigation measure in project design specifications. • The design engineer shall include specifications for energy efficient equipment in the design documents and specifications that allow for operation of facilities during off-peak periods for energy demand. • Ensure design specifications are included in construction contractor specifications.	PWD	Before and After Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
	• Retain copies of design and contractor specifications in project files. • PWD shall develop Operations Manuals for program facilities that include protocols for operating equipment during off-peak periods for energy demand whenever possible.		
AQ-3: PWD shall promote and encourage the use of recycled water to offset imported water requirements.	• PWD shall participate in regional planning efforts to promote and develop recycled water supplies in the Antelope Valley Groundwater Basin.	PWD	Ongoing
Biological Resources			
BIO-1a: Prior to ground disturbing activities for individual projects, a habitat assessment shall be conducted by a qualified biologist to determine the potential for special-status wildlife species to occur within affected areas. If the habitat assessment determines that a special-status species has the potential to be present within a minimum of 500 feet of the construction zone, a focused survey shall be conducted by a qualified biologist prior to the project implementation to determine presence or absence.	• Include mitigation measure in construction contractor specifications. • Prior to construction, PWD or the construction contractor shall retain a qualified biologist to conduct a habitat assessment to determine the potential for special-status wildlife species in the affected areas and to conduct a focused survey if the habitat assessment determines that a special-status species has the potential to be present within the project area. • Retain copies of the survey(s) in the project file.	PWD; Construction Contractor	Before Construction
BIO-1b: If a special-status wildlife species is determined present within the limits of construction activities, a qualified biologist shall conduct pre-construction surveys of proposed work zones and the 500-foot buffer around each area within 14 days prior to ground disturbing activities. Any potential habitat capable of supporting a special-status wildlife species, such as burrows, shall be flagged for avoidance, as necessary; any additional habitat features, if any, shall also be identified and flagged as necessary. The results of these pre-construction surveys shall be submitted to CDFG and USFWS for their review.	• Include mitigation measure in construction contractor specifications. • Prior to construction, PWD or the construction contractor shall retain a qualified biologist to conduct a pre-construction survey in accordance with BIO-1b. • Retain copies of the survey(s) in the project file. • Submit the pre-construction surveys to CDFG and USFWS for review if applicable.	PWD; Construction Contractor	Before Construction
BIO-1c: If the habitat assessment concludes that there is potential for listed wildlife species to occur and the area of potential presence cannot be avoided, appropriate protocol-level surveys shall be conducted by a qualified biologist under a Memorandum of Understanding by the appropriate regulating agency (USFWS or CDFG) to determine presence or absence. If a listed species is determined to have the potential to be present in or adjacent to the area of disturbance, an avoidance plan shall be prepared by a qualified biologist and approved by the USFWS and/or the CDFG prior to any ground disturbing activities.	• Include mitigation measure in construction contractor specifications. • If the habitat assessment determines the potential for listed wildlife species to occur in the area, PWD or the construction contractor shall retain a qualified biologist to determine presence or absence in accordance with BIO-1c. • Retain copies of the survey(s) in the project file. • If presence of a listed species is confirmed, the qualified biologist shall prepare the avoidance	PWD; Construction Contractor	Before Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
	plan in accordance with BIO-1c. • Submit the avoidance plan to USFWS and/or CDFG as applicable. • Retain copies of the avoidance plan in the project file. • PWD shall retain a qualified biologist to monitor implementation of the avoidance plan. • Retain monitoring records in the project file.		
BIO-1d: Every effort shall be made to avoid potential impacts to special-status wildlife species by eliminating construction activities to the greatest extent possible within areas where those species are detected through surveys. Tunneling or jack and bore construction methods under drainages that may support listed special-status wildlife species shall be recommended in areas where those species have the potential to occur or where presence has been confirmed.	• Include mitigation measure in construction contractor specifications. • Incorporate avoidance measures as described in BIO-1d into the avoidance plan developed under BIO-1c to the extent feasible.	PWD; Construction Contractor	Before and During Construction
BIO-1e: All construction areas, staging areas, and right-of-ways shall be staked, flagged, fenced, or otherwise clearly delineated to restrict the limits of construction to the minimum necessary near areas that may support special-status wildlife species as determined by a qualified biologist.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a qualified biologist to serve as a construction monitor to verify compliance with BIO-1e. • The qualified biologist shall implement BIO-1e in conjunction with the results of any previous special-status species surveys or development of avoidance plans. • Retain monitoring records in the project file	PWD; Construction Contractor	Before and During Construction
BIO-1f: Silt fencing or similar impermeable barriers to exclude small wildlife species from entering the active work areas shall be installed around future work areas that occur within or adjacent to undisturbed habitats, or near areas of documented occurrences of special-status wildlife as determined during pre-construction surveys by a qualified biologist. Such impermeable barriers shall be verified by a qualified biologist prior to initiating construction activities.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a qualified biologist to serve as a construction monitor to verify compliance with BIO-1f. • The qualified biologist shall implement BIO-1f in conjunction with the results of any previous special-status species surveys or development of avoidance plans. • Retain monitoring records in the project file	PWD; Construction Contractor	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
BIO-1g: In areas where pre-construction surveys determine that burrowing owls have the potential to occur, the following measures shall be implemented to mitigate for potential impacts to burrowing owls. The following measures shall be implemented as part of the approval for a grading or building permit. Appropriate notes shall be included on any grading permit, building permit or final map. To avoid impacts on western burrowing owl, the following guidelines, adapted from the *CDFG Staff Report on Burrowing Owl Mitigation* (CDFG, 1995), shall be implemented: 1. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct a preconstruction survey to locate any breeding or wintering burrowing owls no more than 30 days prior to the start of construction. 2. If no burrowing owls are detected, no further mitigation is necessary. If burrowing owls are detected, no ground-disturbing activities, such as road construction or installation of turbines or ancillary facilities, shall be permitted within 250 feet of an active burrow during the breeding season (February 1–August 31), unless otherwise authorized by the CDFG. Occupied burrows should not be disturbed during the nesting season unless a qualified biologist approved by CDFG, verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. 3. During the non-breeding (winter) season (September 1–January 31), ground-disturbing work can proceed near active burrows as long as the work occurs no closer than 160 feet from the burrow and the site is not directly affected by the project activity. If active winter burrows are found that would be directly affected by ground-disturbing activities, owls can be displaced from winter burrows. A qualified wildlife biologist shall install one-way doors at the entrance to the active burrow and other potentially active burrows within 150 feet of the active burrow. Forty-eight hours after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. 4. Should burrowing owls be found on-site, and if it is determined that the proposed project would reduce suitable habitat on-site below CDFG threshold levels, the habitat shall be replaced off-site if no suitable on-site habitat is available. Off-site habitat must consist of suitable burrowing owl habitat, as defined in the Burrowing Owl Survey Protocol, and the location shall be approved by the CDFG. The appropriate replacement ratio will be determined through consultation with the CDFG.	• Include mitigation measure in construction contractor specifications. • If the pre-construction survey determines that burrowing owls have the potential to occur, PWD or the construction contractor shall retain a qualified biologist to implement BIO-1g. • If necessary, PWD shall retain a qualified biologist to serve as a construction monitor to ensure any avoidance measures are implemented during construction. • Retain copies of the survey(s) and monitoring reports in the project file. • If suitable burrowing owl habitat is reduced, then PWD shall consult with CDFG to determine the appropriate ratio and location of replacement habitat.	PWD; Construction Contractor	Before and During Construction

MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE PALMDALE WATER DISTRICT STRATEGIC WATER RESOURCES PLAN

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
BIO-2a: If construction and vegetation removal is proposed between February 1 and August 31, then a qualified biologist shall conduct a pre-construction survey for breeding and nesting birds within 500-feet of the construction limits to determine and map the location and extent of breeding birds that could be affected by the project. Active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone shall be established, consisting of 300 feet for any passerine (or similar) species and 500 feet for any raptor or special-status species, or distances otherwise determined by a qualified biologist and approved by the CDFG. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.	• Include mitigation measure in construction contractor specifications. • If construction and vegetation removal is proposed between February 1 and August 31, PWD or the construction contractor shall retain a qualified biologist to conduct a pre-construction survey in accordance with BIO-2a. • PWD shall retain a qualified biologist to serve as a construction monitor to ensure compliance with BIO-2a if active nests are found. • Retain copies of the survey(s) and monitoring report in the project file.	PWD; Construction Contractor	Before and During Construction
BIO-2b: All active bird nest buffer areas shall be clearly demarcated with stakes, flag, or fence material. The installation of buffer areas shall be verified by a qualified biologist prior to the initiation of ground disturbance activities.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a qualified biologist to implement BIO-2b and serve as a construction monitor to ensure compliance with buffer areas. • Retain copies of the buffer area verification and monitoring report in the project file.	PWD; Construction Contractor	Before Construction
BIO-2c: A qualified biologist shall conduct a survey for bat roost sites prior to the initiation of any construction activities in areas where potential roost sites may occur, such as abandoned structures, bridges, or hollow trees. If a bat roost is identified, a minimum 300 foot buffer shall be established by a qualified biologist or as otherwise determined in consultation with the CDFG.	• Include mitigation measure in construction contractor specifications. • Prior to construction, PWD or the construction contractor shall retain a qualified biologist to conduct a survey for bat roost sites in accordance with BIO-2c. • PWD shall retain a qualified biologist to serve as a construction monitor to ensure compliance with BIO-2c if roosts are found. • Retain copies of the survey(s) and monitoring report in the project file.	PWD; Construction Contractor	Before Construction
BIO-3a: To the extent feasible, PWD shall avoid and/or reduce the footprint of construction and staging areas in areas having potential occurrences of special-status plant species.	• Include mitigation measure in construction contractor specifications for program components located on or near natural communities with potential to support special-status plant species. • PWD shall retain a qualified biologist to serve as a construction monitor to ensure compliance with BIO-3a when applicable. • Retain copies of the monitoring report in the project file.	PWD; Construction Contractor	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
BIO-3b: A qualified botanist shall conduct a pre-construction floristic inventory and focused rare plant survey of project areas to determine and map the location and extent of special-status plant species populations within the disturbance area. This survey shall occur during the typical blooming periods of special-status plants with the potential to occur. The plant survey shall follow the CDFG Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (November 24, 2009).	• Include mitigation measure in construction contractor specifications for program components located on or near natural communities with potential to support special-status plant species. • Prior to construction, PWD shall retain a qualified biologist to conduct a pre-construction floristic inventory and focused rare plant survey in accordance with BIO-3b when applicable. • Retain copies of the inventory and survey in the project file.	PWD; Construction Contractor	Before Construction
BIO-3c: The limits of construction shall be staked, flagged, fenced, or otherwise clearly delineated to avoid and minimize impacts on adjacent habitats that may support special-status plant species.	• Include mitigation measure in construction contractor specifications if special-status plant species are found in accordance with BIO-3b. • PWD shall retain a qualified biologist to serve as a construction monitor to ensure compliance with BIO-3c when applicable. • Retain copies of the monitoring report in the project file.	PWD; Construction Contractor	Before and During Construction
BIO-3d: Earth-moving equipment shall avoid maneuvering in areas outside the identified limits of construction in order to avoid disturbing areas that will remain undeveloped. These limits of natural open space areas that are adjacent to the limits of construction shall be identified on the site plans.	• Include mitigation measure in project design specifications and construction contractor specifications. • PWD shall ensure limits of open space areas and construction areas are identified in construction documentation and site plans. • PWD shall retain a qualified biologist to serve as a construction monitor to ensure compliance with BIO-3d when applicable.	PWD; Construction Contractor	Before and During Construction
BIO-3e: If permanent unavoidable impacts to special-status plant populations are identified within a disturbance area, PWD shall develop and implement a detailed plant restoration program. This program shall contain the following items: responsibilities and qualifications of the personnel to implement and supervise the program; site selection; site preparation and planting implementation; schedule; maintenance plan/guidelines; monitoring plan; long-term preservation; and performance standards.	• Include mitigation measure in construction contractor specifications. • If permanent unavoidable impacts to special-status plant populations are identified as part of the inventory and survey conducted for BIO-3b, then PWD or the construction contractor shall retain a qualified biologist to develop and implement a detailed plant restoration program in accordance with BIO-3e. • Retain copies of the restoration program and records of implementation success in the project file.	PWD; Construction Contractor	Before and After Construction

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BIO-3f: If temporary construction-related impacts to special-status plant populations are identified within a disturbance area, PWD shall prepare and implement a special-status species salvage and replanting plan. The salvage and replanting plan shall include measures to salvage, replant, and monitor the disturbance area until native vegetation is re-established under the direction of CDFG and USFWS.	• Include mitigation measure in construction contractor specifications. • If temporary construction-related impacts to special-status plant populations are identified as part of the inventory and survey conducted for BIO-3b, then PWD or the construction contractor shall retain a qualified biologist to prepare and implement a special-status species salvage and replanting plan in accordance with BIO-3f. • Retain copies of the salvage and replanting plan and records of implementation success in the project file.	PWD; Construction Contractor	Before and After Construction
BIO-4a: To the extent feasible, project components shall be placed in areas exhibiting absence or a low density of Joshua trees and other native desert vegetation.	• Include mitigation measure in project design specifications. • Retain copies of design documentation in the project file.	PWD	Before Construction
BIO-4b: Should a project require the removal of any Joshua trees, the applicant will have to prepare a desert vegetation preservation plan that will include numbers and locations of all Joshua trees, detailed landscaping plan, preservation areas, transplant procedures, a two-year maintenance and monitoring program including contingency measures to ensure that the plan is successful, and funding to ensure that it will be maintained and preserved in perpetuity. The plan shall depict the location of each Joshua tree that may be subjected to impacts, including the approximate age of the tree and health, and identification of which trees can be saved and maintained on the site or relocated.	• If implementation of program components requires removal of Joshua trees, PWD shall retain a qualified biologist to prepare and implement a desert vegetation preservation plan in accordance with BIO-4b. • Retain copies of the plan and records of plan implementation in the project file.	PWD	Before and After Construction
BIO-4c: Where Joshua trees cannot be retained on site, the applicant must make them available to the City for landscaping uses related to City property. Joshua trees should also be made available by 30-day public notice to other commercial, industrial, or residential developments and to the general public for landscaping uses. Joshua trees remaining after the above options have been exhausted may be transplanted to an offsite location approved by the City.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a qualified biologist to implement BIO-4c. • Retain records of Joshua tree transplantation in the project file.	PWD; Construction Contractor	Before and During Construction
BIO-4d: If trees situated within the City of Palmdale cannot be transplanted to an off-site location, the proponent may pay an in-lieu fee to the City, which shall be determined by resolution of the City Council.	• In conjunction with BIO-4c, PWD shall consult with the City of Palmdale to determine applicable in-lieu fees if Joshua trees removed from any program sites cannot be transplanted.	PWD	Before and During Construction
BIO-4e: The design and implementation of identified project components in the SWRP and related CEQA documentation shall comply with Chapter 14.04 of the City of Palmdale Municipal Code, or any successor ordinance.	• Include mitigation measure in project design specifications. • Include mitigation measure in construction contractor specifications.	PWD	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
	• PWD shall retain a qualified biologist to ensure that prior to initiation of construction, all required desert vegetation surveys are conducted and all required preservation or restoration plans are developed and implemented as required by Chapter 14.04 of the Palmdale Municipal Code. • Retain copies of all surveys and plans in the project file. • Retain all records of plan implementation in the project file.		
BIO-5a: Prior to construction, a qualified wetland delineator shall be retained to conduct a formal wetland delineation in areas where potential jurisdictional resources (i.e., wetlands or drainages) may occur. If jurisdictional resources are identified in the project area and would be directly or indirectly impacted by construction of individual projects, the qualified wetland delineator shall prepare a jurisdictional delineation report outlining mitigation and compensation requirements to be implemented prior to construction.	• Include mitigation measure in project design specifications. • Prior to construction, PWD shall retain a qualified wetland delineator to conduct a wetland delineation in areas where potential jurisdictional resources may occur, in accordance with BIO-5a. • If jurisdictional resources are identified, the qualified wetland delineator shall prepare a jurisdictional delineation report in accordance with Bio-5A. • Retain copies of the report(s) in the project file. • Retain records of any necessary mitigation or compensation in the project file.	PWD	Before Construction
BIO-5b: Proposed projects shall avoid impacting previously undisturbed areas where possible. This would include employing tunneling or jack and bore methods under drainages. The construction zone(s) shall be modified if feasible to minimize disturbance of any wetland or drainage.	• Include mitigation measure in project design and construction contractor specifications. • Construction documents shall identify wetlands and drainages in the construction zone, as identified in the delineation conducted for BIO-5a. • Construction contractors shall identify feasible means for avoidance of wetlands and drainages.	PWD; Construction Contractor	Before and During Construction
BIO-5c: Where jurisdictional wetlands and other waters cannot be avoided, a restoration plan shall be prepared that provides for replanting and monitoring for a minimum three-year period following construction to ensure riparian habitat is re-established.	• Include mitigation measure in construction contractor specifications. • Where jurisdictional wetlands and other waters (identified under BIO-5a) cannot be avoided (as required by BIO-5b), PWD or the construction contractor shall retain a qualified biologist to prepare and implement a restoration plan in accordance with BIO-5c. • PWD or the construction contractor shall retain a qualified biologist to serve as a monitor to ensure	PWD; Construction Contractor	Before and After Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
	successful implementation of the restoration plan and establishment of wetland or riparian habitat. • Retain copies of the restoration plan and monitoring reports in the project file.		
BIO-5d: PWD shall obtain wetland determination from CDFG and/or RWQCB prior to project implementation for project features that may impact waters of the State.	• If the wetland delineation conduced for BIO-5a identifies waters of the State that would be impacted by program components, PWD shall submit the delineation to CDFG and/or RWQCB for concurrence. • Retain copies of the wetland determination in the project file.	PWD	Before Construction
Cultural Resources			
CUL-1a: PWD shall retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology to conduct a study of the project area(s) for all project components that involve ground disturbance. The archaeologist shall conduct a cultural resources inventory designed to identify potentially significant resources. The cultural resources inventory would consist of: a cultural resources records search to be conducted at the South Central Coastal Information Center located at California State University Fullerton; consultation with the Native American Heritage Commission (NAHC) and with interested Native Americans identified by the NAHC; a field survey where deemed appropriate by the archaeologist; and recordation of all identified archaeological resources on California Department of Parks and Recreation 523 Site Record forms. The archaeologist shall provide recommendations regarding resource significance and additional work for those resources that may be affected by a project.	• For each program component that requires ground disturbance, PWD shall retain a qualified archeologist to conduct a cultural resources inventory in accordance with CUL-1a and prepare a report that includes recommendations regarding resource significance and additional work for those resources potentially affected by a project. • Retain copies of the report(s) and recommendations in the project file.	PWD	Before Construction
CUL-1b: For project components that include or affect existing structures that are 50 years old or greater, PWD shall retain a qualified architectural historian, defined as an architectural historian meeting the Secretary of the Interior's Standards for historic architecture, to determine the need for a project-specific historic architectural study. If warranted, the architectural historian shall identify and evaluate potentially affected historic resources prior to project implementation.	• If program components include or affect existing structures that are 50 years old or greater, PWD shall retain a qualified historian to determine the need for a project-specific historic architectural study in accordance with CUL-1b. • If warranted, the qualified historian shall evaluate potentially affected historic resources prior to project implementation. • Retain copies of the report(s) in the project file.	PWD	Before Construction
CUL-1c: PWD shall avoid impacts, if feasible, on identified cultural resources including prehistoric and historic archaeological sites, locations of importance to Native Americans, human remains, and historical buildings, structures and landscapes. Methods of avoidance may include, but should not be limited to, project re-route or re-design, project cancellation, or identification of protection	• Include mitigation measure in project design and construction contractor specifications. • If cultural resources are identified in reports prepared in accordance with CUL-1a and CUL-1b, project design engineers shall identify	PWD	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
measures such as capping or fencing.	methods of avoidance and incorporate such methods into design and construction documentation. • PWD shall retain cultural resource monitors to ensure avoidance measures are implemented. • Retain copies of monitoring reports in project files.		
CUL-1d: PWD shall retain archaeological monitors (and Native American monitors, where deemed appropriate) during project-related ground-disturbing activities that have the potential to impact significant archaeological resources as determined by a qualified archaeologist.	• Include mitigation measure in construction contractor specifications. • PWD shall retain archaeological monitors to serve as construction monitors when surveys and reports prepared under CUL-1a and CUL-1b determine ground-disturbing activities could affect cultural resources. • Retain copies of monitoring reports in project files.	PWD	During Construction
CUL-2a: If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 48 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then identify the designated Most Likely Descendent of the deceased Native American, who will engage in consultation to determine the disposition of the remains.	• Include mitigation measure in construction contractor specifications. • Retain records of all inadvertent discovery evaluations in the project file.	PWD; Construction Contractor	During Construction
CUL-3a: For all project components that involve ground disturbance, PWD shall retain a 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. If deemed necessary, the paleontologist shall conduct a paleontological resources inventory designed to identify potentially significant resources. The paleontological resources inventory would consist of: a paleontological resources records search to be conducted at the San Bernardino County Museum; a field survey where deemed appropriate by the paleontologist; and recordation of all identified paleontological resources. The paleontologist shall provide recommendations regarding additional work for the project.	• For each program component that requires ground disturbance, PWD shall retain a qualified paleontologist to conduct a paleontological resources inventory in accordance with CUL-3a and prepare a report that includes recommendations regarding resource significance and additional work for those resources potentially affected by a project. • Retain copies of the report(s) and recommendations in the project file.	PWD	Before Construction
CUL-3b: PWD shall avoid impacts, if feasible, on identified paleontological resources. Methods of avoidance may include, but not be limited to, project re-route or re-design, project cancellation, or identification of protection measures such as capping or fencing.	• Include mitigation measure in project design and construction contractor specifications. • If paleontological resources are identified in reports prepared in accordance with CUL-3a, project design engineers shall identify methods of	PWD	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
	avoidance and incorporate such methods into design and construction documentation. • PWD shall retain cultural resource monitors to ensure avoidance measures are implemented. • Retain copies of monitoring reports in project files.		
CUL-3c: PWD shall retain paleontological monitors during construction for ground-disturbing activities that have the potential to impact significant paleontological resources as determined by a qualified paleontologist.	• Include mitigation measure in construction contractor specifications. • PWD shall retain paleontological monitors to serve as construction monitors when surveys and reports prepared under CUL-3a determine ground-disturbing activities could affect paleontological resources. • Retain copies of monitoring reports in project files.	PWD	During Construction
Geology, Soils, Seismicity, and Mineral Resources			
GEO-1: Prior to the approval of construction plans for any individual project, a design-level geotechnical investigation, including collection of site specific subsurface data shall be completed. The geotechnical evaluation shall identify all potential seismic hazards including fault rupture and characterize the soil profiles, including liquefaction potential and expansive soil potential. The geotechnical investigation shall recommend site-specific design criteria to mitigate for seismic hazards, such as special foundations and structural setbacks, and these recommendations shall be incorporated into the design of individual proposed projects.	• PWD shall retain a qualified engineer to conduct a design-level geotechnical investigation. • PWD shall ensure the design engineer incorporates recommendations into the project design. • PWD shall verify that recommendations have been incorporated into the project design prior to initiation of the project. • Retain copies of the geotechnical investigation in the project file. • Include the geotechnical report as part of the construction documents.	PWD; Construction Contractor	Before Construction
GEO-2: All topsoil stripped from the ground surface during construction shall be used, to the extent feasible, for construction of other project elements and not hauled offsite. Any temporary stockpiles shall be managed through the use of best management practices, which shall include but not be limited to wetting and/or covering stockpiles to prevent wind erosion.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance. • Retain copies of monitoring reports in project files.	PWD; Construction Contractor	During Construction

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GEO-3: Construction and operation of facilities that are located within or adjacent to known Mineral Resource Zones shall comply with City policies requiring the continued access to these areas. Buffers shall be installed around development occurring in the vicinity of mining operations to prevent interruptions or impacts to the existing mining operations.	• Include mitigation measure in project design specifications. • PWD shall verify that design and construction documentation includes access to Mineral Resource Zones and buffers around mining operations as applicable.	PWD	Before Construction
Hazards and Hazardous Materials			
HAZ-1: Contingency Plan for Contaminated Soil or Groundwater. Prior to commencement of construction, PWD shall require its construction contractor to consult with appropriate regulatory agencies to prepare a Contingency Plan that outlines how to dispose of any contaminated soil or groundwater that may be encountered during construction. If contaminated soil and/or groundwater are encountered or if suspected contamination is encountered during project construction, work shall be halted in the area, and the Contingency Plan shall be implemented.	• Include mitigation measure in construction contractor specifications. • PWD shall verify that the Plan has been prepared in accordance with HAZ-1. • PWD shall retain a construction monitor to verify contractor compliance with the Plan. • Retain copies of the Plan and records verifying implementation of the Plan in the project file.	PWD; Construction Contractor	Before and During Construction
HAZ-2: Hazardous Materials Management Spill Prevention and Control Plan. Before commencement of construction, PWD shall require its construction contractor 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	• Include mitigation measure in construction contractor specifications. • PWD shall verify that the Plan has been prepared in accordance with HAZ-2. • PWD shall retain a construction monitor to verify contractor compliance with the Plan. • Retain copies of the Plan and records verifying implementation of the Plan in the project file.	PWD; Construction Contractor	Before and During Construction
HAZ-3: Conduct Environmental Site Assessments in AFP 42 Vicinity. Before beginning construction, PWD shall complete a Phase I Environmental Site Assessment (ESA) for soil and groundwater contamination in areas where production wells and pipelines are located within the vicinity of U.S. Air Force Plant 42. The recommendations set forth in the Phase I ESA shall be implemented to the satisfaction of applicable agencies before construction begins. If the Phase I ESA indicates the potential for contamination within the construction zone of the pipelines, Phase II studies shall be completed and recommendations implemented before construction begins. Phase II studies shall include soil and groundwater sampling and analysis for anticipated	• Include mitigation measure in construction contractor specifications for program components located in the vicinity of Air Force Plant 42 (AFP42). • PWD or its contractor shall complete a Phase I Environmental Site Assessment (ESA) for soil and groundwater contamination and Phase II studies (if necessary) in accordance with HAZ-3. • PWD shall verify that recommendations of the ESA are implemented prior to or during	PWD	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
contaminants. The Phase II sampling is intended to identify how to dispose of any potentially harmful material from excavations, and to determine if construction workers need specialized personal protective equipment while constructing the pipeline through that area. All recommendations of the Phase II analysis shall be implemented prior to or during construction to ensure that health hazards are reduced to levels that are deemed acceptable by the applicable regulators.	construction. If necessary, PWD shall retain a construction monitor to assist with such verification during project construction. • Retain copies of the ESA(s) and records verifying implementation of recommendations in the project file.		
HAZ-4: Maintain Emergency Access During Construction. In conjunction with Mitigation Measure TR-1, prior to initiating construction of proposed facilities, PWD shall prepare and implement a Traffic Control Plan that contains comprehensive strategies for maintaining emergency access during construction. Strategies shall include, but are not limited to, maintaining steel trench plates at the construction sites to restore access across open trenches and identification of alternate routing around construction zones. In addition, police, fire, and other emergency service providers shall be notified of the timing, location, and duration of the construction activities and the location of detours and lane closures. The PWD shall ensure that the Traffic Control Plan and other construction activities are consistent with the Los Angeles County Operational Area Emergency Response Plan. The PWD shall coordinate with the City of Palmdale and Los Angeles County in obtaining approval of the Traffic Control Plan and any necessary encroachment permits.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a qualified engineer to prepare and implement a Traffic Control Plan in accordance with HAZ-4. • PWD shall verify that the Traffic Control Plan is consistent with applicable emergency response plans and that coordination with other jurisdictions has occurred. • PWD shall appoint a construction monitor to verify contractor compliance with the Traffic Control Plan. • Retain copies of the Plan and monitoring reports in the project file.	PWD; Construction Contractor	Before and During Construction
HAZ-5: Implement Fire Hazard Reduction Measures. During construction of facilities located in areas designated as "Wildland Area with Substantial Fire Risk" by Los Angeles County Fire Department, PWD shall require that all staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other material that could ignite. Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During the construction of the SWRP facilities, contractors shall require all vehicles and crews working at the project site 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.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance with HAZ-5. • Retain copies of monitoring reports in the project file.	PWD; Construction Contractor	During Construction
Hydrology and Water Quality			
HYD-1: Construction Best Management Practices (BMPs). PWD shall require the construction contractor to develop and implement BMPs to reduce the potential for storm water runoff from construction sites to deliver pollutants into adjacent water bodies or groundwater. PWD shall include in contractor specifications that the contractor is responsible for developing and implementing the BMPs. The BMPs shall be maintained at the site for the entire duration of construction.	• Include mitigation measure in construction contractor specifications. • PWD shall verify that the construction contractor has developed and implemented BMPs to reduce storm water runoff as required by HYD-1. • PWD shall retain a qualified construction monitor to conduct routine inspections of BMP	PWD; Construction Contractor	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
The objectives of the BMPs are to identify pollutant sources that may affect the quality of storm water discharge and to implement measures to reduce or eliminate construction-related water quality effects. Mitigation also shall include monitoring activities to ensure that BMPs are properly implemented and maintained. The BMPs for the proposed project shall represent the best available technology that is economically feasible and include, but not be limited to, the implementation of the following: • Identification of all pollutant sources, including sources of sediment that may affect the quality of storm water discharges associated with construction activity from the construction site; • Identification of non-storm water discharges; • Estimation of the construction area and impervious surface area; • Preparation of a site map and maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs); • Implementation of all applicable erosion and sedimentation control measures, waste management practices, and spill prevention and control measures that are acceptable to the Lahontan RWQCB, such as those identified in the California Stormwater Quality Association's *Construction Best Management Practices Handbook/Portal* (2009); • Maintenance and training practices; and • A sampling and analysis strategy and sampling schedule for discharges from construction activities. The construction contractor shall perform routine inspections of the construction areas to verify that the BMPs are properly implemented and maintained. The construction contractor shall notify PWD immediately if there is a noncompliance issue that requires correction.	implementation during project construction. • Retain copies of the BMPs and monitoring and inspection reports in the project file.		
HYD-2: Groundwater Quality Monitoring Program. PWD shall develop and implement a Groundwater Monitoring Program to monitor the impact of groundwater recharge strategies identified in the SWRP on groundwater quality and to ensure that groundwater storage and recovery activities do not substantially degrade groundwater quality. PWD shall be responsible for developing a Groundwater Monitoring Program that details monitoring and groundwater sampling frequency, parameters to be monitored and/or analyzed, detailed monitoring and operational constraints. Prior to development of the plan, PWD shall conduct a basin-wide survey to identify existing wells that are suitable (based on construction criteria, location and accessibility) for use in a long-term monitoring program. No significant long-term impacts are expected from these monitoring activities as no pumping or injection facilities will be installed as part of these efforts and the well locations	• PWD shall develop and implement a Groundwater Quality Monitoring Program as described in HYD-2 prior to operation of any groundwater recharge, storage or recovery activities. • The Monitoring Program document shall be available upon request. • PWD shall conduct a basin-wide survey in association with HYD-2 to identify monitoring wells. • PWD shall retain copies of all monitoring and sampling data collected in accordance with the Monitoring Plan.	PWD	Before and After Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
will be visited on, at most, a monthly basis. In addition, PWD shall ensure that the project operates under the Waste Discharge Requirements (WDRs) established by the Lahontan RWQCB. These requirements include application and effluent management requirements that will ensure there is no runoff to surface water that is not in accordance with the WDRs, and that groundwater is protected. If necessary, PWD will construct and maintain an additional water treatment plant to protect water quality and associated beneficial uses within the project area.	• PWD shall retain copies of all applicable WDRs and maintain records that verify compliance with the requirements of such WDRs. • Periodic reports shall be prepared and made available to the public to disclose the results of the Monitoring Program.		
HYD-3: Salt and Nutrient Management Program. PWD shall prepare and/or participate in the preparation of a Salt Nutrient Management Plan for the AVGB, which is designed to minimize potential impacts of salt buildup in the basin related to recharge of imported and treated water supplies. Such plans are required under the SWRCB's Recycled Water Policy in basins using significant amounts of reclaimed water, and are intended to aid in addressing just these types of issues. As specific projects are developed, an analysis shall be performed to evaluate potential patterns in seasonal changes in treated surface water quality as it relates to local groundwater quality. Recharge operations shall be conducted to the degree possible so that higher TDS water is percolated in areas of higher salinity groundwater, and near larger extraction wells where subsequent removal of the water is more extensive.	• Include mitigation measure in project design specifications where applicable. • PWD shall verify that the design of program components related to groundwater recharge incorporates the results of analyses of salts and nutrients as described in HYD-3. • PWD shall participate in the preparation of a Salt and Nutrient Management Plan for the AVGB. • Operation records shall be retained in the project file to ensure Salt and Nutrient Management Plan requirements are being met.	PWD	During Operation
HYD-4: Groundwater Injection Operations Protocol. PWD shall prepare a protocol for the injection and extraction of stored groundwater to define operational parameters and conditions under which injection and/or extraction operations are to be modified and/or cease. This protocol shall be dependent on the specific site conditions selected for the injection wells. This protocol shall be implemented in order to minimize any potential impacts to the AVGB that may result in significant changes to either groundwater quality (i.e. increased concentrations of constituents of concern) and/or groundwater levels (i.e. decreased groundwater levels resulting in adverse impacts such as land subsidence).	• PWD shall prepare site-specific Groundwater Injection Operations Protocols for each program component that involve the injection and extraction of groundwater. • PWD shall implement the Protocol and monitor for the operational parameters and conditions described in the Protocol. • Records of monitoring and operation shall be retained in the project file to ensure protocols for the injection and extraction of stored groundwater are implemented. • Retain copies of the Protocol in the project file.	PWD	After Construction

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HYD-5: Groundwater Monitoring and Management Program.. PWD shall manage its groundwater banking activities such that no net loss of groundwater occurs. Prior to the initiation of construction of any individual groundwater banking project, PWD shall prepare and adhere to the requirements of a Groundwater Monitoring and Management Program (GMMP). The purpose of the GMMP will be to ensure that implementation of the SWRP does not result in a net depletion in groundwater storage or a significant reduction in groundwater levels in the vicinity of SWRP facilities. The GMMP shall employ monthly monitoring of groundwater wells and groundwater levels around SWRP recharge and extraction facilities. The number of monitoring wells and their locations shall be defined in the GMMP. The number and location of monitoring wells shall be such that it will enable accurate characterization of groundwater levels on an ongoing basis and determine the area of potential effect (APE) around SWRP recharge and extraction. Program operations shall be scheduled such that groundwater levels would not be reduced below an explicit threshold level to be defined in the GMMP. The threshold shall be based on: (1) the ability of groundwater levels to recover to their lowest recorded drawdown levels by spreading water over a two-year period; (2) the potential for groundwater withdrawals to impede access to groundwater at neighboring wells within the APE, and (3) any adjudication requirements or other legal agreements associated with the Antelope Valley Groundwater Basin. In the event that groundwater levels are reduced to below the threshold, pumping shall be curtailed until such time as water levels again surpass threshold levels. The method for curtailing pumping shall be detailed in the GMMP.	• PWD shall develop a Groundwater Monitoring and Management Program as required by HYD-5. • Copies of the GMMP and associated monitoring records shall be retained in the project file. • Operating plans developed as part of the GMMP shall be retained in the project file. Records of pumping operations and curtailment of pumping also shall be retained in the project file.	PWD	Before, During and After Construction
HYD-6: Implementation of a Drainage Plan. Prior to construction of any facilities that would potentially alter drainage pattern, the applicant must submit a drainage plan to the City of Palmdale and/or the County of Los Angeles Department of Public Works. In addition, all new drainage should be designed in accordance with standards and regulations set forth in the Hydrology Manual of the Los Angeles County Department of Public Works. Drainage shall be designed such that alterations to the course of a stream or river will not result in flooding within or outside of the project area, and drainage will not contribute to runoff which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	• Include mitigation measure in project design and construction contractor specifications for program components that have potential to alter drainage patterns. • PWD shall verify that the design and construction documents are in accordance with standards and regulations set forth in the Hydrology Manual of the Los Angeles County Department of Public Works. • PWD or the construction contractor shall submit a drainage plan to the applicable jurisdiction in accordance with HYD-6.s • Retain copies of the Drainage Plan in the project file.	PWD; construction contractor	Before Construction

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Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
Land Use, Agricultural Resources, and Forestry			
LU-1: As part of the siting of the production wells, PWD shall ensure that the proposed production wells do not limit the use of Prime Farmland or result in conversion of significant acres of land to non-agricultural uses as determined through use of the LESA model.	• Include mitigation measure in project design specifications. • Retain documentation of agricultural land uses in and around program components, including LESA model results, in the project file.	PWD	Before Construction
LU-2: For project components occurring within the Airport Influence Area (AIA), PWD shall submit their proposed project plans to the Los Angeles County ALUC for review and comment prior to final design.	• Include mitigation measure in project design specifications. • PWD shall submit project plans to the Los Angeles County ALUC for program components within the AIA. • PWD shall incorporate comments from the ALUC into its final design. • Retain documentation of correspondence with the ALUC in the project file.	PWD	Before Construction
LU-3: Prior to conducting construction activities within an AIA, PWD shall prepare an Airport Construction Safety Plan that would identify best management practices. The plan may include construction timeframes and hours, lighting and flagging requirements, air traffic control communication requirements, access and egress restrictions, equipment staging area requirements, personal safety equipment requirements for construction workers, and appropriate notification to aviators. The plan would be reviewed and approved by airport staff.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a construction monitor to ensure compliance with the Airport Construction Safety Plan and its requirements • Retain copies of the Plan and monitoring reports in the project file.	PWD; construction contractor	Before and During Construction
LU-4: Prior to final design of the project components within an AIA, PWD shall identify the ground elevation associated with each project component and submit their project plans to airport staff for review and comment. Working with airport staff, PWD shall submit their design plans for airspace analysis (FAA Part 7460 review) to determine whether any of the proposed project components or proposed construction equipment would protrude into protected airspace. If such objects are identified, the implementing agencies, airport staff, and FAA will identify appropriate steps to adjust project plans or include appropriate markings to identify hazards to aviators pursuant to FAA Part 7460.	• Include mitigation measure in project design specifications. • PWD or its contractor shall consult with airport staff to submit design plans for airspace analysis under FAA Part 7460 as required by LU-4. • PWD shall verify that any recommendations from the FAA are incorporated into final project design. • Retain copies of correspondence with airport staff and the FAA in the project file.	PWD; design contractor	Before Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
LU-5: PWD shall reduce the potential attraction of its proposed facilities to wildlife through project design features and ongoing monitoring. PWD shall coordinate with the Palmdale Municipal Airport to develop a Wildlife Hazard Management Plan for recharge basins located in areas determined to pose a risk to aviation pursuant to FAA guidelines. The Plan shall include wildlife deterrent design measures to minimize attracting wildlife. Measures could include installation of a wire grid over the proposed recharge basin as well as other mechanical means of deterring avian wildlife. The Plan also shall include maintenance, monitoring, and reporting requirements.	• Include mitigation measure in project design specifications. • PWD or its contractor shall consult with airport staff to develop a Wildlife Hazard Management Plan. • PWD shall verify that any recommendations from the Plan are incorporated into final project design. • Retain copies of the Plan and correspondence with airport staff in the project file.	PWD; design contractor	Before Construction
Noise			
NOISE-1: PWD shall require the construction contractor to implement the following measures, as applicable, during construction of proposed facilities: • Construction activities in the City of Palmdale shall meet municipal code requirements related to noise. Construction activities shall be limited to between 6:30 a.m. and 8:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Construction activities in unincorporated areas of Los Angeles County shall meet county code requirements related to noise. Construction activities shall be limited to between 6:30 a.m. and 8 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Prior to nighttime construction activities that would generate noise in excess of noise standards, the construction contractor shall secure a noise waiver from the relevant jurisdiction (City or County) and comply with any terms and conditions of the waiver • 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 contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby sensitive receptors including residences, schools, and hospitals. • 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 shall coordinate the most noise producing construction activities with school administration in order to limit disturbance to the campus.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance with noise measures. • Retain copies of monitoring records in the project file.	PWD; Construction Contractor	During Construction

MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE PALMDALE WATER DISTRICT STRATEGIC WATER RESOURCES PLAN

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
NOISE-2: PWD shall require the construction contractor 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 shall designate a Noise Complaint Coordinator who will be responsible for responding to complaints regarding construction noise. The Coordinator shall ensure that reasonable measures are implemented to correct any problems. A contact telephone number for the Coordinator shall be conspicuously posted at the construction site and included in the written notification of the construction schedule sent to surrounding properties.	• Include mitigation measure in construction contractor specifications. • PWD or the construction contractor shall appoint a Noise Complaint Coordinator to respond to construction noise complaints. • Retain copies of the notification and correspondences in the project file.	PWD; Construction Contractor	Before and During Construction
NOISE-3: PWD shall require the construction contractor to implement the following measures, as applicable, during construction of proposed facilities: • Limit jack and bore drilling to 45 feet from sensitive receptors and 15 feet from any structures; or • If jack and bore drilling must occur within 15 feet of any structure, the construction contractor shall conduct crack surveys before drilling to identify existing potential architectural damage to nearby structures and implement measures to prevent any additional damage during project construction. The surveys shall be done by photographs, video tape, or visual inventory, and shall include inside as well as outside locations. All existing cracks in walls, floors, and driveways shall be documented with sufficient detail for comparison after construction to determine whether actual vibration damage occurred. A post-construction survey shall be conducted to document the condition of the surrounding buildings after the construction is complete.	• Include mitigation measure in construction contractor specifications. • PWD shall appoint a construction monitor to verify contractor compliance with noise measures in NOISE-3. • Retain copies of pre-construction and post-construction crack surveys if conducted in the project file.	PWD; Construction Contractor	Before, During, and After Construction
NOISE-4: PWD shall conduct post-construction noise surveys to ensure that operation of new facilities and equipment is in compliance with local noise ordinances at the property boundary. If operational noise exceeds local thresholds, then PWD shall implement further noise-reducing measures, such as enclosing noise generating-equipment, until facilities are in compliance with local ordinances.	• Include mitigation measure in construction contractor specifications. • PWD shall retain a qualified acoustical consultant to conduct a post-construction noise survey to determine compliance with local noise ordinances in accordance with NOISE-4. • Retain copies of the surveys and documentation of any corrective action taken in the project file.	PWD	After Construction

MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE PALMDALE WATER DISTRICT STRATEGIC WATER RESOURCES PLAN

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
Recreation			
REC-1: For implementation actions that would construct new facilities on public lands designated as open spaces or parkland, PWD shall obtain approval from the appropriate recreation or park agency prior to construction of any new facilities. This shall include approval from the City of Palmdale for any new facilities proposed to be located on City-owned lands. Measures to minimize impacts of project construction and operation on recreational activities may include but are not limited to: **Project Construction** • Posting of signage indicating dates during which use of recreational areas would be restricted due to construction • Placement of fencing to isolate construction areas and allow continued use of other areas of recreational parks and facilities • Timing of construction activities to avoid peak recreational seasons **Project Operation** • Use of vegetation to screen proposed facilities from view of adjacent recreational land uses • Security fencing to enclose new PWD facilities, as necessary • Potential land swaps for large projects that may displace substantial amounts of park land or open space	• Include mitigation measure in construction contractor specifications. • PWD shall obtain approval from the appropriate recreation or park agency prior to construction of any new facilities on public lands designated as open space or parkland. • PWD shall obtain approval from the City of Palmdale for any new facilities on City-owned lands. • PWD shall appoint a construction monitor to routinely verify contractor compliance with conditions of approvals during construction • PWD shall verify that conditions of approval are incorporated into project designs and operations. • Retain copies of the approvals and records of implementation in the project file.	PWD	Before and During Construction
REC-2: For implementation actions that would construct pipelines or other new facilities within designated bikeways, PWD shall obtain approval of the circulation and detour plans from the applicable agency with jurisdiction over the affected bikeways prior to construction of any new facilities to minimize access impacts to local bikeways. Circulation and detour plans may include the use of signage and flagging of cyclists through and/or around the construction zone.	• Include mitigation measure in construction contractor specifications. • PWD shall obtain approval of circulation and detour plans from the appropriate jurisdiction prior to construction of program components within bikeways. • PWD shall appoint a construction monitor to routinely verify implementation of the approved plans. • Retain copies of the approval, plan, and monitoring records in the project file.	PWD	Before and During Construction
Traffic and Transportation			
TR-1: PWD shall require the construction contractor to prepare and implement a Traffic Control/Traffic Management Plan subject to approval by the appropriate local jurisdiction prior to construction. The plan shall: • Comply with the California Manual of Uniform Traffic Control Devices, latest edition.	• Include mitigation measure in construction contractor specifications. • PWD or the construction contractor shall retain a traffic engineer to prepare and implement a Traffic Control/Traffic Management Plan in	PWD; Construction Contractor	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
• Identify the layout of the traffic measures, lane closures, turn restrictions, and detours. • Identify hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance on traffic flow. • Specify both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption. • Identify limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements. • Identify all access and parking restrictions. • Maintain access and minimize disruption to residence and business driveways at all times to the extent feasible. • Lay out a plan for notifications and a process for communication with affected residents and businesses prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints; • For construction activities within one-quarter mile of a school facility, include a plan to coordinate all construction activities with the Antelope Valley Union High School District and Palmdale School District, at least two months in advance. The Antelope Valley Union High School District and the Palmdale School District shall be notified of the timing, location, and duration of construction activities. PWD shall require its contractor to maintain vehicle, pedestrian, and school bus service during construction through inclusion of such provisions in the construction contract; and • Specify street restoration requirements pursuant to agreements with the local jurisdictions.	accordance with TR-1. • PWD shall verify that the Plan has been approved by the applicable local jurisdiction(s). • PWD shall appoint a construction monitor to routinely verify implementation of the approved plan. • Retain copies of the Plan and monitoring records in the project file.		
TR-2: PWD shall require the construction contractor to consult with local jurisdictions if bicycle or pedestrian facilities would be directly affected by construction activities. If required, the construction contractor shall develop circulation and detour plans to minimize impacts to bikeways and pedestrian facilities. This may include the use of signing and flagging to guide vehicles, cyclists, and pedestrians through and/or around the construction zone.	• Include mitigation measure in construction contractor specifications. • In conjunction with REC-2, PWD shall obtain approval of circulation and detour plans from the appropriate jurisdiction prior to construction of program components within bikeways and pedestrian facilities. • PWD shall appoint a construction monitor to routinely verify implementation of approved plans. • Retain copies of the approval, plan, and monitoring records in the project file.	PWD; Construction Contractor	Before and During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
TR-3: PWD shall require the construction contractor to consult and coordinate with the Antelope Valley Transit Authority (AVTA) at least one month prior to construction of pipelines within roadways that coincide with bus routes, to determine whether construction of the proposed project would affect bus stop locations or otherwise disrupt public transit routes. A plan shall be developed to relocate bus stops or reroute buses to avoid disruption of transit service.	• Include mitigation measure in construction contractor specifications. • PWD or the construction contractor shall consult with AVTA to develop a plan to relocate bus stops or reroute buses to avoid disruption of transit services. • Retain copies of the plan and implementation records in the project file.	PWD; Construction Contractor	Before and During Construction
TR-4: PWD shall require the construction contractor to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times.	• Include mitigation measure in construction contractor specifications. • Retain copies of the correspondence with emergency service providers in the project file.	PWD; Construction Contractor	Before and During Construction
Utilities and Public Services			
UTIL-1: Project facility design and construction methods that produce less waste or that produce waste that could be recycled or reused more readily, shall be encouraged.	• Include mitigation measure in project design specifications. • PWD shall verify that waste reducing construction methods are indicated in construction documentation and specifications. • Retain records of implementation in the project file.	PWD	Before and During Construction
UTIL-2: The contractor shall be required to describe plans for recovering, reusing, and recycling wastes produced through construction, demolition, and excavation activities described in the construction specifications.	• Include mitigation measure in construction contractor specifications. • PWD shall verify that plans are prepared and implemented as required by UTIL-2. • Retain copies of the plans and records of implementation in the project file.	PWD; Construction Contractor	Before and During Construction
Growth Inducement			
GROWTH-1: PWD will update the implementation schedule for the SWRP every five years or as necessary to ensure that water supplies do not out-pace actual demands.	• PWD shall update the implementation schedule for the SWRP every five years in conjunction with preparation of PWD's urban water management plan. • The updated implementation schedule shall be made available upon request.	PWD	Ongoing

VI. Statement of Overriding Considerations

The Board of Directors find as follows:

PWD has (i) independently reviewed the information in the Final PEIR and the record of proceedings; (ii) made a reasonable and good faith effort to eliminate or substantially lessen the impacts resulting from the program to the extent feasible by adopting the mitigation measures identified in the PEIR; and (iii) balanced the program's benefits against the program's significant unavoidable impact due to indirect secondary effects of growth.

A. Program Benefits

PWD finds that the program's benefits outweigh the program's significant unavoidable impacts, and chooses to approve the program, despite its significant and unavoidable effects, because, in its view, those impacts are considered acceptable in light of the program's benefits. PWD finds that each of the following benefits is an overriding consideration, independent of the other benefits, which warrants approval of the program notwithstanding the program's significant unavoidable impact due to indirect secondary effects of growth. Substantial evidence supports the various benefits. Such evidence can be found in the preceding findings, which are incorporated by reference into this section, the Final PEIR, and the documents which make up the Record of Proceedings. The program would provide public benefits described below.

- Improves PWD's water supply reliability.
- Reduces PWD's dependence on water supplies imported from outside Southern California.
- Diversifies PWD's water supply opportunities and increases operational flexibility.

Each benefit of the proposed program separately and individually outweighs the potential adverse impact identified as significant and unavoidable in the Final PEIR. The benefits of implementing the program provide considerable evidence that outweigh the potential adverse impacts.

B. Statement of Overriding Considerations

After balancing the specific economic, legal, social, technological, and other benefits of the proposed program, PWD has determined that the significant and unavoidable adverse environmental impact identified in Section III may be considered "acceptable" due to the specific benefits listed above which outweigh the significant and unavoidable adverse environmental impact of the proposed program.

PWD has considered information contained in the Final PEIR as well as the public testimony and record of proceedings in which the proposed program was considered. In addition, PWD commits to the proposed mitigation measures and acknowledges that program benefits outweigh the significant and unavoidable adverse impact identified in Section III of this document. In making this determination and commitment, PWD incorporates by reference the Findings of Fact (Section

I through V of this document) and the proposed Mitigation Monitoring and Reporting Program (Appendix A), as well as all of the supporting evidence cited therein and in the record of proceedings and administrative record.