

**Attachment**

**1**

***Stormwater Flood Management Grant Proposal  
Littlerock Reservoir Sediment Project Removal  
Authorization and Eligibility Requirements***

Attachment 1 consists of the following items:

- ✓ **Authorization and Eligibility Requirements.** Attachment 1 contains Palmdale Water District's resolution and eligible documentation, Ground Water Management Compliance documentation, and information regarding the projects consistency with the adopted Antelope Valley Integrated Regional Water Management (IRWM) Plan.
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## **Introduction**

This attachment contains all authorization and eligibility documentation for the proposed Littlerock Reservoir Sedimentation Project (LRSR Project) as required under the IRWM Grant Program Guidelines for Stormwater Funding Management Grants (Proposition 1E).

## **Authorization Documentation**

The Palmdale Water District (PWD) adopted Resolution No. 13-2 authorizing the execution of a master agreement to enter into an agreement with State of California on January 23, 2013. The adopted resolution is provided at the end of this attachment.

## **Eligible Application Documentation- Local Public Agency**

### **Is the applicant a local agency as defined in Appendix B of the Guidelines?**

Yes, PWD is a local agency as defined by Appendix B of the Guidelines. PWD is also a local agency as defined by the California Water Code 10701(a). That section defines a "local agency" as any city, county, district, or agency established for the performance of governmental or proprietary functions within limited boundaries. As set forth in no. 1 above, PWD is an irrigation district formed under the California Water Code and provides water to customers within a defined service area.

### **What is the statutory or other legal authority under which the applicant was formed and is authorized to operate?**

PWD is an irrigation district duly organized and formed pursuant to Division 11 of the California Water Code (Cal. Water Code 20500 et seq.). More specifically, PWD was formed pursuant to formation statutes set forth in Part 2 of Division 11 of the Water Code, commencing at Section 20700.

### **Does the applicant have legal authority to enter into a grant agreement with the State of California?**

PWD has full legal authority to enter into a grant agreement with the State of California. Pursuant to the powers granted to an irrigation district formed pursuant to Division 11 of the California Water Code, PWD is expressly granted with the powers to make and perform any necessary contracts to carry out its purposes (Cal. Water Code 22230)

### **Describe any legal agreements among partner agencies and/or organizations that ensure performance of the Proposal and tracking of funds.**

PWD is the lead agency submitting the Prop 1E Stormwater Flood Management Grant Application for the proposed LRSR Project. For the LRSR Project, PWD has a partnership with the, U.S. Department of Agriculture Forest Service (USFS) and Littlerock Creek Irrigation District (LCID). PWD and the USFS signed a Memorandum of Understanding (MOU) to collaborate on the LRSR project on July 26, 2012. A copy of the MOU is attached at the end of this attachment.

Since 1992, PWD has shared water from the Reservoir with LCID. PWD and LCID jointly hold long-standing water rights to divert 5,500 AFY from Littlerock Creek flows per an agreement between the two districts. LCID has not exercised its right to surface water diversions since 1994<sup>1</sup>.

### **Groundwater Management Plan Compliance**

The proposed LRSR project is not a groundwater project or project that will directly affect groundwater levels or quality.

PWD is a participant of the Antelope Valley Integrated Regional Water Management (IRWM) Plan that meets the requirements for an AB 3030 Plan. The Antelope Valley IRWMP serves as the Antelope Valley's groundwater management plan for the whole basin. The Antelope Valley IRWMP reference to the Groundwater Management Plan can be found in Section 1, Pg 1-24 to 1-25. A copy of the Section 1, Pg 1-24 to 1-25 is provided at the end of this attachment.

### **Consistency with an Adopted IRWM Plan**

The LRSR Project is consistent with the Antelope Valley IRWM Plan. The LRSR project was vetted by the Antelope Valley IRWM Plan stakeholder and regional water management group (RWMG) before including the project in the 2007 Antelope Valley IRWM Plan. The LRSR was identified as a high priority project for the Antelope Valley IRWM Region. Documentation of the LRSR Project's consistency with the Antelope Valley IRWM Plan can be located in Section 7.3 of the Plan. A copy of this section is provided at the end of this attachment.

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<sup>1</sup> Palmdale Water District (PWD). Aug 2012. Diversions from Littlerock Reservoir.

**RESOLUTION NO. 13-2**

**RESOLUTION OF BOARD OF DIRECTORS OF PALMDALE WATER DISTRICT  
AUTHORIZING THE SUBMISSION OF AN APPLICATION TO THE CALIFORNIA  
DEPARTMENT OF WATER RESOURCES TO OBTAIN STORMWATER FLOOD  
MANAGEMENT GRANT FUNDING PURSUANT TO THE DISASTER  
PREPAREDNESS AND FLOOD PREVENTION BOND ACT OF 2006 (PUBLIC  
RESOURCE CODE SECTION 5096.800 ET. SEQ.) FOR THE LITTLEROCK  
RESERVOIR SEDIMENT REMOVAL PROJECT, AND TO ENTER INTO AN  
AGREEMENT WITH RESPECT THERETO**

WHEREAS, Palmdale Water District ("District") is an irrigation district formed under Division 11 of the California Water Code; and

WHEREAS, the District is a "local agency" within the meaning of California Water Code §10701(a) and therefore is eligible to apply for a Stormwater Flood Management Grant administered by the California Department of Water Resources; and

WHEREAS, the District is in the process of developing a project known as the Littlerock Reservoir Sediment Removal Project, which will enable the District to more effectively and efficiently manage stormwater and its other resources for the benefit of its customers; and

WHEREAS, a grant from the California Department of Water Resources under the Local Groundwater Assistance Grant Program will be of significant benefit to the District and its customers in bringing the Littlerock Reservoir Sediment Removal Project to fruition.

NOW THEREFORE BE IT RESOLVED, that the Board of Directors of the Palmdale Water District hereby authorizes and directs that an application be made to the California Department of Water Resources to obtain a Stormwater Flood Management Grant (the "Grant") pursuant to the Disaster Preparedness and Flood Prevention Bond Act of 2006 (Public Resource Code §5096.800, et. seq.).

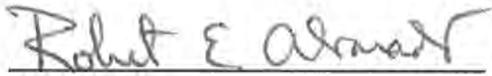
BE IT FURTHER RESOLVED, the District's Board of Directors authorizes the District's General Manager to enter into an agreement to receive the Grant for the Littlerock Reservoir Sediment Removal Project, and the General Manager, or his designee, is hereby authorized and directed to prepare the necessary data, conduct investigations, file such applications and execute such grant agreements with the California Department of Water Resources as may be appropriate in connection with the Grant.

BE IT FURTHER RESOLVED, that the General Manager and the staff of Palmdale Water District are hereby authorized and directed to take such other and further action that may be necessary or appropriate to carry out and further the purposes of this resolution.

PASSED AND ADOPTED at a meeting of the Board of Directors of Palmdale Water District on January 23, 2013.

  
\_\_\_\_\_  
President

January 23, 2013  
\_\_\_\_\_  
(date)

  
\_\_\_\_\_  
Secretary

January 23, 2013  
\_\_\_\_\_  
(date)

FS Agreement No. 12MU-1105-0100-014  
Cooperator Agreement No. \_\_\_\_\_

**MEMORANDUM OF UNDERSTANDING**  
**Between The**  
**PALMDALE WATER DISTRICT**  
**And The**  
**USDA, FOREST SERVICE**  
**PACIFIC SOUTHWEST REGION, ANGELES NATIONAL FOREST**

This MEMORANDUM OF UNDERSTANDING (MOU) is hereby made and entered into by and between the Palmdale Water District, hereinafter referred to as "PWD," and the USDA, Forest Service, Pacific Southwest Region, Angeles National Forest, hereinafter referred to as the "U.S. Forest Service."

Title: PWD Cooperative Work on the Angeles National Forest for the Littlerock Reservoir Sediment Project (Project).

- I. PURPOSE:** The purpose of this MOU is to document the cooperation between the parties to provide a framework for cooperation between the U.S. Forest Service and PWD to work together as joint lead agencies in preparing and completing a joint environmental analysis and document that is in compliance with NEPA, CEQA, and all applicable laws, executive orders, regulations, direction, and guidelines in accordance with the following provisions.

The PWD holds a Special Use Permit to operate and maintain the Littlerock Dam, Reservoir, and associated facilities as a local surface water impoundment. The Reservoir is a man-made feature formed by the impoundment of water on Littlerock Creek and is located within the boundaries of the Santa Clara/Mojave Rivers Ranger District of the Angeles National Forest. PWD proposes to excavate sediment from the Littlerock Reservoir and construct a grade control structure in order to remove excess reservoir sediment that has accumulated over time; restore and maintain the water storage capacity of the Reservoir; and prevent sediment loss and headcutting of the stream channel upstream of the Reservoir to prevent the incidental "take" of arroyo toad (*Anaxyrus californicus*), a federally endangered species.

The Forest Service, as joint lead agency under 40 CFR 1501.5(b), has determined that an Environmental Impact Statement (EIS) is required before a decision on the Project can be made. The EIS must comply with the National Environmental Policy Act of 1969, 42 U.S.C. 4371 et seq. (NEPA), and all other applicable laws, executive orders, regulations, and direction, including, but not limited to, the Council of Environmental Quality (CEQ) Regulations (40 CFR 1500-1508), the Endangered Species Act, the Angeles National Forest Land and Resources Management Plan, Forest Service Manual 1950, and Forest Service Handbook 1909.15.



The PWD, as the lead agency under the California Environmental Quality Act (CEQA) and as joint lead agency under 40 CFR 1501.5(b), has determined that an Environmental Impact Report (EIR) is required for the Project. The EIR must comply with CEQA and all other applicable laws and regulations.

## II. STATEMENT OF MUTUAL BENEFIT AND INTERESTS:

CEQ regulations (40 CFR 1506.2) direct federal agencies to cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements, including joint planning processes, environmental research and studies, public hearings, and environmental impact statements. CEQA Guidelines Sections 15222 and 15226 encourage similar cooperation by State and local agencies with federal agencies when environmental review is required under both CEQA and NEPA. Under these conditions, the Parties shall be joint lead agencies developing one document that complies with all applicable laws.

In consideration of the above premises, the parties agree as follows:

## III. PWD SHALL:

- A. Serve as the CEQA lead agency throughout the CEQA process.
- B. Comply with Federal Statutes relating to non-discrimination. This includes, but is not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352), which prohibits discrimination on the basis of race, color, handicap, or national origin; (b) Title XI of the Education Amendments of 1972, as amended (20 U.S.C. 1681-1683 and 1685-1686) which prohibits discrimination on the basis of sex.
- C. Require full cooperation of the Contractor.
- D. As required, the PWD will be responsible for consulting with the California Department of Fish and Game.
- E. Be responsible for conducting joint public meetings and/or hearings.
- F. Coordinate with the Contractor and the Forest Service to develop and implement a Public and Agency Involvement Plan, which shall provide meaningful opportunities for public and agency notification, involvement, and participation during the environmental review of the Project. This Plan shall meet the legal/procedural requirements of CEQA and NEPA for public notification and involvement and provide additional items tailored to meet the specific needs of the Project. The Plan shall include, but not be limited to, the following: a Project telephone and fax hotline/email through which concerned citizens and organizations can contact the Project team and ask questions or submit comments; a Project database and document tracking; agency and stakeholder consultation;



preparation and distribution of the CEQA Notice of Preparation and the NEPA Notice of Intent; Project scoping, including a public scoping meeting and associated public notification; Draft EIR/EIS public involvement activities; post-Draft EIR/EIS support; and optional activities such as a Project website, electronic notification, and a Project newsletter.

- G. Provide construction monitors.
- H. Provide all graphic handouts and presentations for public meetings/hearings. Any such graphic presentations and/or handouts shall be submitted to the Forest Service for approval prior to distributing them at public meetings/hearings.
- I. Be responsible for all stenographic, clerical, graphics, layout, printing, and like work.
- J. Mail scoping letters and other correspondence, and arrange for publication of notices as required by the NEPA/CEQA processes.
- K. Produce an internal administrative Draft EIR/EIS for review by the Forest Service prior to publication of the Draft EIR/EIS. The administrative draft shall include all text, maps, appendices, tables, charts, and other materials that will be incorporated in the Draft EIR/EIS for publication. As determined by the Forest Service, PWD shall provide a reasonable number of copies to meet internal review needs.
- L. Include evaluation of potential alternatives and impacts in the Draft EIR/EIS. The Draft and Final EIR/EIS will apply whichever NEPA and CEQA requirement is more stringent in the analysis. The Draft and Final EIR/EIS will describe any inconsistencies between Federal plans or laws as they pertain to the proposed actions and describe the extent to which the Forest Service would reconcile the proposed action with the plan or law.
- M. Have primary responsibility for writing and rewriting all sections, parts, and chapters of the EIR/EIS, subject to Forest Service comments during the environmental analysis and responses to the administrative Draft and Final EIR/EIS.
- N. Coordinate with the Forest Service to develop standardized impact minimization measures for inclusion in the EIR/EIS and regulatory permit applications, as necessary. These measures shall be implemented during all construction and operations & maintenance (O&M) activities associated with the Project, as applicable. These measures shall include, but not be limited to, general Standard Operating Procedures and Best Management Practices as well as detailed mitigation measures for impacts to cultural and biological resources.

#### **IV. THE U.S. FOREST SERVICE SHALL:**



- A. Serve as the NEPA lead agency throughout the NEPA process.
- B. Provide updated mailing lists of stakeholders in affected National Forest or other Federal land to the PWD for soliciting input and distributing the scoping letter, Draft and Final EIR/EIS, and Record of Decision as required by law.
- C. Review, and if acceptable, approve the draft Notice of Intent (NOI), public notices, and Notice of Availability of the document, before publication in appropriate periodicals.
- D. Review, and if acceptable, approve draft scoping letter, before PWD sends the letter to stakeholders in mailing list provided by the Forest Service.
- E. File Draft and Final EIR/EIS with the Environmental Protection Agency (EPA).
- F. Be responsible for consulting with the United States Fish and Wildlife Service for a Section 7 Consultation and the California State Historic Preservation Officer for a Section 106 Consultation regarding proposed federal action; at the discretion of the Forest Service, PWD shall furnish such data or information required to accomplish such consultation.
- G. Coordinate with the PWD to provide an approved set of Cultural Resources Mitigation Measures.
- H. Coordinate with the PWD to develop and implement a Public and Agency Involvement Plan, as described above under III.F above.
- I. Coordinate with the PWD to develop and implement a Biological Resources Study Plan, which shall include, but not be limited to, the following: appropriate surveys and data collection to support preparation of the EIR/EIS and applicable regulatory compliance permits (including State and Federal Endangered Species Acts (ESA) compliance, California Department of Fish and Game Lake and Streambed Permitting Section 1602 and 1605, United States Army Corps of Engineers Clean Water Act Section 404, and Lahontan Regional Water Quality Control Board Section 401 Certification), preparation of Forest Service requirements (Biological Evaluation, Management Indicator Species Report, Weed Management Report, and Riparian Conservation Report), and plans related to biological resources (e.g., Water Management Plan, Habitat Compensation and Mitigation Plan, Operation and Maintenance Plan).

**V. IT IS MUTUALLY UNDERSTOOD AND AGREED BY AND BETWEEN THE PARTIES THAT:**

- A. PRINCIPAL CONTACTS. Individuals listed below are authorized to act in their respective areas for matters related to this agreement.



**Principal Cooperator Contacts:**

<b>Cooperator Program Contact</b>	<b>Cooperator Administrative Contact</b>
Matt Knudson 2029 East Avenue Q Palmdale, CA 93550 (661) 947-4111 x118 (661) 947-8604 mknudson@palmdalewater.org	Matt Knudson 2029 East Avenue Q Palmdale, CA 93550 (661) 947-4111 x118 (661) 947-8604 mknudson@palmdalewater.org

**Principal U.S. Forest Service Contacts:**

<b>U.S. Forest Service Program Manager Contact</b>	<b>U.S. Forest Service Administrative Contact</b>
Wilburn Blount 33708 Crown Valley Road Acton, CA 93510 (661) 269-2808 FAX: (661) 269-2825 wmbount@fs.fed.us	Bonnie Harris 701 N. Santa Anita Ave. Arcadia, CA 91006 (626) 574-5246 (626) 574-5363 bharris@fs.fed.us

- B. **NON-LIABILITY.** The U.S. Forest Service does not assume liability for any third party claims for damages arising out of this agreement.
- C. **NOTICES.** Any communications affecting the operations covered by this agreement given by the U.S. Forest Service or PWD is sufficient only if in writing and delivered in person, mailed, or transmitted electronically by e-mail or fax, as follows:

To the U.S. Forest Service Program Manager, at the address specified in the MOU.

To PWD, at PWD's address shown in the MOU or such other address designated within the MOU.

Notices are effective when delivered in accordance with this provision, or on the effective date of the notice, whichever is later.

- D. **PARTICIPATION IN SIMILAR ACTIVITIES.** This MOU in no way restricts the U.S. Forest Service or PWD from participating in similar activities with other public or private agencies; organizations, and individuals.
- E. **ENDORSEMENT.** Any of PWD's contributions made under this MOU do not by direct reference or implication convey U.S. Forest Service endorsement of PWD's products or activities.



- F. NONBINDING AGREEMENT. This MOU creates no right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity. The parties shall manage their respective resources and activities in a separate, coordinated and mutually beneficial manner to meet the purpose(s) of this MOU. Nothing in this MOU authorizes any of the parties to obligate or transfer anything of value.

Specific, prospective projects or activities that involve the transfer of funds, services, property, and/or anything of value to a party requires the execution of separate agreements and are contingent upon numerous factors, including, as applicable, but not limited to: agency availability of appropriated funds and other resources; cooperator availability of funds and other resources; agency and cooperator administrative and legal requirements (including agency authorization by statute); etc. This MOU neither provides, nor meets these criteria. If the parties elect to enter into an obligation agreement that involves the transfer of funds, services, property, and/or anything of value to a party, then the applicable criteria must be met. Additionally, under a prospective agreement, each party operates under its own laws, regulations, and/or policies, and any Forest Service obligation is subject to the availability of appropriated funds and other resources. The negotiation, execution, and administration of these prospective agreements must comply with all applicable law

Nothing in this MOU is intended to alter, limit, or expand the agencies' statutory and regulatory authority.

- G. MEMBERS OF U.S. CONGRESS. Pursuant to 41 U.S.C. 22, no U.S. member of, or U.S. delegate to, Congress shall be admitted to any share or part of this agreement, or benefits that may arise therefrom, either directly or indirectly.
- H. FREEDOM OF INFORMATION ACT (FOIA). Public access to MOU or agreement records must not be limited, except when such records must be kept confidential and would have been exempted from disclosure pursuant to Freedom of Information regulations (5 U.S.C. 552).
- I. TEXT MESSAGING WHILE DRIVING. In accordance with Executive Order (EO) 13513, "Federal Leadership on Reducing Text Messaging While Driving," any and all text messaging by Federal employees is banned: a) while driving a Government owned vehicle (GOV) or driving a privately owned vehicle (POV) while on official Government business; or b) using any electronic equipment supplied by the Government when driving any vehicle at any time. All cooperators, their employees, volunteers, and contractors are encouraged to adopt and enforce policies that ban text messaging when driving company owned, leased or rented vehicles, POVs or GOVs when driving while on official Government business or when performing any work for or on behalf of the Government.

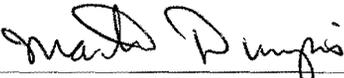


- J. TERMINATION. Any of the parties, in writing, may terminate this MOU in whole, or in part, at any time before the date of expiration.
- K. DEBARMENT AND SUSPENSION. PWD shall immediately inform the U.S. Forest Service if they or any of their principals are presently excluded, debarred, or suspended from entering into covered transactions with the federal government according to the terms of 2 CFR Part 180. Additionally, should PWD or any of their principals receive a transmittal letter or other official Federal notice of debarment or suspension, then they shall notify the U.S. Forest Service without undue delay. This applies whether the exclusion, debarment, or suspension is voluntary or involuntary.
- L. CONSULTATION. The Agency Project Representatives shall keep each other advised of the developments affecting the preparation of the Draft EIR/EIS. The Forest Service will keep PWD informed of all discussions with Contractor and involve PWD when appropriate.
- M. TIMELINE. Attached to this MOU is a draft detailed schedule, which Parties intend to serve as a template for the actual schedule of deadlines that they intend to adhere to in completing the environmental review that is subject to this MOU. The Parties agree to modify and reach final agreement on the details of this draft schedule, which will include specific dates establishing the deadlines for expected deliverables from the Contractor, as well as deadlines for the Forest Service and PWD to respond to all materials provided by the Contractor. Once the details of this schedule are agreed to, the Parties shall undertake their best efforts to comply with all deadlines set forth in said schedule.
- N. MODIFICATIONS. Modifications within the scope of this MOU must be made by mutual consent of the parties, by the issuance of a written modification signed and dated by all properly authorized, signatory officials, prior to any changes being performed. Requests for modification should be made, in writing, at least 30 days prior to implementation of the requested change.
- O. COMMENCEMENT/EXPIRATION DATE. This MOU is executed as of the date of the last signature and is effective through 12/31/2013 at which time it will expire, unless extended by an executed modification, signed and dated by all properly authorized, signatory officials.

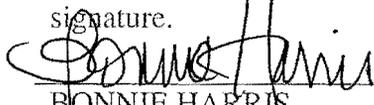


P. AUTHORIZED REPRESENTATIVES. By signature below, each party certifies that the individuals listed in this document as representatives of the individual parties are authorized to act in their respective areas for matters related to this MOU. In witness whereof, the parties hereto have executed this MOU as of the last date written below.

  
\_\_\_\_\_  
MATTHEW KNUDSON, Engineering Manager  
Palmdale Water District  
7/26/12  
Date

  
\_\_\_\_\_  
MARTIN DUMPIS, Acting Forest Supervisor  
U.S. Forest Service, Angeles National Forest  
06/29/2012  
Date

The authority and format of this agreement have been reviewed and approved for signature.

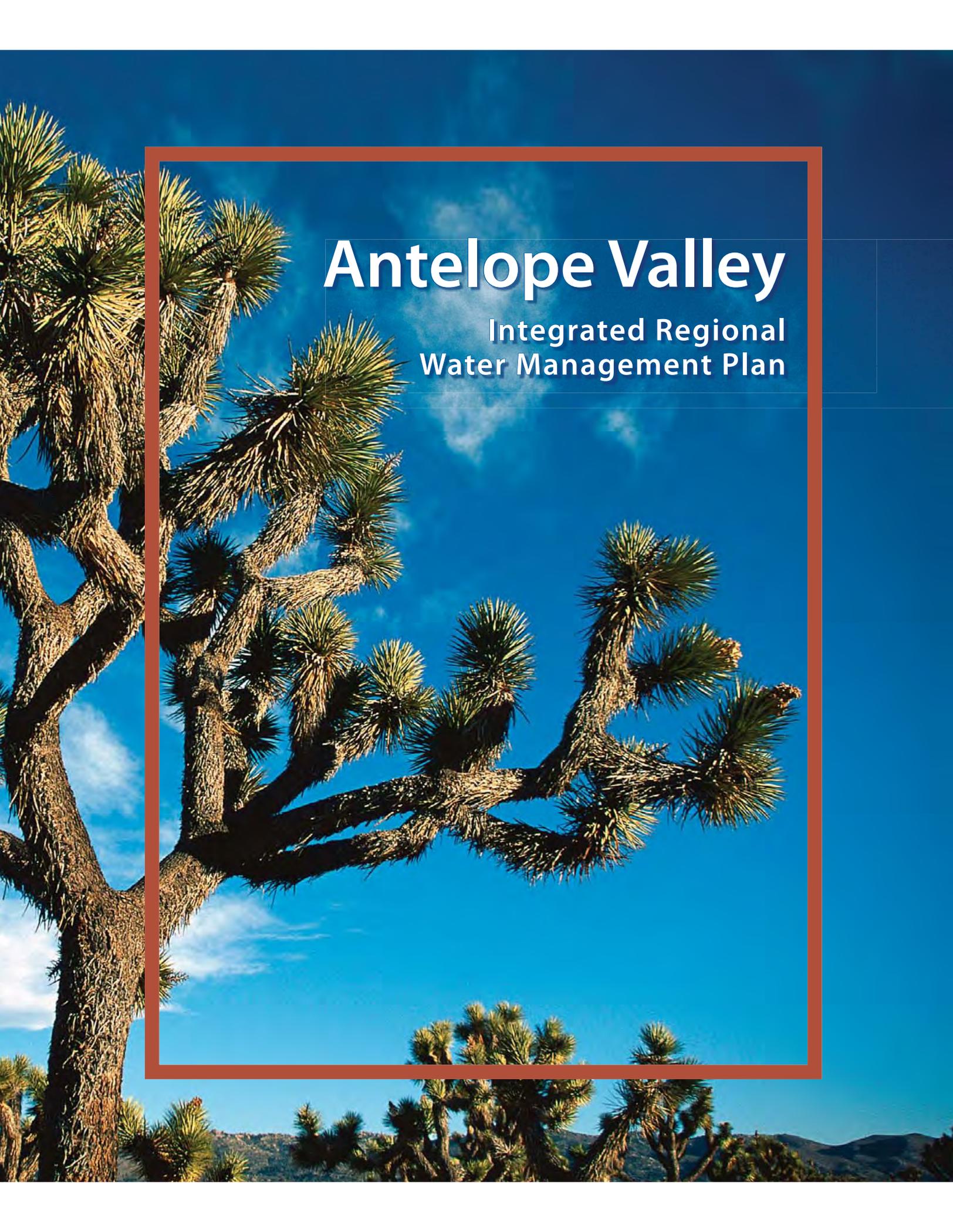
  
\_\_\_\_\_  
BONNIE HARRIS  
U.S. Forest Service Grants & Agreements Specialist  
6/29/12  
Date

Burden Statement

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0217. The time required to complete this information collection is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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# Antelope Valley

Integrated Regional  
Water Management Plan

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When in bloom, the desert floor of the Antelope Valley can be seen bathed in the rich color of the prized California poppy.

## Section 1: Introduction

*This Integrated Regional Water Management Plan (IRWM Plan) defines a clear vision and direction for the sustainable management of water resources in the Antelope Valley Region through 2035. Although this IRWM Plan contains a viable action plan to provide a wide range of crucial water-related services necessary to support the well-being of people living in this unique and vibrant part of Southern California, this Plan is simply a planning and feasibility study and no implementation or any project is being approved or required through the adoption of this Plan. Implementation of this IRWM Plan will require further discretionary approvals either individually or jointly by the Group members. The IRWM Plan identifies existing key water-related challenges being faced by the residents of the Antelope Valley Region, along with projections of how these challenges will change by 2035. In response to current and expected challenges, this IRWM Plan provides a thorough inventory of possible actions to address the challenges, along with estimated costs and benefits of implementing each action. This IRWM Plan documents an extensive collaborative process that led to the selection of a robust combination of actions that may be implemented cooperatively by the stakeholders in the Antelope Valley Region.*

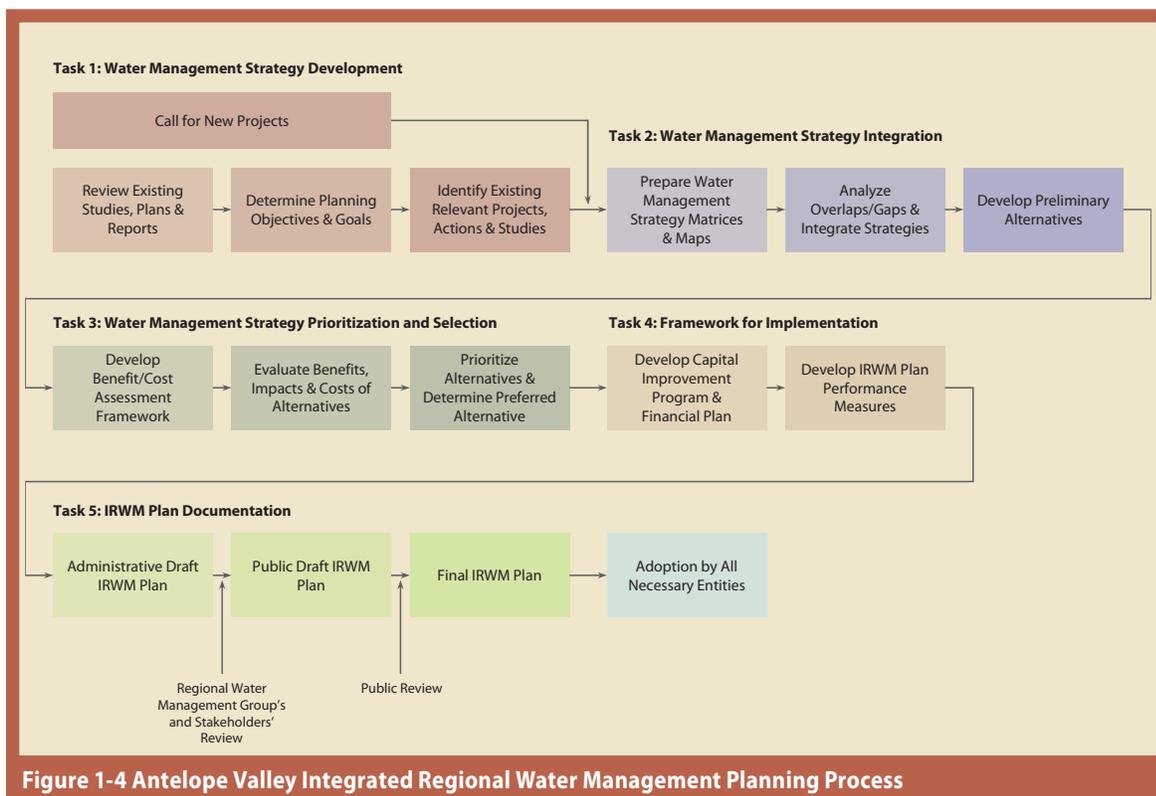


Figure 1-4 Antelope Valley Integrated Regional Water Management Planning Process

as well as Stakeholder comments on the Plan's content have been reviewed, evaluated, discussed amongst the Stakeholder group as necessary, and incorporated into the document as appropriate. These comments have been summarized into a comment response matrix and can be found in Appendix I.

### 1.3.3 Potential Obstacles to Plan Implementation

One potential obstacle to implementation of the IRWM Plan is the pending adjudication of the Antelope Valley Groundwater Basin. The IRWM Plan's water supply analysis is based on assumptions made regarding availability and reliability of the groundwater supply and was used to identify specific objectives and planning targets for the IRWM Plan. Thus it is possible that the outcome of the adjudication may require a change in the assumptions as well as the objectives and planning targets, which may delay implementation of the IRWM Plan. Additionally, the adjudication may place limitations not considered on the groundwater banking and recharge projects included for implementation. However, the IRWM Plan is meant to be a dynamic planning document and as such will be updated at a minimum of every two years with the project priority list being kept up-to-date as discussed in Section 8.6.2.

### 1.3.4 Groundwater Management Plan

This IRWM Plan defines a clear vision and direction for the sustainable management of water resources in the Antelope Valley Region through 2035. Inherent to this discussion is how groundwater will be managed to help meet the needs within the Antelope Valley Region now, and into the future. While a groundwater management plan currently does not exist for the Antelope Valley Groundwater Basin as a whole, one has been developed for the RCSD service area. There is the need, however, to develop a groundwater management plan for the Antelope Valley Region in order to provide a better understanding of the Antelope Valley Groundwater Basin and to recommend various strategies that result in a reliable water supply for all basin users and help meet increasing water demands. Therefore, the IRWM Plan will also meet the requirements for an AB 3030 Plan and establish a groundwater management plan for the whole basin.

The Groundwater Management Act (California Water Code Part 2.75 Section 10753), originally enacted as Assembly Bill (AB) 3030 (1992) and amended by Senate Bill (SB) 1938 (2002), provides the authority to prepare groundwater management plans. The intent of AB 3030 is to encourage local public agencies and water purveyors to adopt formal plans to manage groundwater resources within their jurisdiction.

Within the scope of Water Code Section 10753.8, a local groundwater management plan can potentially include up to twelve technical components, although this IRWM Plan need not be restricted to those specific components. This IRWM Plan addresses all the relevant components related to Groundwater Management Plans in the Water Code, as well as the components recommended by the

California DWR in California’s Groundwater, Bulletin 118 (DWR, 2004). Nothing in this IRWM Plan will supersede or interfere with the pending adjudication of the Antelope Valley Groundwater Basin. Table 1-3 provides a checklist at the end of this section to indicate where in this IRWM Plan specific Groundwater Management Plan components are located.

Table 1-3 Groundwater Management Plan Checklist According to Required Components		
Required Components		
Items to Address	Section of Law	Location in Plan
Provide documentation that a written statement was provided to the public describing the manner in which interested parties may participate in developing the groundwater management plan.	10753.4(b)	Appendix C (Community Outreach Materials)
Provide basin management objectives for the groundwater basin that is subject to this IRWM Plan.	10753.7(a)(1)	Section 4
Describe components relating to the monitoring and management of groundwater levels, groundwater quality, inelastic land surface subsidence and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by pumping.	10753.7(a)(1)	Section 3
Describe plan to involve other agencies that enables the local agency to work cooperatively with other public entities whose service area or boundary overlies the groundwater basin .	10753.7 (a)(2)	Section 1 and Section 8
Adoption of monitoring protocols for the components in Water Code Section 10753.7(a)(1)	10753.7 (a)(4)	Table 8-8
Provide a map showing the area of the groundwater basin as defined by DWR Bulletin 118 with the area of the local agency subject to this IRWM Plan as well as the boundaries of other local agencies that overlie the basin in which the agency is developing a groundwater management plan.	10753.7 (a)(3)	Figure 2-10





With many residents relying on the California Aqueduct to supply their water, it is a lifeline to the Antelope Valley.

## Section 7: IRWM Plan and Projects Evaluation and Prioritization

### 7.1 INTRODUCTION

*This section presents a general discussion of the advantages of planning regionally for water resource management and evaluates the benefits of the Antelope Valley Integrated Regional Water Management (IRWM) Plan, including benefits to local and disadvantaged communities within the Antelope Valley Region, and positive impacts that this effort may have on other natural and community resources. Section 7 also describes the evaluation criteria and process that Stakeholders used to rank and prioritize IRWM projects, and presents those projects that Stakeholders have designated as high priority. High priority projects are those that the Stakeholders want to see implemented within the next two years; their implementation is discussed further in Section 8. Lastly, the benefit and costs of these high priority projects are provided in this section.*

#### 7.2.4.1 Impacts to Energy

The Antelope Valley Region has a variety of efforts planned or underway to both reduce water consumption with the corresponding reduction in energy use and to develop local energy supply. These efforts include water conservation, recycled water use, hydropower, and utilization of renewable resources, such as wastewater treatment plant digester gas recovery and solar power. As described in the IRWM Plan, the Antelope Valley Water Conservation Coalition is proposing the Comprehensive Water Conservation/Water Use Efficiency Program and the Cities of Palmdale and Lancaster are both proposing recycled water projects. The water use efficiency effort, in particular, has a direct impact to reducing the energy used to pump water over the Tehachapis. Recycled waters derive similar benefit by reducing the quantity of potable water that needs to be pumped through the State Water Project system.

The projects included in the AV IRWM Plan also contribute to the production of local energy. The proposed Palmdale Power Project in the City of Palmdale, is a hybrid of natural gas-fired combined cycle generating equipment integrated with solar thermal generating equipment, and will have a net electrical output of 563 megawatts (MW). Critical process cooling water needs for the Plant will be met by the use of recycled water, as described in Section 3, thereby saving valuable potable water. Construction is planned to begin in 2008 and commercial operation planned in late 2010. The Palmdale Power Project is also designed to use solar photovoltaic technology to generate a portion of the project's output and thereby support the State of California's goal of increasing the percentage of renewable energy supplies.

Other examples of renewable energy in the region are the LACSD 14 and LACSD 20 projects. In 2003, the LACSD 14 entered into an agreement with Ingersoll-Rand (IR) to demonstrate their 250 kilowatt (kW) microturbine fueled by digester gas. At full power the microturbine will produce 250 kW of electricity and sufficient hot water to heat the water reclamation plant (WRP) digesters. The completed project will provide economical electricity and hot water to supply the plant's energy needs with a combined electrical and thermal efficiency of up to 51 percent. In the same time period as LACSD 14, LACSD 20 entered into an agreement with Quinn Power Systems to demonstrate a Fuel Cell Energy 250 kW fuel cell on digester gas. This program is the first digester gas application of the 250 kW unit. At full power the fuel cell will produce 250 kW of electricity and sufficient hot water to heat the WRP digesters. The completed project will provide economical electricity and hot water to supply the plant's energy needs with a combined electrical and thermal efficiency of up to 73

percent. Environmental benefits of these facilities include a reduction of greenhouse emissions, air emissions that are less than the gas flares, and the reduction of air emissions associated with less consumption of utility central generating plants. By generating power where it is needed there is also a reduced need for utility transmission and distribution facilities.

Through implementation of these projects and the AV IRWM Plan, there is the potential for an overall benefit to energy resources within the Antelope Valley Region.

### 7.3 IRWM PROJECTS EVALUATION AND RANKING

The following discussion focuses on the potential benefits associated with the individual projects proposed as part of the plan, as well as how effectively they will work towards plan objectives and the feasibility of their future implementation. The intent of the project evaluation and prioritization process is to identify those projects and management actions the stakeholders would like to pursue first to begin addressing the Antelope Valley Region's issues and needs and to meeting the identified AV IRWM Plan objectives.

As discussed in Section 5 and shown in Tables 6-1 and 6-5, there are a number of current strategies being used to address the Antelope Valley Region's water management issues. These include the development of plans and studies, investigations into groundwater recharge and groundwater banking programs, and others. Many of these current efforts provide the basis for the stakeholder-identified projects. For example, the City of Lancaster's Groundwater Recharge Feasibility Study provided the technical analysis for the development of Lancaster's Groundwater Recharge Using Recycled Water Pilot Project.

Plans and actions currently underway are assumed to continue for the purposes of this IRWM Plan. It is the projects that were submitted by the stakeholders during the Call for Projects that illustrate the breadth of the activities that would be needed for the Antelope Valley Region to meet its water management objectives. However, even if all of the projects proposed in this IRWM Plan were implemented in the Antelope Valley Region (discussed in Section 5 and shown in Table 6-2 and 6-6), there are still gaps that would need to be filled by alternative projects in order to meet the IRWM Plan objectives. Management actions suggested to fill these gaps were discussed in Section 6, and are also considered in the evaluation and prioritization exercise provided in this Section.

Therefore, the evaluation and ranking of the projects is focused mainly on those projects and management actions submitted by the stakeholders and the 'alternative gap' projects discussed in Section 6 that help fill the gaps between strategies. Through numerical ranking and qualitative assessment, each project was given a low, medium, or high priority ranking. Projects were evaluated and ranked according to the criteria listed below, and as shown in Table 7-1. Each evaluation criteria was assigned points, as described in more detail below. Initial scores provided an early indication of the potential final ranking of each project. Table 7-1 also allowed for stakeholder comments, which provided an additional method to evaluate the Projects.

**CEQA Completed, or Not Required.** Activities funded under Proposition 50 must be in compliance with the CEQA. Projects that have completed CEQA analyses or do not require CEQA review were given a point.

**Cost Estimates Prepared (with some detail).** As discussed in Section 5, the stakeholders were given the opportunity to directly submit their projects and project concepts for consideration through a "Call for Projects." The cost information provided herein represents the outcome of the initial step in a process of bringing individual projects into the collaborative process implied by this IRWM Plan. It should also be noted that stakeholders were encouraged to submit project concepts and thus the incompleteness of some cost information may be appropriate given that request. While many of the projects lack detailed supporting information, especially with regard to cost estimates, the Call for Projects process identified information that is readily available, needs to be identified, and provides a basis to move forward. Based on that process, a point was given to those projects that were farther along in their estimation of their project costs.

Table 7-1 also identifies the cost estimates if provided, and a description of the associated benefit if quantified. This allowed the Stakeholders to assess the projects cost/benefit ratio, even if just on a very preliminary level. Additionally, if the anticipated funding match source was known, that information was also identified in Table 7-1.

**Schedule Prepared.** Preference is given to those projects that demonstrate a 'readiness to proceed'. A point was given to those projects that had a schedule for implementation that was consistent with its project description and cost estimate.

The three evaluation criteria above: (1) CEQA, (2) Cost Estimation (including cost/benefit detail if available), and (3)

Schedule, collectively gave the Stakeholders an indication of the readiness to proceed for a particular project.

### **Have Broad Support among AV IRWM Plan Stakeholders.**

It is ultimately up to the Antelope Valley Region Stakeholders to determine which water management projects and actions they wish to implement to address their issues and needs, and only those projects that are supported by the group are likely to move forward. Therefore, those projects that have broad support amongst the IRWM Plan stakeholders were given a point.

**Integrates Easily with Other Projects.** A key criterion for prioritization is the ability of a project to integrate with other projects and maximize linkages between projects. Those projects that could be integrated easily with other projects were given a point.

**Number of IRWM Plan Objectives and Planning Targets Addressed.** The IRWM Plan objectives and planning targets, identified in Section 4, were used to evaluate stakeholder-identified projects in Section 6. Priority was assumed to weigh more heavily on projects that meet more than one IRWM Plan objective. Therefore, for each project, the number of objectives that a project contributed to was tallied as its score for this criterion.

**Six or More AB 3030 Elements Addressed.** The Assembly Bill (AB) 3030 elements for a Groundwater Management Plan, identified in Section 3, were used to evaluate stakeholder-identified projects in Section 6. Those projects that contributed to six or more AB 3030 elements were given a point.

**Six or More Water Management Strategies Addressed.** The IRWM Plan water management strategies, identified and correlated with the California Water Plan strategies in Section 5, have been used to evaluate stakeholder-identified projects in Section 6. Those projects that contributed to six or more water management strategies were given a point.

## **Regional Priorities**

**Number of Regional Priorities Addressed.** Regional priorities are intended to guide development of the IRWM Plan. Using the systemic approach of 'facilitated broad agreement' during one of the Stakeholder meetings, the following Regional priorities were developed. These priorities are inherently integrative to the objectives and planning targets identified in Section 4 that address the Antelope Valley Region's issues and needs. Based on discussions with the RWMG and the greater Stakeholder group,

Table 7-1 Project Evaluation Matrix (continued)

Planned Project/Program Types and Activities	Readiness to Proceed						Integration			No. of IRWM Plan Objectives & Targets Addressed	Six or more AB 3030 Elements Addressed	Six or More Water Mngt Strategies Addressed	No. of Regional Priorities Addressed	Four or more IRWM Plan Preferences Addressed	Five or more Statewide Priorities Addressed	Consistency w/ General Plans	Serves a DAC	Total Criteria Score	Stakeholder Comments / Discussion	Stakeholder's Priority (Low, Medium, High)
	CEQA Completed or Not Required	Cost Estimates Prepared (with some detail)	Cost/Benefit Detail			Schedule Prepared	Broad Support	Integrates Easily	Integration Detail											
			Cost Estimate	"Benefit Estimate (if quantifiable)"	Anticipated Funding Match Source															
Tropico Park Pipeline Project (RCSD)	0	0	\$1M - \$10M		Local + Gov't grants, loans	0	1	1	Will provide a way of using tertiary water to develop and water a regional park north to Tropico Hill	5	0	1	6	0	0	1	0	15	Provides a way of using tertiary treated water to develop a regional recreational park. Integrates with the recycled water projects.	Medium
Water Conservation Demonstration Garden (PWD)	1	1	\$9M	~86,000 AF over 20 years	Not specified	1	1	1	Integrates with other conservation efforts proposed for the Region.	4	0	0	5	0	0	1	0	15	Addresses water quality problems.	High/to be included high priority coordinated conservation program. Refer to Appendix E for Coordinated Conservation Program project template.
Water Conservation School Education Program (LACWWD40)	1	1	\$1M		Not specified	1	1	1	Integrates with other conservation efforts proposed for the Region.	3	0	0	5	0	0	1	1	15	County recently issued a new contract for this project, to be awarded soon.	High/to be included high priority coordinated conservation program. Refer to Appendix E for Coordinated Conservation Program project template.
42nd Street East, Sewer Installation (Palmdale)	0	0	\$100K - \$1M		Not specified	0	1	1		6	0	0	4	1	0	1	0	14	Would reduce groundwater pollution by eliminating septic tanks.	Low
Ultra Low Flush Toilet (ULFT) Change Out Program (LACWWD40)	1	1	\$100K - \$1M		Not specified	1	1	1	Integrates with other conservation efforts proposed for the Region.	2	0	0	5	0	0	1	1	14	Cost and schedule well defined, was included in a previous Proposition 50 Chapter 7 grant application.	High/to be included high priority coordinated conservation program. Refer to Appendix E for Coordinated Conservation Program project template.
Water Waste Ordinance (LACWWD40)	1	0	Unknown		Not specified	0	1	1	Integrates with local city ordinances	4	0	0	5	0	0	1	1	14	Could integrate with local city ordinances and policies.	High/to be included high priority coordinated conservation program. Refer to Appendix E for Coordinated Conservation Program project template.
Littlerock Dam Sediment Removal Project (PWD)	0	1	\$4M		Not specified	1	1	1		3	0	0	5	0	0	1	0	13	CEQA almost complete, provides protection for the Arroyo Toad.	High
Place Valves and Turnouts on Reclaimed Water Pipeline (RCSD)	1	1	\$900,000		Local + Gov't grants, loans	0	1	1	Will provide valving and controls to direct water to various pipelines for use by RCSD, AVEK, LA County, etc.	3	0	0	5	0	0	1	0	13	Facilitates water delivery to new facilities and will connect with Tropico Park Pipeline project.	Low
Avenue K Transmission Main, Phases I-IV (LACWWD40)	1	1	> \$10M		Not specified	1	1	1		1	0	0	4	0	0	1	1	12	Provides multiple benefits, in-design.	High/linked to AVEK Westside project

Table 7-1A Regional Priorities Matrix															
"Planned Project/Program Types and Activities"	Short-Term Regional Priorities						Long-Term Regional Priorities								
	Complete AV IRWM Plan by January 1, 2008	Identify Gap Projects	Maximize Funding For Project Implementation	Utilize Committee for Continued Development/ AV IRWM Plan Implementation	Develop Programs/ Policies to Increase Groundwater Recharge/ Manage Use	Encourage Cooperation in Developing Regional Groundwater Banking	Maintain Committee for Continued AV IRWM Plan Implementation/ Stakeholder Input	Optimize Use of Recycled Water, Conjunctive Management, Conservation, Stormwater	Provide Adequate Water/ Wastewater Services to Meet Projected Growth	Protect Groundwater Supplies	Provide More Efficient Storage for Imported Water Supply	Preserve Open Space, Ag Lands, Conserve Functional Habitats & Protect Species	Continue to Meet Applicable Water Quality Standards	Expand Recycled Water Distribution Systems to New Users	Expand Voluntary Water Conservation Programs for Res/CII/ Ag Users
<b>WATER SUPPLY MANAGEMENT</b>															
<b>Groundwater Recharge/Banking</b>															
Amargosa Creek Recharge and Channelization Project (Palmdale)				X	X	X	X	X	X	X	X	X			
Amargosa Water Banking and Storm Water Retention Project (No financial sponsor identified)				X	X	X	X	X	X	X	X	X			
Antelope Valley Water Bank (WDS)				X	X	X	X	X	X	X	X	X			
Aquifer Storage and Recovery Project: Injection Well Development (LACWWD40)				X	X	X	X	X	X	X	X				
Aquifer Storage and Recovery Project: Additional Storage Capacity (LACWWD40)				X	X	X	X	X	X	X	X				
Deep wells to Recapture Banked Water (RCSD)				X	X	X	X	X	X	X	X				
Gaskell Road Pipeline (RCSD)				X			X	X	X				X		
Groundwater Banking (LACWWD40)				X	X	X	X	X	X	X	X				
Purchasing Spreading Basin Land (RCSD)				X	X	X	X	X	X	X	X				
Water Supply Stabilization Project – Westside Project (AVEK, AVSWCA)				X	X	X	X	X	X	X	X				
Water Supply Stabilization Project – Eastside Project (AVEK, AVSWCA)				X	X	X	X	X	X	X	X				
<b>Recycled Water</b>															
Groundwater Recharge Using Recycled Water (GWR-RW) Pilot Project (Lancaster)				X	X	X	X	X	X	X	X		X		
Groundwater Recharge - Recycled Water Project (PWD)				X	X	X	X	X	X	X	X		X		
KC & LAC Interconnection Pipeline (RCSD)				X			X	X	X				X		
North Los Angeles/Kern County Regional Recycled Water System (LACWWD40)				X	X	X	X	X	X	X	X		X		
Tertiary Treated Water Conveyance & Incidental Groundwater Recharge of Amargosa Creek Avenue M to Avenue H (Lancaster)				X	X	X	X	X	X	X	X		X		
<b>Water Conservation/Water Use Efficiency</b>															
ET-Based Controller Program (PWD)				X			X	X	X						X
Implement Evapotranspiration (ET) Controller Program (LACWWD40)				X			X	X	X						X
Precision Irrigation Control System (Leona Valley Town Council)				X			X	X	X						X
Ultra Low Flush Toilet (ULFT) Change Out Program (LACWWD40)				X			X	X	X						X
Water Conservation Demonstration Garden (PWD)				X			X	X	X						X
Water Conservation School Education Program (LACWWD40)				X			X	X	X						X
Water Waste Ordinance (LACWWD40)				X			X	X	X						
<b>Water Infrastructure Improvements</b>															
Avenue K Transmission Main, Phases I-V (LACWWD40)				X			X	X	X						
Avenue M and 60th Street West Tanks (LACWWD40)				X			X	X	X		X				
Littlerock Dam Sediment Removal Project (PWD)				X			X	X	X		X				
Place Valves and Turnouts on Reclaimed Water Pipeline (RCSD)				X			X	X	X				X		
RCSD's Wastewater Pipeline (RCSD)				X			X	X	X				X		
<b>WATER QUALITY MANAGEMENT</b>															
<b>Recycled Water</b>															
42nd Street East, Sewer Installation (Palmdale)				X			X		X			X			
Lancaster WRP Stage V (LACSD)				X			X	X	X			X	X		
Lancaster WRP Stage VI (LACSD)				X			X	X	X			X	X		
Lancaster WRP Proposed Effluent Management Sites (LACSD)				X			X	X	X			X	X		
Palmdale Power Project (Palmdale)				X			X	X					X		
Palmdale WRP Existing Effluent Management Sites (LACSD)				X			X	X	X			X	X		
Palmdale WRP Stage V (LACSD)				X			X	X	X			X	X		
Palmdale WRP Stage VI (LACSD)				X			X	X	X			X	X		
Palmdale WRP Proposed Effluent Management Sites (LACSD)				X			X	X	X			X	X		
<b>Water Infrastructure Improvements</b>															
Partial Well Abandonment of Groundwater Wells for Arsenic Mitigation (LACWWD40)				X	X		X	X	X	X		X			

the following short-term (e.g., 3 to 5 years) and long-term (20 years) priorities have been identified for the Antelope Valley Region. For each project, the number of regional priorities that a project contributed to was tallied as its score for this criterion (refer to Table 7-1A).

#### Short-term Implementation Priorities (3-5-years)

- Complete the Antelope Valley IRWM Plan by January 1, 2008;
- Identify projects that will meet the gap between existing projects and the Regional planning targets;
- Maximize funding opportunities for project implementation from local, state, and federal funding sources;
- Utilize a committee structure for continued development and implementation of the IRWM Plan;
- Develop programs and policies to increase groundwater recharge or better manage groundwater use; and
- Encourage cooperation in the short-term to develop regional groundwater banking programs.

#### Long-term Implementation Priorities (20 years)

- Maintain a committee structure to oversee plan implementation and continued stakeholder input;
- Optimize use of recycled water, conjunctive management, conservation, and stormwater to enhance water supply reliability;
- Provide adequate water and wastewater services to meet projected growth
- Protect groundwater supplies;
- Provide more efficient storage for imported water supply to increase its reliability;
- Preserve open space, agricultural land uses, conserve functional habitats, and protect special-status species;
- Continue to meet applicable water quality standards;
- Expand distribution systems to provide recycled water to new users; and
- Expand voluntary water conservation programs for residential, commercial, industrial and agricultural uses.

**Four or More IRWM Plan Preferences Addressed.** The IRWM Plan preferences were identified and used to evaluate stakeholder-identified projects in Section 6. Those projects that contributed to four or more IRWM Plan preferences were given a point.

**Five or More Statewide Priorities Addressed.** The statewide priorities were used to evaluate stakeholder-identified projects in Section 6. Those projects that contributed to five or more statewide priorities were given a point.

**Consistency with General Plans.** The local and regional general plan policies related to water supply, water quality, flood management, environmental resource management, and land use management are identified in Section 8 (Table 8-2) and used to evaluate stakeholder-identified projects. Those projects that demonstrated consistency with these general plan policies were given a point.

**Serves a Disadvantaged Community.** A DAC was assumed to benefit from a particular project if the project increased the reliability of water supply for the Antelope Valley Region as a whole, enhanced water quality in the Antelope Valley Region, or if the DAC was located within the service area of a proposed project. In this manner, a project was given a point if it was determined to benefit a DAC.

Table 7-1 provides a preliminary evaluation and ranking of the stakeholder-identified proposed projects via a tally of the total number of criteria met by each project. The projects were then evaluated for how well they can be integrated with each other. Additionally, the projects were reviewed for geographic coverage while using a mix of plan objectives and water management strategies to provide multiple benefits, as shown in the “Additional Comments” column in Table 7-1.

Table 7-1 was presented to the RWMG/Stakeholder group for further evaluation and prioritization. Additionally, the Stakeholders were given the opportunity to present support for their projects, to discuss the merits of the projects with the group, and to discuss how their projects could potentially be combined to create more regional, comprehensive, and logistically beneficial and efficient projects. Additionally, at this particular Stakeholder meeting, a number of Stakeholders presented modified versions of their projects to the group that they felt better integrated with the goals and objectives of the Antelope Valley Region as well as other projects.

The Stakeholders were then broken up into groups and asked to give a preliminary “priority” ranking to each project based on the information in Table 7-1 and the discussions presented at the meeting. The group was asked to assign priority under the assumption that any particular project would be implemented with or without grant funding. Priority was given as follows:

- A ‘high’ priority was assigned to projects the group would take action on within the next two (2) years.
- A ‘medium’ priority was assigned to projects the group would take action on within the next five (5) years.
- A ‘low’ priority was assigned to projects the group would take action on within the next 5 to 10 years.

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A facilitated discussion led the Stakeholders to identify their high, medium, and low projects, as shown below in Table 7-2. Appendix F provides a more detailed breakdown of the high priority project schedules.

Based on the stakeholders determinations of the ranking process above, the suite of projects and alternatives given 'high' priority, were selected for implementation and discussed below in Section 7.4.

**Table 7-2 Prioritized Project List**

Priority	Project	Responsible Entity	Project Status	Project Schedule
<b>Water Supply Groundwater Recharge/Banking Infrastructure Projects</b>				
High	Antelope Valley Water Bank	WDS	Design	2001 to 2008
	Aquifer Storage and Recovery Project - Injection Well Development	LACWWD 40	Planning	2007 to 2010
	Upper Amargosa Creek Recharge, Flood Control & Riparian Habitat Restoration Project	Palmdale, AVEK	Planning	2006 to 2010
	Water Supply Stabilization Project – Westside	AVEK/AVSWCA/ LACWWD 40	CEQA/ Permitting	2007 to 2009
Medium	Aquifer Storage and Recovery Project: Additional Storage Capacity	LACWWD 40	Planning	2010 to 2013
	Lower Amargosa Creek Recharge & Flood Control Project	J.Goit/Palmdale	Planning	2010 to 2013
	Water Supply Stabilization Project – Eastside Project	AVEK	Planning	2010 to 2013
<b>Water Infrastructure Projects</b>				
High	Avenue K Transmission Main, Phases I-IV	LACWWD 40	Planning	2008 to 2010
	Littlerock Dam Sediment Removal Project	PWD	Planning/ Design	2004 to 2009
	Waste Water Pipeline	RCSD	Planning	2008 to 2010
Low	Avenue M and 60th Street West Tanks	LACWWD 40	Conceptual	2013 to 2018
	Place Valves and Turnouts on Reclaimed Water Pipeline	RCSD	Conceptual	2013 to 2018
<b>Recycled Water Projects</b>				
High	Antelope Valley Recycled Water Project Phase 2	LACWWD 40/ Palmdale/LACSD	Planning	2007 to 2009
	Groundwater Recharge Using Recycled Water Project	Lancaster	Pilot Study	2006 to 2009
Medium	Groundwater Recharge – Recycled Water Project	PWD	Planning	2010 to 2013
	KC & LAC Interconnection Pipeline	RCSD	Planning	2010 to 2013
	Regional Recycled Water Project Phase 3	LACWWD 40/ Palmdale/LACSD	Planning	2010 to 2013
	Tertiary Treated Water Conveyance & Incidental Groundwater Recharge of Amargosa Creek Avenue M to Avenue H	Lancaster	Planning	2010 to 2013
Low	Regional Recycled Water Project Phase 4	LACWWD 40/ Palmdale/LACSD	Planning	2013 to 2018
<b>Water Conservation/Water Use Efficiency</b>				
High	Comprehensive Water Conservation/Efficient Water Use Program. This program would include the following: PWD's & LACWWD 40's "ET-Based Controller Program", Leona Valley's "Precision Irrigation Control System"; PWD's "Water Conservation Demonstration Garden"; LACWWD 40's "Water Conservation School Education Program", "Ultra Low Flush Toilet (ULFT) Change Out Program", and "Waste Water Ordinance." Additionally, this Program is envisioned to include a landscape/nuisance water ordinance.	AVWCC/ LACWWD/PWD	Planning	2007 to 2010

continual assessment of whether this IRWM Plan is meeting the issues and needs of the Antelope Valley Region will be conducted. Additionally, this IRWM Plan provides a mechanism for identifying new projects designed in accordance with the regional objectives, priorities, and management strategies. Therefore, a continual review of the prioritization is anticipated, and is described in more detail in Section 8, Implementation Framework. Table 7-2 is also included as Appendix E. In this way, the Appendix can be more easily evaluated and adjusted rather than having to make changes to the entire IRWM Plan if changes are necessitated more frequently than the scheduled updates as described in Section 8.6.

## 7.4 CURRENT HIGH PRIORITY PROJECTS

The following provides descriptions of the high priority projects from Table 7-2. During the process of evaluating and prioritizing the projects, the Stakeholders found that a number of their individually submitted projects could be integrated to form enhanced projects that could reach more beneficiaries, integrate geographically to extend to further reaches of the Antelope Valley Region, and take advantage of synergies not previously noticed. The process enabled the stakeholders to look more carefully at their projects and at what phases they may want to implement in the near term, potentially ranking that a higher priority

than a later phase in the project. For example, the Regional Recycled Water Project, which is the regional recycled water backbone system project, includes a number of implementation phases. Phase 2, which includes the connection to the Palmdale Power Plant, was given a high priority. Later phases of the project, Phases 3 and 4, were given medium and low priorities, respectively. For a full description of each of the high priority projects, refer to their project templates, which are provided in Appendix F.

### 7.4.1 High Priority Projects Benefit/Cost Assessment

The IRWM Plan Guidelines require that an IRWM Plan demonstrate its economic and technical feasibility on a programmatic level (technical feasibility is discussed in Section 8). It is appropriate that both quantifiable and non-quantifiable benefits provided by projects be considered in relation to their costs. The potential benefit of each proposed project was initially identified in Section 5, and cumulatively considered in Section 6. It is likely, however, in this initial stage of Plan development, that a lack of detailed data regarding all benefits, especially costs, could preclude a rigorous quantitative comparison of all projects. Therefore, only those projects that have demonstrated priority status resultant from the analysis provided in Table 7-1 and with concurrence from the Stakeholders are assessed for their benefit to cost relationships. This analysis is presented in Table 7-3.

Upper Amargosa Creek Recharge, Flood Control and Riparian Habitat Restoration Project (WS-1)	
Project Sponsor:	City of Palmdale and Antelope Valley-East Kern Water Agency (AVEK)
Joint Agencies:	Antelope Valley State Water Contractors Association (AVSWCA), Los Angeles County Waterworks District No. 40 (LACWWD 40)
Project Description:	This project consists of the project previously entitled “Amargosa Creek Recharge and Channelization” with some modifications and additions included during the prioritization process. The project proposes the release of untreated aqueduct water into the Upper Amargosa Creek in order to recharge the most depressed and damage portion of the Antelope Valley Region’s groundwater basin. Per the Stetson Report, the Amargosa ranks as one of the top locations in the Antelope Valley Region for groundwater recharge. Project goals include increasing the Antelope Valley Region’s water supply and the amount of open space and protected natural habitat, and providing improved flood prevention within the Amargosa Creek watershed. Proposed project improvements include: expanding the size and capacity of the spreading ground of the natural recharge area; developing and preserving an ephemeral stream habitat; channelization of Amargosa Creek (soft bottom) and providing a grade separation of 20th Street West over Amargosa Creek.
Project Integration:	Possible integration with Water Supply Stabilization Project- Westside Project (WS-2).
Project Benefits:	5,000 – 10,000 AFY, 15 acres open space; 20 acres flood protection
Total Cost:	\$13.5 Million

Comprehensive Water Conservation/Water Use Efficiency Program (WC-1)	
Project Sponsor:	Antelope Valley Water Conservation Coalition (AVWCC), LACWWD, PWD
Joint Agencies:	AVWCC includes the Cities of Lancaster and Palmdale, local mutual water districts, AVEK, Antelope Valley College, Building Industry Association (BIA), and local developers.
Project Description:	The Comprehensive Water Conservation/Water Use Efficiency Program would include a number of water conservation and water use efficiency projects previously discussed in Section 5 including: PWD's & LACWWD 40's "ET-Based Controller Program", Leona Valley's "Precision Irrigation Control System"; PWD's "Water Conservation Demonstration Garden"; LACWWD 40's "Water Conservation School Education Program", "Ultra Low Flush Toilet (ULFT) Change Out Program", and "Waste Water Ordinance." Additionally, WC-1 would include a landscape/nuisance water ordinance.
Project Integration:	Project integrates with all the water supply projects in reducing the expected mismatch of supply and demand in 2035.
Project Benefits:	3,500 AFY by 2010 and ultimately 28,000 to 42,000 AFY
Total Cost:	\$900,000
Avenue K Transmission Main, Phases I-IV (WI-1)	
Project Sponsor:	LACWWD 40
Joint Agencies:	None
Project Description:	The Avenue K Transmission Main, Phases I-IV project consists of four phases for a total of approximately 32,000 linear feet of 30-inch and 36-inch diameter steel transmission main. The proposed transmission main will have interconnections to the existing distribution system and will increase the capacity of the water system to meet the existing domestic and fire protection requirements.
Project Integration:	Possibility to connect to WS-2
Project Benefits:	Firms up existing supply
Total Cost:	\$10.0 Million
Littlerock Dam Sediment Removal Project (WI-2)	
Project Sponsor:	PWD
Joint Agencies:	None
Project Description:	The Littlerock Dam Sediment Removal Project will remove up to 540,000 cubic yards of sediment that has accumulated from runoff in Littlerock Reservoir, and up to 40,000 cubic yards on an annual basis after the initial sediment is removed. The project may include a grade control structure that will protect the identified habitat of the arroyo toad. The project is expected to increase capacity and reliability of surface water storage in Littlerock Reservoir, and could eventually feed into other regional water banking projects such as AVEK's eastside project. CEQA for the project is almost complete.
Project Integration:	Project integrates with the other water supply projects in reducing the expected mismatch between supply and demand in 2035.
Project Benefits:	1,000 AFY
Total Cost:	\$5.5 Million
RCSD's Waste Water Pipeline (WI-3)	
Project Sponsor:	RCSD
Joint Agencies:	None
Project Description:	This project would include placing a 36-inch wastewater pipeline from LACSD to RCSD's wastewater treatment plant. The total distance would be approximately 15 miles. This project would provide for a possible expansion of RCSD's recycled water services beyond the 0.5 mgd expansion in order to provide more recycled water in a quicker period of time.
Project Integration:	Integration with RW-1, WQ-1, WQ-2, and WQ-3, by connecting to their systems.
Project Benefits:	Adds additionally potential users of recycled water.
Total Cost:	\$13.0 Million

Partial Well Abandonment of Groundwater Wells for Arsenic Mitigation (WQ-4)	
Project Sponsor:	LACWWD 40 and Quartz Hill Water District (QHWD)
Joint Agencies:	None
Project Description:	WQ-4 includes a combination of LACWWD 40's and QHWD's "Partial Well Abandonment of Groundwater Wells for Arsenic Mitigation" projects. WQ-4 proposes arsenic mitigation of six groundwater wells. The proposed method involves using grout with extremely small pour space to seal off localized regions of the well that contain higher levels of arsenic, resulting in an isolation of arsenic located in specific levels of strata and an overall decrease in contamination. This project will benefit several lower income areas that are served by these wells.
Project Integration:	Integrates with other water quality projects in protecting the Basin.
Project Benefits:	Preventing loss of groundwater pumping and supply.
Total Cost:	\$1.5 Million
Ecosystem and Riparian Habitat Restoration of Amargosa Creek; Ave J to Ave H (EM-1)	
Project Sponsor:	City of Lancaster
Joint Agencies:	None
Project Description:	The Ecosystem and Riparian Habitat Restoration of Amargosa Creek; Ave J north to Ave H establishes riparian habitat along the eastern edge of the Amargosa Creek in elongated segments and sections resulting in a "Riparian Curtain" approximately extending from Ave J north to Ave H. This restoration project is holistic in that it serves to enhance the environment and improve water quality, and helps to offset impacts on the overall ecosystem of ephemeral and riparian habitat associated with Amargosa Creek. By establishing a riparian corridor, this project provides habitat connectivity and protection; creates acoustic and aesthetic buffers; improves the existing network of wetlands; and works towards overall ecosystem restoration. This project requires site reconnaissance, coordination with California Department of Fish and Game (CDFG), various bio-assessments and planting plans prior to implementation and creation.
Project Integration:	Integrates with WS-1 and LM-1
Project Benefits:	100 – 1,000 AFY
Total Cost:	\$10.0 Million
Coordinated Flood Management Plan (FM-1)	
Project Sponsor:	Cities of Lancaster, Palmdale, LADPW, Kern County
Joint Agencies:	Edwards AFB would be an interested participant
Project Description:	The proposed project is the coordination of a flood management plan for the Antelope Valley Region by 2010. The Plan could include regional strategies to: improve and update flood management mapping and technology; coordinate mitigation efforts that address the level of risk associated with different areas and flood events; and direct the location, pattern and design of development in order to reduce flood damage, maximize groundwater recharge and meet other planning objectives throughout the Antelope Valley Region. A regional flood management plan could also include a regional communication and contingency plan, prepared so that regional and local authorities have the means to respond collaboratively to different flood events.
Project Integration:	Integrates with WS-1, EM-1, and LM-1
Project Benefits:	Improved flood management and protection for the Antelope Valley Region.
Total Cost:	To be provided once all project description components are more clearly defined.

Amargosa Creek Pathways Project (LM-1)	
Project Sponsor:	City of Lancaster
Joint Agencies:	None
Project Description:	The Amargosa Creek Pathways Project, proposed by the City of Lancaster, includes development of a top of bank trail or paseo along eastern side of Lake Lancaster, and construction of a foot-bridge structure crossing the lake and connecting under Hwy 14 to link to the existing trailhead at the Antelope Valley Region Fairgrounds. The project integrates stormwater/flood control with natural riparian habitat enhancement and preservation, open/recreational space and land use management. The goal is to construct a pathway in harmony with established riparian habitat, within a flood control management basin which captures stormwater and nuisance water runoff that, in turn, sustains riparian habitat. This project will additionally increase the amount of protected natural habitat and provide improved flood control within the Amargosa Creek watershed.
Project Integration:	Integrates with WS-1 and EM-1
Project Benefits:	1 – 100 AFY
Total Cost:	\$1.3 Million
Coordinated Land Use Management Plan (LM-2)	
Project Sponsor:	Cities of Lancaster, Palmdale, LADPW, Kern County
Joint Agencies:	Antelope Valley Conservancy
Project Description:	The proposed project is the coordination of a land use management plan for the Antelope Valley Region. A regional land use plan that directs the Antelope Valley Region's growth towards existing urban centers will help protect agricultural lands, natural habitat and recreational open space, and will encourage the efficient use of water and economic resources dedicated to water utilities infrastructure improvements and expansions. It is likely that this effort will be combined with the "Antelope-Fremont Watershed Assessment and Plan" project described in Section 5. The watershed assessment project would fund the 606 Studio to work with regional stakeholders to coordinate a regional land use plan with emphasis on the preservation and restoration of sensitive natural systems of the Antelope Valley Region.
Project Integration:	Integrates with WS-1, WS-2, WS-4, RW-1, RW-2, WC-1, WQ-1, WQ-2, WQ-3, EM-1, and LM-1.
Project Benefits:	2,000 acres of habitat/conservation lands
Total Cost:	\$45,000 to fund the development of the Antelope-Fremont Watershed Assessment and Plan portion of the Plan. Total cost of the Plan to be provided.

#### 7.4.1.1 Integration of High Priority Projects

The combined implementation of these projects would provide multiple benefits to the Antelope Valley Region spanning a number of water management actions. All of the projects proposed for implementation are targeted at reducing the mismatch between supply and demand projected for the Region by 2035. The projects would facilitate the use of recycled water throughout the Region as well as improve water quality in the groundwater through interdependent recycled water projects, thereby providing

a new water supply to the Region. Additionally, the suite of projects would reduce regional water demand by as much as 10 percent by 2035 through a regional water conservation program.

These priority projects work as an integrated package. Many of their components are dependant on each other, requiring continual coordination between agencies and Stakeholders. Implementation of these projects are discussion further in Section 8.

Table 7-3 Benefit/Cost for High Priority Projects				
Project Code	Project	Quantified Water Supply Benefit	Other Benefits	Costs (in millions)
LM-1	Amargosa Creek Pathways Project	1 – 100 AFY		\$1.3
RW-1	Antelope Valley Recycled Water Project Phase 2	8,400 AFY	Potential recharge and habitat restoration	\$10.9
WS-4	Antelope Valley Water Bank	100,000 AFY	1,700 acres of agriculture	\$170.0
WS-3	Aquifer Storage and Recovery Project: Injection Well Development	12,000 AFY		\$10.0
WI-1	Avenue K Transmission Main, Phases I-IV	NA	Firms up supplies	\$10.0
WC-1	Comprehensive Water Conservation/Water Use Efficiency Program	3,500 AFY	Ultimate benefit of 28,000 AFY to 42,000 AFY	\$0.90
FM-1	Coordinated Flood Management Plan	NA	Would improve overall flood management and protection for the Antelope Valley Region	TBD
LM-2	Coordinated Land Use Management Plan	NA	2,000 acres open space	TBD
EM-1	Ecosystem & Riparian Habitat Restoration of Amargosa Creek; Ave J to Ave H	100 – 1,000 AFY		\$10.0
RW-2	Groundwater Recharge Using Recycled Water (GWR-RW) Project	2,500 AFY	100 acres open space	\$6.0
WQ-1	Lancaster WRP Stage V	See RW-1	48,000 AFY potential benefits when users identified	\$74.8
WI-2	Littlerock Dam Sediment Removal Project	1,000 AFY		\$5.5
WQ-2	Palmdale WRP Existing Effluent Management Sites	See RW-1	48,000 AFY potential benefits when users identified	\$5.2
WQ-3	Palmdale WRP Stage V	See RW-1	48,000 AFY potential benefits when users identified	\$94.6
WQ-4	Partial Well Abandonment of Groundwater Wells for Arsenic Mitigation	NA	Prevents loss of groundwater pumping and existing supply	\$1.5
WI-3	RCSD's Waste Water Pipeline	NA	Provides potential future recycled water users	\$13.0
WS-1	Upper Amargosa Creek Recharge, Flood Control & Riparian Habitat Restoration Project	5,000 – 10,000 AFY	15 acres open space; 20 acres flood protection	\$13.5
WS-2	Water Supply Stabilization Project – Westside Project	40,400 to 42,600 AFY		\$230.0