Proposal Full View

Print

APPLICANT INFORMATION

Organization Name *	Los Angeles County Waterworks District No. 40
Tax ID	568935789
Point Of Contact *	**Division/Address List:** Waterworks Division **Address1:** 1000 S. Fremont Avenue **Address2:** **City:** Alhambra **State:** CA **Zip:** 91803 **First Name:** Paul **Last Name:** Alva **Email:** gms@dpw.lacounty.gov **Phone (Direct):** 6264583912
Point Of Contact Position Title *	Program Manager
Proposal Name *	Antelope Valley IRWM 2014 Drought Solicitation Implementation Grant Proposal
Proposal Objective*	The objective of this Antelope Valley IRWM 2014 Drought Solicitation Implementation Grant Proposal is to present a project that will help the Antelope Valley Region with critical water supply needs by increasing local supply reliability and providing immediate drought preparedness.

BUDGET

Other Contribution	0
Local Contribution	2471772.10
Federal Contribution	0
Inkind Contribution	0
Amount Requested *	1666244
Total Project Cost *	4138016.10

GEOGRAPHIC INFORMATION

Latitude *	**DD (+/-):**	34	**MM:**	5	**SS:**	6
Longitude *	**DD (+/-):**	-118	**MM:**	9	**SS:**	0
Longitude/Latitude Clarification	http://itouchmap.com/latlong.html		**Location**	LA County Dept. Public Works, 900 S Fremont Ave. Alhambra, CA		
County*	Los Angeles					
Ground Water Basin	Antelope Valley					
Hydrologic Region	South Lahontan					

Watershed	Antelope Valley watersheds, Amargosa Creek

LEGISLATIVE INFORMATION

Assembly District*	36th Assembly District
Senate District*	21st Senate District
US Congressional District*	District 23 (CA)

Project Information

PROJECT NAME: 60TH STREET WEST WELLHEAD ARSENIC TREATMENT PROJECT

60TH STREET WEST WELLHEAD ARSENIC TREATMENT PROJECT

Implementing Organization	Los Angeles County Waterworks District No. 40
Secondary Implementing Organization	
Proposed Start Date	5/15/2014
Proposed End Date	3/31/2016
Scope Of Work	
Project Description	
Project Objective	

PROJECT BENEFITS INFORMATION

No records found.

BUDGET

Other Contribution	0
Local Contribution	2471772.10
Federal Contribution	0
Inkind Contribution	0
Amount Requested*	1666244
Total Project Cost*	4138016.10

GEOGRAPHIC INFORMATION

Latitude *	**DD(+/-):**	34	**MM:**	41	**SS:**	45
Longitude*	**DD(+/-):**	-118	**MM:**	14	**SS:**	12
Longitude/Latitude Clarification	http://itouchmap.com/latlong.html		**Location**	60th Street West between W Avenue I and W Avenue J, City of Lancaster		

County*	Los Angeles
Ground Water Basin	Antelope Valley
Hydrologic Region	South Coast,Tulare Lake
Watershed	Amargosa Creek

LEGISLATIVE INFORMATION

Assembly District*	36th Assembly District
Senate District*	21st Senate District
US Congressional District*	District 23 (CA)

Section : Applicant Information and Questions Tab

APPLICANT INFORMATION AND QUESTIONS TAB

Q1. Project Representative

Provide the name and details of the person responsible for signing and executing the grant agreement for the applicant. Persons that are subcontractors to be paid by the grant cannot be listed as the Project Director.

Gail Farber Director County of Los Angeles Department of Public Works 900 South Fremont Avenue Alhambra CA 91803 (626) 458-4002 gfarber@dpw.lacounty.gov

Q2. Project Manager

Provide the name and contact information of the Project Manager from the applicant agency or organization that will be the day-to-day contact on this application.

Adam Ariki Assistant Deputy Director 900 South Fremont Avenue Alhambra CA 91803 (626) 300-3300 aariki@dpw.lacounty.gov

Q3. Funding Area Information

Provide the IRWM funding area(s) in which projects are located.

Lahontan Funding Area

Q4. DAC Waiver Cost Share Request

Are you applying for a DAC cost share waiver? If yes, fill out Attachment 8.

a) ○ Yes
b) ◉ No

Q5. Responsible Regional Water Quality Control Board(s) (RWQCB):

List the name of the RWQCB in which your Proposal is located. For a region that extends beyond one RWQCB boundary, list the name of each Board.

The Antelope Valley IRWM Region lies within the Lahontan Regional Water Quality Control Board (Region 6).

Q6. Eligibility

The Implementation Grant Program requires a minimum funding match of 25% of total project cost unless there is a DAC project included in the proposal. Are your matching funds less than 25%? If so, please explain.

This proposal meets the requirements of Proposition 84 regarding a minimum funding match of 25%. The projects within this proposal have a cumulative funding match of 60% of total project costs.

Q7. Eligibility

Does the application represent an IRWM Region approved in the RAP? To verify, see RAP website: http://www.water.ca.gov/irwm/grants/rap.cfm.

a) ◉ Yes
b) ○ No

If yes, include the name of the IRWM Region. If no, please explain.

Antelope Valley Region

Section : Appplication Attachments Tab

Application Attachments Tab

Attachment 1: Authorization and Eligibility Requirements

Upload "Authorizing" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_2of12.pdf

Upload "Eligible Applicant" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments:
Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_2of12.pdf,Att1_DG_Eligible_3of12.pdf,Att1_DG_Eligible_4of12.pdf

Upload "Acknowledgement Form – Submittal of Additional Information" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_5of12.pdf

Upload "Adopted IRWM Plan and Proof of Formal Adoption" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_6of12.pdf,Att1_DG_Eligible_7of12.pdf

Upload "Project and Consistency with an adopted IRWM Plan" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_4of12.pdf

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Upload "Urban Water Management Compliance" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_8of12.pdf,Att1_DG_Eligible_9of12.pdf,Att1_DG_Eligible_10of12.pdf

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Upload "Agricultural Water Management Compliance" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf

Upload "Surface Water Diverter Compliance" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf

Upload "Groundwater Management Compliance" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_11of12.pdf

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Upload "CASGEM Compliance" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf,Att1_DG_Eligible_12of12.zip

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Upload "Water Conservation Programs and Measures" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att1_DG_Eligible_1of12.pdf

Attachment 2: Drought Impact

Upload "Drought Impact" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att2_DG_Impact_1of1.pdf

Attachment 3: Project Justification

Upload "Project Justification" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att3_DG_ProJust_1of2.pdf,Att3_DG_ProJust_2of2.pdf

Attachment 4: Work Summary

Upload "Work Summary" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att4_DG_WorkSummary_1of1.pdf

Attachment 5: Budget Summary

Upload "Budget Summary" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att5_DG_Budget_1of1.pdf

Attachment 6: Schedule

Upload "Schedule" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att6_DG_Schedule_1of2.pdf,Att6_DG_Schedule_2of2.pdf

Attachment 7: Program Preferences

Upload "Program Preferences" docmentation here. This attachment is mandatory.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att7_DG_Preference_1of1.pdf

Attachment 8: Disadvantaged Community Assistance

Upload "Disadvantaged Community Assistance" documentation here. This attachment is optional.

Ensure file name is consistent with Section V of the 2014 IRWM Drought Grant PSP.

Last Uploaded Attachments: Att8_DG_DACAssistance_1of1.pdf

Introduction

This attachment consists of the following items for the 2014 IRWM Drought Grant Solicitation Integrated Regional Water Management Implementation Grant Program, Funded by Proposition 84:

- Authorizing Documentation
- Eligible Applicant Documentation
- Acknowledgement Form – Submittal of Additional Information
- Adopted IRWM Plan and Proof of Formal Adoption
- Project Consistency with an adopted IRWM Plan
- Urban Water Management Plan Compliance
- Agricultural Water Management Compliance
- Surface Water Diverter Compliance
- Groundwater Management Compliance
- CASGEM Compliance
- Water Conservation Programs and Measures

Authorizing Documentation

The Resolution of the Board of Supervisors of the County of Los Angeles, California, Acting as Governing Body of the Los Angeles County Waterworks District No. 40, Antelope Valley (Waterworks), Authorizing the Filing of an Application for Integrated Regional Water Management Round 3 Implementation Grant (Proposition 84) was adopted by the County of Los Angeles Board of Supervisors on July 1, 2014, and authorizes Waterworks to submit this Antelope Valley Region IRWM Implementation Grant Proposal and execute an agreement with the State of California for IRWM planning activities (see Appendix 1-1).

Eligible Applicant Documentation

Waterworks' qualifications as an eligible applicant in accordance with IRWM Program Guidelines are as follows:

1. Waterworks is a local public agency as defined in Appendix B of the IRWM Grant Program Guidelines.
2. Waterworks is a special District formed in accordance with Division 15, Sections 55000 through 55991 of the State Water Code to supply drinking water for urban use in the Antelope Valley.
3. Waterworks has legal authority to enter into a grant agreement with the State of California. The *Resolution of the Board of Supervisors of the County of Los Angeles, California, Acting as Governing*

Body of the Los Angeles County Waterworks District No. 40, Antelope Valley (Waterworks), Authorizing the Filing of Application for Integrated Regional Water Management Implementation Grant (Proposition 84) was adopted by the County of Los Angeles Board of Supervisors on July 1, 2014 and authorizes Waterworks to submit this *Antelope Valley IRWM Implementation Grant Proposal* and execute an agreement with the State of California for IRWM activities (see Appendix 1-1).

4. The RWMG jointly developed and adopted a *Memorandum of Understanding for Integrated Regional Water Management Planning and Implementation* in 2009 (see Appendix 1-2). This MOU establishes that parties entering into the MOU "develop proposals for the voluntary funding of cooperative efforts to implement the IRWMP". Waterworks is a signatory of the MOU, and was approved as the sole applicant and project proponent submitting a grant application on behalf of the Region (see May 14, 2014 meeting notes in Appendix 1-3). Since Waterworks is the sole project proponent and applicant for this application, legal agreements to ensure performance of the Proposal and tracking of funds among project partners are unnecessary.

Acknowledgement Form

The 2014 IRWM Drought Grant Acknowledgement Form is included in Appendix 1-4 of this Attachment. A hard copy, wet signature has been provided to DWR as well.

Adopted Plan and Proof of Formal Adoption

The "Antelope Valley Integrated Regional Water Management Plan" (IRWM Plan) was updated to be consistent with the 2012 IRWM Plan Standards, and was deemed consistent with the Plan Standards by the Department of Water Resources (DWR) on March 27, 2014. Appendix 1-5 contains the DWR letter of review and acceptance.

The IRWM Plan was adopted by the RWMG agencies and project proponent as shown in the below table. Appendix 1-6 contains the Proof of Adoptions for each of the RWMG agencies and Project Partners.

Table 1-1: Antelope Valley IRWM Plan Update Agency Adoption Information

Agency	RWMG Member or Project Proponent	Adoption Date
Antelope Valley-East Kern (AVEK) Water Agency	RWMG Member	May 27, 2014
Antelope Valley State Water Contractors Association (AVSWCA)	RWMG Member	May 29, 2014
Boron Community Services District (BCSD)	RWMG Member	May 22, 2014
City of Lancaster	RWMG Member	June 10, 2014
City of Palmdale	RWMG Member	June 4, 2014
Los Angeles County Waterworks District No. 40, Antelope Valley	RWMG Member and Project Proponent	June 17, 2014
County Sanitation District No. 14 and No. 20 of Los Angeles County	RWMG Member	June 19, 2014
Littlerock Creek Irrigation District (LCID)	RWMG Member	May 28, 2014
Palmdale Water District (PWD)	RWMG Member	May 28, 2014
Quartz Hill Water District (QHWD)	RWMG Member	June 24, 2014
Rosamond Community Services District (RCSD)	RWMG Member	May 28, 2014

Project Consistency with an Adopted IRWM Plan

The Project included within this grant proposal is part of the 2013 IRWM Plan Update. The IRWM Plan allows for periodic updates to the list of water management projects or generally for inclusion in the plan via submission through an online database. The Antelope Valley IRWM project list is currently hosted online at: http://dpw.lacounty.gov/wwd/avwater/. Minutes from the May 14, 2014 stakeholder meetings in which the Project was adopted into the 2013 Plan update are included in Appendix 1-3. The general process used to submit, review and select projects for the IRWM Plan is as follows:

1. Project Submittal: Project proponents submit projects through the Antelope Valley IRWM Region's online project database.
2. Project Review: Projects are reviewed by the Antelope Valley IRWM Advisory Team to ensure that they meet the Proposition 84 Guidelines and IRWM Region objectives and targets, and that they can be implemented.
3. Project Selection: The Antelope Valley IRWM Advisory Team selects projects for inclusion in the IRWM Plan if they meet the criteria listed in step 2, and indicate this in the online project list.

Urban Water Management Compliance

There is one urban water supplier included as a project proponent within this Proposal: Los Angeles County Waterworks District No. 40, Antelope Valley. Table 1-2 lists the agency name, contact name, contact phone number and email address for the urban water supplier.

Table 1-2: Urban Water Management Plan Contact Information

Agency	Project Name	Contact Name	Contact Phone	Contact Email
Los Angeles County Waterworks District 40, Antelope Valley	60th Street West Wellhead Arsenic Treatment Project	Timothy Chen	626-354-4407	tchen@dpw.lacounty.gov

Urban Water Management Plan (UWMP) Compliance

As required by the Urban Water Management Planning Act (CWC §10610 et seq.), the agency listed in Table 1-2 has submitted a complete 2010 UWMP to DWR. Per these requirements, this agency is currently eligible to receive grant funds (see email correspondence with DWR included in Appendix 1-7). DWR has requested that revisions be made to the UWMP to meet CWC requirements, which are detailed in the DWR letter provided in Appendix 1-7. Los Angeles County Waterworks District 40 expects to revise its UWMP to meet these requirements, resubmit, and have DWR approval prior to the execution of the funding contract.

Agricultural Water Management Compliance

The Project proponent whose project is included in this Proposal is not an agricultural water supplier.

AB 1420 Compliance

As defined in the IRWM Grant Program Guidelines, urban water suppliers much self-certify compliance with the requirements contained in AB 1420. Per these requirements, the urban water supplier listed in Table 1-2 has submitted the AB 1420 self-certification form (see Appendix 1-8 for AB 1420 self-certification form which has also been provided to DWR as a wet signed, hard copy).

Water Meter Compliance

As defined in the IRWM Grant Program Guidelines, CWC §525 et seq. requires urban water suppliers applying for IRWM grant funds to demonstrate that they meet the State's water meter requirements. Per these requirements, the urban water supplier listed in Table 1-2 has submitted a Water Meter compliance form (see Appendix 1-9) which has also been provided to DWR as a wet signed, hard copy.

Surface Water Diverter Compliance

The Project proponent whose project is included in this Proposal is not a surface water diverter.

GWMP Compliance

The Project included in this application may directly affect groundwater levels or quality, and is included in Table 1-3, which also includes the status of the applicable GWMP compliance option. See Appendix 1-10 for the GWMP compliance form, which has also been provided to DWR as a wet signed, hard copy.

Table 1-3: GWMP Compliance

Project	Agency Implementing Project	Project Agency Contact Information
60th Street West Wellhead Arsenic Treatment Project	Los Angeles County Waterworks District 40, Antelope Valley	Tim Chen 626-354-4407 tchen@dpw.lacounty.gov

CASGEM Compliance

As defined in the IRWM Grant Program Guidelines, CWC §10933.7 states that if the grant applicant or project proponents' jurisdictions include unmonitored high and medium priority groundwater basins, and they match the list of potential monitoring entities identified in CWC §10927, they will not be eligible to receive 2014 IRWM Drought Grant funding. Table 1-4 lists each medium and high priority groundwater basin, monitoring entities and designation status, overlying applicant or proponent agency name, and overlying projects with latitude and longitude.

All medium and high priority basins have either been assigned a monitoring entity, or there are agencies in the process of applying to be the designated monitoring entity. Potential monitoring entities whose applications have not yet been accepted include the Antelope Valley State Water Contractors Association (AVSWCA), which is expected to become the designated monitoring entity for the Antelope Valley Basin prior to the grant award date. A map showing groundwater basin priorities, monitoring entities, applicant and proponent boundaries, and project locations is shown in Figure 1-1. The shapefiles of Los Angeles County Waterworks District No. 40's boundary and Project location are included as uploads to the GRanTS website.

Antelope Valley Basin does not yet have a monitoring entity; however, the AVSCWA has applied to be the designated monitoring entity for the Antelope Valley Basin, and has been working closely with DWR's CASGEM group to complete the CASGEM compliance and notification requirements. The AVSWCA expects to be approved by DWR as the monitoring entity prior to the grant contract being executed. The following steps were provided to AVSCWA by DWR as action items to complete to be designated as the monitoring entity:

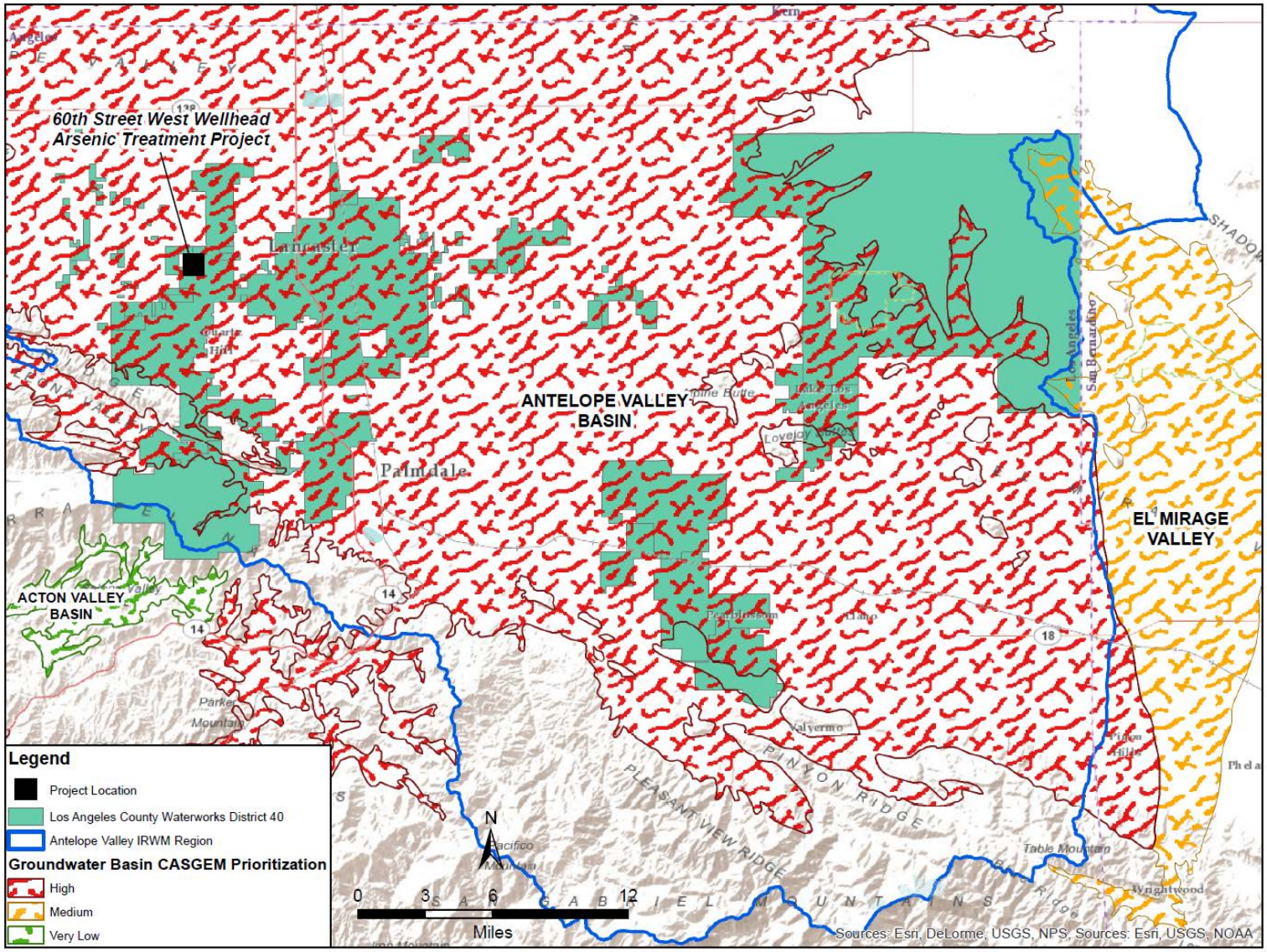
1. Select monitoring wells
2. Develop Monitoring Plan
3. Develop an MOU

4. Obtain Bulletin 118 shapefile and upload to CASGEM website
5. Obtain well construction information and GPS coordinates
6. Obtain and document permission from USGS to use well data
7. Batch upload all relevant information to DWR website

Table 1-4: Medium and High Priority Groundwater Basins, Monitoring Entities, and Overlying Proponents and Projects

Groundwater Basin (Prioritization)	Monitoring Entity	Overlying applicant or proponents	Overlying Projects (latitude and long)
Antelope Valley (High)	AVSWCA (applied)	Los Angeles County Waterworks District 40	60th Street West Wellhead Arsenic Treatment Project (34.695726,-118.236592)
El Mirage Valley (Medium)	Mojave Water Agency	Los Angeles County Waterworks District 40	No project overlies this basin

Figure 1-1: Groundwater Basin CASGEM Prioritization, Project Locations and Project Proponent Service Areas



Locally not Cost Effective Water Conservation Programs and Measures

As defined in the IRWM Grant Program Guidelines, CWC §10631.5(a)(4)(B) states that "not locally cost effective" means the present value of the local benefits of implementing a water conservation program or measure is less than the present value of the local costs of implementing that program or measure. The Project included in this Proposal does not include water conservation programs or measures whose total annualized cost exceeds its annualized local monetary benefits over the life of the Project.

Appendix 1-1

Resolution of the Board of Supervisors of the County of Los Angeles, California, Acting as the Governing Body of the Los Angeles County Waterworks District No. 40, Antelope Valley, Authorizing the Filing of Application for Integrated Regional Water Management Implementation Grant

STATEMENT OF PROCEEDINGS FOR THE

REGULAR MEETING OF THE BOARD OF SUPERVISORS

OF THE COUNTY OF LOS ANGELES HELD IN ROOM 381B

OF THE KENNETH HAHN HALL OF ADMINISTRATION

500 WEST TEMPLE STREET, LOS ANGELES, CALIFORNIA 90012

Tuesday, July 1, 2014

9:30 AM

25. Recommendation: Acting as the Governing Body of the County Waterworks District No. 40, Antelope Valley (5), adopt a resolution approving the filing of an application for up to $3,000,000 of grant funds with the California Department of Water Resources (DWR) for Integrated Regional Water Management Round 3 grant funds for the implementation of the 60th Street West Wellhead Arsenic Treatment Project; and authorize the Director of Public Works to file the application with DWR. **(Department of Public Works)** (14-2801)

On motion of Supervisor Antonovich, seconded by Supervisor Molina, this item was adopted.

Ayes: 5 - Supervisor Molina, Supervisor Ridley-Thomas, Supervisor Yaroslavsky, Supervisor Antonovich and Supervisor Knabe

Attachments: Board Letter

The foregoing is a fair statement of the proceedings for the meeting held July 1, 2014, by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

ATTEST: SACHI A. HAMAI
EXECUTIVE OFFICER
CLERK OF THE BOARD OF SUPERVISORS
By Carla Little, Deputy

Sachi A. Hamai, Executive Officer
Executive Officer-Clerk
of the Board of Supervisors
By Sachi C. Hamai

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331

http://dpw.lacounty.gov

GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

July 01, 2014

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

25 July 1, 2014

SACHI A. HAMAI
EXECUTIVE OFFICER

Dear Supervisors:

LOS ANGELES COUNTY WATERWORKS DISTRICT NO.40, ANTELOPE VALLEY RESOLUTION TO APPLY FOR INTEGRATED REGIONAL WATER MANAGEMENT ROUND 3 IMPLEMENTATION GRANT FUNDS (PROPOSITION 84) (SUPERVISORIAL DISTRICT 5) (3 VOTES)

SUBJECT

This action is to adopt a Resolution to authorize the Los Angeles County Waterworks District No. 40, Antelope Valley, to file an application for Integrated Regional Water Management Round 3 Implementation Grant funds with the California Department of Water Resources.

IT IS RECOMMENDED THAT THE BOARD ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY:

1. Adopt a Resolution approving the filing of an application for up to $3,000,000 of grant funds with the California Department of Water Resources, on behalf of Los Angeles County Waterworks District No. 40, Antelope Valley, for Integrated Regional Water Management Round3 grant funds for the implementation of the 60th Street West Wellhead Arsenic Treatment Project.

2. Authorize the Director of Public Works or her designee to file an application with the California Department of Water Resources.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of the recommended action is to submit an Integrated Regional Water Management Round 3 Implementation Grant Application for up to $3,000,000 to fund the 60th Street West Wellhead Arsenic Treatment Project (Project). The Project consists of installing an arsenic treatment

system for two existing wells that supply water to the Los Angeles County Waterworks District No. 40, Antelope Valley's (District) distribution system. The Project will improve water quality and increase local water supply reliability by reducing the District's dependence on imported water from the California State Water Project. The arsenic concentrations in the water from the two existing wells currently exceed the State and Federal maximum contaminant level of 10 micrograms per liter. Consistent with Senate Bill 104, the Project for this round will provide immediate regional drought relief, increase local water supply reliability, and reduce water quality conflicts.

The enclosed Resolution will allow the Director of Public Works or her designee to apply for the Implementation Grant funds. The cost to prepare the grant application is estimated to be $20,000. If the District is awarded grant funds, we will return to the Board for acceptance of the grant funds and to request authority to negotiate and execute funding agreements with the California Department of Water Resources (DWR). The Board's approval, including approval of appropriate environmental documentation, will also be required to proceed with implementing the Project.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provisions of Operational Effectiveness (Goal 1) and Fiscal Sustainability (Goal 2) by actively seeking grant funds to augment the County's funding sources and Integrated Services Delivery (Goal 3) since the implementation of the projects in the grant application would leverage resources and improve the quality of life for residents in the County of Los Angeles.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund.

The estimated grant application cost of up to $20,000 is included in the District's General Fund Fiscal Year 2013-14 Budget. Up to 100 percent of this amount may be reimbursed by the DWR if the Project is awarded funding.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

In November 2006 the voters of California enacted the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Act of 2006 (Proposition 84), adding provisions to the California Water Code. Public Resources Code, Sections 75001-75130, authorizes the Legislature to appropriate $1 billion for an Integrated Regional Water Management Program (Program). The Program is managed by the DWR.

The intent of the Program is to encourage integrated regional strategies for the management of water resources and to provide funding through at least three competitive grant cycles for projects that protect communities from drought, improve water reliability, protect and improve water quality, and improve local water security by reducing dependence on imported water. The implementation grants are designed for projects that are ready or nearly ready to proceed to implementation.

The Proposition 84 Round 3 Implementation Grant solicitation, which will lead to the distribution of $450 million in grant funds, was originally scheduled to commence in late 2014. On March 1, 2014, Governor Brown signed Senate Bill 104, designating $200 million of these Proposition 84 Round 3 funds for regional drought preparedness projects that provide immediate regional drought relief. These funds are to be distributed through an expedited grant solicitation process (Part 1). The remaining $250 million will become available for Integrated Regional Water Management projects

during a second solicitation process tentatively scheduled for mid-2015 (Part 2). This action will authorize the District to apply for Part 1 grant funds.

On April 3, 2014, the DWR released the Draft Expedited Project Solicitation Package and revised Program Guidelines for the Proposition 84 Round 3 Implementation grants cycle and announced a grant application deadline for Part 1 in July 2014. Similar to the first two rounds of solicitation, the Project Solicitation Package and Program Guidelines indicate that eligible grant applications must provide in addition to regional benefits, immediate drought relief and originate from an Integrated Regional Water Management Region.

The grant program requires grant applications to include a Resolution from the jurisdiction's governing body identifying the representative authorized to file the applications and execute the grant agreements. The Resolution has been reviewed and approved as to form by County Counsel.

ENVIRONMENTAL DOCUMENTATION

The recommended actions do not constitute a project subject to the requirements of the California Environmental Quality Act (CEQA) because it is activity that is excluded from the definition of a project by Section 15378(b) of the CEQA Guidelines. The funding, preparation, and submission of an application for grant funding involves the creation of a government funding mechanism or other government fiscal activity, which does not involve any commitment to any specific project, which may result in potentially significant physical impact on the environment. If selected for grant funding, we will return to the Board to request authority to accept the grant funds and to approve the Project, along with the appropriate documentation under CEQA and the National Environmental Policy Act (NEPA), as applicable. No activities that would be considered a project under CEQA or NEPA, if applicable, will be undertaken prior to the Board's approval of environmental documentation.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The implementation of these projects will enhance the quality of life for the District's customers by improving water quality and water reliability while reducing dependence on imported water.

CONCLUSION

Please return three adopted copies of this letter and three copies of the signed Resolution to the Department of Public Works, Waterworks Division.

Respectfully submitted,

Gail Farber

GAIL FARBER
Director

GF:AA:dvt

Enclosures

c: Chief Executive Office (Rita Robinson)
County Counsel
Executive Office

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE
COUNTY OF LOS ANGELES, CALIFORNIA,
ACTING AS THE GOVERNING BODY OF THE
LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY,
AUTHORIZING THE FILING OF APPLICATION FOR
INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT

WHEREAS, the Legislature and the Governor of the State of California have provided funds for the Integrated Regional Water Management Grant Program pursuant to the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Act of 2006 (Proposition 84); and

WHEREAS, the Legislature and the Governor of the State of California have enacted Senate Bill 104 to provide funds for the Integrated Regional Water Management Grant Program Proposition 84 Round 3; and

WHEREAS, this grant program is administered by the California Department of Water Resources; and

WHEREAS, the California Department of Water Resources requires the governing body of a grant applicant to designate, by Resolution, an authorized representative for filing grant applications and executing grant agreements; and

WHEREAS, the Los Angeles County Waterworks District No. 40, Antelope Valley (DISTRICT), intends to submit an application for Proposition 84 Round 3 Implementation Grant funds of up to Three Million and 00/100 Dollars ($3,000,000.00) for the 60th Street West Wellhead Arsenic Treatment Project under the Integrated Regional Water Management Grant Program.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Supervisors of the County of Los Angeles, acting as the governing body of the DISTRICT:

1. Authorize and direct the Director of Public Works or her designee to file an application for Proposition 84 Round 3 Implementation Grant funds.

2. Designate the Director of Public Works or her designee to negotiate and execute the grant agreement.

The foregoing Resolution was adopted on the 1st day of July, 2014, by the Board of Supervisors of the County of Los Angeles acting as the governing body of the DISTRICT.

SACHI A. HAMAI
Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By Carla Little
Deputy

APPROVED AS TO FORM:

JOHN F. KRATTLI
County Counsel

By Michael L. Moore (for)
Deputy

Appendix 1-2

Memorandum of Understanding for the Antelope Valley IRWM Region

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (MOU), made and entered into on this 9th day of January by and between the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley, hereinafter referred to as "DISTRICT," and in the aggregate hereinafter referred to as "parties":

WITNESSETH

WHEREAS, the parties are designated as a "Regional Water Management Group" under the California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002*, hereinafter referred to as "ACT"; and

WHEREAS, Section 10531 of the ACT includes the following declarations:

(a) Water is a valuable natural resource in California and should be managed to ensure the availability of sufficient supplies to meet the State's agricultural, domestic, industrial, and environmental needs. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage their available local and imported water supplies to improve the quality, quantity, and reliability of those supplies.

(b) Improved coordination among local agencies with responsibilities for managing water supplies and additional study of groundwater resources are necessary to maximize the quality and quantity of water available to meet the State's agricultural, domestic, industrial, and environmental needs.

(c) The implementation of the Integrated Regional Water Management Planning Act of 2002 will facilitate the development of integrated regional water management plans, thereby maximizing the quality and quantity of water available to meet the State's water needs by providing a framework for local agencies to integrate programs and projects that protect and enhance regional water supplies.

WHEREAS, Section 10537 of the ACT states that "Regional Water Management Group" means a group in which three or more local public agencies, at least two of which have statutory authority over water supply, participate by means of a joint powers agreement, memorandum of understanding, or other written agreement, as appropriate, that is approved by the governing bodies of those local public agencies; and

WHEREAS, under the ACT, the parties propose to collaboratively prepare an Integrated Regional Water Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," as set forth in this MOU; and

WHEREAS, the study area for the PLAN includes all, or a portion of, the service areas of the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and DISTRICT within the Antelope Valley; and

WHEREAS, the DISTRICT is willing to administer a contract ("CONTRACT") to engage a third-party consultant ("CONSULTANT") to prepare the PLAN, including preparation of a request for proposals, evaluation of CONSULTANT proposals, award of the CONTRACT, and general oversight of the CONTRACT; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District are willing to provide the CONSULTANT with the necessary data to prepare the PLAN and to review and comment on the draft versions of the PLAN; and

WHEREAS, the "CONSULTANT COSTS" for preparation of the PLAN consist of all amounts paid to the CONSULTANT upon completion of the PLAN; and

WHEREAS, the CONSULTANT COSTS are currently estimated to amount to $325,000 with DISTRICT'S share being $60,000, Antelope Valley-East Kern Water Agency's share being $50,000, Palmdale Water District's share being $60,000, Quartz Hill Water District's share being $5,000, Littlerock Creek Irrigation District's share being $5,000, City of Palmdale's share being $50,000, City of Lancaster's share being $45,000, County Sanitation District No. 14 of Los Angeles County's share being $22,500, County Sanitation District No. 20 of Los Angeles County's share being $22,500, and Rosamond Community Services District's share being $5,000, and

WHEREAS, the FINAL PLAN is defined to be the version of the PLAN that is deemed ready for adoption by 100 percent* of the representatives from the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District, where each agency has one representative.

*Exception taken per AVEK Board action on January 09, 2007.

WHEREAS, the ADOPTED PLAN is defined to be the version of the PLAN that is adopted by the governing bodies of at least three or more member agencies to the Regional Water Management Group, two of which have statutory authority over water supply, as evidenced by resolutions substantially similar to the sample included as Exhibit A.

NOW, THEREFORE, in consideration of the mutual benefits to be derived by the parties and of the promises herein contained, it is hereby agreed as follows:

(1) ANTELOPE VALLEY-EAST KERN WATER AGENCY AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Antelope Valley-East Kern Water Agency's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $50,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $50,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(2) PALMDALE WATER DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Palmdale Water District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $60,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $60,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(3) QUARTZ HILL WATER DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Quartz Hill Water District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $5,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $5,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(4) LITTLEROCK CREEK IRRIGATION DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Littlerock Creek Irrigation District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $5,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $5,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(5) ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Antelope Valley State Water Contractors Association's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(6) CITY OF PALMDALE AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or City of Palmdale's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $50,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Cit of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $50,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(7) CITY OF LANCASTER AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or City of Lancaster's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $45,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $45,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(8) COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or County Sanitation District No. 14 of Los Angeles County's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $22,500 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $22,500 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(9) COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or County Sanitation District

No. 20 of Los Angeles County's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $22,500 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $22,500 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(10) ROSAMOND COMMUNITY SERVICES DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Rosamond Community Services District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $5,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $5,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(11) DISTRICT AGREES:

a. To administer a CONSULTANT CONTRACT for the PLAN, including preparation of a request for proposals, evaluation of CONSULTANT proposals, award of a CONSULTANT CONTRACT, and oversight of the CONSULTANT services.

b. To facilitate stakeholder meetings.

c. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

d. To provide each agency with copies of the draft and final versions of technical reports and the draft PLAN within seven (7) calendar days from the date of receipt of said documents from the CONSULTANT, and to transmit comments to the CONSULTANT within seven (7) calendar days from the date of receipt of said documents from each agency.

e. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or DISTRICT's comments may not be incorporated in the PLAN.

f. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

g. To provide a contribution in the amount of $60,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

h. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(12) IT IS MUTUALLY UNDERSTOOD AND AGREED AS FOLLOWS:

a. If the governing body of the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District or DISTRICT does not adopt the PLAN within forty-five (45) calendar days from the date of receipt of the FINAL PLAN, such action or inaction shall constitute withdrawal from the Regional Water Management Group. An agency which withdraws from the Regional Water Management Group may be reinstated when the agency adopts the FINAL PLAN and agrees to any additions and/or amendments to the MOU.

b. Upon completion of the ADOPTED PLAN, the DISTRICT shall prepare a final accounting (the "Accounting") of all final actual CONSULTANT COSTS for review by the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

c. If the funds deposited with the DISTRICT exceed the CONSULTANT COSTS, based upon the Accounting, the DISTRICT shall refund the excess funds to the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District in proportion to their contribution towards the CONSULTANT COSTS within sixty (60) days after completion of the PLAN.

d. If the CONSULTANT COSTS exceed the funds deposited with the DISTRICT, the Antelope Valley-East Kern Water Agency,* Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District will supplement this MOU to fund the additional portion of the CONSULTANT COSTS in excess of the funds deposited with the DISTRICT in proportion to their original contributions towards the CONSULTANT COSTS.

*Exception taken per AVEK Board action on January 09, 2007.

e. This MOU may be amended or modified only by mutual written consent of all parties.

f. The Regional Water Management Group shall terminate twenty (20) years after the date of execution unless renewed by mutual written consent from all parties prior to expiration.

g. All parties agree to release the DISTRICT of any liability and in connection with all claims arising out of this MOU, including relating to the CONTRACT with the CONSULTANT, and including in connection with any and all claims by third parties relating to the CONSULTANT's work under the CONTRACT and/or any violation or alleged violation of the ACT as a result thereof, including pursuant to Civil Code Section 1542, which states:

> "A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor."

h. Notwithstanding the foregoing and notwithstanding any provision of law, including as contained in the California Government Code, and including Sections 895 *et. seq.*, therein, any and all liability or expenses (including attorneys' and experts' fees and related costs) to the DISTRICT for claims by third parties or CONSULTANT and injury to third parties or CONSULTANT, arising from or relating to this MOU shall be allocated among the parties on the basis of the percent of contribution required of each party under this MOU. As an example only, the percentage of contribution of Antelope Valley-East Kern Water Agency is 15 percent. Each party shall reimburse the DISTRICT for its allocated share of the costs described herein within thirty (30) calendar days of issuance of an invoice by the DISTRICT. The term "injury" shall have the meaning prescribed by Section 810.8 of the Government Code. This provision shall survive termination of this Agreement.

i. If any provision of this MOU is held, determined or adjudicated to be illegal, void, or unenforceable by a court of competent jurisdiction, the reminder of this MOU shall be given effect to the fullest extent possible.

j. Any correspondence, communication, or contact concerning this MOU shall be directed to the following:

ANTELOPE VALLEY-EAST KERN WATER AGENCY:

Mr. Russell E. Fuller
General Manager
6500 West Avenue N
Palmdale, CA 93551

PALMDALE WATER DISTRICT:

Mr. Dennis LaMoreaux
General Manager
2029 East Avenue Q
Palmdale, CA 93550

QUARTZ HILL WATER DISTRICT:

Mr. Dave Meraz
General Manager
42141 50th Street West
Quartz Hill, CA 93536

LITTLEROCK CREEK IRRIGATION DISTRICT:

Mr. Brad Bones
General Manager
35141 North 87th Street East
Littlerock, CA 93543

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION:

Ms. Barbara Hogan
Chairperson
c/o Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

CITY OF PALMDALE:

Mr. Leon Swain
Public Works Director
38250 Sierra Highway
Palmdale, CA 93550

CITY OF LANCASTER:

Mr. Randy Williams
Public Works Director
44933 Fern Avenue
Lancaster, CA 93534

COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY:

Mr. James F. Stahl
Chief Engineer and General Manager
County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, CA 90601

COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY:

Mr. James F. Stahl
Chief Engineer and General Manager
County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, CA 90601

ROSAMOND COMMUNITY SERVICES DISTRICT:

Mr. Claud Seal
Assistant General Manager
3179 35th Street
Rosamond, CA 93560

DISTRICT:

Mr. Manuel del Real
Assistant Deputy Director
Waterworks & Sewer Maintenance Division
County of Los Angeles
Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

k. Each person signing this MOU represents to have the necessary power and authority to bind the entity on behalf of which said person is signing and each of the other parties can rely on that representation.

l. This MOU may be executed in counterparts, each counterpart being an integral part of this MOU.

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IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by ANTELOPE VALLEY-EAST KERN WATER AGENCY; and

ANTELOPE VALLEY-EAST KERN
WATER AGENCY

By _____

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by Palmdale Water District; and

Palmdale Water District

By _____
General Manager

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by Quartz Hill Water District; and

Tier No. 3 Level of
Contribution - $5000.00

Quartz Hill Water District

By Dave Meraz
Dave Meraz,
General Manager

APPROVED AS TO FORM:

By
Legal Counsel
Brad Weeks, Esq.

By: Allen D Flick Sr.
Allen Flick, Sr.
Quartz Hill Water District
Board President

Approved at the Regular Board Meeting, held on Thurs., September 14, 2006.

Attested
By: Denise E. Burks
Denise Burks,
Board Secretary

Carried: 4-0

Ayes: P.Powell, J. powell, A. Flick, F. Tymon
Noes: ø

Abstained: ø

Absent: Ben Harrison, Jr.
Passed on 8-7-06

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by Littlerock Creek Irrigation District; and

Littlerock Creek Irrigation District

By _____
Brad Bones, General Manager

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION; and

ANTELOPE VALLEY STATE WATER
CONTRACTORS ASSOCIATION

By Barbara Hogan
Barbara Hogan

APPROVED AS TO FORM:

By Dayne Lemmon
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by City of Palmdale; and

City of Palmdale

By _____
James C. Ledford
Mayor

APPROVED AS TO FORM:

By _____
Wm. Matthew Ditzhazy
City Attorney

Attest:

By: _____
Victoria L. Hancock, CMC
City Clerk

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by CITY OF LANCASTER; and

APPROVED BY DEPT. HEAD _____

CITY OF LANCASTER

By _____

Bishop Henry W. Hearns
Mayor

APPROVED AS TO FORM:

By _____
Legal Counsel

Attest:

_____
City Clerk

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by County Sanitation District No. 14 of Los Angeles; and

County Sanitation District No. 14
of Los Angeles County

By _____
Chief Engineer and General Manager

ATTEST:

By _____
Secretary to the Board

APPROVED AS TO FORM:

Lewis, Brisbois, Bisgaard, and Smith LLP

By _____
District Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by County Sanitation District No. 20 of Los Angeles; and

County Sanitation District No. 20
of Los Angeles County

By _____
Chief Engineer and General Manager

ATTEST:

By _____
Secretary to the Board

APPROVED AS TO FORM:

Lewis, Brisbois, Bisgaard, and Smith LLP

By _____
District Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by ROSAMOND COMMUNITY SERVICES DISTRICT; and

ROSAMOND COMMUNITY
SERVICES DISTRICT

By _____

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by DISTRICT.

DISTRICT:

LOS ANGELES COUNTY
WATERWORKS DISTRICT NO. 40

By _____
for Director of Public Works

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By _____
Deputy

Exhibit A

RESOLUTION OF THE *[governing body of agency]*, ADOPTING THE INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley are designated as a "Regional Water Management Group" under the California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002*, hereinafter referred to as "ACT"; and

WHEREAS, under the ACT, the parties collaboratively prepared an Integrated Regional Water Management Plan for the Antelope Valley that meets the requirements of the ACT, hereinafter referred to as "PLAN"; and

WHEREAS, Section 10531 of the ACT includes the following declarations:

(d) Water is a valuable natural resource in California, and should be managed to ensure the availability of sufficient supplies to meet the state's agricultural, domestic, industrial, and environmental needs. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage their available local and imported water supplies to improve the quality, quantity, and reliability of those supplies.

(e) Improved coordination among local agencies with responsibilities for managing water supplies and additional study of groundwater resources are necessary to maximize the quality and quantity of water available to meet the state's agricultural, domestic, industrial, and environmental needs.

(f) The implementation of the Integrated Regional Water Management Planning Act of 2002 will facilitate the development of integrated regional water management plans, thereby maximizing the quality and quantity of water available to meet the state's water needs by providing a framework for local agencies to integrate programs and projects that protect and enhance regional water supplies.

WHEREAS, the adoption of the PLAN will allow the Antelope Valley Region to compete for State grant funding available under Proposition 50, proposed Proposition 84, and other future State and/or Federal grant programs.

NOW, THEREFORE, BE IT RESOLVED, that the *[governing body of agency]*, hereby adopts the PLAN.

The foregoing Resolution was adopted on the____day of_____, 2007, by the *[governing body of agency]*, as the governing body of the *[agency]*.

By _____

APPROVED AS TO FORM:

By _____
Legal Counsel

AGREEMENT ON THE IMPLEMENTATION OF THE INTEGRATED REGIONAL WATER MANAGEMENT PLAN

THIS AGREEMENT is made and entered into as of this 7th day of APRIL, 2009 by and between the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, ("Association"), City of Palmdale, City of Lancaster, County of Los Angeles, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley, (collectively, the "parties"):

RECITALS

A. On or about January 9, 2007, the parties entered into a Memorandum of Understanding for Integrated Regional Water Management Planning and Implementation ("MOU") under the California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002* (the "Act").

B. The parties desire to engage the various stakeholder interests throughout the Antelope Valley in implementing the Integrated Regional Water Management Plan (IRWMP) through broad facilitated agreement.

C. The parties desire to obtain grant or other funding to supplement the costs of implementing the IRWMP.

NOW, THEREFORE, the parties agree as follows:

1. The parties to this Agreement shall be known as and referred to as the Regional Water Management Group (RWMG). If approved by all parties, new entities may join the RWMG by adopting the IRWMP, executing this Agreement, agreeing to be bound by the terms hereof, and payment of such reasonable sums as the existing RWMG members shall determine.

2. Entities that are not members of the RWMG may contribute funding or in-kind services to support the activities of the RWMG without becoming signatories to this Agreement.

3. Each party shall designate a representative and an alternate to attend meetings, work with representatives of the other parties and to formulate

proposed actions by the RWMG. Any party may change designated representatives by notification to the other parties.

4. Representatives of the RWMG shall do the following:

   a) Designate a person to serve as the central point of contact for the representatives of the RWMG and as chairperson at any meetings.

   b) Hold public meetings for interested members of the public to meet, share ideas and discuss actions taken by the parties to implement the IRWMP. These meetings will be referred to as Stakeholder Meetings and people who attend these meetings may be referred to as the Stakeholder Group. The Stakeholder Group will be encouraged to participate in Stakeholder Meetings, advocate for regional projects, and disseminate information from the Stakeholders Meetings to the general public. In order to maintain effective meetings, the Stakeholder Group will follow a Code of Conduct at the Stakeholder Meetings to:

      i. Participate fully.

      ii. Treat others with dignity and respect.

      iii. Consider new ideas and perspectives.

      iv. Share accurate facts.

   c) Promote regional cooperation among its members to implement the IRWMP.

   d) Gather, compile, and manage data, as defined in the IRWMP.

   e) Develop proposals for the voluntary funding of cooperative efforts to implement the IRWMP. The ideas and suggestions of the Stakeholder Group shall be considered in the development of such proposals.

   f) Develop a list of short-term implementation objectives. The ideas and suggestions of the Stakeholder Group shall be considered in the development of such implementation objectives.

   g) Prepare and/or disseminate to the RMWG progress reports and proposed updates to the IRWMP. This task may be delegated to the Advisory Team as defined below.

   h) Identify and recommend to the governing bodies of the parties that applications be submitted for appropriate funding opportunities.

5. The parties shall designate one party, the Association, to solicit and administer one or more contracts ("Contracts"), with one or more third-party

consultants, to assist the RWMG to promote collaboration between members of the RWMG and other stakeholders during implementation of the Plan, prepare grant applications, update the IRWMP, and manage data collected consistent with the IRWMP on behalf of the RWMG. Any contract recommended by the Association shall be subject to the written approval of each party.

6. The parties shall establish a seven-member Advisory Team to the RWMG selected by the Stakeholder Group in the following manner:

   a) The Stakeholder Group shall select seven members according to the following categories for staggered three-year terms[1].

      i. Agriculture (2010)

      ii. Conservation, Environmental, and Water Quality (2011)

      iii. Industry and Commerce (2009)

      iv. Municipalities (2010)

      v. Mutual Water Companies (2011)

      vi. Public/Land Owners/Rural Town Councils (2009)

      vii. Urban Water Suppliers (2010)

   b) Nominations for each category can be made by any member of the Stakeholder Group and must be made during a Stakeholder Meeting.

   c) If the person nominated is willing to serve on the Advisory Team as described, that person will be considered as a potential member by the Stakeholder Group.

   d) Nominations for each open category will be discussed by the Stakeholder Group during a Stakeholder Meeting. If more than one qualified nomination is made per category, the Stakeholder Group shall choose one team member per category. Selections will be made by consensus. If a selection cannot be made by consensus, a selection will be made based on simple majority vote of the members at a meeting. Each Stakeholder Group member present may cast one vote per category.

   e) If an Advisory Team position becomes vacant before the regularly-scheduled reselection year, the same selection process described in this section will be used to select a replacement.

[1] Members for each category will be reselected in the year shown and every three years thereafter.

f) Advisory Team members may not designate an alternate.

g) Members of the Advisory Team shall use their best efforts to make decisions by consensus. If a consensus cannot be reached on a particular matter, a simple majority vote of the members present at a meeting at which a quorum is present will be sufficient to take action. A quorum shall be half the number of members plus one.

h) If the Stakeholder Group is not satisfied with the performance of one or more Advisory Team members, one or more members of the Stakeholder Group can request that the RWMG conduct a new nomination and selection cycle for the category (or categories) involved.

7. The parties will delegate the following tasks to the Advisory Team:

a) Schedule and facilitate Stakeholder Meetings

b) Draft agendas and prepare minutes for the Stakeholder Meetings

c) Distribute information to the Stakeholder Group

d) Develop a list of short-term implementation objectives for consideration and approval by the RWMG and Stakeholder Group.

e) Maintain a list of long-term implementation objectives for the RWMG to address and update at Stakeholder Meetings.

f) Recommend an annual scope and budget to the RWMG

g) Maintain the AVIRWMP website

h) Identify grant opportunities for the RWMG or its members to apply for

i) Review and edit grant applications submitted by the RWMG

j) Designate a single point of contact for all AVIRWM efforts

k) Recommend options to the RWMG to consider for establishing a long-term governance structure for integrated regional water management in the Antelope Valley

8. The parties shall designate a lead applicant for the RWMG for grant programs that require regional collaboration to contract with and receive funds from the granting agency, invoice the granting agency, fulfill the administrative responsibilities of the grant contract, and distribute the funds received from the granting agency to the specific project sponsors, subject to the written approval of each party. A party's (or parties') failure to approve a grant

application shall not prevent other parties from seeking that grant application on their own behalf.

9. Each party shall provide and share with other parties, all necessary and relevant information, data, studies, and/or documentation in its possession as necessary to further the purposes of this Agreement. To the extent allowed by law, the parties may enter into confidentiality agreements to maintain the confidentiality of any documents that are exempt from disclosure under the California Public Records Act or otherwise privileged and confidential.

10. Each party shall review and comment on draft and final versions of technical reports, grant applications, and revisions or addendums to the IRWMP within twenty-one (21) calendar days from the date of receipt of those documents from their representative.

11. Each party shall consider for adoption final versions of IRWMP revisions or addendums within forty-five (45) calendar days from the date of receipt of the document.

12. Consistent with their powers and purposes, each party shall work together in a spirit of cooperation, collaboration, and mutual respect, with the overall goal of bringing the highest possible benefit for the Antelope Valley as a hydrologic region.

13. This Agreement shall be executed in duplicate originals, one for each Party, each of which duplicate original shall be deemed to be an original, but all of which shall constitute one and the same agreement.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by ANTELOPE VALLEY-EAST KERN WATER AGENCY;

ANTELOPE VALLEY-EAST KERN WATER AGENCY

BY David Rizzo

APPROVED AS TO FORM:

By
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by Palmdale Water District;

PALMDALE WATER DISTRICT

By: Jeff A. Storm, President
Board of Directors

APPROVED AS TO FORM:

By: Lagerlof, Senecal, Gosney & Kruse, LLP
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by Quartz Hill Water District;

QUARTZ HILL WATER DISTRICT

_____

By: Allen Flick, Sr.
Board President

APPROVED AS TO FORM:

_____

By: Brad Weeks, Esg.,
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by Littlerock Creek Irrigation District;

LITTLEROCK CREEK IRRIGATION DISTRICT

By: BJ Bones

APPROVED AS TO FORM:

_____
By
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION;

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION

By:

APPROVED AS TO FORM:

By:
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by City of Palmdale;

CITY OF PALMDALE

By:_____
James C. Ledford, Jr.
Mayor

APPROVED AS TO FORM:

By:_____
Wm. Matthew Ditzhazy,
City Attorney

ATTEST:

By: Victoria L. Hancock
Victoria L. Hancock, CMC
City Clerk

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by CITY OF LANCASTER;

CITY OF LANCASTER

By: Ronald D. Smith
Vice Mayor

APPROVED AS TO FORM

By: David R. McEwen
City Attorney

Attest:

City Clerk Geri K. Bryan, CMC
City Clerk

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by County Sanitation District No. 14 of Los Angeles;

COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY

By: FEB 2 5 2009

ATTEST:

By:

APPROVED AS TO FORM:

By: Lewis, Brisbois, Bisgaard, and Smith LLP
District Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by County Sanitation District No. 20 of Los Angeles;

COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES

FEB 2 5 2009

ATTEST:

APPROVED AS TO FORM:

By: Lewis, Brisbois, Bisgaard, and Smith LLP
District Counsel

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by ROSAMOND COMMUNITY SERVICES DISTRICT;

ROSAMOND COMMUNITY SERVICES DISTRICT

By: _____

APPROVED AS TO FORM:

By: _____

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by COUNTY OF LOS ANGELES:

COUNTY OF LOS ANGELES

By _____

APPROVED AS TO FORM:

ROBERT E. KALUNIAN
Acting County Counsel

By _____
Deputy

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by DISTRICT.
DISTRICT:

LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40

By

APPROVED AS TO FORM:

ROBERT E. KALUNIAN
Acting County Counsel

By
Deputy

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Appendix 1-3

Antelope Valley IRWM Stakeholder Meeting Notes

Wednesday, May 14, 2014

AV IRWM Stakeholder Meeting
Wednesday, May 14, 2014

Minutes taken by: Brenda Ponton

The Antelope Valley Integrated Regional Water Management Stakeholder Meeting was held from 9:00 – 11:00 am on May 14, 2014, at the City of Palmdale Larry Chimbole Cultural Center – Joshua Room.

1. Welcome and Introductions
    a. The meeting was opened and led by Rick Caulkins and called to order at 9:05 am.
    b. An electronic copy of the PowerPoint presentation and sign-in sheet is attached.

2. Salt and Nutrient Management Plan Update
    a. Tim C. announced that the Salt and Nutrient Management Plan (SNMP) is undergoing final revisions and will be emailed to the Lahontan Regional Water Quality Control Board by the end of the day.
    b. The SNMP will be posted on the www.avwaterplan.org website by the next morning.
    c. Regional Water Management Group (RWMG) members are being asked to include the SNMP along with the 2013 IRWMP Update for adoption from their respective boards/councils during May, June, and potentially July. The SNMP is included in the IRWMP document as an appendix.

3. IRWMP Adoption Update
    a. The dates the RWMG members expect to adopt the AV IRWMP can be found in the attached PowerPoint and are updated as follows
        - City of Lancaster will adopt June 10th
        - Rosamond CSD will adopted May 28th
        - The Sanitation District will most likely adopt in July instead of June (it was noted that DWR gives a grace period after the grant applications are due to allow time to adopt the IRWMP)
        - The 12th member of the Regional Water Management Group not listed in the power point presentation is Los Angeles County. They will be adopting the IRWMP on June 17th
        - Boron CSD will be adopting the AV IRWMP May 22nd (not a RWMG member)
    b. Any project proponent that wants to apply for Prop. 84 funding needs to adopt the AV IRWMP.
    c. Matt Knudsen of AVSWCA is coordinating the IRWMP adoption process for the RWMG

4. Projects Submitted for IRWMP
    a. *Lancaster Cemetery Recycled Water Conversion (Special District)*: The project will replace the aging irrigation system and connect the cemetery to the purple pipe system.
        - The project is currently in the AV IRWMP as conceptual.

- The project has received cost estimates.
- The stakeholders agreed to accept the project into the AV IRWMP as an implementation project.

b. *South North Intertie Pipeline (SNIP) Phase II/Pump Station Project (AVEK)*: Phase II will allow the banked water to reach previously unconnected areas so that peak demands can be met in the summer.
   - The project addresses the IRWMP water supply reliability objective regarding a 6-month disruption of SWP water.
   - The stakeholders agreed to accept the project into the AV IRWMP as an implementation project.

c. *60th Street West Wellhead Arsenic Treatment (LACWD40)*: Project installs a treatment system at 2 wells that have high levels of arsenic.
   - This project will enable LACWD40 to use water that was previously unusable
   - The stakeholders agreed to accept the project into the AV IRWMP as an implementation project.

d. *Installation of Nitrate Treatment at Well 1-06 in Leona Valley (California Water Service Company)*: The project will treat nitrate-contaminated groundwater at well 1-06.
   - The stakeholders agreed to accept the project into the AV IRWMP as a conceptual project until it is determined whether a preliminary economic analysis has been conducted.

5. <u>Prop. 84, Round 3, Part 1 Grant Summary</u>
   a. The expedited round requires the AV Region to tell the story of how the Region has been impacted by drought conditions and what measures have been implemented to address these impacts.
   b. One of the drought eligibility requirements involves water quality conflicts created by the drought. An example of a water quality conflict created by drought would be an area that uses SWP water for blending to meet maximum contaminant levels (MCLs). The drought would decrease the availability of SWP water which render that particular water supply as unusable.
   c. Another of the drought eligibility requirements involves ecosystem conflicts created by the drought. An example of an ecosystem conflict created by drought could be impacts to Edwards Air Force Base and Piute Ponds created by drought conditions.
   d. Projects that have awarded construction bids by April 1, 2015 will be favored.

6. <u>Projects Submitted for Grant Consideration</u>
   a. Little Rock Sediment Removal (Palmdale Water District)
      - Increased storage will help meet summer demand.
      - The project will be ready for construction in early fall 2015.
      - This project has applied for funding under Prop. 50 and Prop. 1E, but did not receive funding. The stakeholders agreed the Prop. 84 drought round is more applicable to this project than the previous grants.

- In heavy storms, the water not captured in the reservoir flows to Edwards Air Force Base and evaporates from the lakebed.
- The current capacity is about 3,000 AF. With the sediment removal, PWD is hoping to come closer to their diversion right of 5,500 AFY. They are expecting to capture an additional 560 AFY in an average year but higher amounts are feasible.

b. South North Intertie Pipeline Phase II/ Pump Station Project (SNIP Phase II Project)
   - The project will increase water supply reliability by allowing AVEK to move banked water to parts of their service area that were previously unconnected to the WSSP-2 water bank.
   - The project will provide immediate drought relief and provide a long-term solution.
   - SNIP is the recovery component of the WSSP-2 recharge project.

c. 60th Street West Wellhead Arsenic Treatment
   - The alternative to treatment at the wells is partial well abandonment.

d. North Los Angeles/Kern County Regional Recycled Water Project Phase 2
   - The project will connect the Palmdale Water Reclamation Plant to the Lancaster Water Reclamation Plant and provide pressure to supply water to several sites such as the County Club.
   - Any users already connected to the backbone will have increased reliability.
   - For the Prop. 84 drought grant, DWR will not count benefits to new users unless they are included in the cost.
   - The Palmdale Power Plant will be the largest user.
   - The project is ready to go.
   - The transmission capacity is larger than 4,200 AFY.

e. Install Nitrate Treatment System at Well Station 1-06 in Leona Valley
   - The project proponent is a private entity which makes it ineligible for the expedited drought grant.

7. <u>Coordination with other Lahontan Regions</u>
   a. Rick C. has been facilitating discussion between the Antelope Valley and other Regions in the Lahontan Funding Area.
   b. Tahoe Sierra and Inyo Mono are interested in working with the Antelope Valley to split the remaining 10.7 million 3 ways (approximately $3.3 million each).
   c. Tahoe Sierra is interested in applying this round. Inyo Mono will most likely wait until the second part of Round 3 to apply for funding.
   d. Fremont is not officially an IRWM Region yet, but may be by the second part of Round 3.

8. <u>Discussion of Potential Application Strategies</u>
   a. Decisions that need to be made by the Stakeholder group include choosing the number of projects to submit and the total amount of funding to request

b. The group discussed that there is a lot of political drive behind the drought grant that could result in Regions getting funded and that there may not be sufficient time to come to an agreement between Lahontan Regions
c. Dave R. commented that the Antelope Valley and Mojave Regions have both received approximately 5 million or about 1/5 of the original allocation to the Region. If DWR is distributing the funds equally among the Regions and Fremont does not become a Region, there would be approximately $1.3 million (or ¼ of 5 million) left available to the Antelope Valley Region
d. The Stakeholder group decided that there are three reasonable options for funding request: (1) $1.3 million, (2) $3.3 million, or (3) the entire $10.7 million
e. The group discussed whether the Antelope Valley project proponents would still want to apply if their grant amount was decreased to approximately $1 million.
    - City of Palmdale and AVEK decided it would not be beneficial for their projects to apply for a small grant request in this round.
f. The stakeholder group agreed that PWD's Little Rock Creek Sediment Removal project and LACWD40's Arsenic Treatment project would be the best candidates for the drought grant.
g. The stakeholder group agreed to let the A-Team decide on the total grant request amounts after determining if the AV Region will be coordinating with the other Lahontan Regions regarding how much funding to request.
h. If the Antelope Valley Region decides to go for the entire $10.7 million in funds remaining for the Lahontan Funding Area, the AVEK SNIP project should be included in the Round 3 application.

9. Meeting was adjourned at 11:15 am

ACTION ITEMS:

1) Rick C. to email (and follow up with a phone call) the other Regions in the Lahontan Funding Area to set up a call to discuss the option of dividing the remaining Prop. 84 funds equally between the Regions.
2) Rick C. and Dave. R. (and other A-Team members if available) to determine the total amount of grant funds the Antelope Valley will request in the expedited round.
3) RMC to draft a proposal for AVSWCA for the preparation of the Prop. 84, Round 3, Part 1 grant application.

Appendix 1-4

2014 IRWM Drought Grant Acknowledgement Form

(Submitted separately as a wet-signed, hard copy to DWR)

2014 IRWM Drought Grant Acknowledgement Form

Applicant Name: **Los Angeles County Waterworks District No. 40**

IRWM Region: **Antelope Valley IRWM Region**

RWMG: **Antelope Valley RWMG**

As the authorized representative of the above-referenced RWMG, I acknowledge and affirm that the RWMG understands that it must provide additional information to DWR in the event that the RWMG is conditionally selected to receive 2014 IRWM Drought Grant funding.

I further acknowledge that the RWMG understands that its request for 2014 IRWM Drought grant funding is part of an expedited solicitation effort and agrees to the following items:

- If conditionally awarded funding, the applicant, on the behalf of the RWMG, will submit to DWR, within thirty (30) calendar days of written notification, which may include e-mail or electronic notification, all of the following items:
  - A detailed Work Plan per Exhibit A of the PSP for each project contained in the Proposal
  - A detailed Budget per Exhibit B of the PSP for each project contained in the Proposal
  - Documentation to support the Project Justification claims contained in the Proposal
  - Project Performance Monitoring Plans for each project that received funding
  - Audited Financial Statements for the Grantee and the individual project proponents whose project(s) is/are about to begin construction/implementation
  - CEQA/NEPA documentation for those projects that are about to begin construction/implementation
  - Other materials that DWR deems necessary, which will be detailed in the award notification

I further acknowledge that the RWMG also understands that failure to submit the necessary information, within thirty (30) calendar days, may result in delayed execution of the grant agreement or revocation of the conditional award of funds.

Authorized Original Signature: Patrick V. DeChellis

Printed Name: **Patrick V. DeChellis**

Title: **Deputy Director**

Date: **July 17, 2014**

Appendix 1-5

DWR Letter of Final Review and Approval of the Antelope Valley IRWM Plan

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

June 5, 2014

Mr. Matthew R. Knudson
General Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, California 93550

Antelope Valley Integrated Regional Water Management Plan Final Review

Dear Mr. Knudson:

This letter transmits the Department of Water Resources (DWR) final review of the Antelope Valley Integrated Regional Water Management (IRWM) Plan. The public comment period on DWR's review of the Antelope Valley IRWM Plan has closed and no public comments were received. DWR has determined that Antelope Valley IRWM Plan is consistent with IRWM Planning Act, and the related IRWM Plan Standards contained in the 2012 IRWM Program Guidelines. The final review is posted on the following link: http://www.water.ca.gov/irwm/grants/prp.cfm.

If adopted by the Regional Water Management Group and project proponents, by the appropriate dates, the Antelope Valley IRWM Plan will satisfy the terms of the Round 1 Implementation Grant Agreement's default clause and the adopted plan eligibility criteria for the 2014 Drought Solicitation. Each agreement and grant solicitation has its own date for adoption compliance.

To simplify submitting proof of adoption, DWR will compile and track this information and inform DWR grant managers and grant application review teams appropriately. You may submit proof of adoption material as often as necessary. When submitting information, please fill out IRWM Plan Adoption Form, found at: http://www.water.ca.gov/irwm/grants/resourceslinks.cfm, along with scanned proof of adoption, and then submit the material directly to Craig Cross at the email address listed below.

If you have any questions, please contact Craig Cross at (916) 651-9204 or Craig.Cross@water.ca.gov

Sincerely,

Tracie L. Billington, P.E. Chief
Financial Assistance Branch
Division of Integrated Regional Water Management

INTRODUCTION

IRWM planning regions must have an IRWM Plan that has been reviewed and deemed consistent with the 2012 IRWM Plan Standards by DWR for eligibilty to receiving Round 3 Proposition 84 funding. This 2012 IRWM Plan Standards Review Form for DWR staff use provides a consistent means in determining whether the 2012 IRWM Guidelines are being addressed in the IRWM Plan. It is part of the Plan Review Process that will begin prior to Round 3 solicitation. The form is similar to a grant application review form in that there is a checklist for each of the 16 Plan Standards and narrative evaluations where required. However, the evaluation is pass/fail; there is no numeric scoring. Each Plan Standard is either sufficient or not based on its associated requirements. Each Standard consists of between one and fourteen requirements. A Yes or No is automatically calculated in each Plan Standard header based on the individual requirement evaluations. In general, a passing score of "C" (i.e. 70% of the requirements for a given Plan Standard) is required for a Standard to pass. Standards with only one or 2 requirements will need one or both of those requirements to pass. Standards with 3 requirements will need at least 2 of the requirements to pass. Standards with 4 or 5 requirements will need at least 3 to pass. Some plan elements are legislated requirements. Such plan elements must be met in order to be considered consistent with plan standards. A summary of the sufficiency of each Standard is automatically calculated on the Standards Summary worksheet. A "No" evaluation indicates that a Standard was not met due to insufficient requirements comprising the Standard. The evaluation for each Plan Standard and any associated insufficiencies is automatically compiled on the Standards Summary page. Additional reviewer comments may be added at the bottom of each standards work sheet.

Note: This review form is meant to be a tool used in conjunction with the 2012 IRWM Guidelines document to assist in the evaluation of IRWM plans. It is not designed to be a substitute for the Guidelines document itself. Reviewers must use the Guidelines in determining plan consistency.

DEFINITION OF TABLE HEADINGS

IRWM Plan Standard: As named in the November 2012 IRWM Prop 84 and 1E Guidlelines.

Overall Standard Sufficient: This field is either "YES" or "NO" and is automatically calculated based on the "Sufficient" column described below. If all fields are "y", the the overall standard is deemed sufficient. Any entry other than a "y" in the Sufficient column (i.e. "n", ?, not sure, more detail needed, etc.) results in a NO.

Plan Standard Requirements Which Must Be Addressed **Fields with an asterisk * are required by legislation to be included in an IRWM Plan.**

Requirement	Requirements are taken directly from the November 2012 Guidelines.
Included	Is the Guideline Requirement included in the IRWM Plan? The options are: y = yes, requirement is included in the IRWMP; or n = no, requirement is not included in the IRWMP. If only y or n then presence/absence of the requirement is sufficient for evaluation. If there is a "q" (qualitative) then add a brief narrative, similar to a Grant Application Review public evaluation or supporting information.
Plan Standard Source	
2012 IRWM Grant Program Guidelines Source Page(s)	Page(s) in the Guidelines (November 2012) which pertain to the Requirement.
Legislative Support and/or Other Citations	The CWC or other regulations that pertain to the Requirement, **if applicable**. This is for reference purposes. The cell links to a weblink of the regulatory code.
Evidence of Sufficiency	
Location of Standard in Grantee IRWM Plan	The page(s) or sections in the IRWM Plan where information on the Requirement can be found. This can be specific paragraphs or entire chapters for more general requirements.
Brief Qualitative Evaluation Narrative	Supporting information for the Requirement if a "q" is in the Included column. This can be just a few sentences or a paragraph and can be taken directly from the IRWM Plan. Comments or supporting information may be entered regardless of whether required.
Sufficient	Is the Guidelines requirement sufficiently represented in the IRWM Plan (y/n).

2012 IRWM Plan Standards Review Form

Regional Acceptance Process Planning Region: Antelope Valley
Regional Water Management Group: Antelope Valley IRWM
IRWM Plan Title: Antelope Valley Integrated Regional Water Management Plan

PLAN IS SUFFICIENT

IRWM Plan Standard	Overall Standard Sufficient	Requirement(s) Insufficient
Governance	**Yes**	
Region Description	**Yes**	
Objectives	**Yes**	
Resource Management Strategies	**Yes**	
Integration *	**Yes**	
Project Review Process	**Yes**	
Impact and Benefit	**Yes**	
Plan Performance and Monitoring	**Yes**	
Data Management	**Yes**	
Finance	**Yes**	
Technical Analysis	**Yes**	
Relation to Local Water Planning	**Yes**	
Relation to Local Land Use Planning	**Yes**	
Stakeholder Involvement	**Yes**	
Coordination	**Yes**	
Climate Change	**Yes**	

* If not included as an individual section use Governance, Project Review Process, and Data Management Standards per November 2012 Guidelines, p. 44.

Additional Comments:

IRWM Plan Standard: Governance						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Regulatory and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Document a governance structure to ensure updates to the IRWM Plan							
The name of the RWMG responsible for implementation of the IRWMP	**y/n**	y	**18/35**	CWC §10539	Executive summary, Section 1, page 2; Section 1, page 1-6		y
A description of the IRWM governance structure	**y/n**	y	**19/36**		Section 8.2, page 8-2, 8-3. 8-4		y
A description of how the chosen form of governance **addresses** and **ensures**:							
Public outreach and involvement processes	**y/n/q**	y	**19/36-37**	§10540, §10541	Pages 1-12 through 1-21; Section 8.2, page 8-5, 8-6	A diverse group of stakeholders were involved in updating the recent Plan. The role of stakeholders and the public in the planning process and public outreach activities are discussed.	y
Effective decision making	**y/n/q**	n	**19/37**		Section 8.2, page 8-5	The RWMG uses "facilitated broad agreement." Whenever a decision needs to be made, the discussion between the RWMG members and the Stakeholder Group is facilitated until all members come to a consensus.	y
Balanced access and opportunity for participation in the IRWM process	**y/n/q**	y	**19/37**		Section 8.2.3, page 8-5	The Plan discusses the stakeholders involved and their levels of participation. Stakeholder participation and public review and is discussed.	y
Effective communication – both internal and external to the IRWM region	**y/n/q**	y	**19/37-38**		Pages 1-15 to 1-16; Section 8.2.4, page 8-7	Communication occurs with groups both within and outside the Region. Information is disseminated to stakeholders via email, website, workshops, presentations, and one on one meetings. Subcommittees were formed to address issues within the region.	y
Long term implementation of the IRWM Plan	**y/n/q**	y	**19/38**		Section 8.2.5, page 8-7	The MOU signed by each RWMG member does not expire until January 2027, which demonstrates each member's commitment to the program. Stakeholders	y
Coordination with neighboring IRWM efforts and State and federal agencies	**y/n/q**	y	**19/38**		Section 8.2.6, 8-7, 8-8	Outreach is conducted to include neighboring IRWM regions, and state and federal agencies. When appropriate, representatives are elected to interface with the other party.	y
The collaborative process(es) used to establish plan objectives	**y/n/q**	y	**19/38**		Section 1.2, page 1-6; Section 8.2.6, page 8-8; pages 4-1 to 4-4	Many stakeholder meetings were held for this latest update to discuss objectives and prioritization.	y
How interim changes and formal changes to the IRWM Plan will be performed	**y/n/q**	n	**19/38**		1-24 to 1-25 and 8-8	The process of interim and formal changes to the IRWM Plan in response to changing conditions is described.	y
Updating or amending the IRWM Plan	**y/n/q**	y	**19/38**		Section 1.3.2, pages 1-24, 1-25, 1-26; Section 8.2.7, page 8-8	The IRWM Plan will be updated at minimum every five years. There will be an ongoing process for keeping the proposed project list up-to-date through regular quarterly updates and additional meetings.	y
Publish NOI to prepare/update the plan; adopt the plan in a public meeting	**y/n/q**	y	**35**	CWC §10543	Section 1.2.3, page 1-15	Notice of intent is included as an appendix to the Plan. It was published for this update.	y

IRWM Plan Standard: Region Description						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
If applicable, describe and explain how the plan will help reduce dependence on the Delta supply regionally	**y/n**	y	**20**	--	Section 6.1, pages 6-2 to 6-13		y
Describe watersheds and water systems	**y/n**	y	**19/39**	PRC §75026.(b)(1) and CWP Update 2009	Sections 2.3 to 2.4, Section 3.4, Section 2.8, Section 3.6		y
Describe internal boundaries	**y/n**	y	**19/39**	--	Section 2 of the Plan (various)		y
Describe water supplies and demands for minimum 20 year planning horizon	**y/n**	y	**19/39**	--	Section 3.1, pages 3-1 to 3-40		y
Describe water quality conditions	**y/n**	y	**19/40**	--	Section 3.2, pages 3-41 to 3-46		y
Describe social and cultural makeup, including specific information on DACs and tribal communities in the region and their water challenges.	**y/n/q**	y	**19/40**	--	Section 1.2.4, pages 1-16 to -21; Appendix D	DAC communities and Native American tribes and their water challenges were identified and described, including detailed maps. Information was included from targeted outreach to DAC, rural and isolated communities, and Native American tribes.	y
Describe major water related objectives and conflicts *	**y/n/q**	y	**19/40**	§10541. (e)(3)	Sections 3.1.9, 3.2.5, 3.3.1, 3.4.1, and 3.5.1	The key issues, needs, challenges, and priorities for the Antelope Valley Region are described with respect to water supplies, water quality, flood management, environmental issues, and land use.	y
Explain how IRWM regional boundary was determined and why region is an appropriate area for IRWM planning.	**y/n/q**	y	**19/40**	--	Section 2.1, pages 2-1 to 2-4	Explained in "2.1 Region Overview" first paragraph	y
Describe neighboring and/or overlapping IRWM efforts	**y/n**	y	**19/40**	--	Section 2.2, pages 2-2 to 2.4; pages 8-7 to 8-8		y
Explain how opportunities are maximized (e.g. people at the table, natural features, infrastructure) for integration of water management activities	**y/n**	y	**38**	--	Section 5.8; 6; 8		y

* Requirement must be addressed.

IRWM Plan Standard: Objectives						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Qualitative Narrative**	**y/n**
Through the objectives or other areas of the plan, the 7 items on pg 41 of GL are addressed.*	**y/n**	y	**20/40 - 41**	§10540.(c)	Sections 4.1 to 4.7, Section 1.2.4, and Section 3.7		y
Describe the collaborative process and tools used to establish objectives: - How the objectives were developed - What information was considered (i.e., water management or local land use plans, etc.) - What groups were involved in the process - How the final decision was made and accepted by the IRWM effort	**y/n**	y	**20/41**	--	Section 4.1, pages 4-1 to 4-4		y
Identify quantitative or qualitative metrics and measureable objectives: Objectives must be measurable - there must be some metric the IRWM region can use to determine if the objective is being met as the IRWM Plan is implemented. Neither quantitative nor qualitative metrics are considered inherently better. *	**y/n/q**	y	**20/41 - 42**	10541.(e)	All of Section 4	Table 4-1 summarizes the region's objectives and planning targets. Sections 4.2 to 4.7 go into further detail about the objectives and how the targets were derived.	y
Explain how objectives are prioritized or reason why the objectives are not prioritized	**y/n/q**	y	**20/42-43**	--	Section 4.1, pages 4-1 to 4-2	Objectives were not prioritized with the understanding that each objective is equally important relative to the others, as the IRWMP is intended to be an integrated plan that incorporates all areas of water resource management.	y
Reference specific overall goals for the region: RWMGs may choose to use goals as an additional layer for organizing and prioritizing objectives, or they may choose to not use the term at all.	**y/n**	y	**43**	--	Section 4.1, pages 4-1 to 4-4		y

* Requirement must be addressed.

IRWM Plan Standard: Resource Management Strategies (RMS)						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Identify RMS incorporated in the IRWM Plan: Consider all California Water Plan (CWP) RMS criteria (29) listed in Table 3 from the CWP Update 2009 *	**y/n**	y	**20/43**	CWP Update 2009 Volume II; 10541(e)(1)	5-1 to 5-26		y
Consideration of climate change effects on the IRWM region must be factored into RMS	**y/n**	y	**20/43**	--	5-16 to 5-17		y
Address which RMS will be implemented in achieving IRWM Plan Objectives	**y/n**	y	**44**	--	Sections 5.2 to 5.7		y

* Requirement must be addressed.

IRWM Plan Standard: Integration						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Contains structure and processes for developing and fostering integration [1]: - Stakeholder/institutional - Resource - Project implementation	y/n/q	y	20/44 - 45	§10540.(g); §10541.(h)(2)	Section 8	Section 8 addresses the structure and processes for developing and fostering integration.	y

1. If not included as an individual section use Governance, Project Review Process, and Data Management Standards per November 2012 Guidelines, p. 44.

IRWM Plan Standard: Project Review Process						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Regulatory and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Process for projects included in IRWM plan must address 3 components: - procedures for submitting projects - procedures for reviewing projects - procedures for communicating lists of selected projects	**y/n**	y	**20/45**		Section 7, pages 7-1 to 7-9		y
Does the project review process in the plan incorporate the following factors:							
How a project contributes to plan objectives	**y/n**	y	**20**		Section 7, page 7-8, Table 7-1		y
How a project is related to Resource Management Strategies identified in the plan.	**y/n**	y	**20**		Section 7, page 7-8, Table 7-1		y
The technical feasibility of a project.	**y/n**	y	**20**		Section 7, page 7-8, Table 7-1		y
A projects specific benefits to a DAC water issue.	**y/n**	y	**20**		Section 7, page 7-8, Table 7-1		y
Environmental Justice considerations.	**y/n**	y	**20**	§75028.(a)	Section 7, page 7-8, Table 7-1		y
Project costs and financing	**y/n**	y	**20**		Section 7, page 7-8, Table 7-1		y
Address economic feasibility	**y/n**	y	**21**		Section 7, page 7-8, Table 7-1		y
Project status	**y/n**	y	**21**		Section 7, page 7-8, Table 7-1		y
Strategic implementation of plan and project merit	**y/n**	y	**21/48**		Section 7, page 7-8, Table 7-1		y
Project's contribution to climate change adaptation	**y/n**	y	**21**		Section 7, page 7-8, Table 7-1		y
Contribution of project in reducing GHGs compared to project alternatives	**y/n**	y	**21**		Section 7, page 7-8, Table 7-1		y
Status of the Project Proponent's IRWM plan adoption	**y/n**	y	**21**		Section 7, page 7-8, Table 7-1		y
Project's contribution to reducing dependence on Delta supply (for IRWM regions receiving water from the Delta).	**y/n**	y	**21**		Section 7, pages 7-9, 7-10		y

IRWM Plan Standard: Impact and Benefit						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Discuss potential impacts and benefits of plan implementation within IRWM region, between regions, with DAC/EJ concerns and Native American Tribal communities	**y/n**	y	**21**	--	Section 5.8		y
State when a more detailed project-specific impact and benefit analysis will occur (prior to any implementation activity)	**y/n**	y	**49**	--	Section 5.8, page 5-17		y
Review and update the impacts and benefits section of the plan as part of the normal plan management activities	**y/n**	y	**50**	--	Section 5.8, page 5-17		y

IRWM Plan Standard: Plan Performance and Monitoring						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Contain performance measures and monitoring methods to ensure that IRWM objectives are met *	**y/n**	y	**21/53**	PRC §75026.(a)	Section 8.6		y
Contain a methodology that the RWMG will use to oversee and evaluate implementation of projects.	**y/n**	y	**21/53**		Section 8.6 and 8.7		y

* Requirement must be addressed.

IRWM Plan Standard: Data Management						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Regulatory and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Describe data needs within the IRWM region	**y/n**	y	**54**	--	Section 8.4.2		y
Describe typical data collection techniques	**y/n**	y	**54**	--	Section 8.4.1		y
Describe stakeholder contributions of data to a data management system	**y/n**	y	**54**	--	Section 8.4.1		y
Describe the entity responsible for maintaining data in the data management system	**y/n**	y	**54**	--	Section 8.4.1		y
Describe the QA/QC measures for data	**y/n**	y	**54**	--	Section 8.4.1		y
Explain how data collected will be transferred or shared between members of the RWMG and other interested parties throughout the IRWM region, including local, State, and federal agencies *	**y/n**	y	**54**	--	Section 8.4.1		y
Explain how the Data Management System supports the RWMG's efforts to share collected data	**y/n**	y	**54**	--	Section 8.4.1		y
Outline how data saved in the data management system will be distributed and remain compatible with State databases including CEDEN, Water Data Library (WDL), CASGEM, California Environmental Information Catalog (CEIC), and the California Environmental Resources Evaluation System (CERES).	**y/n**	y	**54**	--	Section 8.4.4		y

* Requirement must be addressed.

IRWM Plan Standard: Finance						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Include a programmatic level (i.e. general) plan for implementation and financing of identified projects and programs* including the following:	**y/n**	y	**21**	§10541.(e)(8)	Section 8.3		y
List known, as well as, possible funding sources, programs, and grant opportunities for the development and ongoing funding of the IRWM Plan.	**y/n**	y	**21**		Section 8.3.1		y
List the funding mechanisms, including water enterprise funds, rate structures, and private financing options, for projects that implement the IRWM Plan.	**y/n**	y	**21**		Section 8.3.1		y
An explanation of the certainty and longevity of known or potential funding for the IRWM Plan and projects that implement the Plan.	**y/n**	y	**21**		Section 8.3.3; Table 8-2		y
An explanation of how operation and maintenance (O&M) costs for projects that implement the IRWM Plan would be covered and the certainty of operation and maintenance funding.	**y/n**	y	**21**		Table 8-2; Appendix K for specific projects		y

* Requirement must be addressed.

IRWM Plan Standard: Technical Analysis						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Document the data and technical analyses that were used in the development of the plan *	y/n	y	22	--	Table 8-3 (8-17 to 8-19)		y

* Requirement must be addressed.

IRWM Plan Standard: Relation to Local Water Planning						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Identify a list of local water plans used in the IRWM plan	y/n	y	22	§10540.(b)	Section 8.1.1; Table 8-1		y
Discuss how the plan relates to these other planning documents and programs	y/n	y	22		Section 8.1.1; Table 8-1		y
Describe the dynamics between the IRWM plan and other planning documents	y/n	y	22		Section 8.1.1		y
Describe how the RWMG will coordinate its water mgmt planning activities	y/n	y	58		Section 8.2		y

IRWM Plan Standard: Relation to Local Land Use Planning						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Document current relationship between local land use planning, regional water issues, and water management objectives	y/n	y	22/59 - 62	--	Section 8.1.1; Table 8-1		y
Document future plans to further a collaborative, proactive relationship between land use planners and water managers	y/n	n	22/59 - 62	--	Section 8.2		y

IRWM Plan Standard: Stakeholder Involvement						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Contain a public process that provides outreach and opportunity to participate in the IRWM plan *	y/n	y	22/63	§10541.(g)	Section 1.2; Section 8.2; Figure 8-1		y
Identify process to involve and facilitate stakeholders during development and implementation of plan regardless of ability to pay; include barriers to invlovement *	y/n	y	64	§10541.(h) (2)	Section 1.2, pages 1-12 to 1-22; Section 8.2		y
Discuss involvement of DACs and tribal communities in the IRWM planning effort	y/n	y	23	--	Section 1.2, pages 1.2.4.1; 1.2.4.3; Section 8.2.3.3		y
Describe decision-making process and roles that stakeholders can occupy	y/n	y	23	--	1.2.2; 1.2.3; Section 8.2		y
Discuss how stakeholders are necessary to address objectives and RMS	y/n	y	23	--	Section 1.2; Section 8.2.1; 8.2.4; 8.2.7		y
Discuss how a collaborative process will engage a balance in interest groups	y/n	y	23	--	Section 1.2		y

* Requirement must be addressed.

IRWM Plan Standard: Coordination						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Identify the process to coordinate water management projects and activities of participating local agencies and stakeholders to avoid conflicts and take advantage of efficiencies *	**y/n**	y	**23/65**	§10541.(e)(13)	Section 1.2.2		y
Identify neighboring IRWM efforts and ways to cooperate or coordinate, and a discussion of any ongoing water management conflicts with adjacent IRWM efforts	**y/n**	y	**23/65**	--	Section 2.2; Section 8.2.6		y
Identify areas where a state agency or other agencies may be able to assist in communication or cooperation, or implementation of IRWM Plan components, processes, and projects, or where State or federal regulatory decisions are required before implementing the projects.	**y/n**	y	**23**	--	pages 1-13 to 1-14; section 8.2.6		y

* Requirement must be addressed.

IRWM Plan Standard: Climate Change						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Evaluate IRWM region's vulnerabilities to climate change and potential adaptation responses based on vulnerabilites assessment in the DWR Climate Change Handbook for Regional Water Planning *	**y/n**	y	**23/66 - 73**	Climate Change Handbook vulnerability assessment: http://www.water.ca.gov/climatechange/CCHandbook.cfm; November 2012 Guidelines Legislative and Policy Context, p. 66 §10541.(e)(11)	Section 2.11; Section 3.6; Section 5.2		y
Provide a process that considers GHG emissions when choosing between project alternatives *	**y/n**	y	**23/68**		Section 7.1; Section 7.2; Table 7-1		y
Include a list of prioritized vulnerabilites based on the vulnerability assessment and the IRWM's decision making process.	**y/n**	y	**23/66 - 73**		Section 3.6.2; Table 3-19		y
Contain a plan, program, or methodology for further data gathering and analysis of prioritized vulnerabilities	**y/n**	y	**23/66 - 73**		Section 3.6.2; Section 8.6.1; Table 8-4; Section 8.7		y
Include climate change as part of the project review process	**y/n**	y	**23/68**		Section 7.1; Section 7.2; Table 7-1		y

* Requirement must be addressed.

Regulatory Citation	Link	Notes
IRWM Prop 84 and 1E Guidelines	http://www.water.ca.gov/irwm/grants/docs/Guidelines/GL_2012_FINAL.pdf	DWR November 2012 Guidelines - Final
CWC §10539	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10532-10539	
CWC §10540, §10541	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10540-10543	
CWC §10543	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10540-10543	
PRC §75026, §75028, CWP Update 2009, and California Watershed Portal	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=75001-76000&file=75020-75029.5	The Department of Water Resources shall give preference to proposals that satisfy the criteria specified in PRC §75026.(b)(1). §75028.(a) - the department shall defer to approved local project selection, and review projects only for consistency with the purposes of Section 75026.
	http://www.waterplan.water.ca.gov/cwpu2009/index.cfm	2009 California Water Plan Volumes I and II
	http://www.conservation.ca.gov/dlrp/watershedportal/Pages/Index.aspx	California Watershed Portal
§10541. (e)(3)	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10540-10543	

Appendix 1-6

Proofs of Adoption of the 2013 Update of the Antelope Valley IRWM Plan

RESOLUTION NO. R-14-10

A RESOLUTION OF THE ANTELOPE VALLEY – EAST KERN WATER AGENCY

APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40, Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Antelope Valley – East Kern Water Agency does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED on this 27th day of May, 2014 by the Board of Directors, as the governing body of the Antelope Valley-East Kern Water Agency:

ANTELOPE VALLEY-EAST KERN
WATER AGENCY

By: _____
Board President

APPROVED AS TO FORM:

By: _____
Legal Counsel

RESOLUTION NO. 2014-1

RESOLUTION OF THE GOVERNING BOARD OF COMMISSIONERS OF THE ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40, Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Commissioners of the Antelope Valley State Water Contractors Association does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED on this 29th day of May, 2014 by the Board of Commissioners, the governing body of the Antelope Valley State Water Contractors Association.

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION

Barbara Hogan,
Chair

ATTEST:

Kathy MacLaren,
Secretary

RESOLUTION NO. 2014-005

RESOLUTION OF THE GOVERNING BOARD OF THE BORON COMMUNITY SERVICES DISTRICT APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Boron Community Services District does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED on this 22nd day of May, 2014, by the Board of Directors, the governing body of the Boron Community Services District, by the following vote, to wit:

AYES: 3, Kostopoulos, Lopez, Sommers

NOES: 0

ABSENT: 2, Boghosian, Petrey

James H. Sommers
Board President

CERTIFICATION:

The undersigned, Secretary to the Board of Directors of the Boron Community Services District, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Boron Community Services District Board of Directors on March 22nd, 2014.

Date: May 22nd, 2014

Secretary to the Board of Directors

RESOLUTION NO. 14-28

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA, APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the City of Lancaster (CITY) and agencies in the Antelope Valley Region have long recognized the importance of regional collaboration and integration of single purpose efforts and now regularly work across jurisdictional boundaries to implement regional projects and programs that address multiple water resource management issues including local and imported water supplies, sanitation and recycled water, storm water management, groundwater management, water use efficiency, habitat and open space management, and many others; and

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many others; and

WHEREAS, organizations participating in the IRWM Program join together to form IRWM Regions; and

WHEREAS, the IRWM Region serving the Antelope Valley Region is known as the Antelope Valley IRWM Region; and

WHEREAS, the Antelope Valley IRWM Region engages in regional water resources planning for the Antelope Valley Region; and

WHEREAS, the IRWM Program requires that a Regional Water Management Group (RWMG) be formed to establish an IRWM Region; and

WHEREAS, the CITY is a member of the RWMG for the Antelope Valley IRWM Region; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program through Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the CITY actively participated in the development of the 2013 update to the Antelope Valley IRWM Plan; and

WHEREAS, adopting the 2013 update Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM Plan, including the CITY, to apply for future grant funding under various grant programs including Proposition 84 and Proposition 1E; and

WHEREAS, on December 11 2007, the City Council adopted Resolution No. 07-221 approving the proposal and determination to adopt the Antelope Valley IRWM Plan; and

WHEREAS, the 2012 Guidelines require the governing bodies of member agencies of the RWMGs, the RWMG representatives of the governing bodies, as well as proponents of projects included in IRWM grant funding proposals to adopt an updated IRWM Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER AS FOLLOWS:

Section 1. The City Council adopted the 2013 update to the Antelope Valley IRWM Plan as a member of the Regional Water Management Group.

PASSED, APPROVED and ADOPTED this 10th day of June, 2014, by the following vote:

AYES: Council Members Johnson, Mann, Smith; Vice-Mayor Crist, Mayor Parris

NOES: None

ABSTAIN: None

ABSENT: None

ATTEST:

GERI K. BRYAN, CMC
City Clerk
City of Lancaster

APPROVED:

FOR

R. REX PARRIS
Mayor
City of Lancaster

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES }ss
CITY OF LANCASTER }

CERTIFICATION OF RESOLUTION
CITY OF LANCASTER

I, Britt Avrit, Assistant City Clerk City of Lancaster, California, do hereby certify that this is a true and correct copy of the original Resolution No. 14-28, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this 16th day of June, 2014.

(seal)

Britt Avrit

CITY OF PALMDALE
LOS ANGELES COUNTY, CALIFORNIA

RESOLUTION NO. CC 2014-081

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the City of Palmdale (CITY) and agencies in the Antelope Valley Region have long recognized the importance of regional collaboration and integration of single purpose efforts and now regularly work across jurisdictional boundaries to implement regional projects and programs that address multiple water resource management issues including local and imported water supplies, sanitation and recycled water, storm water management, groundwater management, water use efficiency, habitat and open space management, and many others; and

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, organizations participating in the IRWM Program join together to form IRWM Regions; and

WHEREAS, the IRWM Region serving the Antelope Valley Region is known as the Antelope Valley IRWM Region; and

WHEREAS, the Antelope Valley IRWM Region engages in regional water resources planning for the Antelope Valley Region; and

WHEREAS, DWR recognizes the Antelope Valley IRWM Region as an official IRWM Region; and

WHEREAS, the IRWM Program requires that a Regional Water Management Group (RWMG) be formed to establish an IRWM Region; and

WHEREAS, the CITY is a member of the RWMG for the Antelope Valley IRWM Region; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the CITY actively participated in the development of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, adopting the 2013 Update Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM, including the CITY, to apply for future grant funding under various grant programs including Proposition 84 and Proposition 1E; and

WHEREAS, on January 16, 2008, the CITY Council adopted the resolution for the proposal and determination to adopt the Antelope Valley IRWM Plan; and

WHEREAS, the 2012 Guidelines require the governing bodies of member agencies of the RWMGs, the RWMG representatives of the governing bodies, as well as proponents of projects included in IRWM grant funding proposals to adopt an updated IRWM Plan.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PALMDALE DOES HEREBY FIND, DETERMINE, RESOLVE AND ORDER AS FOLLOWS:

SECTION 1: The City Council adopts the 2013 Update to the Antelope Valley IRWM Plan as a member of the Regional Water Management Group.

SECTION 2: The City Clerk shall certify to the adoption of this resolution.

PASSED, APPROVED and ADOPTED this 4th day of June, 2014, by the following vote:

AYES: Ledford, Lackey, Hofbauer, and Thompson

NOES: None

ABSTAIN: None ABSENT: Dispenza

James C. Ledford, Jr., Mayor

Attest:

Rebecca J. Smith, City Clerk

Approve as to form:

Wm. Matthew Ditzhazy, City Attorney

STATEMENT OF PROCEEDINGS FOR THE

REGULAR MEETING OF THE BOARD OF SUPERVISORS

OF THE COUNTY OF LOS ANGELES HELD IN ROOM 381B

OF THE KENNETH HAHN HALL OF ADMINISTRATION

500 WEST TEMPLE STREET, LOS ANGELES, CALIFORNIA 90012

Tuesday, June 17, 2014

9:30 AM

41. Recommendation: Acting as the Governing Body of the County of Los Angeles and the County Waterworks District No. 40, Antelope Valley (District) (5), adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan; and authorize the Chief Executive Officer and the Director of Public Works, to vote as a member of the Regional Water Management Group for the Antelope Valley to adopt this Plan in accordance with Sections 10530 to 10546 of the California Water Code. **(Department of Public Works and Chief Executive Office)** (14-2587)

On motion of Supervisor Yaroslavsky, seconded by Supervisor Antonovich, this item was adopted.

Ayes: 5 - Supervisor Molina, Supervisor Ridley-Thomas, Supervisor Yaroslavsky, Supervisor Antonovich and Supervisor Knabe

Attachments: Board Letter

The foregoing is a fair statement of the proceedings for the meeting held June 17, 2014, by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

ATTEST: SACHI A. HAMAI
EXECUTIVE OFFICER
CLERK OF THE BOARD OF SUPERVISORS
By Carla Little, Deputy

Sachi A. Hamai, Executive Officer
Executive Officer-Clerk
of the Board of Supervisors
By Sachi C. Hamai

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

June 17, 2014

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

41 June 17, 2014

SACHI A. HAMAI
EXECUTIVE OFFICER

Dear Supervisors:

JOINT RECOMMENDATION FROM THE CHIEF EXECUTIVE OFFICER AND THE DIRECTOR OF PUBLIC WORKS TO ADOPT THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN (SUPERVISORIAL DISTRICT 5) (3 VOTES)

SUBJECT

This action is to adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan and authorize the Chief Executive Officer or his designee and the Director of Public Works or her designee, respectively, to vote as members of the Regional Water Management Group for the Antelope Valley to adopt this Plan in accordance with Sections 10530 to 10546 of the California Water Code. These actions will enable the Regional Water Management Group for the Antelope Valley to improve regional water resources management practices, as well as qualify it for future grant funding for water resources-related projects.

IT IS RECOMMENDED THAT THE BOARD ACTING AS THE GOVERNING BODY OF THE COUNTY OF LOS ANGELES AND LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY:

1. Adopt the enclosed Resolution (Enclosure A) adopting the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan on behalf of the County of Los Angeles and Los Angeles County Waterworks District No. 40, Antelope Valley.

2. Authorize the Chief Executive Officer or his designee and the Director of Public Works or her designee, respectively, to vote as a member of the Regional Water Management Group for the Antelope Valley to adopt this Plan in accordance with Sections 10530 to 10546 of the California Water Code.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water.

Agencies in the Antelope Valley Region have long recognized the importance of regional collaboration and integration of single-purpose efforts. Agencies now regularly work across jurisdictional boundaries to implement regional projects and programs that address multiple water resource management issues including recycled water, stormwater capture, water use efficiency, and groundwater basin banking. The Antelope Valley IRWM Plan is a result of these ongoing efforts and is an acknowledgement by these agencies that integration and cost-sharing is the key to meeting the Antelope Valley Region's future water resource management challenges.

The DWR and State Legislators have established program guidelines for the IRWM Program through Proposition 84 and Proposition 1E (2012 Guidelines). The 2013 Update to the Antelope Valley IRWM Plan addresses the provisions of Proposition 84 and Proposition 1E and meets the requirements of the 2012 Guidelines.

The IRWM Program requires IRWM Plans to be administered by a Regional Water Management Groups (RWMG). The RWMG for the Antelope Valley is responsible for the preparation and adoption of the Antelope Valley IRWM Plan. The 2012 Guidelines require adoption of an updated IRWM Plan by the governing bodies of member agencies of the RWMG, the RWMG's representatives of the governing bodies, and by proponents of projects included in IRWM grant funding proposals.

Adopting the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley to apply for future grant funding under various grant programs including Proposition 84 and Proposition 1E. The RWMG of the Antelope Valley has previously accepted funds from these grant programs, including funding to update the Antelope Valley IRWM Plan.

The County of Los Angeles and Los Angeles County Waterworks District No. 40, Antelope Valley (District) are a part of the RWMG for the Antelope Valley and are required to adopt the 2013 Update to the Antelope Valley IRWM Plan in order to continue participating.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provision of Integrated Services Delivery (Goal 3) by maximizing opportunities to measurably improve client and community outcomes and leverage resource through the continuous integration of health, community, and public safety.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

On December 4, 2007, the Board adopted, in accordance with Sections 10530 through 10546 of the California Water Code, the resolution approving the proposal and determination to adopt the Antelope Valley IRWM Plan.

On April 7, 2009, the Board authorized the Chief Executive Officer or his designee and the Director of Public Works or her designee, respectively, to execute a Memorandum of Understanding with interested parties to establish a RWMG, in accordance with Sections 10530 through 10541 of the California Water Code, for the Antelope Valley to pursue grant funding for the Antelope Valley Region and facilitate implementation of the Antelope Valley IRWM Plan.

Appendix B of the 2012 Guidelines requires the governing body of each member agency of a RWMG responsible for the development of an IRWM Plan to adopt the Plan by way of a Resolution. The enclosed Resolution has been reviewed and approved as to form by County Counsel.

ENVIRONMENTAL DOCUMENTATION

Adoption of the 2013 Update to the Antelope Valley IRWM Plan is not a project subject to provisions of the California Environmental Quality Act Guidelines (CEQA) because it is an activity that is excluded from the definition of a project by Section 15378(b) of the CEQA Guidelines. The proposed action is an administrative activity of government, which will not result in direct or indirect physical changes to the environment.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no adverse impact on current County services. This effort to adopt the 2013 Update to the Antelope Valley IRWM Plan further enhances and facilitates partnerships among water resources, stormwater quality, and open space interests while improving the quality of life for residents in the Antelope Valley Region.

CONCLUSION

Please return one adopted copy of this letter and one signed original of the Resolution to the Chief Executive Office and two adopted copies of this letter and two copies of the signed Resolution to the Department of Public Works, Waterworks Division.

Respectfully submitted,

GAIL FARBER
Director of Public Works

WILLIAM T FUJIOKA
Chief Executive Officer

GF:AA:dvt

Enclosure

c: Chief Executive Office (Rita Robinson)
County Counsel
Executive Office

ENCLOSURE A

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE
COUNTY OF LOS ANGELES, CALIFORNIA, ACTING AS THE GOVERNING BODY
OF THE COUNTY OF LOS ANGELES AND THE
LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY,
APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY
INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the County of Los Angeles (COUNTY), Los Angeles County Waterworks District No. 40, Antelope Valley (DISTRICT), and agencies in the Antelope Valley Region have long recognized the importance of regional collaboration and integration of single-purpose efforts and now regularly work across jurisdictional boundaries to implement regional projects and programs that address multiple water resource management issues including local and imported water supplies, sanitation and recycled water, stormwater management, groundwater management, water use efficiency, habitat and open space management, and other such issues; and

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water, and other such purposes; and

WHEREAS, organizations participating in the IRWM Program join together to form IRWM Regions; and

WHEREAS, the IRWM Region serving the Antelope Valley Region is known as the Antelope Valley IRWM Region; and

WHEREAS, the Antelope Valley IRWM Region engages in regional water resources planning for the Antelope Valley Region; and

WHEREAS, DWR recognizes the Antelope Valley IRWM Region as an official IRWM Region; and

WHEREAS, the IRWM Program requires that a Regional Water Management Group (RWMG) be formed to establish an IRWM Region; and

WHEREAS, the COUNTY and the DISTRICT are members of the RWMG for the Antelope Valley IRWM Region; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the COUNTY and the DISTRICT actively participated in the development of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, adopting the 2013 Update Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM, including the COUNTY and the DISTRICT, to apply for future grant funding under various grant programs including Proposition 84 and Proposition 1E; and

WHEREAS, on December 4, 2007, the Board adopted the resolution for the proposal and determination to adopt the Antelope Valley IRWM Plan; and

WHEREAS, the 2012 Guidelines require the governing bodies of member agencies of the RWMGs, the RWMG representatives of the governing bodies, as well as proponents of projects included in IRWM grant funding proposals to adopt an updated IRWM Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Supervisors of the County of Los Angeles, acting as the governing body of the COUNTY and the DISTRICT:

1. Adopt the 2013 Update to the Antelope Valley IRWM Plan;

2. Authorize and direct the Chief Executive Officer or his designee and the Director of Public Works or her designee, respectively, in their role as member agencies of the RWMG of the Antelope Valley IRWM, to vote at the appropriate time to adopt the 2013 Update to the Antelope Valley IRWM Plan.

The foregoing Resolution was adopted on the 17th day of June, 2014, by the Board of Supervisors of the County of Los Angeles acting as the governing body of the County of Los Angeles and the Los Angeles County Waterworks District No. 40, Antelope Valley.

SACHI A. HAMAI
Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By Carla Little
Deputy

APPROVED AS TO FORM:

MICHAEL L. MOORE
County Counsel

By
Deputy

RESOLUTION OF THE BOARD OF DIRECTORS OF COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY TO ADOPT THE 2013 UPDATE OF THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, in 2002, the California Legislature enacted Division 6, Part 2.2, of the California Water Code, known as the *Integrated Regional Water Management Planning Act of 2002* (Act) to, among other things, encourage local agencies to work together to manage their available water supplies and to improve the quality, quantity, and availability of those supplies; and

WHEREAS, the Act encourages local agencies of different types to join together to form a Regional Water Management Group to address water supply, quantity, and quality issues in their areas; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley have established a Regional Water Management Group by means of a Memorandum of Understanding with the Act; and

WHEREAS, the proposed 2013 Updated IRWMP was developed through a comprehensive stakeholder process; and

WHEREAS, the state Department of Water Resources (DWR) established program guidelines for the IRWM program for implementation of Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the Regional Water Management Group, of which County Sanitation District No. 20 of Los Angeles County is a member, for the Antelope Valley IRWM Region has developed the 2013 Updated IRWMP to address provisions of the 2012 Guidelines; and

WHEREAS, adopting the 2013 Updated IRWMP will enable participants in the Antelope Valley IRWM Region to apply for future grant funding under various grant programs including those under Proposition 84 and Proposition 1E; and

WHEREAS, the 2012 Guidelines require the governing bodies of member agencies of the Regional Water Management Group, their designated representatives to the Group, and the proponents of projects receiving IRWM grant funding in the Antelope Valley IRWM Region to adopt an updated IRWM Plan.

NOW THEREFORE, the Antelope Valley 2013 Updated IRWMP is determined to be exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15262 of the State CEQA Guidelines since it involves only a conceptual plan associated with feasibility and planning studies for possible future actions, as well as basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource; and

BE IT FURTHER RESOLVED by this Board of Directors of County Sanitation District No. 20 of Los Angeles County that it hereby adopts on behalf of itself the 2013 Updated IRWMP.

Chairperson, Board of Directors

JUN 19 2014

ATTEST:

Secretary

RESOLUTION OF THE BOARD OF DIRECTORS OF COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY TO ADOPT THE 2013 UPDATE OF THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, in 2002, the California Legislature enacted Division 6, Part 2.2, of the California Water Code, known as the *Integrated Regional Water Management Planning Act of 2002* (Act) to, among other things, encourage local agencies to work together to manage their available water supplies and to improve the quality, quantity, and availability of those supplies; and

WHEREAS, the Act encourages local agencies of different types to join together to form a Regional Water Management Group to address water supply, quantity, and quality issues in their areas; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley have established a Regional Water Management Group by means of a Memorandum of Understanding with the Act; and

WHEREAS, the proposed 2013 Updated IRWMP was developed through a comprehensive stakeholder process; and

WHEREAS, the state Department of Water Resources (DWR) established program guidelines for the IRWM program for implementation of Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the Regional Water Management Group, of which County Sanitation District No. 14 of Los Angeles County is a member, for the Antelope Valley IRWM Region has developed the 2013 Updated IRWMP to address provisions of the 2012 Guidelines; and

WHEREAS, adopting the 2013 Updated IRWMP will enable participants in the Antelope Valley IRWM Region to apply for future grant funding under various grant programs including those under Proposition 84 and Proposition 1E; and

WHEREAS, the 2012 Guidelines require the governing bodies of member agencies of the Regional Water Management Group, their designated representatives to the Group, and the proponents of projects receiving IRWM grant funding in the Antelope Valley IRWM Region to adopt an updated IRWM Plan.

NOW THEREFORE, the Antelope Valley 2013 Updated IRWMP is determined to be exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15262 of the State CEQA Guidelines since it involves only a conceptual plan associated with feasibility and planning studies for possible future actions, as well as basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource; and

BE IT FURTHER RESOLVED by this Board of Directors of County Sanitation District No. 14 of Los Angeles County that it hereby adopts on behalf of itself the 2013 Updated IRWMP.

Chairperson, Board of Directors

JUN 19 2014

ATTEST:

Secretary

RESOLUTION NO. 14-01

RESOLUTION OF THE GOVERNING BOARD OF DIRECTORS OF THE LITTLEROCK CREEK IRRIGATION DISTRICT APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Littlerock Creek Irrigation District does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED on this 28th day of May, 2014, by the Board of Directors, the governing body of the Littlerock Creek Irrigation District.

Leo Thibault
President

ATTEST:

Secretary: Lynn Burns
Lynn Burns
Secretary

RESOLUTION NO. 14-10

RESOLUTION OF THE GOVERNING BOARD OF THE PALMDALE WATER DISTRICT APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40, Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Palmdale Water District does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED on this 28th day of May, 2014 by the Board of Directors, the governing body of the Palmdale Water District.

PALMDALE WATER DISTRICT

Kathy Mac Laren,
President

ATTEST:

Joe Estes,
Secretary

RESOLUTION NO. 14-0624a

RESOLUTION OF THE GOVERNING BOARD OF THE QUARTZ HILL WATER DISTRICT APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the QUARTZ HILL WATER DISTRICT does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED on this 24 day of June, 2014, by the Board of Directors, the governing body of the QUARTZ HILL WATER DISTRCT.

Dated 6/25/14

By _____
General Manager

Ayes: Rivera, Scott, Powell, Parell
Noes: 0
Abstain: 0
Absent: Gross

_____
Attested: Debi Pizzo, Secretary to the Board

RESOLUTION NO. 2014-11

RESOLUTION OF THE GOVERNING BOARD OF THE ROSAMOND COMMUNITY SERVICES DISTRICT APPROVING THE ADOPTION OF THE 2013 UPDATE TO THE ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the State of California Department of Water Resources (DWR) created the Integrated Regional Water Management (IRWM) Program to encourage integrated, regional strategies for managing water resources and to provide funding for both planning and implementation of projects that support management of water supply, water quality, environmental interests, drought protection, flood protection, and reduction of dependence on imported water and many other; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group (RWMG) by means of a Memorandum of Understanding; and

WHEREAS, DWR and State Legislators have established program guidelines for the IRWM Program though Proposition 84 and Proposition 1E (2012 Guidelines); and

WHEREAS, the RWMG for the Antelope Valley IRWM Region is responsible for the preparation and adoption of an IRWM Plan; and

WHEREAS, the RWMG for the Antelope Valley IRWM Region has developed the 2013 Update to the Antelope Valley IRWM Plan to address the provisions of the 2012 Guidelines; and

WHEREAS, the RWMG solicited and incorporated input from all interested stakeholders in preparation of the 2013 Update to the Antelope Valley IRWM Plan; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan will enable participants in the Antelope Valley IRWM to apply for future grant funding under various grant programs including grants from Proposition 84 and Proposition 1E; and

WHEREAS, the adoption of the 2013 Update to the Antelope Valley IRWM Plan is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Rosamond Community Services District does hereby:

1. Adopt the 2013 Update to the Antelope Valley Integrated Regional Water Management Plan.

PASSED AND ADOPTED by the Rosamond Community Services District Board of Directors, at a meeting held on this 28th day of May, 2014.

Greg Wood, President
Board of Directors
Rosamond Community Services District

ATTEST:

Lizette Guerrero, Secretary of the Rosamond Community Services District and the Board of Directors

Appendix 1-7

DWR Letter of Review of the Los Angeles County Waterworks District No. 40 2010 Urban Water Management Plan

and

Email Correspondence Regarding the Los Angeles County Waterworks District No. 40 2010 Urban Water Management Plan

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

July 8, 2014

Mr. Alan Ariki
General Manager
Los Angeles County Water Works District No. 40
900 South Fremont Avenue
Alhambra, California 91803-1331

Dear Mr. Ariki:

The Department of Water Resources (DWR) has reviewed the Los Angeles County Water Works District No. 40 (District) 2010 Urban Water Management Plan (UWMP) received July 28, 2011. The California Water Code (CWC) directs DWR to report to the legislature once every five years on the status of submitted plans. In meeting this legislative reporting requirement, DWR reviews all submitted plans to ensure that they have addressed the required elements of the California Water Code.

DWR's review of the District's 2010 plan has determined the following required elements have not been addressed in accordance with the Water Code:

- The service area population for the baseline period was not calculated in accordance with Technical Methodology 2: Service Area Population, found in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, DWR 2010. Adjustments to baseline population estimates can affect the calculations of baseline and target water use, which should be adjusted accordingly. CWC Sections 10608.20 (f) and 10631 (a).

- Gross water use was not calculated in accordance with Technical Methodology 1: Gross Water Use, found in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, DWR 2010. The UWMP provided the water use from the billing data, rather than the water production into the distribution system. Total water production into the system would include all non-revenue water. Adjustments to baseline gross water use can affect the calculations of baseline and target water use, which should be adjusted accordingly. CWC Section 10608.20 (h)(1)(A).

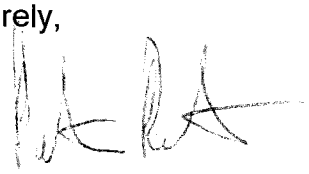
- Water suppliers that are members of the California Urban Water Conservation Council (Council) may meet the Demand Management Measures (DMMs) requirement by submitting their evaluated 2009-2010 Council Best Management Practices (BMP) Report showing that all BMPs are "on-track". The coverage report submitted with the District's UWMP showed that the District was not in compliance ("on track") with BMPs 2.2, 3, and 5. CWC Section 10631 (j).

To meet the requirements of the Water Code and to be eligible for State water grants and loans, the District should consider revising its 2010 UWMP to address the UWMP elements listed above. Revised plans must be adopted by the agency's governing board following the public process specified in the UWMP Act. DWR encourages water suppliers to send drafts of the revised sections to DWR for review before adopting the revised plan.

After adoption, copies of the revised plan should be sent to DWR, the State Library, and local cities and counties. On receiving the revised plan, DWR will review the revised sections for compliance with the UWMP Act.

Please feel free to contact me if you would like to discuss this further.

Sincerely,



Peter Brostrom
UWMP Program Manager
Brostrom@water.ca.gov
(916) 651-7034

cc: Aracely Jaramillo
Los Angeles County Water Works District No. 40

Kirk Allen
Los Angeles County Water Works District No. 40

Sergio Fierro
DWR Southern Regional Office

Gwen Huff
DWR Headquarters

Chen, Tim

Subject: FW: Waterworks District 40 UWMP

From: Allen, Kirk
Sent: Tuesday, June 03, 2014 1:48 PM
To: Rydman, David; Chen, Tim
Subject: FW: Waterworks District 40 UWMP

FYI

From: Vail, Betsy@DWR [mailto:Elizabeth.Vail@water.ca.gov]
Sent: Tuesday, June 03, 2014 1:46 PM
To: Allen, Kirk
Subject: RE: Waterworks District 40 UWMP

Hello,

Your synopsis is correct. It is required to have a 2010 UWMP on file in order to apply for grant funding. It is only necessary for the UWMP to be deemed in compliance with the law at the time a funding contract is executed.

The 2010 UWMP for Los Angeles County Public Works Waterworks District 40 (District 40) was received by DWR on July 28, 2011, so District 40 is eligible to apply for funding.

I hope this helps. Please contact me again if I can offer any further assistance.

Kind regards,
Betsy

Betsy Vail
Environmental Scientist
Office of Water Use & Efficiency
California Department of Water Resources
(916) 651-9667 Office

Mailing Address:
P.O. Box 942836
Sacramento, CA 94236-0001

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From: Allen, Kirk [mailto:KALLEN@dpw.lacounty.gov]
Sent: Monday, June 02, 2014 8:06 AM
To: Vail, Betsy@DWR
Subject: FW: Waterworks District 40 UWMP

Good morning Betsy

Thank you for returning my call last Friday regarding the question on whether we could apply for Prop 84 IRWM Grant Funding Program without first having submitted a complete 2010 UWMP for Los Angeles County Waterworks Districts No 40, Antelope Valley (District 40). According to your voicemail we can apply for grant funding and if our project gets selected to receive funding that we will need to have a complete UWMP on record with DWR before the grant is executed. The bottom line is that we want to apply and have something in writing from DWR that clears the way to apply for grant funding on the drought relief grant opportunities.

We have been in communication with Gwen Huff on the needed revisions for the acceptance letter. She has been very helpful and available in our efforts to complete the 2010 UWMP. We will continue working on the revisions to our 2010 UWMP for District 40 in the meantime.

Could you reply to this message confirming that we can submit a Prop 84 grant application without first having the completion approval letter for the 2010 UWMP? Our consultant that will be submitting the application on our behalf is asking that DWR confirm in writing "approval to apply" concerning our situation at hand.

Thank you,

Kirk Allen, P.E.
County of Los Angeles - Department of Public Works
Waterworks Division - Water Resources Unit
1000 South Fremont Avenue
Suite A-9 East, 4th Floor
Alhambra, CA 91803
(Mon-Thurs)
(t) 626-300-3389
(f) 626-300-3385
kallen@dpw.lacounty.gov

Appendix 1-8

AB 1420 Form

(Submitted separately as a wet-signed, hard copy to DWR)

AB 1420 Self- Certification Statement Table 1

Note: Table 1 documents Status of Past and Current BMP implementation.

Self-Certification Statement: The Urban Water Supplier and its authorized representative certifies, under penalty of perjury, that all information and claims, stated in this table, regarding compliance and implementation of the BMPs, including alternative conservation approaches, are true and accurate. This signed AB 1420 Self-Certification StatementTable 1, and Table 2 are the basis for granting funds by the Funding Agency. Falsification and/or inaccuracies in AB 1420 Self Certification Statement Table 1,and Table 2 and in any supporting documents substantiating such claims may, at the discretion of the funding agency, result in loss of all State funds to the applicant. Additionally, theFunding Agency, in its sole discretion, may halt disbursement of grant or loan funds, not pay pending invoices, and/or pursue any other applicable legal remedy and refer the matter to the Attorney General's Office.

Name of Signatory David Rydman **Title of Signatory** Civil Engineer **Signature of signatory**_____ **Date** _____

Application Date:

Proposal Identification Number: | **CUWCC Member? Yes/No** Yes

Has Urban Water Supplier submitted a 2010 Urban Water Management Plan? Yes/No Yes | **Is the UWM Plan Deemed Complete by DWR? Yes/No** No

Applicant Name: Los Angeles County Waterworks District No. 40, Antelope Valley

Project Title:

Applicant's Contact Information: **Name:** Timothy Chen **Phone:** 626-354-4407 **E-mail:** tchen@dpw.lacounty.gov

Participants:

Retailer (List Below)	*Wholesaler (List Below)*
Los Angeles County Waterworks District No. 40, Antelope Valley	

C1	C2	C3	C4	C5	*C6	C7	**C8	**C9	**C10	C11	C12	C13	C14	C15	C16	C17	C18
				BMP Implemented by Retailers and/or Wholesalers / *BMP*			**Compliance Options/Alternative Conservation Approaches (1)**			**BMP Is Exempt (2)**			**BMP Implementation Requirements Met**				
BMPs required for Wholesale Supplier	BMPs required for Retail Supplier	BMPs		Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	CUWCC MOU Requirement Met: Retailer *Yes/No*	CUWCC MOU Requirement Met: Wholesaler *Yes/No*	Date of BMP Report Submitted to CUWCC for (2007-2008) (MOU Signatories)	Date BMP Implementation Data Submitted to DWR in CUWCC Format (Non MOU Signatories) (3)	All Supporting Documents have been Submitted Yes/No
	✓	BMP 1 Water Survey for Single/Multi-Family Residential Customers		Yes									Yes		5/4/2009		Yes
	✓	BMP 2 Residential Plumbing Retrofit		Yes									Yes		5/4/2009		Yes
✓	✓	BMP 3 System Water Audits, Leak Detection		Yes									Yes		5/4/2009		Yes
✓	✓	BMP 3 Leak Repairs		Yes									Yes		5/4/2009		Yes
	✓	BMP 4 Metering with Commodity Rates for All New connections		Yes									Yes		5/4/2009		Yes
	✓	BMP 4 Retrofit of Existing Connections		Yes									Yes		5/4/2009		Yes

C1	C2	C3	C4	C5	*C6	C7	**C8	**C9	**C10	C11	C12	C13	C14	C15	C16	C17	C18
				BMP Implemented by Retailers and/or Wholesalers / *BMP*			**Compliance Options/Alternative Conservation Approaches (1)**			**BMP Is Exempt (2)**			**BMP Implementation Requirements Met**				
BMPs required for Wholesale Supplier	BMPs required for Retail Supplier		BMPs	Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	CUWCC MOU Requirement Met: Retailer *Yes/No*	CUWCC MOU Requirement Met: Wholesaler *Yes/No*	Date of BMP Report Submitted to CUWCC for (2007-2008) (MOU Signatories)	Date BMP Implementation Data Submitted to DWR in CUWCC Format (Non MOU Signatories) (3)	All Supporting Documents have been Submitted Yes/No
	✓		BMP 5 Large Landscape Conservation Programs and Incentives	Yes									Yes		5/4/2009		Yes
	✓		BMP 6 High-Efficiency Washing Machine Rebate Programs	Yes									Yes		5/4/2009		Yes
✓	✓		BMP 7 Public Information	Yes									Yes		5/4/2009		Yes
✓	✓		BMP 8 School Education	Yes									Yes		5/4/2009		Yes
	✓		BMP 9 Conservation programs for Commercial, Industrial, and Institutional (CII) Accounts	Yes									Yes		5/4/2009		Yes
✓			BMP 10 Wholesale Agency Assistance Programs	N/A									N/A		N/A		N/A
	✓		BMP 11 Conservation Pricing	Yes									Yes		5/4/2009		Yes
✓	✓		BMP 12 Conservation Coordinator	Yes									Yes		5/4/2009		Yes
	✓		BMP 13 Water Waste Prohibitions	Yes									Yes		5/4/2009		Yes
	✓		BMP 14 Residential ULFT Replacement Programs	Yes									Yes		5/4/2009		Yes

***C6:** Wholesaler may also be a retailer (supplying water to end water users)
****C8, **C9, **, and C10:** Agencies choosing an alternative conservation approach are responsible for achieving water savings equal or greater than that which they would have achieved using only BMP list.

(1) For details, please see: http://www.cuwcc.org/mou/exhibit-1-bmp-definitions-schedules-requirements.aspx.
(2) BMP is exempt based on cost-effectiveness, lack of funding, and lack of legal authority criteria as detailed in the CUWCC MOU
(3) Non MOU signatories must submit to DWR reports and supporting documents in the same format as CUWCC.

Appendix 1-9

Certification for Compliance with Water Metering Requirements for Funding Applications

(Submitted separately as a wet-signed, hard copy to DWR)

California State Water Resources Control Board
California Department of Water Resources
California Department of Public Health

CERTIFICATION FOR COMPLIANCE WITH WATER METERING REQUIREMENTS FOR FUNDING APPLICATIONS

In 2004, Assembly Bill 2572 added section 529.5 to the Water Code, providing that, commencing January 1, 2010, urban water suppliers must meet certain volumetric pricing and water metering requirements in order to apply for permits for new or expanded water supply, or state financial assistance for the following types of projects:

1. wastewater treatment projects
2. water use efficiency projects (including water recycling projects)
3. drinking water treatment projects

For the purposes of compliance with Section 529.5, a “water use efficiency project” means an action or series of actions that ensure or enhance the efficient use of water or result in the conservation of water supplies.

Please consult with your legal counsel and review sections 525 through 529.7 of the Water Code before completing this certification.

Applicants Affected
This requirement applies to urban water suppliers.

"Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.

When Certification is Required
State Water Resources Control Board (SWRCB): The application for financial assistance must include a completed and signed certification form demonstrating compliance with the water metering requirements.

Department of Water Resources (DWR) funding applications: This certification must be completed and submitted with the funding application. Check the specific proposal solicitation package for directions on applicability and submittal instructions.

Department of Public Health (DPH) Safe Drinking Water State Revolving Fund Program: This certification must be completed and submitted with the executed Notice of Acceptance of Application (NOAA).

California State Water Resources Control Board
California Department of Water Resources
California Department of Public Health

CERTIFICATION FOR
COMPLIANCE WITH WATER METERING REQUIREMENTS
FOR FUNDING APPLICATIONS

Funding Agency name: State of California Department of Water Resources

Funding Program name: Proposition 84 IRWM Implementation Grant, Round 3 Part 1

Applicant (Agency name): Los Angeles County Waterworks District No. 40

Project Title (as shown on application form): 60th Street West Wellhead Arsenic Treatment Project

Please check one of the boxes below and sign and date this form.

☐ As the authorized representative for the applicant agency, I certify under penalty of perjury under the laws of the State of California, that the agency is not an urban water supplier, as that term is understood pursuant to the provisions of section 529.5 of the Water Code.

☒ As the authorized representative for the applicant agency, I certify under penalty of perjury under the laws of the State of California, that the applicant agency has fully complied with the provisions of Division 1, Chapter 8, Article 3.5 of the California Water Code (sections 525 through 529.7 inclusive) and that ordinances, rules, or regulations have been duly adopted and are in effect as of this date.

I understand that the Funding Agency will rely on this signed certification in order to approve funding and that false and/or inaccurate representations in this Certification Statement may result in loss of all funds awarded to the applicant for its project. Additionally, for the aforementioned reasons, the Funding Agency may withhold disbursement of project funds, and/or pursue any other applicable legal remedy.

Adam Ariki
Name of Authorized Representative
(Please print)

Signature

Assistant Deputy Director
Title

June XX, 2014
Date

Appendix 1-10

Certification for Groundwater Management Plan Compliance for the Proposition 84, Implementation and Proposition 1E, Stormwater Flood Management Grant Programs

(Submitted separately as a wet-signed, hard copy to DWR)

California Department of Water Resources
Integrated Regional Water Management Grant Programs

CERTIFICATION FOR GROUNDWATER MANAGEMENT PLAN COMPLIANCE FOR THE PROPOSITION 84, IMPLEMENTATION AND PROPOSITION 1E, STORMWATER FLOOD MANAGEMENT GRANT PROGRAMS

Grant Program: ☒ Implementation ☐ SWFM

IRWM Region: Antelope Valley

Agency name: Los Angeles County Waterworks District No. 40, Antelope Valley

Project Title (as shown on application form): 60th St. W. Wellhead Arsenic Treatment Project

Please check one of the boxes below and sign and date this form.

☐ As the authorized representative for the agency, I certify under penalty of perjury under the laws of the State of California, that the agency has prepared and implemented a GWMP in compliance with CWC §10753.7.

☒ As the authorized representative for the agency, I certify under penalty of perjury under the laws of the State of California, that the agency participates or consents to be subjected to an existing GWMP, basin-wide management plan, or other IRWM program or plan that meets the requirements of CWC §10753.7(a).

☐ As the authorized representative for the agency, I certify under penalty of perjury under the laws of the State of California, that agency consents to be subjected to a GWMP that will will meet the requirements of CWC §10753.7 and be completed within 1-year of the grant application submittal date.

☐ As the authorized representative for the agency, I certify under penalty of perjury under the laws of the State of California that the agency conforms to the requirements of an adjudication of water rights in the subject groundwater basin.

I understand that the Department of Water Resources will rely on this signed certification in order to approve funding and that false and/or inaccurate representations in this Certification may result in loss of all funds awarded to the applicant for its project. Additionally, for the aforementioned reasons, the Department of Water Resources may withhold disbursement of project funds, and/or pursue any other applicable legal remedy.

Adam Ariki
Name of Authorized Representative
(Please print)

Signature

Assistant Deputy Director
Title

Date

Drought Impacts

This attachment explains the regional water management impacts due to the 2014 drought and any anticipated or projected impacts if drought or dry year conditions continue into 2015. The attachment also describes water conservation measures or restrictions that have been implemented as a result of the 2014 drought and planned or anticipated water conservation measures if drought or dry year conditions continue into 2015.

Drought Impacts

The Antelope Valley Integrated Regional Water Management (IRWM) Region is home to 388,000 people with two medium-sized cities and dozens of agencies and districts responsible for the management of water resources to meet local demands. The Antelope Valley relies heavily on imported water from the State Water Project (SWP). This imported water is procured and managed primarily by Antelope Valley East Kern Water Agency (AVEK), but also by the Palmdale Water District (PWD) and the Littlerock Creek Irrigation District (LCID), and it is conveyed to contracting water supply agencies, such as the Los Angeles County Waterworks District No. 40 (District) and other retail water suppliers to meet the Region's demands. The District is the implementing agency for the single project included in this grant application proposal.

Imported water resources supply more than 50 percent of demands in the Region during an average water year with the rest being met by groundwater from the Antelope Valley Groundwater Basin, banked groundwater from AVEK's Water Supply Stabilization Project No. 2 (WSSP-2), surface water diversions from the Littlerock Creek Reservoir, and a small amount of recycled water. All of imported water supplies come from the SWP which has been greatly impacted this year by drought conditions. The Antelope Valley IRWM Plan 2013 Update assessed supplies in the Region for a single dry year assuming an 11 percent allocation of SWP deliveries and 23,000 acre-feet (AF) of withdrawal from the WSSP-2 groundwater bank, and the Plan indicated a mismatch of supply and demand of almost 40,000 AF. Actual allocations for 2014 so far are at 5 percent, which is less than half of the amount estimated in the IRWM Plan for a single dry year, indicating that water supply conditions may be worse in the Region than anticipated.

Given the long-standing tenuous nature of imported supplies, AVEK, the District, and other local suppliers have been at the forefront of both the development and implementation of programs and projects aimed at increasing the reliability of these supplies. Increases in regional imported surface storage capabilities and groundwater recharge, such as AVEK's WSSP-2, funded under Round 1 of the Proposition 84 grant program, have allowed regional water purveyors to take advantage of excess imported supply, when available, and store it for future use when supplies are limited. Demand management programs have also been widely implemented, resulting in average municipal use levels of about 199 gallons[1] per capita per day (gpcd).

The Antelope Valley Region experienced significant cutbacks to imported supplies in 2008-2010 as a result of both a protracted drought and newly-enforced environmental restrictions limiting SWP supplies from the Bay-Delta. The results of these still-recent drought conditions can be seen throughout the Region as implementation of local supply development projects increases, as well as conservation measures and restricted use ordinances. With only one wet year in 2011, the Region is in the middle of yet another multiple year drought. Conservation programs in the Region are currently in full implementation, with public outreach through advertisements, "reverse 911" calls, and water bill messages. Public education initiatives are also being conducted in schools, public meetings, and workshops that teach customers how to conserve more water and increase awareness of incentive opportunities such as "cash for grass" and water saving device rebates. Palmdale, Lancaster, and the District have all enacted voluntary measures to reduce usage in their

[1] *Antelope Valley Integrated Regional Water Management Plan, 2013 update:* Page 3-11 – Average per capita water use 0.223 AFY/person

Drought Impacts

service areas by 20 percent. Furthermore, in order to preserve water for domestic use, the District is encouraging the use of recycled water for construction projects and other appropriate uses.

Many of the strategic reliability measures implemented by AVEK, the District, PWD, and other local purveyors have helped to protect the Region from rationing and other severe conservation measures thus far. However, as the drought continues through the summer of 2014 and with SWP allocations held at only 5 percent, local and imported supply stores are being depleted at increasingly significant rates. For example, AVEK is expecting to use more than half of the cumulative 35,000 AF of regional imported storage in WSSP-2 by the end of 2014. Due to the emergency drought regulations adopted by the State Water Resources Control Board on July 15, 2014 and with the expectation that dry-weather conditions will persist this winter, the District is prepared to recall all existing construction meters and implement its Water Shortage Contingency Plan, resulting in water use restrictions and surcharges for customer use beyond 80 percent of baseline water usage. As a result of these conditions over the past several years, the Region has invested over $200 million in water conservation, recycled water and groundwater projects to improve local supply reliability and has plans for an additional $25 million in local supply reliability projects in the near future.

Given the Region's inland location, closed basin, and ecological resources, water shortages experienced here can create impacts with few solutions that can be immediately implemented to mitigate them. This has increased the immediacy of local resource development.

Depending on the mix of local and imported supplies used by purveyors to meet demands, there are differences in the severity and type of impact experienced within the Region as a result of this latest drought. An overview of some of the regional and local drought impacts are provided below. It is expected that if dry year conditions continue into 2015, these impacts will amplify.

DROUGHT IMPACT: At Risk of Not Meeting Existing Drinking Water Demands

Drought conditions have cut off the Region from one of its primary safe drinking water supplies, imported water from the SWP. Water supply for the Antelope Valley Region comes from the following sources: imported SWP water, local surface water runoff that is stored in Little Rock Reservoir, the Antelope Valley Groundwater Basin, recycled water, captured stormwater, and locally banked water. Typically, approximately 98 percent of demand is met utilizing imported water and groundwater. Local water agencies have limited access to imported water with 2014 SWP allocations at 5 percent (8,250 AF) and only 8,800 AF from 2013 SWP carryover. While the Antelope Valley typically relies on approximately 70,000 AFY to 95,000 AFY of SWP water, this year's lack of imported supply is resulting in sharply increased groundwater pumping and depletion of locally-banked water to provide over 50,000 AF that is typically imported. If dry weather conditions continue into 2015, several water agencies may not meet demands. Imported water supplies could be limited to the 2014 allocations (5 percent) or less and there will be no carryover from 2014, resulting in continued dependence on pumping groundwater from portions of the already over-drafted basin.

Drought conditions have also depleted the other main source of safe drinking water, groundwater from the Antelope Valley Groundwater Basin. Historic lows in precipitation have produced limited local surface supplies as well as reduced natural recharge. This has resulted in over-drafting of portions of the local groundwater basins and/or increasing dependence on imported supplies and depletion of banked water stores. USGS data from 1975 to 1998 show decreased groundwater levels of up to 66 feet as a result of increased groundwater pumping in certain portions of the basin. Recent declines over the past few years have also caused entrained air in the well pumps that deliver water. Entrained air causes aesthetic issues with customers.

Diminished SWP supplies and lowering groundwater levels have forced the Region to deplete its banked water supplies as well. AVEK's WSSP-2 groundwater bank had cumulatively stored approximately 35,000 AF

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of water since the project began in 2010. As a result of this year's drought, AVEK has increased pumping from the bank and has accelerated new well drilling projects. It is anticipated that 20,000 AF (57 percent of the total volume) will be withdrawn by the end of 2014 to support dry year demands. If drought conditions continue into 2015, the entire volume of banked water could be reduced to zero AF during the next year. The Project proposed in this application will pump groundwater from a portion of the Basin that is not experiencing overdraft.

Drought conditions have exacerbated other water supply issues related to blending for arsenic, a naturally-occurring constituent in many parts of the Region's groundwater basin. Currently, the District uses imported SWP water to blend with 15 wells, of which 11 wells produce water with arsenic levels that exceed the concentration limit. Without available SWP water for blending, these wells cannot be used to supply safe drinking water and the District anticipates taking 11 wells offline in 2015 if no blend water is available from the SWP. The District also anticipates that several groundwater wells may be taken offline as a result of the July 2014 established maximum contamination level (MCL) for hexavalent chromium of 0.010-milligram per liter, further limiting the Region's ability to extract groundwater.

Finally, drought conditions have depleted the Region's only source of local surface water, the Littlerock Reservoir, owned and operated by PWD. Current conditions indicate that minimum pool requirements for recreational use may not be met as early as September of 2014. These surface waters, though a small percentage of total supplies, are critical during times of extended drought because they constitute a local source of supply.

If current dry-weather conditions persist throughout the State, there is a risk that mandatory rationing measures will be required by early 2015.

DROUGHT IMPACT: At Risk of Not Meeting Existing Agricultural Water Demands

Drought conditions have impacted the ability to provide agricultural users with adequate water supplies. Due to the drastic reduction in SWP deliveries to 5 percent of Table A amounts, AVEK was not able to deliver water to its agricultural users in 2014. As a result, these customers have had to rely entirely on groundwater pumped from the Basin, exacerbating overdraft in some portions of the Basin. The 60th Street West Wellhead Treatment Project proposed in this application will pump groundwater from a portion of the Basin that is not experiencing overdraft.

DROUGHT IMPACT: Drinking Water MCL Violations

Drought conditions have reduced the District's ability to utilize blend water for arsenic management. SWP water is used at numerous locations for blending groundwater to meet arsenic MCLs. The District currently relies on SWP water for blending at 15 wells. With the extreme reduction in SWP deliveries, no water has been available for blending, causing groundwater from 11 of the 15 wells to not be utilized as they cannot be made to meet the arsenic MCL requirements. The 60th Street West Wellhead Treatment Project included in this Proposal will allow access to arsenic contaminated groundwater that will not require blending with imported supplies as arsenic treatment will be provided.

DROUGHT IMPACT: Groundwater Basin Overdraft

Drought conditions have exacerbated existing difficulties with groundwater basin over-draft in some portions of the basin. Groundwater extraction in the Antelope Valley has exceeded the estimated natural recharge of the Basin since the 1920's with groundwater levels declining by more than 200 feet in some areas and by at least 100 feet in most of the Antelope Valley Region. Water table depressions are most evident between the cities of Lancaster and Palmdale where the majority of municipal groundwater pumping occurs. The 60th Street West Wellhead Treatment Project lies outside this depression zone in an area where little pumping

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occurs due to arsenic levels being too high to blend down to regulatory requirements. The Project will open up a new local water source that will not contribute to depletion of groundwater in the principal pumping areas that are affected by overdraft. The 60th Street West Wellhead Treatment Project proposed in this application will pump groundwater from a portion of the Basin that is not experiencing overdraft.

Conservation Measures

Given the long-standing tenuous nature of imported supplies and the Region's heavy reliance on such supplies, the Antelope Valley Region has been at the forefront of the development and implementation of demand management/water use efficiency (WUE) programs that have resulted in average municipal use levels (of about 199 gpcd)[2] when compared to other Regions in Southern California and throughout the state.

The impacts from the previous drought of 2008-2010 and the combined SWP system cutbacks due to new environmental restrictions prompted water purveyors to implement water conservation plans in order to offset demands on imported water. Purveyors developed and implemented expanded voluntary conservation programs across the Region.

SB7x7 requirements also set water use targets for water purveyors within the Antelope Valley Region with the 2010 Urban Water Management Plans (UWMPs) completed by AVEK and all retail providers. The targeted 20 percent reduction in demand would result in almost 36,000 AFY of additional supply for the Region. The UWMPs articulated what type of demand management measures that each water purveyor would be using to help meet reduction targets as well as water shortage contingency plans in case supplies were becoming insufficient to meet demands. As a result, there had already been a great deal of conservation savings generated within the Region in advance of the 2014 drought. Several noteworthy conservation measures from Antelope Valley water purveyors are summarized below.

Antelope Valley East Kern Water Agency: As an imported water wholesaler for the Region, AVEK relies on local water retailers to develop and implement water conservation plans. AVEK is implementing conservation measures in order to decrease demand on supplies they do not have. The agency is promoting a series of free *Smart Landscape Water Use* workshops sponsored by Antelope Valley Water Partners and hosted at Antelope Valley College, as well as investigating methods to enhance current water conservation programs for water retailers through partnering agreements and financial incentives. In addition, AVEK is exploring other avenues to expand the water conservation programs to smaller water retailers served by AVEK through financial incentives.

Los Angeles County Waterworks District No. 40: The District ordinarily promotes the implementation of water conservation measures, provides conservation tips, and offers incentive programs such as "cash for grass" and water saving device rebates for clothes washers as well as sprinkler controllers and nozzles. With the current drought conditions, it has been even more important to increase awareness of these initiatives to aid in water use reduction. The District is currently advertising on billboards, bus tails, and the radio; distributing pledge cards and flyers; and providing "reverse 911" calls, and water bill messages. Additional public outreach and community education is taking place through public meetings and workshops for children and adults. The District has requested a voluntary 20 percent reduction through its "20 ways in 20 days" which it rolled out through Twitter and its website. Additionally, the District has instituted mandatory restrictions on potable water use for new construction projects. Instead of permitting temporary construction meters, the District is encouraging new projects to use recycled water as an alternative for construction purposes.

[2] *Antelope Valley Integrated Regional Water Management Plan, 2013 update:* Page 3-11 – Average per capita water use 0.223 AFY/person

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If drought conditions continue or worsen, the District is prepared to recall all existing construction meters and implement mandatory restrictions through its Water Shortage Contingency Plan.

Palmdale Water District: As a result of the 2014 drought PWD has strengthened their water savings initiatives and campaigns. The center of the PWD website home page advertises the Governor's Drought Declaration, and asks "what does a 20 percent reduction in water use look like?" PWD's water conservation program includes rebates on for high efficiency toilets, washing machines, matched precipitation rotators, and smart controllers for irrigation. Other programs include their cash for grass program, workshops on water efficient landscaping, and water savings tips. A big push in PWD's water conservation program has been their public education campaign through their website, public tours and presentations, and their water conservation mascot for children, "Aquadog".

In reaction to the drought, PWD's Board approved a resolution echoing the governor's 20 percent voluntary conservation and due to the emergency drought regulations adopted by the State Water Resources Control Board on July 15, 2014; and the Board will be recommending a new resolution to make it mandatory. PWD plans to make use of the prohibitions outlined in their Urban Water Management Plan.

Los Angeles County Waterworks District No. 40, Antelope Valley (District) – 60th Street West Wellhead Arsenic Treatment (Project)

This attachment provides a summary of the proposed Project, including the purpose and how the Proposal meets the needs created by the drought. It also contains the estimated physical benefits of the Project; justifies how the Project is technically feasible; describes how the Project can achieve the claimed level of benefits; and explains whether the benefits will be attained through the least cost alternative.

Project Summary Table

The Project in this proposal meets three of the Drought Project Elements and five of the IRWM Project Elements as indicated in the table.

	Drought Project Element	**60th St. West Wellhead Arsenic Treatment**
D.1	Provide immediate regional drought preparedness	X
D.2	Increase local water supply reliability and the delivery of safe drinking water	X
D.3	Assist water supplier and regions to implement conservation programs and measures that are not locally cost-effective	
D.4	Reduce water quality conflicts or ecosystem conflicts created by the drought	X
	IRWM Project Element	
IR.1	Water Supply reliability, water conservation, and water use efficiency	X
IR.2	Stormwater capture, storage, clean-up, treatment, and management	
IR.3	Removal of invasive non-native species, the creation and enhancement of wetlands, and the acquisition, protection, and restoration of open space and watershed lands	
IR.4	Non-point source pollution reduction, management, monitoring	
IR.5	Groundwater recharge and management	X
IR.6	Contaminant and salt removal through reclamation, desalting, and other treatment technologies and conveyance of reclaimed water for distribution to users	X
IR.7	Water banking, exchange, reclamation, and improvement of water quality	X
IR.8	Planning and implementation of multipurpose flood management programs	
IR.9	Watershed protection and management	
IR.10	Drinking water treatment and distribution	X
IR.11	Ecosystem and fisheries restoration and protection	

Project Description

(25 Word) The Project will install an arsenic treatment system and produce 3,600 AFY at two existing wells that currently cannot provide water due to arsenic contamination.

(Expanded) The Project consists of installing an arsenic treatment system at two of the District's existing wells in the Antelope Valley that are unable to produce groundwater due to high arsenic (As[V]) contamination levels in that portion of the Antelope Valley Groundwater Basin (Basin). The current arsenic concentrations from the two wells are approximately 50-55 and 80-87 micrograms per liter (ug/L) according to lab results, which exceed the State and Federal maximum contaminant level (MCL) of 10 ug/L. The arsenic concentration is too high to allow blending with State Water Project (SWP) water as a treatment option, even under average year conditions. The Project will install a ferric oxide adsorption technology arsenic treatment system, replace the two pumps and electrical panels for the wells, install a flow meter to monitor pumping, and install approximately 1,500 feet of 12-inch water main to connect the wells to the existing potable water main. The wells will pump directly to the arsenic treatment system and the treated effluent will pump directly to the existing distribution system. The combined flow rate for the two wells is 2,500 to 3,000 gallons per minute (gpm), which would allow the production of approximately 3,600 acre-feet per year (AFY) of previous unusable safe drinking water for distribution to District customers.

This Project provides immediate regional drought preparedness by adding a new local water supply to reduce the District's dependence on imported water from the SWP. The Antelope Valley receives 100% of its imported water from the SWP and is highly dependent on both imported water and groundwater pumped from the Basin. Over the last four years, SWP water accounted for nearly 70% of the District's water supply. With SWP allocations held at only 5% due to the drought emergency in 2014, increasing access to currently unusable groundwater supply will protect District customers from drought impacts.

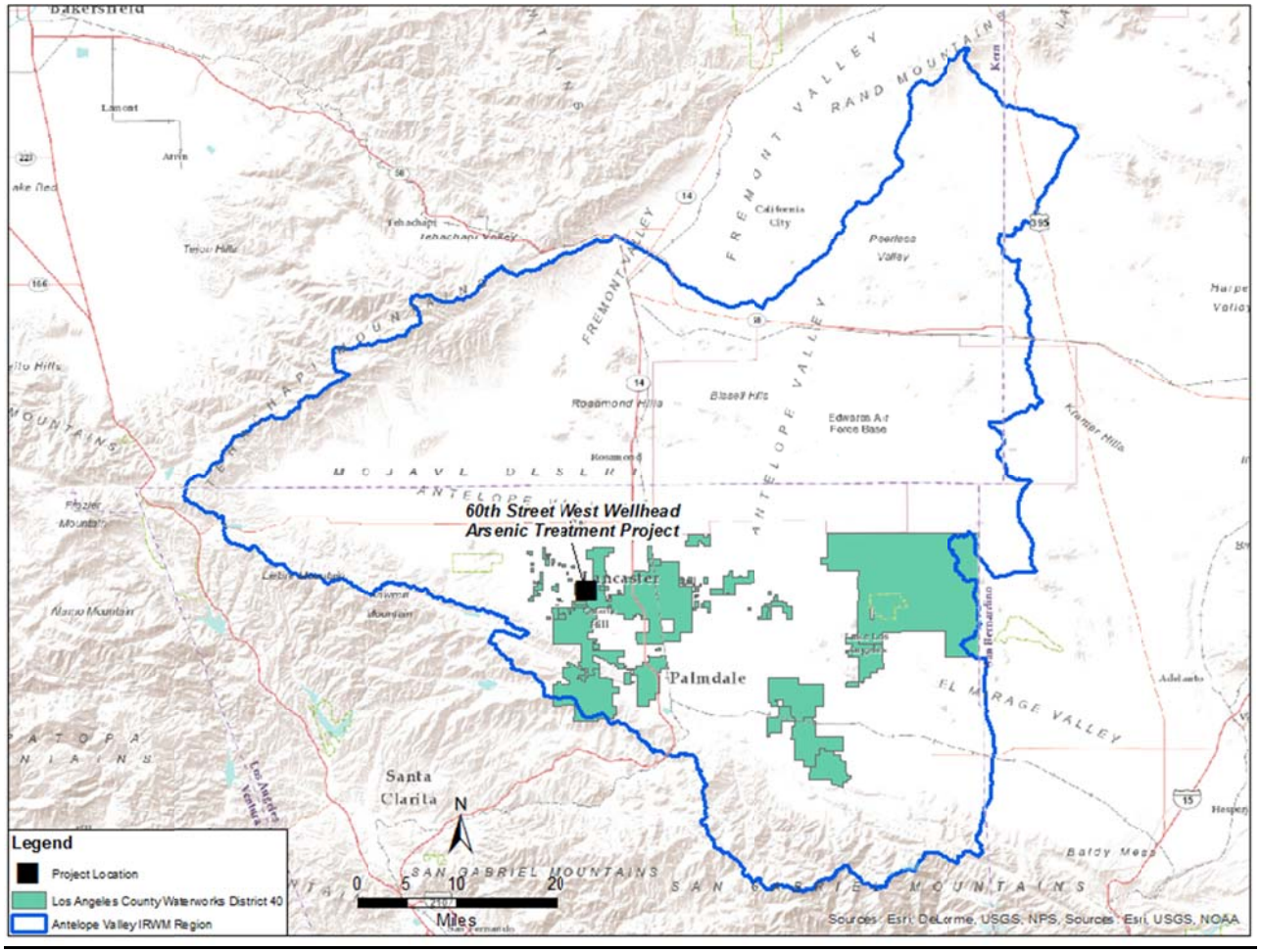
The Project increases local water supply reliability and the delivery of safe drinking water by increasing the ability to better utilize groundwater supplies in the Antelope Valley. The Project will offset 3,600 AFY of potable imported water with locally produced groundwater from an untapped portion of the Basin that is located outside the main depression zone in the aquifer (Lancaster sub-basin). As a result, the Project allows extraction in a portion of the Basin that is not experiencing extreme overdraft and will not contribute to subsidence issues in the Antelope Valley. The arsenic treatment also improves the overall water quality in the Basin, increasing the District's ability to provide reliable safe drinking water to customers.

The Project reduces water quality conflicts created by the drought by removing arsenic from currently unused groundwater well sites. Historically, the District has used both SWP and groundwater to meet customer demand. SWP water is essential for blending groundwater from fifteen of the District's high arsenic well sites to meet regulatory arsenic limits. With the recent drought, there has been an increased reliance on storage supplies; yet SWP water has not been available for blending, resulting in groundwater from fifteen wells not being utilized. The Project will treat arsenic-contaminated water (that would otherwise remain in the Basin) from two wells at another location and provide the District with a new water source that meets the aforementioned State and Federal water quality requirements, even in times of drought.

Expedited funding is needed for this Project to ensure the District can immediately comply with arsenic concentration limits and begin using a previously unusable local groundwater supply for drinking water.

Regional Map

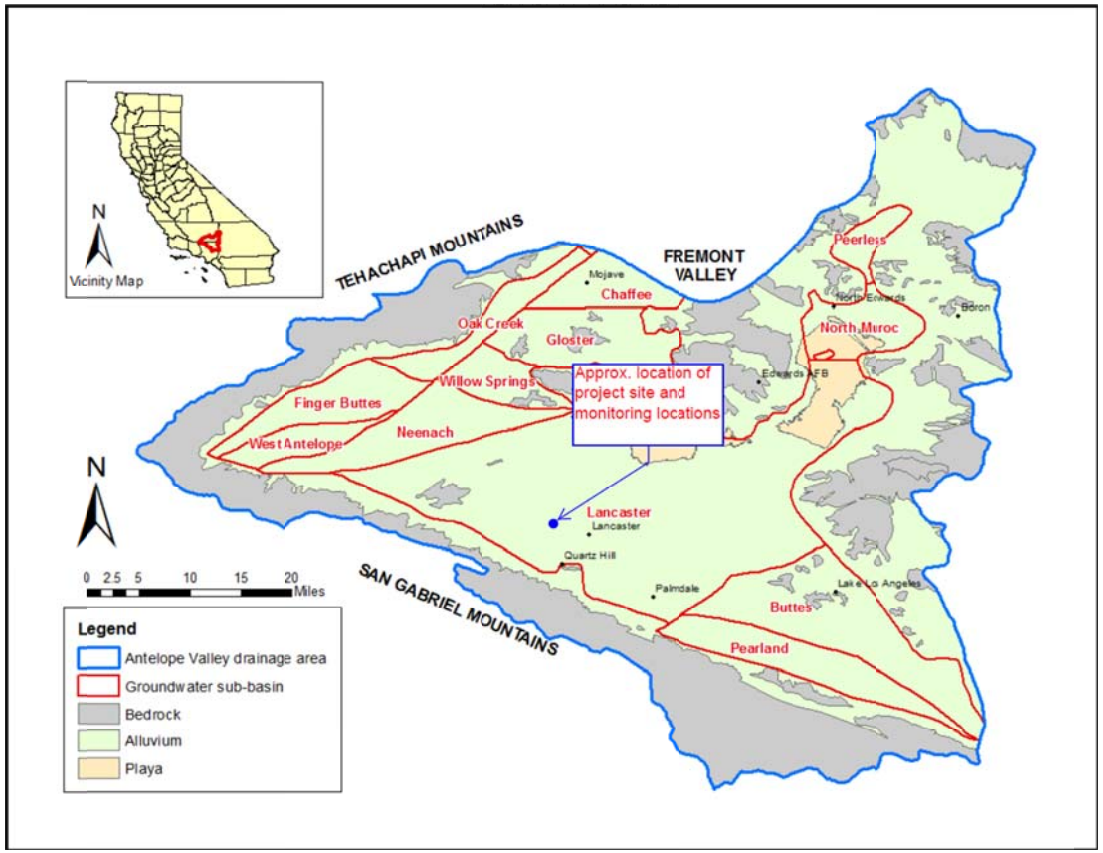
The map below shows the Antelope Valley Integrated Regional Water Management Regional Boundary and the location of the 60th Street West Wellhead Arsenic Treatment Project.



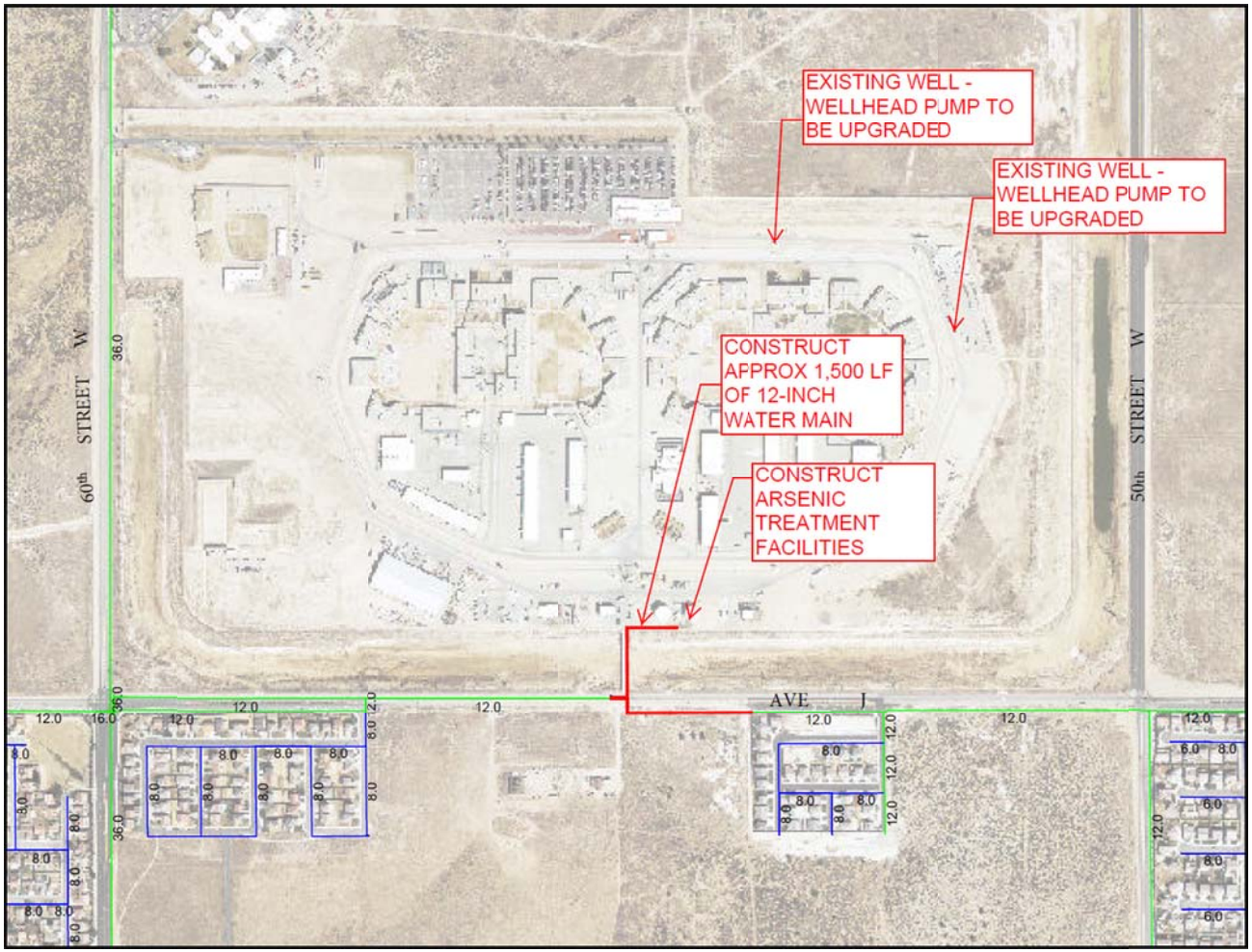
Project Map

The two maps below show the location of the Project. The first map shows the Project's geographical location in relation to the Antelope Valley Groundwater Basin, the water resource that will be affected by the Project, and the monitoring locations of the Project, which are located onsite at the wells. The second map details the Project's geographical location by showing surrounding street names, the Project's surrounding work boundaries, and the facilities that are part of the Project.

Project Vicinity Map with Groundwater Basin



Detailed Project Map



Project Physical Benefits

The following physical benefits are claimed for the Project and are listed in the tables below.

- Increased Local Water Supplies/Reliability and Decreased Dependence on Imported Water
- Reduced Demands on the Bay-Delta
- Reduced Energy Usage
- Reduced Greenhouse Gas Emissions
- Improved Groundwater Quality

Benefit #1 – Increased Local Water Supplies/Reliability and Decreased Dependence on Imported Water

The table below provides information on the benefit of increasing local water supplies and reliability by treating arsenic contaminated groundwater. This increase in local supplies will lead to a direct reduction in imported water demands and represents the same amount as measured in AFY.

Table 5 – Annual Project Physical Benefits

Project Name: 60th Street West Wellhead Arsenic Treatment Project
Type of Benefit Claimed: Increased Local Supplies/Reliability and Decreased Dependence on Imported Water
Units of the Benefit Claimed: AF
Additional Information About this Benefit: The volumes below show the increase in local water supply by treating arsenic contaminated water. The volumes below are based on a combined rate of pumping at 3,000 gpm for 18 hours per day. Because construction of the two wells will be complete by the end of December 2015 with performance testing and demobilization the first month of 2016, a full AF benefit is assumed for the year 2016.

(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project
2014	0	0 – Award Contract	0
2015	0	0 – Construction	0
2016 – 2036	0	3,600	3,600

Comments:

- *Test Data Sheet, BW&PC Aquifer Test (Well Efficiency Data), May 19-20, 2014:* Test results show the two existing wells are capable of pumping 3,000 gpm total when pumped together.

Benefit #2 – Reduced Demands on Bay-Delta

The table below provides information regarding the benefit of reducing demands on the Bay-Delta. The District uses 100% SWP water as its imported water source so all reductions in imported water purchases would lead to an equivalent direct reduction in Bay-Delta demands.

Table 5 – Annual Project Physical Benefits

Project Name: 60th Street West Wellhead Arsenic Treatment Project

Type of Benefit Claimed: Reduced Demands on the Bay-Delta

Units of the Benefit Claimed: AF

Additional Information About this Benefit: The District uses 100% SWP water as its imported water source, so all reductions in imported water purchases would lead to a direct reduction in demands on the Bay-Delta. The volumes below indicate the reduction in demands on the Bay-Delta.

(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project
2014	3,600	3,600 – Award Contract	0
2015	3,600	3,600 – Construction	0
2016 -2036	3,600	0	3,600

Comments:

- *Test Data Sheet, BW&PC Aquifer Test (Well Efficiency Data), May 19-20, 2014:* Test results show the two existing wells are capable of pumping 3,000 gpm total when pumped together.
- *Personal communication with Tim Chen, Los Angeles County Waterworks District No. 40, Antelope Valley (District)*: Proportion imported water used by the District that is SWP water (100% SWP).

Benefit #3 – Reduced Energy Usage

The table below provides information regarding energy conservation provided through the offset of treated SWP water with arsenic-treated groundwater pumped from the Antelope Valley Groundwater Basin. Approximately 3,000 kilowatt-hours (kWh /AF) are required for conveyance and pumping of SWP water to Southern California. It costs approximately $50/AF to pump and treat the groundwater for this Project. The arsenic treatment system utilizes the energy from the production well pump to move the water through the treatment system, resulting in no significant additional energy required for arsenic treatment. According to the U.S. Bureau of Labor Statistics, the average cost of electricity in the Los Angeles area in 2014 is $0.178/kWh. Using these values, it can be estimated that the energy required to pump groundwater from the Antelope Valley Groundwater Basin and treat it for arsenic is approximately 281 kWh/AF, creating a net energy savings of 2,719 kWh/AF. Since the Project will offset 3,600 AFY of SWP water, approximately 9,788,400 kWh/year will be conserved. Over the 20-year lifespan of the Project, this totals approximately 195,768,000 kWh of reduced energy usage.

Table 5 – Annual Project Physical Benefits			
Project Name: 60th Street West Wellhead Arsenic Treatment Project			
Type of Benefit Claimed: Reduced Energy Usage			
Units of the Benefit Claimed: kWh			
Additional Information About this Benefit: Values in column d show the amount of energy saved thorough implementation of the Project. Energy saved results from replacing imported water from SWP with locally pumped groundwater treated for arsenic.			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project**
2014	10,800,000	10,800,000 – Award Contract	0
2015	10,800,000	10,800,000 – Construction	0
2016 -2036	10,800,000	1,011,600	9,788,400

Comments:

- *Analysis of the Energy Intensity of Water Supplies for West Basin Municipal Water District, WBMWD (March 2007), Page 4*: Lists the kWh/AF associated with SWP imported water.
- *Personal communication with Tim Chen, Los Angeles County Waterworks District No. 40, Antelope Valley (District)*: Proportion imported water used by the District that is SWP water (100% SWP).
- *Personal communication with Tim Chen, Los Angeles County Waterworks District No. 40, Antelope Valley (District)*: Cost to pump and treat groundwater for the Project ($50/AF).
- *Bureau of Labor Statistics, 2014. Average Energy Prices, Los Angeles-Riverside-Orange County.* – Page 2: 17.8 cents per kWh paid for electricity in Los Angeles County.
- *60th Street West Wellhead Arsenic Treatment Project Calculations* – Contains the detailed breakdown of the energy calculations.

Benefit #4 – Reduced Greenhouse Gas Emissions

The Project would avoid greenhouse gas (GHG) emissions generated by the need to transport imported water to the Antelope Valley. This value is calculated by applying a factor of 0.724 pounds of CO_2 equivalents per kWh and converting to total metric tons (MT) of CO_2 equivalents, based on the California Action Registry, General Reporting Protocol. By offsetting 3,600 AFY of imported water demand from the SWP and creating an average energy savings of 2,719 kWh/AF, the Project will avoid GHG emissions of approximately 3,215 MT of CO_2 equivalents per year. Over the 20-year lifespan of the Project, this totals 64,300 MT of avoided carbon emissions.

Table 5 – Annual Project Physical Benefits			
Project Name: 60th Street West Wellhead Arsenic Treatment Project			
Type of Benefit Claimed: Reduced Greenhouse Gas Emissions			
Units of the Benefit Claimed: Metric Tons (MT) of CO_2 Equivalents			
Additional Information About this Benefit: Values in column d show the amount of GHGs reduced as the results of replacing imported water from the SWP with groundwater that has been treated for arsenic.			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project**
2014	3,547	3,547 – Award Contract	0
2015	3,547	3,547 – Construction	0
2016-2036	3,547	332	3,215

Comments:

- *California Action Registry, General Reporting Protocol. Version 3.1, (January 2009), Section 3*: Document used to convert amount of energy saved to a reduction in emissions of CO_2 equivalents. Applied a factor of 0.724 pounds of CO_2 equivalents per kWh and converted the quantity to total metric tons of CO_2 equivalents.
- *60th Street West Wellhead Arsenic Treatment Project Calculations* – Contains the detailed breakdown of the GHG calculations.

Benefit #5 – Improved Groundwater Quality

The table below provides information on the benefit of improving groundwater quality through pumping and treating arsenic contaminated groundwater from the Basin. The values are calculated using arsenic concentration data with and without the Project and converting to pounds per year (lbs/year) of arsenic removed.

Table 5 – Annual Project Physical Benefits			
Project Name: 60th Street West Wellhead Arsenic Treatment Project			
Type of Benefit Claimed: Improved Groundwater Quality			
Units of the Benefit Claimed: lbs of arsenic removed			
Additional Information About this Benefit: An average arsenic concentration between the two wells (65 ug/L) was used to assess the reduction in arsenic concentration in the groundwater pumped from the Basin. The values are calculated using arsenic concentration data with and without the Project and converting to pounds per year of arsenic removed.			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project**
2014	0	0 – Award Contract	0
2015	0	0 – Construction	0
2016 -2036	0	558	558

Comments:

- *Test Data Sheet, BW&PC Aquifer Test (Well Efficiency Data), May 19-20, 2014:* Test results show the two existing wells are capable of pumping 3,000 gpm total when pumped together.
- *Analytical Results for Arsenic, County of Los Angeles, Department of Agricultural Commissioner/Weights and Measures, May 19-20, 2014:* Testing results for Wells 2A and 3 show Well 2A has arsenic levels ranging from 51 to 55 ug/L and Well 3 has arsenic levels ranging from 80 to 87 ug/L.
- *Product sheet for Bayoxide Arsenic Removal Media/Ferric Oxide Adsorptive Media, Severn Trent, Page 1*: Describes the arsenic removal technology and the ability of the Media to remove As(V) (the arsenic located at the Project site) to less than 4 ug/L.
- *SORB 33® As Removal System Sizing & Estimate, Severn Trent*: Provides conceptual drawing of the system and states the ability of treatment system to remove arsenic to levels below 7 ug/L at Well 2A and 3. The above calculations assume 8 ug/L as this is the District's blending goal (the State requires treatment to 80% of the MCL of 10 ug/L)
- *60th Street West Wellhead Arsenic Treatment Project Calculations* – Contains the detailed breakdown of the arsenic removal calculations.

Technical Analysis of Physical Benefits Claimed

Primary Physical Benefit

Type of Physical Benefit: Increased Local Water Supplies/Reliability and Decreased Dependence on Imported Water **Amount of Benefit:** 3,600 AFY	
Technical Basis of the Project	• *Test Data Sheet, BW&PC Aquifer Test (Well Efficiency Data), May 19-20, 2014:* o Test results show the two existing wells are capable of pumping 3,000 gpm total when pumped together. The two groundwater wells were investigated during the week of May 19, 2014 to determine production capacity as well as arsenic levels. Individually, the wells are capable of pumping 1,750 and 2,050 gpm, respectively. When pumped together, the wells can pump in the range of 2,500 to 3,000 gpm combined. A combined pumping rate of 3,000 gpm was assumed for the physical benefit calculations, pumping 18 hours per day to produce approximately 3,600 AFY of a new supply of treated groundwater [(3,000 gpm)*(60 min/hr)*(18 hours/day)/(892.74 gpd/AFY) = 3,629 AFY; approximately 3,600 AFY].
Recent and Historical Conditions that Provide Background for the Benefit Being Claimed	SWP water is the primary source of imported water for the District and accounts for approximately 70% of the overall water use during the last four years. This year the drought emergency has caused SWP allocations to be reduced dramatically to 5% of their full allocations. The two existing wells are capable of producing up to approximately 3,600 acre-feet of potable water annually. The annual production is based on a 3,000 gpm combined pumping rate and 18 hours of pumping per day.
Description and Estimates of Without-Project Conditions	Without the Project, the two assets (wells) will remain inoperable and the arsenic contaminated groundwater will not be available as a locally-generated potable water supply. Therefore, 3,600 AFY of SWP water will continue to be necessary to supply customers with potable water.
Methods Used to Estimate the Physical Benefit	The two groundwater wells were investigated during the week of May 19, 2014, to estimate the pumping capacity of the two wells. The pumping capacity of the two wells pumping together was used and it was assumed the wells will operate at 3,000 gpm, 18 hours per day, 7 days a week. Flow meters on the wells will record the volume of water supply made available by the Project.
New Facilities, Policies, and Actions Required to Obtain Physical Benefit	The Project involves the replacement of pumps, electrical panel components, flow meters, and transducers for two existing wells. The Project also includes SCADA installation, an arsenic treatment system, and approximately 1,500 feet of 12-inch water main to connect to existing potable water main along Avenue J.
Any Potential Adverse Physical Effects	No adverse physical effects. The wells are located outside the main depression zone in the groundwater basin and as a result, will not impact groundwater levels in the principal pumping areas that are affected by overdraft.

Secondary Physical Benefits

Type of Physical Benefit:	Reduced Demands on the Bay-Delta	Reduced Energy Usage	Reduced Greenhouse Gas Emissions
Amount/ Volume and Unit:	**3,600 AFY**	**9,788,400 kWh /year**	**3,215 MT /year**
Technical Basis of the Project	The two groundwater wells were investigated during the week of May 19, 2014 to determine production capacity as well as arsenic levels. Individually, the wells are capable of pumping 1,750 and 2,050 gpm, respectively. When pumped together, the wells can pump in the range of 2,500 to 3,000 gpm. A combined pumping rate of 3,000 gpm was assumed for the physical benefits calculations, pumping 18 hours per day to produce approximately 3,600 AFY of a new supply of treated groundwater. • *Personal communication with Tim Chen, Los Angeles County Waterworks District No. 40, Antelope Valley (District)*: o Proportion imported water used by the District that is SWP water (100% SWP).	• *References as mentioned in the primary benefits table to assess AFY water supply benefit from Project.* • *Personal communication with Tim Chen, Los Angeles County Waterworks District No. 40, Antelope Valley (District)*: o Proportion of imported water used by the District that is SWP water (100% SWP). o Estimated cost to pump and treat groundwater for the Project ($50/AF). • *Analysis of the Energy Intensity of Water Supplies for West Basin Municipal Water District, WBMWD (March 2007):* o Page 4: Estimates how much energy is used to provide SWP (3,000 kWh/year) to Southern California. • *Bureau of Labor Statistics, 2014. Average Energy Prices, Los Angeles-Riverside-Orange County*: o Page 2: Estimates an average of 17.8 cents per kWh paid for electricity in Los Angeles County.	• *References listed for the Reduce Energy Usage benefit to calculate energy usage.* • *California Action Registry, General Reporting Protocol. Version 3.1 (January 2009):* o Section 3: Converts energy saved to a reduction in emissions of CO_2 equivalents.

Type of Physical Benefit:	Reduced Demands on the Bay-Delta	Reduced Energy Usage	Reduced Greenhouse Gas Emissions
Amount/ Volume and Unit:	**3,600 AFY**	**9,788,400 kWh /year**	**3,215 MT /year**
Recent and Historical Conditions that Provide Background for the Benefit Being Claimed	SWP water is the primary source of water for the District and accounts for approximately 70% of the overall water use during the last four years. 100% of the imported water used by the District is from SWP, originating from the Bay-Delta. This year, the drought emergency has caused SWP allocations to be reduced dramatically (currently 5% of Table A amounts). The two existing wells are capable of producing up to 3,600 acre-feet of potable water annually. The annual production is based on a 3,000 gpm combined pumping rate and 18 hours of pumping per day.	SWP water is the primary source of water for the District and accounts for approximately 70% of the overall water use during the last four years. The SWP water used by the District requires energy for conveyance from the Bay-Delta at a higher rate than pumping and treating local groundwater.	The imported water delivered to the Project service area requires energy for conveyance from the Bay-Delta at a higher rate than pumping and treatment of local groundwater. This energy usage generates GHG emissions that cause climate change.
Description and Estimates of Without-Project Conditions	Without the Project, the District would need to continue to purchase 3,600 AFY of imported water from the SWP to supply to customers as potable supplies.	Without the Project, 10,800,000 kWh/year of energy would be used to serve 3,600 AFY of imported water to the Antelope Valley, which is 9,788,400 kWh/year more than the energy required to serve arsenic-treated local groundwater to this area.	Without the Project, 3,547 MT of CO_2 equivalents per year would be emitted by serving 3,600 AFY of imported water to the Antelope Valley, which is 3,215 MT of CO_2 equivalents per year more than the emissions generated by serving arsenic-treated local groundwater to this area.

Type of Physical Benefit:	Reduced Demands on the Bay-Delta	Reduced Energy Usage	Reduced Greenhouse Gas Emissions
Amount/ Volume and Unit:	**3,600 AFY**	**9,788,400 kWh /year**	**3,215 MT /year**
Methods Used to Estimate the Physical Benefit	The two groundwater wells were investigated during the week of May 19, 2014 to estimate the pumping capacity of the two wells. The pumping capacity of the two wells pumping together was used and it was assumed the wells operate 18 hours per day, 7 days a week. The resulting 3,600 AFY that could be pumped and treated with the Project was assumed to replace imported water supplies. Because the only imported water supplies in the Antelope Valley come from the SWP, this is a 1:1 offset of SWP water with the Project.	The SWP imported water use volumes and corresponding groundwater volumes were applied to the energy use estimates (contained in documents cited above) for conveying and treating imported supply sources. The difference between the energy needed for the Project compared to imported water supplies was calculated. Energy estimates for conveyance of SWP water supplies were compared to the energy estimate for pumping and treating arsenic contaminated groundwater.	The SWP imported water use volumes and corresponding groundwater volumes were applied to the energy use estimates (contained in documents cited above) for conveying and treating imported supply sources. The difference between the energy needed for the Project compared to imported water supplies was calculated. The California Action Registry, General Reporting Protocol was used to correlate the amount of energy saved to a reduction in emissions of CO_2 equivalents.
New Facilities, Policies, and Actions Required to Obtain Physical Benefit	The Project involves the replacement of pumps, electrical panel components, flow meters, and transducers for two existing wells, SCADA installation, an arsenic treatment system, and approximately 1,500 feet of 12-inch water main to connect to the existing potable water main along Avenue J.	The Project involves the replacement of pumps, electrical panel components, flow meters, and transducers for two existing wells, SCADA installation, an arsenic treatment system, and approximately 1,500 feet of 12-inch water main to connect to the existing potable water main along Avenue J.	The Project involves the replacement of pumps, electrical panel components, flow meters, and transducers for two existing wells, SCADA installation, an arsenic treatment system, and approximately 1,500 feet of 12-inch water main to connect to the existing potable water main along Avenue J.

Type of Physical Benefit:	Reduced Demands on the Bay-Delta	Reduced Energy Usage	Reduced Greenhouse Gas Emissions
Amount/ Volume and Unit:	**3,600 AFY**	**9,788,400 kWh /year**	**3,215 MT /year**
Any Potential Adverse Physical Effects	No adverse physical effects. The wells are located outside the main depression zone in the groundwater basin and as a result, will not impact groundwater levels in the principal pumping areas that are affected by overdraft.	No adverse physical effects. The wells are located outside the main depression zone in the groundwater basin and as a result, will not impact groundwater levels in the principal pumping areas that are affected by overdraft.	No adverse physical effects. The wells are located outside the main depression zone in the groundwater basin and as a result, will not impact groundwater levels in the principal pumping areas that are affected by overdraft.

Secondary Physical Benefits Continued

Type of Physical Benefit: Improved Groundwater Quality **Amount of Benefit:** 558 lbs of arsenic removed/year	
Technical Basis of the Project	• *Test Data Sheet, BW&PC Aquifer Test (Well Efficiency Data), May 19-20, 2014:* o Test results show the two existing wells are capable of pumping 3,000 gpm total when pumped together. This totals 3,600 AFY treated with the Project as described in the Primary Benefits table. • *Analytical Results for Arsenic, County of Los Angeles, Department of Agricultural Commissioner/Weights and Measures, May 19-20, 2014:* o Results of arsenic testing in Wells 2A and 3 show concentrations are well above the regulatory limit of 10 ug/L. Well 2A has arsenic levels ranging from 51 to 55 ug/L. Well 3 has arsenic levels ranging from 80 to 87 ug/L. • *Product sheet for Bayoxide Arsenic Removal Media/Ferric Oxide Adsorptive Media, Severn Trent*: o Page 1: Describes the arsenic removal technology and the ability of the Media to remove As(V) to less than 4 ug/L. • *SORB 33® As Removal System Sizing & Estimate, Severn Trent:* o Provides conceptual drawing of the system and verifies the ability of treatment system to remove arsenic to levels below 7 ug/L at Well 2A and 3. The Project assumes reduction to 8 ug/L as this is the District's blending goal (the State requires treatment to 80% of the MCL of 10 ug/L). *Case Studies for Ferric Oxide Adsorption Technology (Bayoxide):* • *Arsenic Treatment: Process Optimization Using Granular Ferric Oxide Adsorption. (Seven Trent, 2005).* Retrieved from: http://www.severntrentservices.com/News/Arsenic_Treatment__Process_Optimization_Using_Granular_Ferric_Oxide_Adsorption_nwMFT_532.aspx o Describes treatment system history and background. • *How U.K., U.S. Teams Optimized Arsenic Removal Process and Media Over Nearly a Decade. (Seven Trent, 2007).* Retrieved from: http://www.severntrentservices.com/News/How_U.K._U.S._Teams_Optimized_Arsenic_Removal_Process_and_Media_Over_Nearly_a_Decade_nwMFT_520.aspx o Describes treatment system optimization. • *Teamwork Rids Southern California City of Arsenic Problem (Seven Trent, 2008).* Retrieved from: http://www.severntrentservices.com/News/Teamwork_Rids_Southern_California_City_of_Arsenic_Problem_nwMFT_576.aspx o Describes system designed to treat similar flow rate of 3,000 gpm. • *Optimizing Arsenic Treatment System Yields Significant Cost Savings. (Seven Trent, 2010).* Retrieved from: http://*www*.severntrentservices.com/News/Optimizing_Arsenic_Treatment_System_Yields_Significant_Cost_Savings_nwMFT_487.aspx o Describes pilot project for treatment system treating arsenic levels up to 82 ug/L.
Recent and Historical Conditions that Provide Background for the	Naturally-occurring arsenic is an issue in the Antelope Valley groundwater basin in several locations. The District uses SWP water to blend arsenic contaminated groundwater below the arsenic blending goal of 8 ug/L as part of

Benefit Being Claimed	their blending plan to meet State and Federal arsenic concentration limits. At the Project location, the two existing wells pump groundwater with arsenic levels well above State and Federal regulations (51 to 55 ug/L and 80 to 87 ug/L, compared to the regulatory limit of 10 ug/L). Arsenic levels in this area are too high to blend with SWP water which has resulted in the two wells being inoperable and groundwater not being pumped in this area of the Basin. Installation of an arsenic treatment system will allow use of groundwater area and remove arsenic from the Basin in the process.
Description and Estimates of Without-Project Conditions	Without the Project, the District will not be able to pump groundwater at these wells and they will remain inoperable due to high arsenic concentrations between 50 and 87 ug/L. Because the contaminated water will not be pumped and treated, 558 lbs of arsenic/year will not be removed from the Basin. Groundwater will continue to be pumped in other areas of the Basin; but where blending is required, the supply will be at risk of not meeting blending ratio requirements if not enough SWP is available due to drought conditions in 2014 and 2015. Without the ability to pump 3,600 AFY from the existing wells in the Project area, 3,600 AFY will need to continue to be purchased from the SWP.
Methods Used to Estimate the Physical Benefit	The two wells were tested May 19th and 20th, 2014 to estimate the without Project levels of arsenic concentrations in the groundwater. Multiple sources (listed above) were used to confirm that the system could reduce arsenic concentrations to below the District's blending goal of 8 ug/L as required by the State. The approximate pumping rate of 3,000 gpm for 18 hours per day was assumed as described above to produce 3,600 AFY of treated water. The reduction in arsenic concentration was then converted to pounds of arsenic removed. The District will prepare State mandated monthly reports with arsenic testing results to confirm the reduction in arsenic levels. The two wells will be sampled and tested every month. Effluent from the arsenic treatment system will be sampled and tested every week.
New Facilities, Policies, and Actions Required to Obtain Physical Benefit	Installation of the Bayoxide® Arsenic Removal Media arsenic treatment system at the two wells at the two existing wells is required as well as installation of pumps, electrical panel components, flow meters, and transducers for two existing wells, SCADA installation, and approximately 1,500 feet of 12-inch water main to connect to the existing potable water main along Avenue J.
Any Potential Adverse Physical Effects	No adverse physical effects. The wastewater generated is minimal (< 0.1%) and non-hazardous. The spent media is non-hazardous and will be sent to landfills. Upon completion of the Project, there will be a maintenance agreement. The maintenance agreement vendor will be responsible for media replacement and disposal of spent media and brine.

Cost Effectiveness Analysis

Table 6 – Cost Effective Analysis		
Project name: 60th Street West Wellhead Arsenic Treatment Project		
Question 1	**Types of benefits provided as shown in the Annual Project Physical Benefits Section (above)**	• Increased local supplies/reliability and decreased dependence on imported water • Reduced demands on the Bay-Delta • Reduced energy usage • Reduced Greenhouse Gas emissions • Improved water quality
Question 2	**Have alternative methods been considered to achieve the same types and amounts of physical benefits as the proposed project been identified?**	Yes.
	If no, why?	Not Applicable
	If yes, list the methods (including the proposed project) and estimated costs.	One alternative method is the purchase of additional SWP entitlement. This is estimated to cost $36M for 3,600 AF (stated on page 2 of the attached MOU between the District and AVEK); but while this achieves the water supply benefit, it does not achieve any of the other benefits claimed above for this Project. The second alternative is to drill new wells in another location. The existing District Well Nos. 4-76 and 4-77 cost about $3.8 million to implement (see enclosed KBHome invoice for construction costs of two wells). This cost is provided as justification for the potential cost of two new wells, though the true cost would be even higher because it does not include the cost of land acquisition (which would be required for this alternative but is not required for the proposed Project), as well as other non-construction related activities that are included in the proposed Project cost of $4.1M. The construction of two new wells (approximately $3.8M) can be compared to the construction and treatment system costs of the proposed Project (approximately $3.3M for Task 10: Construction), plus new wells would also have land acquisition costs and potentially treatment system costs if the pumped water does not meet MCLs. The total costs for drilling new wells are anticipated to be significantly higher than for the Project when all costs are included.

Question 3	**If the proposed project is not the least cost alternative, why is it the preferred alternative? Provide an explanation of any accomplishments of the proposed project that are different from the alternative project or methods.**	The proposed Project is the least cost alternative. The proposed Project provides water supply benefits similar to both of the two alternatives, but the proposed Project also pumps and removes arsenic from the Basin. Additionally, the alternative of increasing the District's SWP entitlement will not reduce demands on the Bay-Delta or reduce energy usage and GHG emissions. If the alternative of drilling new wells is conducted at a location that would also require treatment for arsenic, the alternative might provide the same types of benefits as the proposed Project (including arsenic removal), but would cost significantly more due to drilling costs and potential land acquisition costs.

Comments:

- *Memorandum of Understanding between the Antelope Valle-East Kern Water Agency (AVEK) and Los Angeles County Waterworks District No. 4 (August 2013), Page 2*: Acquiring additional imported water supplies is estimated to cost $10,000/AF.
- *KBHome Utility Site, County Reimbursement Submission (July 21, 2009*): Provides the amount it cost to construct District Well Nos. 4-76 and 4-77.

60th Street West Wellhead Treatment Project

Supporting Documents

Test Data Sheet

BW&PC Aquifer Test

May 19 – 20, 2014

TEST DATA SHEET

DATE _____ JOB # 14.605

CUSTOMER L.A. COUNTY (PALMDALE PRISON) WELL # 3

MOTOR MAKE US HP 125 RPM 1781

ID# G51138 / U10U1990114R-1

PUMP MAKE INGERSOLL-[redacted]ND (10") 14KK

COLUMN

SUCTION COLUMN SUCTION STARAINER

HEAD 10" I.R.

	UNIT	1	2	3	4	5
	RPM	1800				
VOLTA AB	VOLTS	460.0				
VOLTS BC	VOLTS	458.2				
VOLTS CA	VOLTS	460.1				
AVE VOLTS	AMPS	459.4				
AMPS A	AMPS	145.7				
AMPS B	AMPS	144.7				
AMPS C	AMPS	145.5				
AVEERAGE AMPS	AMPS	145.3				
KW1	KW	33.4				
KW2	KW	33.0				
KW3	KW	33.3				
TOTAL KW	KW	99.7				
PF1		0.858				
PF2		0.864				
PF3		0.856				
AVE PF		0.859.3				
SWL	FEET	145				
PWL	FEET	186				
DISCHARGE PRESSURE	PSI	2				
HEAD ABOVE GROUND	FEET					
FRICTION LOSS	FEET					
DICH TEE LOSS	FEET					
VELOCITY LOSS	FEET					
TOTAL HEAD	FEET					
FLOW1	GPM					
FLOW2	GPM					
FLOW3	GPM					
AVERAGE FLOW1	GPM	2,100				
DISCH PIPE DIA	INCH	10"				
DISCH PIPE AREA	SQ INCH					
VELOCITY1	FT/SEC					
VELOCITY 2	FT/SEC					
VELOCITY 3	FT/SEC					
AVERAGE VELOCITY	FT/SEC					
FLOW 2	GPM					
AVERAGE OF FLOW I & 2	GPM					

ADDITIONAL PUMP INFO:
S/N. 91076596 · 3 STGS. · IMP. H-11.12 · 1450 GPM @ 1770 RPM

BW&PC AQUIFER TEST

JOB# 14.605
CUSTOMER LA. COUNTY
DATE
WELL # 2A
TIME 0800 - 1500

SWL 146.6
AIRLINE NO
GPM 1300
RPM 1800
DIS PSI 20

TIME OF DAY	ELAPSED TIME(MIN)	DISCHARGE PSI	GPM	PUMPING LEVEL	DRAWN DOWN	STATIC LEVEL	SPECIFIC CAPACITY	RPM	SAND PPM	REMARKS for COLOR
0800						146.6		1800	0	
	0:01	20	1300	181	34.4					
	0:02									
	0:03									
	0:04									
	0:05									
	0:07									
	0:09									
	0:11									
	0:15									
	0:20									
	0:25									
	0:30									
	0:35								0.01	
	0:40									
	0:50									
0900	1:00									
	1:10									
	1:20									
	1:30									
	1:40									
1000	2:00									
1030	2:30									
1100	3:00									
1130	3:30									
1200	4:00									
1230	4:30									
1300	5:00									
1400	6:00									
1500	7:00									
	8:00									
	9:00									
	10:00									
	11:00									

BW&PC AQUIFER TEST

JOB# 14,605
CUSTOMER L.A. COUNTY
DATE
WELL # 3
TIME 0800 - 1500

SWL 145
AIRLINE NO
GPM 2,100
RPM 1800
DIS PSI 2

TIME OF DAY	ELAPSED TIME(MIN)	DISCHARGE PSI	GPM	PUMPING LEVEL	DRAWN DOWN	STATIC LEVEL	SPECIFIC CAPACITY	RPM	SAND PPM	REMARKS for COLOR
0800						145		1800	0	
	0:01	2	2,100	186	41					
	0:02									
	0:03									
	0:04									
	0:05									
	0:07									
	0:09									
	0:11									
	0:15									
	0:20									
	0:25									
	0:30								0.01	
	0:35									
	0:40									
	0:50									
0900	1:00									
	1:10									
	1:20									
	1:30									
	1:40								0.02	
1000	2:00									
1030	2:30									
1100	3:00									
1130	3:30									
1200	4:00									
1230	4:30									
1300	5:00									
1400	6:00									
1500	7:00									
	8:00									
	9:00									
	10:00									
	11:00									

TEST DATA SHEET

DATE _____ JOB # 14.605

CUSTOMER L.A. COUNTY (PALMDALE PRISON) WELL # 2A

MOTOR MAKE US HP 125 RPM 1781

ID# G51138 / U10111840310R-1

PUMP MAKE INGERSOLL-RAND (10") 14KK

COLUMN

SUCTION COLUMN _____ SUCTION STARAINER _____

HEAD 10" IR.

	UNIT	1	2	3	4	5
	RPM	1800				
VOLTA AB	VOLTS	463				
VOLTS BC	VOLTS	462				
VOLTS CA	VOLTS	465				
AVE VOLTS	AMPS	463.3				
AMPS A	AMPS	135.3				
AMPS B	AMPS	136.5				
AMPS C	AMPS	137.4				
AVEERAGE AMPS	AMPS	136.4				
KW1	KW	31.7				
KW2	KW	31.2				
KW3	KW	31.1				
TOTAL KW	KW	94				
PF1		0.846				
PF2		0.857				
PF3		0.853				
AVE PF		0.852				
SWL	FEET	146.6				
PWL	FEET	181				
DISCHARGE PRESSURE	PSI	20				
HEAD ABOVE GROUND	FEET					
FRICTION LOSS	FEET					
DICH TEE LOSS	FEET					
VELOCITY LOSS	FEET					
TOTAL HEAD	FEET					
FLOW1	GPM					
FLOW2	GPM					
FLOW3	GPM					
AVERAGE FLOW1	GPM	1300				
DISCH PIPE DIA	INCH	10"				
DISCH PIPE AREA	SQ INCH					
VELOCITY1	FT/SEC					
VELOCITY 2	FT/SEC					
VELOCITY 3	FT/SEC					
AVERAGE VELOCITY	FT/SEC					
FLOW 2	GPM					
AVERAGE OF FLOW I & 2	GPM					

ADDITIONAL PUMP INFO:
S/N. 910666551 · 3 STGS. · IMP. H-11.12 · 1450 GPM @ 1770 RPM

Analysis of the Energy Intensity of Water Supplies for West Basin Municipal Water District

March, 2007

Robert C. Wilkinson, Ph.D.

Note to Readers

This report for West Basin Municipal Water District is an update and revision of an analysis and report by Robert Wilkinson, Fawzi Karajeh, and Julie Mottin (Hannah) conducted in April 2005. The earlier report, *Water Sources "Powering" Southern California: Imported Water, Recycled Water, Ground Water, and Desalinated Water*, was undertaken with support from the California Department of Water Resources, and it examined the energy intensity of water supply sources for both West Basin and Central Basin Municipal Water Districts. This analysis focuses exclusively on West Basin, and it includes new data for ocean desalination based on new engineering developments that have occurred over the past year and a half.

Principal Investigator: Robert C. Wilkinson, Ph.D.

Dr. Wilkinson is Director of the Water Policy Program at the Donald Bren School of Environmental Science and Management, and Lecturer in the Environmental Studies Program, at the University of California, Santa Barbara. His teaching, research, and consulting focuses on water policy, climate change, and environmental policy issues. Dr. Wilkinson advises private sector entities and government agencies in the U.S. and internationally. He currently served on the public advisory committee for California's 2005 State Water Plan, and he represented the University of California on the Governor's Task Force on Desalination.
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Overview

Southern California relies on imported and local water supplies for both potable and non-potable uses. Imported water travels great distances and over significant elevation gains through both the California State Water Project (SWP) and Colorado River Aqueduct (CRA) before arriving in Southern California, consuming a large amount of energy in the process. Local sources of water often require less energy to provide a sustainable supply of water. Three water source alternatives which are found or produced locally and could reduce the amount of imported water are desalinated ocean water, groundwater, and recycled water. Groundwater and recycled water are significantly less energy intensive than imports, while ocean desalination is getting close to the energy intensity of imports.

Energy requirements vary considerably between these four water sources. All water sources require pumping, treatment, and distribution. Differences in energy requirements arise from the varying processes needed to produce water to meet appropriate standards. This study examines the energy needed to complete each process for the waters supplied by West Basin Municipal Water District (West Basin).

Specific elements of energy inputs examined in this study for each water source are as follows:

- Energy required to **import water** includes three processes: pumping California SWP and CRA supplies to water providers; treating water to applicable standards; and distributing it to customers.
- **Desalination of ocean water** includes three basic processes: 1) pumping water from the ocean or intermediate source (e.g. a powerplant) to the desalination plant; 2) pre-treating and then desalting water including discharge of concentrate; and 3) distributing water from the desalination plant to customers.
- **Groundwater** usage requires energy for three processes: pumping groundwater from local aquifers to treatment facilities; treating water to applicable standards; and distributing water from the treatment plant to customers. Additional injection energy is sometimes needed for groundwater replenishment.
- Energy required to **recycle water** includes three processes: pumping water from secondary treatment plants to tertiary treatment plants; tertiary treatment of the water, and distributing water from the treatment plant to customers.

The energy intensity results of this study are summarized in the table on the following page. They indicate that recycled water is among the least energy-intensive supply options available, followed by groundwater that is naturally recharged and recharged with recycled water. Imported water and ocean desalination are the most energy intensive water supply options in California. East Branch State Water Project water is close in energy intensity to desalination figures based on current technology, and at some points along the system, SWP supplies exceed estimated ocean desalination energy intensity. The following table identifies energy inputs to each of the water supplies including estimated energy requirements for desalination. Details describing the West Basin system operations are included in the water source sections. Note that the Title 22 recycled water energy figure reflects only the *marginal* energy required to treat secondary effluent wastewater which has been processed to meet legal discharge requirements, along with the energy to convey it to user

Energy Intensity of Water Supplies for West Basin Municipal Water District

	af/yr	Percentage of Total Source Type	kWh/af Conveyance Pumping	kWh/af MWD Treatment	kWh/af Recycled Treatment	kWh/af Groundwater Pumping	kWh/af Groundwater Treatment	kWh/af Desalination	kWh/af WBMWD Distribution	Total kWh/af	Total kWh/year
Imported Deliveries											
State Water Project (SWP) [1]	57,559	43%	3,000	44	NA	NA	NA	NA	0	3,044	175,209,596
Colorado River Aqueduct (CRA) [1] (other that replenishment water)	76,300	57%	2,000	44	NA	NA	NA	NA	0	2,044	155,957,200
Groundwater[2]											
natural recharge	19,720	40%	NA	NA	NA	350	0	NA	0	350	6,902,030
replenished with (injected) SWP water [1]	9,367	19%	3,000	44	NA	350	0	NA	0	3,394	31,791,598
replenished with (injected) CRA water [1]	11,831	24%	2,000	44	NA	350	0	NA	0	2,394	28,323,432
replenished with (injected) recycled water	8,381	17%	205	0	790	350	0	NA	220	1,565	13,116,278
Recycled Water											
West Basin Treatment, Title 22	21,506	60%	205	NA	0	NA	NA	NA	285	490	10,537,940
West Basin Treatment, RO	14,337 35,843	40%	205	NA	790	NA	NA	NA	285	1,280	18,351,360
Ocean Desalination	20,000	100%	200	NA	NA	NA	NA	3,027	460	3,687	82,588,800

Notes:

NA Not applicable

[1] Imported water based on percentage of CRA and SWP water MWD received, averaged over an 11-year period. Note that the figures for imports do not include an accounting for system losses due to evaporation and other factors. These losses clearly exist, and an estimate of 5% or more may be reasonable. The figures for imports above should therefore be understood to be conservative (that is, the actual energy intensity is in fact higher for imported supplies than indicated by the figures).

[2] Groundwater values include entire basin, West Basin service area covers approximately 86% of the basin. Groundwater values are specific to aquifer characteristics, including depth, within the basin.

Energy Intensity of Water

Water treatment and delivery systems in California, including extraction of "raw water" supplies from natural sources, conveyance, treatment and distribution, end-use, and wastewater collection and treatment, account for one of the largest energy uses in the state.[1] The California Energy Commission estimated in its 2005 Integrated Energy Policy Report that approximately 19% of California's electricity is used for water related purposes including delivery, end-uses, and wastewater treatment.[2] The total energy embodied in a unit of water (that is, the amount of energy required to transport, treat, and process a given amount of water) varies with location, source, and use within the state. In many areas, the energy intensity may increase in the future due to limits on water resource extraction, and regulatory requirements for water quality, and other factors.[3] Technology improvements may offset this trend to some extent.

> ***Energy intensity*** is the total amount of energy, calculated on a whole-system basis, required for the use of a given amount of water in a specific location.

The Water-Energy Nexus

Water and energy systems are interconnected in several important ways in California. Water systems both provide energy – through hydropower – and consume large amounts of energy, mainly through pumping. Critical elements of California's water infrastructure are highly energy-intensive. Moving large quantities of water long distances and over significant elevation gains, treating and distributing it within the state's communities and rural areas, using it for various purposes, and treating the resulting wastewater, accounts for one of the largest uses of electrical energy in the state.[4]

Improving the efficiency with which water is used provides an important opportunity to increase related energy efficiency. (*"Efficiency"* as used here describes the useful work or service provided by a given amount of water.) Significant potential economic as well as environmental benefits can be cost-effectively achieved in the energy sector through efficiency improvements in the state's water systems and through shifting to less energy intensive local sources. The California Public Utilities Commission is currently planning to include water efficiency improvements as a means of achieving energy efficiency benefits for the state.[5]

Overview of Energy Inputs to Water Systems

There are four principle energy elements in water systems:

1. primary water extraction and supply delivery (imported and local)
2. treatment and distribution within service areas
3. on-site water pumping, treatment, and thermal inputs (heating and cooling)

4. wastewater collection, treatment, and discharge

Pumping water in each of these four stages is energy-intensive. Other important components of embedded energy in water include groundwater pumping, treatment and pressurization of water supply systems, treatment and thermal energy (heating and cooling) applications at the point of end-use, and wastewater pumping and treatment.[6]

1. Primary water extraction and supply delivery
Moving water from near sea-level in the Sacramento-San Joaquin Delta to the San Joaquin-Tulare Lake Basin, the Central Coast, and Southern California, and from the Colorado River to metropolitan Southern California, is highly energy intensive. Approximately 3,236 kWh is required to pump one acre-foot of SWP water to the end of the East Branch in Southern California, and 2,580 kWh for the West Branch. About 2,000 kWh is required to pump one acre foot of water through the CRA to southern California.[7] Groundwater pumping also requires significant amounts of energy depending on the depth of the source. (Data on groundwater is incomplete and difficult to obtain because California does not systematically manage groundwater resources.)

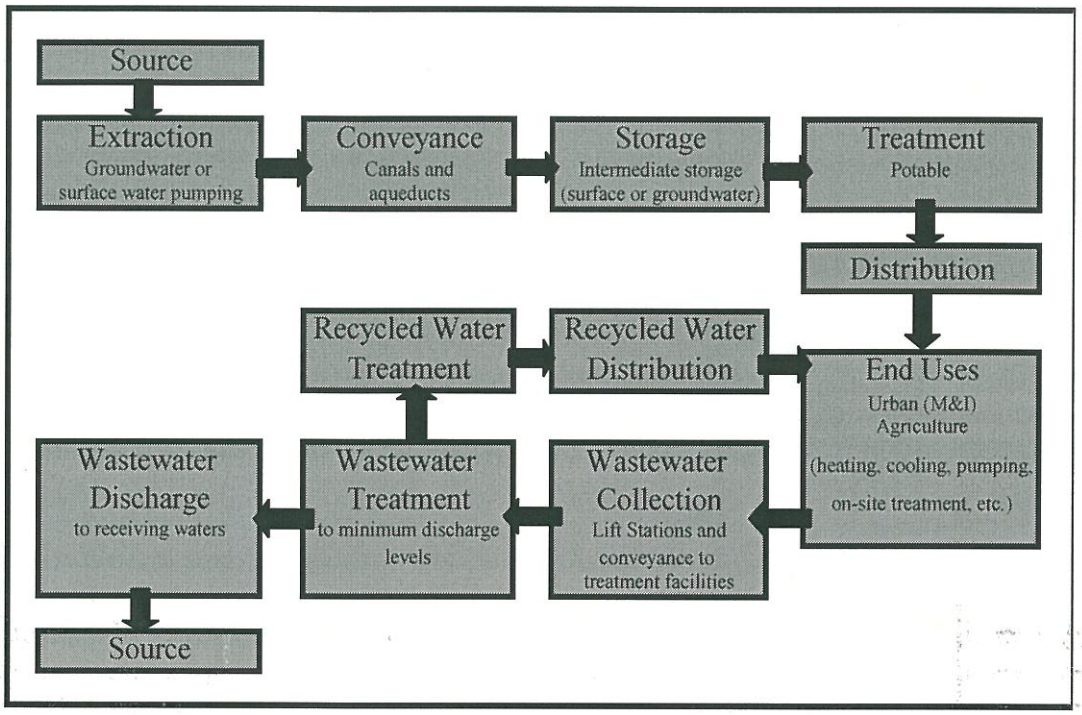
2. Treatment and distribution within service areas
Within local service areas, water is treated, pumped, and pressurized for distribution. Local conditions and sources determine both the treatment requirements and the energy required for pumping and pressurization.

3. On-site water pumping, treatment, and thermal inputs
Individual water users use energy to further treat water supplies (e.g. softeners, filters, etc.), circulate and pressurize water supplies (e.g. building circulation pumps), and heat and cool water for various purposes.

4. Wastewater collection, treatment, and discharge
Finally, wastewater is collected and treated by a wastewater authority (unless a septic system or other alternative is being used). Wastewater is often pumped to treatment facilities where gravity flow is not possible, and standard treatment processes require energy for pumping, aeration, and other processes. (In cases where water is reclaimed and re-used, the calculation of total energy intensity is adjusted to account for wastewater as a *source* of water supply. The energy intensity generally includes the additional energy for treatment processes beyond the level required for wastewater discharge, plus distribution.)

The simplified flow chart below illustrates the steps in the water system process. A spreadsheet computer model is available to allow cumulative calculations of the energy inputs embedded at each stage of the process. This methodology is consistent with that applied by the California Energy Commission in its analysis of the energy intensity of water.

Simplified Flow Diagram of Energy Inputs to Water Systems



Source: Robert Wilkinson, UCSB[8]

Calculating Energy Intensity

Total energy intensity, or the amount of energy required to facilitate the use of a given amount of water in a specific location, may be calculated by accounting for the summing the energy requirements for the following factors:

- imported supplies
- local supplies
- regional distribution
- treatment
- local distribution
- on-site thermal (heating or cooling)
- on-site pumping
- wastewater collection
- wastewater treatment

Water pumping, and specifically the long-distance transport of water in conveyance systems, is a major element of California's total demand for electricity as noted above. Water use (based on embedded energy) is the next largest consumer of electricity in a typical Southern California home after refrigerators and air conditioners. Electricity required to support water service in the typical home in Southern California is estimated at between 14% to 19% of total residential energy demand.[9] If air conditioning is not a factor the figure is even higher. Nearly three quarters of this energy demand is for pumping imported water.

Interbasin Transfers

Some of California's water systems are uniquely energy-intensive, relative to national averages, due to the pumping requirements of major conveyance systems which move large volumes of water long distances and over thousands of feet in elevation lift. Some of the interbasin transfer systems (systems that move water from one watershed to another) are net energy producers, such as the San Francisco and Los Angeles aqueducts. Others, such as the SWP and the CRA require large amounts of electrical energy to convey water. On *average*, approximately 3,000 kWh is necessary to pump one AF of SWP water to southern California,[10] and 2,000 kWh is required to pump one AF of water through the CRA to southern California.[11]

Total energy savings for reducing the full embedded energy of *marginal* (e.g. imported) supplies of water used indoors in Southern California is estimated at about 3,500 kWh/af.[12] Conveyance over long distances and over mountain ranges accounts for this high marginal energy intensity. In addition to avoiding the energy and other costs of pumping additional water supplies, there are environmental benefits through reduced extractions from stressed ecosystems such as the delta.

Imported Water: The State Water Project and the Colorado River Aqueduct

Water diversion, conveyance, and storage systems developed in California in the 20th century are remarkable engineering accomplishments. These water works move millions of AF of water around the state annually. The state's 1,200-plus reservoirs have a total storage capacity of more than 42.7 million acre feet (maf).[13] West Basin receives imported water from Northern California through the State Water Project and Colorado River water via the Colorado River Aqueduct. The Metropolitan Water District of Southern California delivers both of these imported water supplies to the West Basin.

California's Major Interbasin Water Projects

The State Water Project

The State Water Project (SWP) is a state-owned system. It was built and is managed by the California Department of Water Resources (DWR). The SWP provides supplemental water for agricultural and urban uses.[14] SWP facilities include 28 dams and reservoirs, 22 pumping and generating plants, and nearly 660 miles of aqueducts.[15] Lake Oroville on the Feather River, the project's largest storage facility, has a total capacity of about 3.5 maf.[16] Oroville Dam is the tallest and one of the largest earth-fill dams in the United States.[17]

Water is pumped out of the delta for the SWP at two locations. In the northern Delta, Barker Slough Pumping Plant diverts water for delivery to Napa and Solano counties through the North Bay

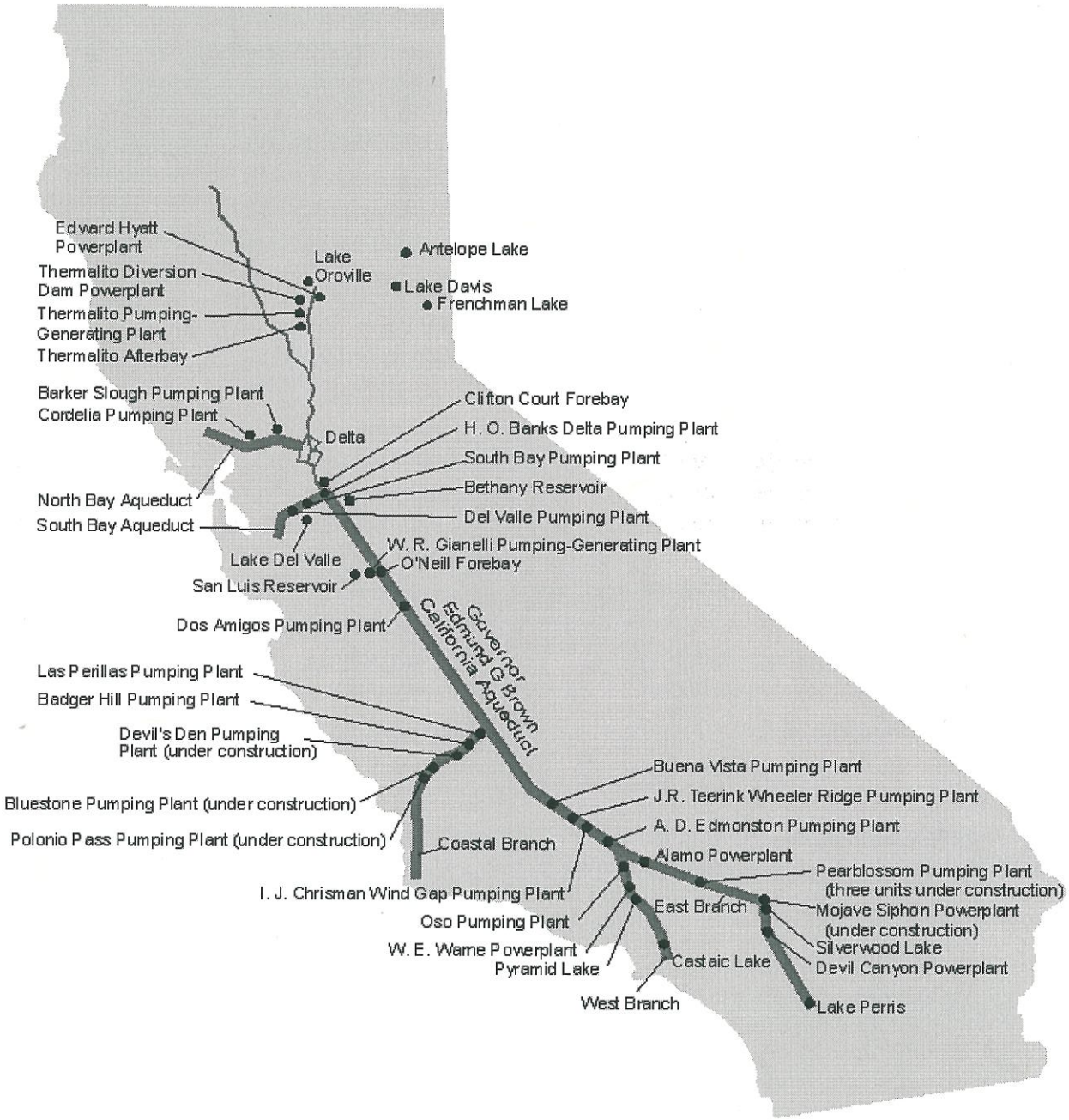
Aqueduct.[18] Further south at the Clifton Court Forebay, water is pumped into Bethany Reservoir by the Banks Pumping Plant. From Bethany Reservoir, the majority of the water is conveyed south in the 444-mile-long Governor Edmund G. Brown California Aqueduct to agricultural users in the San Joaquin Valley and to urban users in Southern California. The South Bay Pumping Plant also lifts water from the Bethany Reservoir into the South Bay Aqueduct. [19]

The State Water Project is the largest consumer of electrical energy in the state, requiring an average of 5,000 GWh per year.[20] The energy required to operate the SWP is provided by a combination of DWR's own hydroelectric and other generation plants and power purchased from other utilities. The project's eight hydroelectric power plants, including three pumping-generating plants, and a coal-fired plant produce enough electricity in a normal year to supply about two-thirds of the project's necessary power.

Energy requirements would be considerably higher if the SWP was delivering full contract volumes of water. The project delivered an average of approximately 2.0 mafy, or half its contracted volumes, throughout the 1980s and 1990s.[21] Since 2000 the volumes of imported water have generally increased.

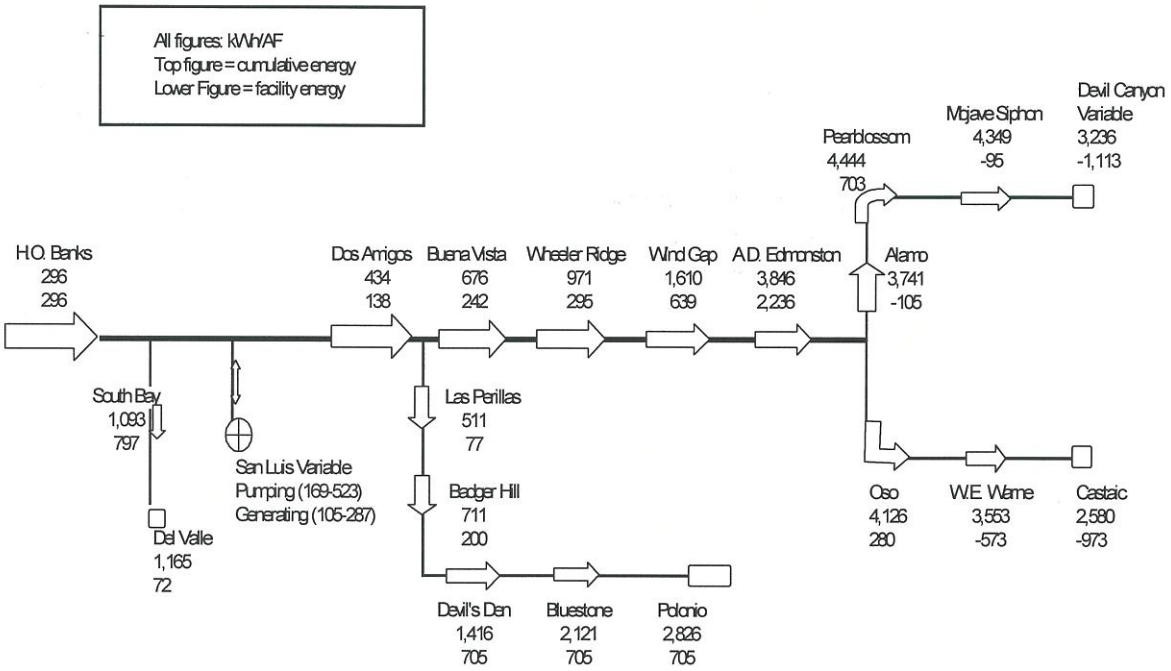
The following map indicates the location of the pumping and power generation facilities on the SWP.

Names and Locations of Primary State Water Delivery Facilities



The following schematic shows each individual pumping unit on the State Water Project, along with data for both the individual and cumulative energy required to deliver an AF of water to that point in the system. Note that the figures include energy recovery in the system, but they do not account for losses due to evaporation and other factors. These losses may be in the range of 5% or more. While more study of this issue is in order, it is important to observe that the energy intensity numbers are conservative (e.g. low) in that they assume that all of the water originally pumped from the delta reaches the ends of the system without loss.

State Water Project
Kilowatt-Hours per Acre Foot Pumped
(Includes Transmission Losses)



Source: Wilkinson, based on data from: California Department of Water Resources, State Water Project Analysis Office, Division of Operations and Maintenance, *Bulletin 132-97*, 4/25/97.

The Colorado River Aqueduct

Significant volumes of water are imported to the Los Angeles Basin and San Diego in Southern California from the Colorado River via the Colorado River Aqueduct (CRA). The aqueduct was built by the Metropolitan Water District of Southern California (MWD). Though MWD's allotment of the Colorado River water is 550,000 afy, it has historically extracted as much as 1.3 mafy through a combination of waste reduction arrangements with Imperial Irrigation District (IID) (adding about 106,000 afy) and by using "surplus" water.[22] The Colorado River water supplies require about 2,000 kWh/af for conveyance to the Los Angeles basin.

The Colorado River Aqueduct extends 242 miles from Lake Havasu on the Colorado River to its terminal reservoir, Lake Mathews, near Riverside. The CRA was completed in 1941 and expanded in 1961 to a capacity of more than 1 MAF per year. Five pumping plants lift the water 1,616 feet, over several mountain ranges, to southern California. To pump an average of 1.2 maf of water per year into the Los Angeles basin requires approximately 2,400 GWh of energy for the CRA's five pumping plants.[23] On average, the energy required to import Colorado River water is about 2,000 kWh/AF. The aqueduct was designed to carry a flow of 1,605 cfs (with the capacity for an additional 15%).

The sequence for CRA pumping is as follows: The Whitsett Pumping Plant elevates water from Lake Havasu 291 feet out of the Colorado River basin. At "mile 2," Gene pumping plant elevates water 303 feet to Iron Mountain pumping plant at mile 69, which then boosts the water another 144 feet. The last two pumping plants provide the highest lifts - Eagle Mountain, at mile 110, lifts the water 438 feet, and Hinds Pumping Plant, located at mile 126, lifts the water 441 feet.[24]

MWD has recently improved the system's energy efficiency. The average energy requirement for the CRA was reduced from approximately 2,100 kWh /af to about 2,000 kWh /af "through the increase in unit efficiencies provided through an energy efficiency program." The energy required to pump each acre foot of water through the CRA is essentially constant, regardless of the total annual volume of water pumped. This is due to the 8-pump design at each pumping plant. The average pumping energy efficiency does not vary with the number of pumps operated, and MWD states that the same 2,000 kWh/af estimate is appropriate for both the "Maximum Delivery Case" and the "Minimum Delivery Case."[25]

It appears that there are limited opportunities to shift pumping off of peak times on the CRA. Due to the relatively steep grade of the CRA, limited active water storage, and transit times between plants, the system does not generally lend itself to shifting pumping loads from on-peak to off-peak. Under the Minimum Delivery Case, the reduced annual water deliveries would not necessarily bring a reduction in annual peak load, since an 8-pump flow may still need to be maintained in certain months.

Electricity to run the CRA pumps is provided by power from hydroelectric projects on the Colorado River as well as off-peak power purchased from a number of utilities. The Metropolitan Water District has contractual hydroelectric rights on the Colorado River to "more than 20 percent of the firm energy and contingent capacity of the Hoover power plant and 50 percent of the energy and capacity of the Parker power plant."[26] Energy purchased from utilities makes up approximately 25 percent of the remaining energy needed to power the Colorado River Aqueduct.[27]

Minimizing the Need for Inter-Basin Transfers

For over 100 years, California has sought to transfer water from one watershed for use in another. The practice has caused a number of problems. As of 2001, California law requires that the state examine ways to "*minimize the need to import water from other hydrologic regions*" and report on these approaches in the official State Water Plan.[28] A new focus and priority has been placed on developing *local* water supply sources, including efficiency, reuse, recharge, and desalination. The law directs the Department of Water Resources as follows:[29]

> The department, as a part of the preparation of the department's Bulletin 160-03, shall include in the California Water Plan a report on the development of regional and local water projects within each hydrologic region of the state, as described in the department's Bulletin 160-98, to improve water supplies to meet municipal, agricultural, and environmental water needs and *minimize the need to import water from other hydrologic regions*.

(Note that Bulletin 160-03 became Bulletin 160-05 due to a slip in the completion schedule.)

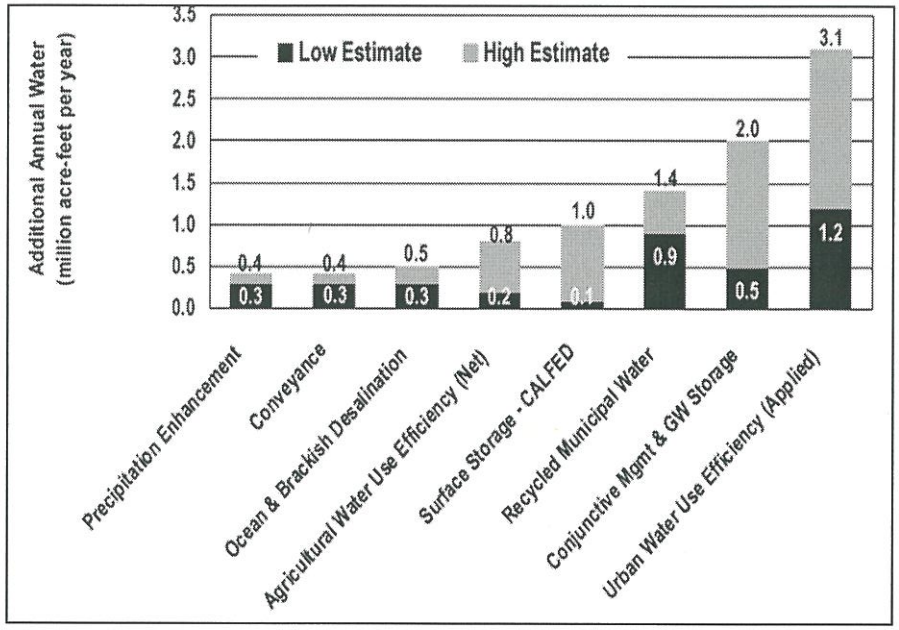
The legislation set forth the range of local supply options to be considered:

> The report shall include, but is not limited to, regional and local water projects that use technologies for desalting brackish groundwater and ocean water, reclaiming water for use within the community generating the water to be reclaimed, the construction of improved potable water treatment facilities so that water from sources determined to be unsuitable can be used, and the construction of dual water systems and brine lines, particularly in connection with new developments and when replacing water piping in developed or redeveloped areas.

This law calls for a thorough consideration in the state's official water planning process of work that is already going on in various areas of the state. The significance of the legislation is that for the first time, local supply development is designated as a priority in order to minimize inter-basin transfers.

The Department of Water Resources State Water Plan (Bulletin 160-05) reflects this new direction for the state in its projection of water supply options for the next quarter century. The following graph clearly indicates the importance of local water supplies from various sources in the future.

California State Water Plan 2005
Water Management and Supply Options for the Next 25 Years



Source: *California Water Plan Update 2005*.[30]

Energy Requirements for Treatment of State Water Project and the Colorado River Aqueduct Supplies

Imported SWP and CRA supplies require an estimated 44 kWh/af for treatment before it enters the local distribution systems. Water pressure from MWD's system is sufficient to move supplies through the West Basin distribution system without requiring additional pressure.

Groundwater and Recycled Water at West Basin MWD

Nearly half of the water used in the service area of the Metropolitan Water District of Southern California (from Ventura to Mexico) is secured from *local* sources, and the percentage of total supplies provided by local sources is growing steadily.[31] This figure is up from approximately one-third of the supply provided by local resources in the mid-1990s.[32] MWD has encouraged local supply development through support for recycling, groundwater recovery, conservation, groundwater storage, and most recently, ocean desalination.

Groundwater and recycled water are important and growing supply sources for West Basin. Water flows through natural hydrologic cycles continuously. The water we use today has made the journey many times. In water recycling programs, water is treated and re-used for various purposes including recharging groundwater aquifers. The treatment processes essentially short-circuit the longer-term process of natural evaporation and precipitation. In cities around the world water is used and then returned to natural water systems where it flows along to more users down stream. It is often used again and again before it flows to the ocean or to a terminal salt sink.

Groundwater at West Basin MWD

Groundwater reservoirs in West Basin are replenished with four water sources; natural recharge, SWP supplies, CRA supplies, and recycled water supplies. The largest portion (approximately 40%) of groundwater supplies is derived from natural recharge. The energy associated with recovering this naturally recharged supply is estimated at 350 kWh/af for groundwater pumping.

Imported water, from both the SWP and CRA, is injected into the groundwater supply in West Basin. The imported water remains at sufficient pressure for injection, so no additional energy is required. The energy requirements for importing water are significant, however, primarily due to the energy associated with importing the water from northern California and the Colorado River. The imported water also passes through MWD's treatment plant, incurring additional energy requirements. The total energy intensity for West Basin's imported water used for recharge of groundwater storage from the SWP is 3,394 kWh/af and from the CRA is 2,394 kWh/af.

Recycled water is also used to recharge groundwater in the basin. West Basin replenishes groundwater by injecting RO treated recycled water from the West Basin Water Recycling Facility (WBWRF). The total energy use is 1,565 kWh/af. Details for the recycled water energy are described in the next section.

Recycled Water at West Basin MWD

Many cities in California are using advanced processes and filtering technology to treat wastewater so it can be re-used for irrigation, industry, and other purposes. In response to increasing demands for water, limitations on imported water supplies, and the threat of drought, West Basin has developed state-of-the-art regional water recycling programs. Water is increasingly being used more than once within systems at both the end-use level and at the municipal level. This is because scarce water resources (and wastewater discharges) are increasing in cost and because cost-effective technologies and techniques for re-using water have been developed that meet health and safety requirements. At the end-use, water is recycled within processes such as cooling towers and industrial processes prior to entering the wastewater system. Once-through systems are increasingly being replaced by re-use technologies. At the municipal level, water re-use has become a significant source of supplies for both landscape irrigation and for commercial and industrial processes. MWD of Southern California is supporting 33 recycling programs in which treated wastewater is used for non-potable purposes. [33]

West Basin provides customers with recycled water used for municipal, commercial and industrial applications. Approximately 27,000 AF of recycled water is annually distributed to more than 210 sites in the South Bay. These sites use recycled water for a wide range of non-potable applications. Based in El Segundo, California, the WBWRF is among the largest projects of its kind in the nation, producing five qualities of recycled water with the capacity at full build-out to recycle 100,000 AF per year of wastewater from the Los Angeles Hyperion Treatment Plant.

In 1998, West Basin began to construct the nation's only regional high-purity water treatment facility, the Carson Regional Water Recycling Facility (CRWRF). A pipeline stretching through five South Bay communities connects the CRWRP to West Basin's El Segundo facility. At the CRWRF, West Basin ultra-purifies the recycled water it gets from the El Segundo facility. From the CRWRF, West Basin uses service lines to transport two types of purified water to the BP Refinery in Carson. The West Basin expansion also includes a new disposal pipeline to carry brine reject water from the CRWRF to a Los Angeles County Sanitation District's outfall.

In order to provide perspective on the energy requirements for the WBWRF, two water qualities and associated energy intensity are presented. "Title 22" water, produced by a gravity filter treatment system, requires conveyance pumping energy from Hyperion to WBWRF at 205 kWh/af. The water flows through the filters via gravity, thus no additional energy is required for treatment. The final energy requirement is 285 kWh/af for distribution with a total energy requirement of 490 kWh/af. This is the lowest grade of recycled water that WBWRF produces. Contrasting the Title 22 water, WBWRF produces RO water with a total energy requirement of 1,280 kWh/af. This includes 205 kWh/af for conveyance from Hyperion, 790 kWh/af for treatment with RO, and 285 kWh/af for distribution.

More than 210 South Bay sites use 9 billion gallons of West Basin's recycled water for applications including irrigation, industrial processes, indirect potable uses, and seawater barrier injection. West Basin has been successful in changing the perception of recycled water from merely a conservation tool with minimal applications to a cost-effective business tool that can reduce costs and improve reliability.

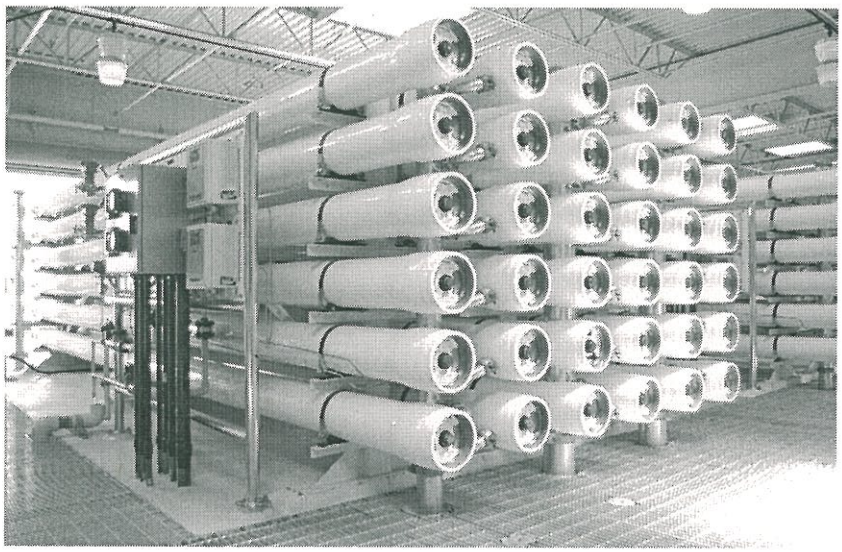
Local oil refineries are major customers for West Basin's recycled water. The Chevron Refinery in El Segundo, the Exxon-Mobile refinery in Torrance, and the BP refinery in Carson use recycled water for cooling towers and in the boiler feed systems.

Ocean Water Desalination Development

Desalination technologies are in use around the world. A number of approaches work well and produce high quality water. Many workable and proven technology options are available to remove salt from water. During World War Two, desalination technology was developed as a water source for military operations.[34] Grand plans for nuclear-driven desalination systems in California were drawn up after the war, but they were never implemented due to cost and feasibility problems.

Desalination techniques range from distillation to "reverse osmosis" (RO) technologies. Current applications around the world are dominated by the "multistage flash distillation" process (at about 44% of the world's applications), and RO, (at about 42%).[35] Other desalting technologies include electrodialysis (6%), vapor compression (4%), multi-effect distillation (4%), and membrane softening (2%) to remove salts.[36] All of the ocean desalination projects currently in place or proposed for municipal water supply in California employ RO technology.

Reverse Osmosis Membranes



A recent inventory of desalination facilities world-wide indicated that as of the beginning of 1998, a total of 12,451 desalting units with a total capacity of 6.72 afy[37] had been installed or contracted worldwide.[38] (Note that *capacity* does not indicate actual operation.) Non-seawater desalination plants have a capacity 7,620 af/d[39], whereas the seawater desalination plant capacity reached 10,781af/d.[40]

Desalination systems are being used in over 100 countries, but 10 countries are responsible for 75 percent of the capacity.[41] Almost half of the desalting capacity is used to desalt seawater in the Middle East and North Africa. Saudi Arabia ranks first in total capacity (about 24 percent of the world's capacity) followed by the United Arab Emirates and Kuwait, with most of the capacity being made up of seawater desalting units that use the distillation process.[42]

The salinity of ocean water varies, with the average generally exceeding 30 grams per liter (g/l).[43] The Pacific Ocean is 34-38 g/l, the Atlantic Ocean averages about 35 g/l, and the Persian Gulf is 45 g/l. Brackish water drops to 0.5 to 3.0 g/l.[44] Potable water salt levels should be below 0.5 g/l.

Reducing salt levels from over 30 g/l to 0.5 g/l and lower (drinking water standards) using existing technologies requires considerable amounts of energy, either for thermal processes or for the pressure to drive water through extremely fine filters such as RO, or for some combination of thermal and pressure processes. Recent improvements in energy efficiency have reduced the amount of thermal and pumping energy required for the various processes, but high energy intensity is still an issue. The energy required is in part a function of the degree of salinity and the temperature of the water.

West Basin is in the process of developing plans to construct an ocean desalinating plant. Estimated energy requirements have been calculated by Gerry Filteau of Separation Processes, Inc for each step in the process.[45] The values presented for desalination are based on his work. Since the proposed plant will tap the source water at the power plant, there is no ocean intake pumping required. The source water is estimated to require 200 kWh/af this energy will bring ocean water from the power plant to the desalination system, approximately one quarter of a mile in distance. Pre-treatment of the source water is estimated at 341 kWh/af. This figure includes microfiltration and transfer to the RO units via a 5-10 micron cartridge filter. The RO process requires 2,686 kWh/af if operated at the most energy-efficient level. A slightly less efficient but more cost-effective level of operation would require 2,900 kWh/af, or 214 kWh/af additional energy input according to Filteau. Finally, an estimated 460 kWh/af is required to deliver the product water to the distribution system, including elevation gain, conveyance over distance, and pressurization to 90 psi. No additional energy is required to discharge the brine, as it flows back to the ocean outfall line by gravity.

The energy intensity figures presented here for desalination are lower than previous estimates. This is mainly due to improved membrane technologies, efficiency improvements for high pressure pumps, and pressure recovery systems. It should be noted that the figures provided here are based on engineering estimates, not on actual plant operations.

The total energy required to desalinate the ocean water, including each of the steps above, is estimated to be 3,687 kWh/af. If the energy intensity is increased slightly to improve cost-effectiveness, the total figure increases to 3,901 kWh/af.

Summary

This study examined the energy intensity of imported and local water supplies (ocean water, groundwater, and recycled water) for both potable and non-potable uses for West Basin. All water sources require pumping, treatment, and distribution. Differences in energy requirements arise from varying pumping, treatment, and distribution processes needed to produce water to meet appropriate standards for different uses.

The key findings of this study are: 1) the marginal energy required to treat and deliver recycled water is among the *least* energy intensive supply options available, 2) naturally recharged groundwater is low in energy intensity, though replenishment with imported water is not, and 3) current ocean desalination technology is getting close to the level of energy intensity of imported supplies.

Further refinement of the data in this study, such as applying an agency's own energy values, may provide a more accurate basis for decision-making tailored to a unique water system. The information presented, however, provides a reasonable basis for water managers to explore energy (and cost) benefits of increased use of local water sources, and it indicates that desalination of ocean water is getting close to the energy intensity of existing supplies.

Sources

[1] Water systems account for roughly 7% of California's electricity use: See Wilkinson, Robert C., 2000. Methodology For Analysis of The Energy Intensity of California's Water Systems, and an Assessment of Multiple Potential Benefits Through Integrated Water-Energy Efficiency Measures, Exploratory Research Project, Ernest Orlando Lawrence Berkeley Laboratory, California Institute for Energy Efficiency.

[2] California Energy Commission, 2005. *Integrated Energy Policy Report*, November 2005, CEC-100-2005-007-CMF.

[3] Franklin Burton, in a recent study for the Electric Power Research Institute (EPRI), includes the following elements in water systems: "Water systems involve the transportation of water from its source(s) of treatment plants, storage facilities, and the customer. Currently, most of the electricity used is for pumping; comparatively little is used in treatment. For most surface sources, treatment is required consisting usually of chemical addition, coagulation and settling, followed by filtration and disinfection. In the case of groundwater (well) systems, the treatment may consist only of disinfection with chlorine. In the future, however, implementation of new drinking water regulations will increase the use of higher energy consuming processes, such as ozone and membrane filtration." Burton, Franklin L., 1996, *Water and Wastewater Industries: Characteristics and Energy Management Opportunities*. (Burton Engineering) Los Altos, CA, Report CR-106941, Electric Power Research Institute Report, p.3-1.

[4] Wilkinson, Robert C., 2000. *Methodology For Analysis of The Energy Intensity of California's Water Systems, and an Assessment of Multiple Potential Benefits Through Integrated Water-Energy Efficiency Measures*, Exploratory Research Project, Ernest Orlando Lawrence Berkeley Laboratory, California Institute for Energy Efficiency.

[5] California Public Utilities Commission, Order Instituting Rulemaking Regarding to Examine the Commission's post-2005 Energy Efficiency Policies, Programs, Evaluation, Measurement and Verification, and Related Issues, Rulemaking 06-04-010 (Filed April 13, 2006)

[6] An AF of water is the volume of water that would cover one acre to a depth of one foot. An AF equals 325,851 gallons, or 43,560 cubic feet, or 1233.65 cubic meters.

[7] Metropolitan Water District of Southern California, *Integrated Resource Plan for Metropolitan's Colorado River Aqueduct Power Operations*, 1996, p.5.

[8] This schematic, based on the original analysis by Wilkinson (2000) has been refined and improved with input from Gary Wolff, Gary Klein, William Kost, and others. It is the basic approach reflected in the CEC IEPR and other analyses.

[9]QEI, Inc., 1992, *Electricity Efficiency Through Water Efficiency*, Report for the Southern California Edison Company, p. 24.

[10] Figures cited are *net* energy requirements (gross energy for pumping minus energy recovered through generation).

[11] Metropolitan Water District of Southern California, *Integrated Resource Plan for Metropolitan's Colorado River Aqueduct Power Operations*, 1996, p.5.

[12] Wilkinson, Robert C., 2000. *Methodology For Analysis of The Energy Intensity of California's Water Systems, and an Assessment of Multiple Potential Benefits Through Integrated Water-Energy Efficiency Measures*, Exploratory Research Project, Ernest Orlando Lawrence Berkeley Laboratory, California Institute for Energy Efficiency.

[13] California Department of Finance. California Statistical Abstract. Tables G-2, "Gross Capacities of Reservoirs by Hydrographic Region," and G-3 "Major Dams and Reservoirs of California." January 2001. (http://www.dof.ca.gov/html/fs_data/stat-abs/toc.htm)

[14] "The SWP, managed by the Department of Water Resources, is the largest state-built, multi-purpose water project in the country. Approximately 19 million of California's 32 million residents receive at least part of their water from the SWP. SWP water irrigates approximately 600,000 acres of farmland. The SWP was designed and built to deliver water, control floods, generate power, provide recreational opportunities, and enhance habitats for fish and wildlife." California Department of Water Resources, *Management of the California State Water Project*. Bulletin 132-96. p.xix.

[15] California Department of Water Resources, 1996, *Management of the California State Water Project*. Bulletin 132-96.p.xix.

[16] Three small reservoirs upstream of Lake Oroville — Lake Davis, Frenchman Lake, and Antelope Lake — are also SWP facilities. California Department of Water Resources, 1996, *Management of the California State Water Project*. Bulletin 132-96.

[17] California Department of Water Resources, 1996, *Management of the California State Water Project*. Bulletin 132-96. Power is generated at the Oroville Dam as water is released down the Feather River, which flows into the Sacramento River, through the Sacramento-San Joaquin Delta, and to the ocean through the San Francisco Bay.

[18] The North Bay Aqueduct was completed in 1988. (California Department of Water Resources, 1996, *Management of the California State Water Project*. Bulletin 132-96.)

[19] The South Bay Aqueduct provided initial deliveries for Alameda and Santa Clara counties in 1962 and has been fully operational since 1965. (California Department of Water Resources, 1996, *Management of the California State Water Project*. Bulletin 132-96.)

[20] Carrie Anderson, 1999, "Energy Use in the Supply, Use and Disposal of Water in California", Process Energy Group, Energy Efficiency Division, California Energy Commission, p.1.

[21] Average deliveries for 1980-89 were just under 2.0 mafy, deliveries for 1990-99 were just over 2.0 mafy. There is disagreement regarding the ability of the SWP to deliver the roughly 4.2 mafy that has been contracted for.

[22] According to MWD, "Metropolitan's annual dependable supply from the Colorado River is approximately 656,000 AF -- about 550,000 AF of entitlement and at least 106,000 AF obtained through a conservation program Metropolitan funds in the Imperial Irrigation District in the southeast corner of the state. However, Metropolitan has been allowed to take up to 1.3 maf of river water a year by diverting either surplus water or the unused portions of other agencies' apportionments." Metropolitan Water District of Southern California, 1999, "Fact Sheet" at: http://www.mwd.dst.ca.us/docs/fctsheet.htm.

[23] Metropolitan Water District of Southern California, 1999, http://www.mwd.dst.ca.us/pr/powres/summ.htm.

[24] The five pumping plants each have nine pumps. The plants are designed for a maximum flow of 225 cubic feet per second (cfs). The CRA is designed to operate at full capacity with eight pumps in operation at each plant (1800 cfs). The ninth pump operates as a spare to facilitating maintenance, emergency operations, and repairs. Metropolitan Water District of Southern California, 1999, Colorado River Aqueduct: http://aqueduct.mwd.dst.ca.us/areas/desert.htm, 08/01/99.

[25] Metropolitan Water District of Southern California, 1996, "Integrated Resource Plan for Metropolitan's Colorado River Aqueduct Power Operations", 1996, p.5.

[26] Metropolitan Water District of Southern California, 1999, "Summary of Metropolitan's Power Operation". February, 1999, p.1, http://aqueduct.mwd.dst.ca.us/areas/desert.htm.

[27] Metropolitan Water District of Southern California, 1999, http://www.mwd.dst.ca.us/pr/powres/summ.htm. MWD provides further important system information as follows: Metropolitan owns and operates 305 miles of 230 kV transmission lines from the Mead Substation in southern Nevada. The transmission system is used to deliver power from Hoover and Parker to the CRA pumps. Additionally, Mead is the primary interconnection point for Metropolitan's economy energy purchases. Metropolitan's transmission system is interconnected with several utilities at multiple

interconnection points. Metropolitan's CRA lies within Edison's control area. Resources for the load are contractually integrated with Edison's system pursuant to a Service and Interchange Agreement (Agreement), which terminates in 2017. Hoover and Parker resources provide spinning reserves and ramping capability, as well as peaking capacity and energy to Edison, thereby displacing higher cost alternative resources. Edison, in turn, provides Metropolitan with exchange energy, replacement capacity, supplemental power, dynamic control and use of Edison's transmission system.

[28] SB 672, Machado, 2001. California Water Plan: Urban Water Management Plans. (The law amended Section 10620 of, and adds Section 10013 to, the Water Code) September 2001.

[29] SEC. 2. Section 10013 to the Water Code, 10013. (a) SB 672, Machado. California Water Plan: Urban Water Management Plans. September 2001, (Emphasis added.)

[30] California Department of Water Resources, 2005. California Water Plan Update 2005. Bulletin 160-05, California Department of Water Resources, Sacramento, CA.

[31] Metropolitan Water District of Southern California, 2000. *The Regional Urban Water Management Plan for the Metropolitan Water District of Southern California*, p.A.2-3.

[32] "About 1.36 maf per year (34 percent) of the region's average supply is developed locally using groundwater basins and surface reservoirs and diversions to capture natural runoff." Metropolitan Water District of Southern California, 1996, "Integrated Resource Plan for Metropolitan's Colorado River Aqueduct Power Operations", 1996, Vol.1, p.1-2.

[33] MWD estimates that reclaimed water will ultimately produce 190,000 AF of water annually. Metropolitan Water District of Southern California, 1999, "Fact Sheet" at: http://www.mwd.dst.ca.us/docs/fctsheet.htm.

[34] Buros notes that "American government, through creation and funding of the Office of Saline Water (OSW) in the early 1960s and its successor organizations like the Office of Water Research and echnology (OWRT), made one of the most concentrated efforts to develop the desalting industry. The American government actively funded research and development for over 30 years, spending about $300 million in the process. This money helped to provide much of the basic investigation of the different technologies for desalting sea and brackish waters." Buros, O.K., 2000. *The ABCs of Desalting, International Desalination Association*, Topfield, Massachusetts, p.5. This very useful summary is available at http://www.ida.bm/PDFS/Publications/ABCs.pdf

[35] Buros, O.K., 2000. *The ABCs of Desalting, International Desalination Association*, Topfield, Massachusetts, p.5. This very useful summary is available at http://www.ida.bm/PDFS/Publications/ABCs.pdf See also; Buros et al.1980. *The USAID Desalination Manual.* Produced by CH2M HILL International for the U.S. Agency for International Development.

[36] Wangnick,Klaus.1998 *IDA Worldwide Desalting Plants Inventory Report No.15.*Produced by Wangnick Consulting for International Desalination Association; and Buros, O.K., 2000. *The ABCs of Desalting, International Desalination Association*, Topfield, Massachusetts, p.5.

[37] Desalination systems with a unit size of 100 m3/d or more. Figures in original cited as 6,000 mgd.

[38] Wangnick Consulting GMBH (http://www.wangnick.com) maintains a permanent desalting plants inventory and publishes the results biennially in co-operation with the International Desalination Association, as the IDA Worldwide Desalting Plants Inventory Report. Thus far, fifteen reports have been published, with the latest report having data through the end of 1997; and see Wangnick,Klaus.*1998 IDA Worldwide Desalting Plants Inventory Report No.15.*Produced by Wangnick Consulting for International Desalination Association. The data cited are as of December 31, 1997.

[39] Cited in original as 9,400,000 m3/d.

[40] Wangnick,Klaus.*1998 IDA Worldwide Desalting Plants Inventory Report No.15.*Produced by Wangnick Consulting for International Desalination Association. (Cited in original in m3d (13,300,000 m3/d).

[41] Wangnick,Klaus.1998 *IDA Worldwide Desalting Plants Inventory Report No.15.*Produced by Wangnick Consulting for International Desalination Association; and Buros, O.K., 2000. *The ABCs of Desalting, International Desalination Association*, Topfield, Massachusetts. The United States ranks second in over-all capacity (16 %) with most of the capacity in the RO process used to treat brackish water. The largest plant, at Yuma, Arizona, is not in use.

[42] Wangnick,Klaus.1998. *IDA Worldwide Desalting Plants Inventory Report No.15.* Produced by Wangnick Consulting for International Desalination Association; and Buros, O.K., 2000. *The ABCs of Desalting, International Desalination Association*, Topfield, Massachusetts.

[43] Salinity levels referenced in metric units.

[44] OTV. 1999. "Desalinating seawater." Memotechnique, Planete Technical Section, No. 31 (February), p.1; and Gleick, Peter H. 2000. *The World's Water: 2000-2001*, Island Press, Covelo, p.94.

[45] Gerry Filteau, Separation Processes, Inc., 2386 Faraday Ave., Suite 100, Calsbad, CA 92008, www.spi-engineering.com

Bureau of Labor Statistics

Average Energy Prices

Los Angeles-Riverside-Orange County

April 2014

BLS
BUREAU OF LABOR STATISTICS
U.S. DEPARTMENT OF LABOR

NEWS RELEASE

WEST INFORMATION OFFICE
San Francisco, Calif.

For release Tuesday, May 20, 2014 **14-910-SAN**

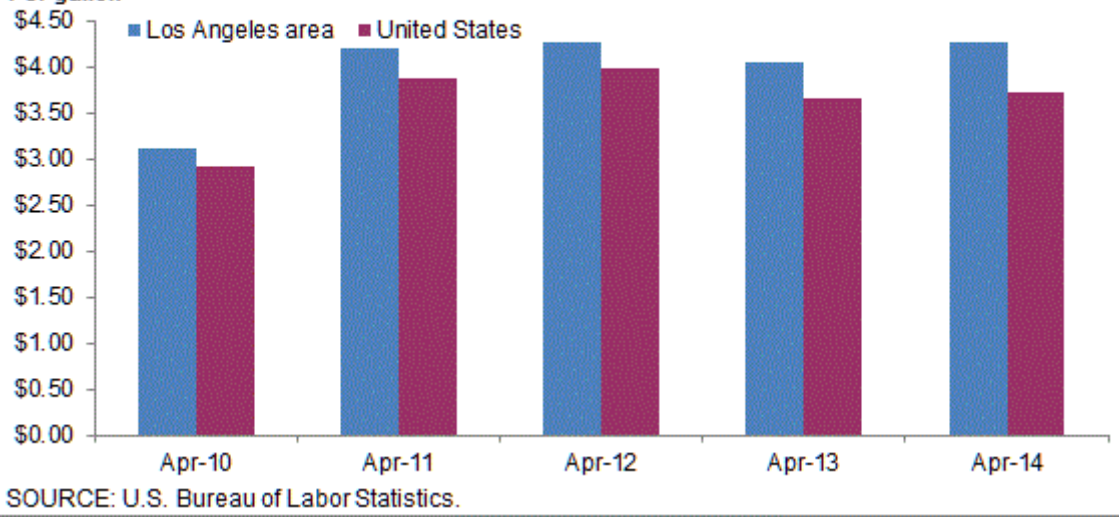
Technical information: (415) 625-2282 • BLSinfoSF@bls.gov • www.bls.gov/ro9
Media contact: (415) 625-2270

AVERAGE ENERGY PRICES, LOS ANGELES-RIVERSIDE-ORANGE COUNTY APRIL 2014

Gasoline prices averaged $4.263 a gallon in the Los Angeles-Riverside-Orange County area in April 2014, the U.S. Bureau of Labor Statistics reported today. Regional Commissioner Richard J. Holden noted that area gasoline prices were down 22.0 cents compared to last April when they averaged $4.043 per gallon. Los Angeles area households paid an average of 17.8 cents per kilowatt hour (kWh) of electricity in April 2014, down from 21.6 cents per kWh in April 2013. The average cost of utility (piped) gas at $1.211 per therm in April was more than the 1.077 cents per therm spent last year. (Data in this release are not seasonally adjusted; accordingly, over-the-year-analysis is used throughout.)

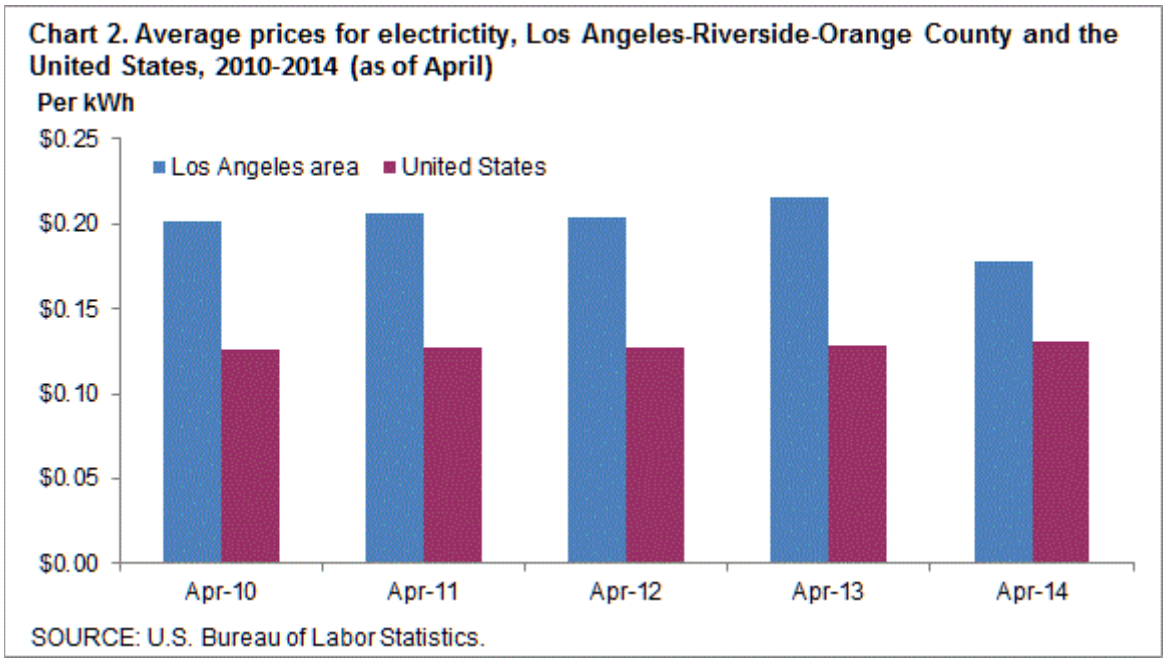
At $4.263 a gallon, Los Angeles area consumers paid 14.7 percent more than the $3.717 national average in April 2014. A year earlier, consumers in the Los Angeles area paid 10.9 percent more than the national average for a gallon of gasoline. The local price of a gallon of gasoline has exceeded the national average by at least 6 percent in the month of April in each of the past five years. (See chart 1.)

Chart 1. Average prices for gasoline, Los Angeles-Riverside-Orange County and the United States, 2010-2014 (as of April)

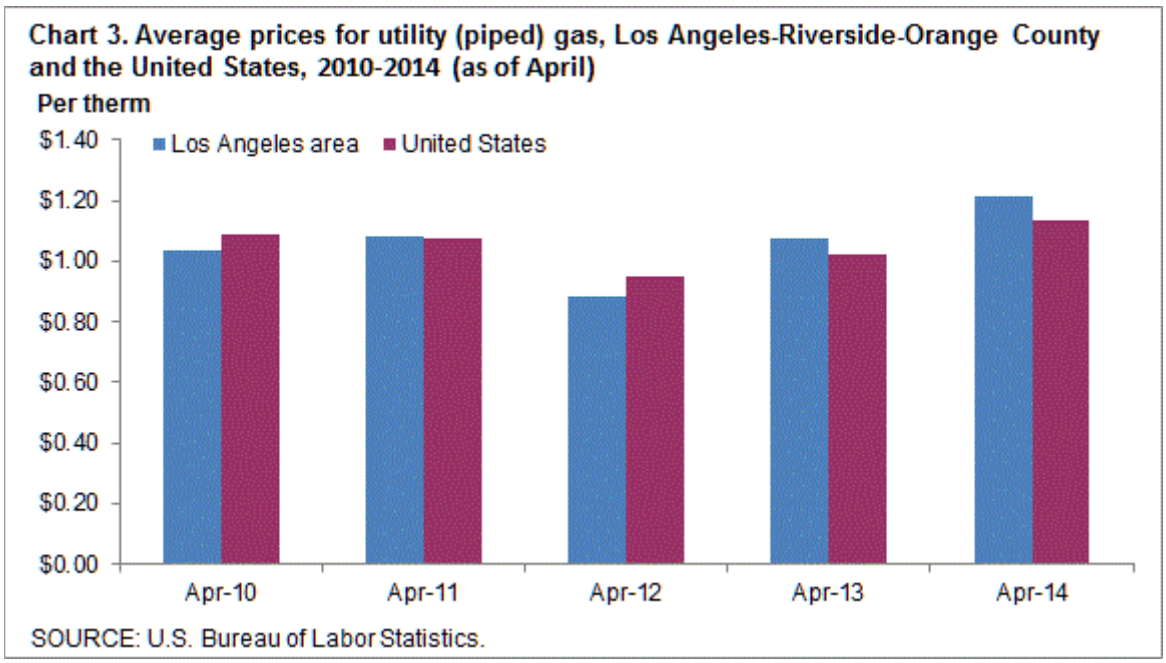


SOURCE: U.S. Bureau of Labor Statistics.

The 17.8 cents per kWh Los Angeles households paid for electricity in April 2014 was 35.9 percent more than the nationwide average of 13.1 cents per kWh. Last April, electricity costs were 68.8 percent higher in Los Angeles compared to the nation. In the past five years, prices paid by Los Angeles area consumers for electricity exceeded the U.S. average by 35.9 percent or more in the month of April. (See chart 2.)



Prices paid by Los Angeles area consumers for utility (piped) gas, commonly referred to as natural gas, were $1.211 per therm, or 6.5 percent more compared to the national average in April 2014 ($1.137 per therm). A year earlier, area consumers paid 5.6 percent more per therm for natural gas compared to the nation. In the Los Angeles area over the past five years, the per therm cost for natural gas in April has varied between 7.2 percent below and 6.5 percent above the U.S. average.
(See chart 3.)



The Los Angeles-Riverside-Orange County, Calif. metropolitan area consists of Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties in California.

Technical Note

Average prices are estimated from Consumer Price Index (CPI) data for selected commodity series to support the research and analytic needs of CPI data users. Average prices for electricity, utility (piped) gas, and gasoline are published monthly for the U.S. city average, the 4 regions, the 3 population size classes, 10 region/size-class cross-classifications, and the 14 largest local index areas. For electricity, average prices per kilowatt-hour (kWh) and per 500 kWh are published. For utility (piped) gas, average prices per therm, per 40 therms, and per 100 therms are published. For gasoline, the average price per gallon is published. Average prices for commonly available grades of gasoline are published as well as the average price across all grades.

Price quotes for 40 therms and 100 therms of utility (piped) gas and for 500 kWh of electricity are collected in sample outlets for use in the average price programs only. Since they are for specified consumption amounts, they are not used in the CPI. All other price quotes used for average price estimation are regular CPI data.

With the exception of the 40 therms, 100 therms, and 500 kWh price quotes, all eligible prices are converted to a price per normalized quantity. These prices are then used to estimate a price for a defined fixed quantity.

The average price per kilowatt-hour represents the total bill divided by the kilowatt-hour usage. The total bill is the sum of all items applicable to all consumers appearing on an electricity bill including, but not limited to, variable rates per kWh, fixed costs, taxes, surcharges, and credits. This calculation also applies to the average price per therm for utility (piped) gas.

Information from this release will be made available to sensory impaired individuals upon request. Voice phone: 202-691-5200, Federal Relay Service: 800-877-8339.

Table 1. Average prices for gasoline, electricty, and utility (piped) gas, Los Angeles-Riverside-Orange County and the United States, April 2013-April 2014, not seasonally adjusted

	Gasoline per gallon		Electricity per kWh		Utillity (piped) gas per therm	
	Los Angeles area	United States	Los Angeles area	United States	Los Angeles area	United States
2013						
April	$4.043	$3.647	$0.216	$0.128	$1.077	$1.020
May	4.060	3.682	0.216	0.131	1.200	1.036
June	4.073	3.693	0.203	0.137	1.275	1.038
July	4.115	3.687	0.203	0.137	1.239	1.025
August	3.955	3.658	0.203	0.137	1.230	1.003
September	4.008	3.616	0.203	0.137	1.183	1.000
October	3.767	3.434	0.215	0.132	1.175	0.999
November	3.651	3.310	0.215	0.130	1.113	0.999
December	3.661	3.333	0.220	0.131	1.109	0.998
2014						
January	3.665	3.378	0.215	0.134	1.195	1.040
February	3.812	3.422	0.215	0.134	1.236	1.078
March	4.046	3.590	0.215	0.135	1.321	1.154
April	4.263	3.717	0.178	0.131	1.211	1.137

60th Street West Wellhead Arsenic Treatment Project

Energy Usage, Greenhouse Gas Emissions, and Arsenic Removal Calculations

Antelope Valley Energy Calculations			
	Groundwater Pumping Cost (2014):	**$50**	**per acre-foot**
	Average Annual Imported Water Offset	**3,600**	**AFY**
	Lifespan of Project	**20**	**Years**
	Average Cost of Electricity (2014):	**$0.178**	**per kWh**
	Energy Required for SWP Conveyance and Pumping	**3,000**	**kWh/AF**
Calculated	**Energy Required to Pump GW**	**281**	**kWh/AF**
	Net Energy Savings	**2,719**	**kWh/AF**
	Energy Conserved with Project Annually	**9,788,400**	**kWh/year**
	Energy Used to Import Water (Without Project)	**10,800,000**	**kWh/year**
	Energy Used to Pump GW (With Project)	**1,011,600**	**kWh/year**
	Energy Conserved over Lifespan (20 years)	**195,768,000**	**kWh**

GHG Calculations

	Groundwater Pumping Cost (2014):	50	per acre-foot
	Average Cost of Electricity (2014):	0.178	per kWh
	Energy Required for Conveyance and Pumping	3,000	kWh/AF
	Average Annual Imported Water Offset	3,600	AFY
	Lifespan of Project	20	Years
	Energy Required to Pump GW	281	kWh/AF
	Conversion Factor	0.724	lbs of CO2/kWh
	Net Energy Savings	2,719	kWh/AF
GHG Emissions Avoided	Net Energy Savings x Conversion Factor	1,969	lbs CO2/AF
	Net Energy Savings Converted to Metric Tons	1	metric tons/AF
	Avoided Carbon Emissions Annually	**3,215**	**metric tons**
	Avoided Emissions Over Lifespan	64,290	metric tons
GHG Emissions to Import Water	Energy Required for Importing x Conv. Factor	2,172	lbs CO2/AF
	Energy Required for Importing Conv. To Met Tons	1	metric tons/AF
	GHG Emissions to Import Water Annually (Without Projec	**3,547**	**metric tons**
GHG Emissions to Pump GW	Energy Required for GW Pumping x Conv Factor	203	lbs CO2/AF
	Energy Required for GW Pumping Conv. to Met Tons	0.092	metric tons/AF
	GHG Emissions to Pump GW Annually (With Project)	**332**	**metric tons**

Arsenic Removal Calculations

	ug/L	mg/L	
	57	0.057	

AFY	mgd	lbs/day	**lbs/year**
3600	3.2148	1.53	**558**

California Climate Action Registry General Reporting Protocol

Reporting Entity-Wide Greenhouse Gas Emissions

Version 3.1 | January 2009

Thus, regional/power pool emission factors for electricity consumption can be used to determine emissions based on electricity consumed. If you can obtain verified emission factors specific to the supplier of your electricity, you are encouraged to use those factors in calculating your indirect emissions from electricity generation. If your electricity provider reports an electricity delivery metric under the California Registry's Power/Utility Protocol, you may use this factor to determine your emissions, as it is more accurate than the default regional factor. Utility-specific emission factors are available in the Members-Only section of the California Registry website and through your utility's Power/Utility Protocol report in CARROT.

This Protocol provides power pool-based carbon dioxide, methane, and nitrous oxide emission factors from the U.S. EPA's eGRID database (see Figure III.6.1), which are provided in Appendix C, Table C.2. These are updated in the Protocol and the California Registry's reporting tool, CARROT, as often as they are updated by eGRID.

To look up your eGRID subregion using your zip code, please visit U.S. EPA's "Power Profiler" tool at www.epa.gov/cleanenergy/energy-and-you/how-clean.html.

Fuel used to generate electricity varies from year to year, so emission factors also fluctuate. When possible, you should use emission factors that correspond to the calendar year of data you are reporting. CO_2, CH_4, and N_2O emission factors for historical years are available in Appendix E. If emission factors are not available for the year you are reporting, use the most recently published figures.

U.S. EPA Emissions and Generation Resource Integrated Database (eGRID)

The Emissions & Generation Resource Integrated Database (eGRID) provides information on the air quality attributes of almost all the electric power generated in the United States. eGRID provides search options, including information for individual power plants, generating companies, states, and regions of the power grid. eGRID integrates 24 different federal data sources on power plants and power companies, from three different federal agencies: EPA, the Energy Information Administration (EIA), and the Federal Energy Regulatory Commission (FERC). Emissions data from EPA are combined with generation data from EIA to produce values like pounds per megawatt-hour (lbs/MWh) of emissions, which allows direct comparison of the environmental attributes of electricity generation. eGRID also provides aggregated data to facilitate comparison by company, state or power grid region. eGRID's data encompasses more than 4,700 power plants and nearly 2,000 generating companies. eGRID also documents power flows and industry structural changes. www.epa.gov/cleanenergy/egrid/index.htm.

Figure III.6.1 eGRID Subregions

Source: eGRID2007 Version 1.1, December 2008 (Year 2005 data).

Analytical Results for Arsenic

County of Los Angeles

Department of Agricultural Commissioner/Weights and Measures

May 19-20, 2014

COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

Environmental Toxicology Laboratory
11012 S. Garfield Ave.
South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

CA State DPH Certificate #1430
County Sanitation ID #10240

May 22, 2014

Iwen Tseng
LACo Dept of Public Works-Waterworks.
1000 South Fremont Avenue
Alhambra, CA 91803-1331

RE: Workorder: E1401326 Special-LancasterStatePrison

Dear Iwen Tseng:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, May 19, 2014. Results reported herein conform to the most current ELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me at (562)622-0437.

Sincerely,

Thant Zin Win

Chief

Enclosures
Note: All results have no blank correction unless otherwise specified

Protecting Consumers and the Environment Since 1881
To Enrich Lives Through Effective and Caring Service

COUNTY OF LOS ANGELES

Department of
Agricultural Commissioner/
Weights and Measures

Environmental Toxicology Laboratory
11012 S. Garfield Ave.
South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

SAMPLE SUMMARY

Workorder: E1401326 Special-LancasterStatePrison

Lab ID	Sample ID	Location	Matrix	Date Collected	Date Received
E1401326001	#1 (Well 2 A)	Well #2 A -	Drinking Water	5/19/2014 09:35	5/19/2014 15:00
			Collector:	Gary Hilliardo	
E1401326002	#2 (Well 2 A)	Well #2 A -	Drinking Water	5/19/2014 14:01	5/19/2014 15:00
			Collector:	Gary Hilliardo	

COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

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11012 S. Garfield Ave.
South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

ANALYTICAL RESULTS

Workorder: E1401326 Special-LancasterStatePrison

Lab ID: **E1401326001** Date Received: 5/19/2014 15:00 Matrix: Drinking Water
Sample ID: **#1 (Well 2 A)** Date Collected: 5/19/2014 09:35
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	55.0	ug/L	2.00		1	5/21/2014 12:02	GS		8

Lab ID: **E1401326002** Date Received: 5/19/2014 15:00 Matrix: Drinking Water
Sample ID: **#2 (Well 2 A)** Date Collected: 5/19/2014 14:01
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	52.0	ug/L	2.00		1	5/21/2014 12:06	GS		8

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County of Los Angeles
Agricultural Commissioner/Weights & Measures
ENVIRONMENTAL TOXICOLOGY BUREAU
11012 Garfield Avenue, Bldg B, South Gate, CA 90280
Phone# (562)622-0437 Fax# (562)622-0440

Rush profile # 2158

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: LANCASTER STATE PRISON – WELL 2A
COMPANY NAME: LA County WWD # 40
ADDRESS: W 60th St, LANCASTER, CA
PHONE # / E-MAIL: ghilliard@dpw.lacounty.gov
SAMPLERS SIGNATURE: Gary Hilliard

WO# E1401326

SAMPLE ID	DATE	TIME	LOCATIONS	ARSENIC	TEMP °C / pH	# OF BOTTLES	PRESERVATIVE	LAB NUMBER
#1	5/14/14	9:35AM	WELL # 2A	√	8			001
#2	5/14/14	2:01PM	WELL # 2A	√	↓			002

1 RELINQUISHED SIGNATURE	DATE / TIME	2 RELINQUISHED SIGNATURE	DATE / TIME	REMARKS	SAMPLE MATRIX
Gary Hilliard	5-19-14 15:00		5-19-14 15:00		☒ DW ☐ WW ☐ OTHER:
PRINT NAME: Gary Hilliard	SAMPLE CONDITION: ICE: YES / NO SEALED: YES / NO	PRINT NAME: Oleg	SAMPLE CONDITION: ICE: YES / NO SEALED: YES / NO		
COMPANY: LA County WWD #40		COMPANY: ETL			
RECEIVE SIGNATURE:	DATE / TIME	RECEIVE SIGNATURE:	DATE / TIME 5-19-14 / 15:40		TURN AROUND TIME: ☒ SPECIAL RUSH ☒ REGULAR ☐ OTHER:
PRINT NAME: Oleg	SAMPLE CONDITION: ICE: YES / NO SEALED: YES / NO	PRINTED NAME: Carolina Lopez	SAMPLE CONDITION: ICE: YES / NO SEALED: YES / NO		
COMPANY: ETL		COMPANY: ETL			

081910

COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

Environmental Toxicology Laboratory
11012 S. Garfield Ave.
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http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

CA State DPH Certificate #1430
County Sanitation ID #10240

June 2, 2014

Iwen Tseng
LACo Dept of Public Works-Waterworks.
1000 South Fremont Avenue
Alhambra, CA 91803-1331

RE: Workorder: E1401348 RUSH-LancasterStatePrison

Dear Iwen Tseng:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, May 20, 2014. Results reported herein conform to the most current ELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me at (562)622-0437.

Sincerely,

Thant Zin Win

Chief

Enclosures
Note: All results have no blank correction unless otherwise specified

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Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

SAMPLE SUMMARY

Workorder: E1401348 RUSH-LancasterStatePrison

Lab ID	Sample ID	Location	Matrix	Date Collected	Date Received
E1401348001	Sample #3 (Well 2 A)	Well 2 A -	Drinking Water	5/20/2014 09:00	5/20/2014 15:30
			Collector:	Gary Hillard	
E1401348002	Sample #4 (Well 2 A)	Well 2 A -	Drinking Water	5/20/2014 14:00	5/20/2014 15:30
			Collector:	Gary Hillard	

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COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

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http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

ANALYTICAL RESULTS

Workorder: E1401348 RUSH-LancasterStatePrison

Lab ID: **E1401348001** Date Received: 5/20/2014 15:30 Matrix: Drinking Water
Sample ID: **Sample #3 (Well 2 A)** Date Collected: 5/20/2014 09:00
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	50.5	ug/L	2.00		1	5/29/2014 11:55	GS		8

Lab ID: **E1401348002** Date Received: 5/20/2014 15:30 Matrix: Drinking Water
Sample ID: **Sample #4 (Well 2 A)** Date Collected: 5/20/2014 14:00
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	51.0	ug/L	2.00		1	5/29/2014 11:59	GS		8

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Rush.

County of Los Angeles
Agricultural Commissioner/Weights & Measures
ENVIRONMENTAL TOXICOLOGY BUREAU
11012 Garfield Avenue, Bldg B, South Gate, CA 90280
Phone# (562)622-0437 Fax# (562)622-0440

CHAIN-OF-CUSTODY RECORD

WO# 1401348

PROJECT NAME: LANCASTER STATE PRISON Well 2A
COMPANY NAME: LA COUNTY WWD # 40
ADDRESS: 260 E AVE K-8 LANCASTER, CA 93535
PHONE # / E-MAIL:
SAMPLERS SIGNATURE: Gary Hilliard

SAMPLE ID	DATE	TIME	LOCATIONS	ARSENIC	TEMP °C / pH	# OF BOTTLES	PRESERVATIVE	LAB NUMBER
Sample #3	05/20/14	9:00AM	well 2A	✓	5.4°C			001
Sample #4	05/20/14	2:00PM	Well 2A	✓	5.4°C			002
	05		R2 per Iwen Tseng on 05/29					

RELINQUISHED SIGNATURE	DATE / TIME	RELINQUISHED SIGNATURE	DATE / TIME	REMARKS
Gary Hilliard	4-19-14 2:00PM	[signature]	5-20-14/15:30	
PRINT NAME: Gary HILLIARD	SAMPLE CONDITION: ICE: YES / NO SEALED: YES / NO	PRINT NAME: Carolina Lopez	SAMPLE CONDITION: ICE: (YES) NO SEALED: YES / (NO)	
COMPANY: LA COUNTY WWD		COMPANY: ETL		
RECEIVE SIGNATURE: [signature]	DATE / TIME 5-20-14/16:20	RECEIVE SIGNATURE: [signature]	DATE / TIME 05/20/14/15:30	
PRINT NAME: Carolina Lopez	SAMPLE CONDITION: ICE (YES) NO SEALED: YES (NO)	PRINTED NAME: Jose Lamacho	SAMPLE CONDITION: ICE (YES) / NO SEALED: YES (NO)	
COMPANY: ETL		COMPANY: ETL		

SAMPLE MATRIX:
- [x] DW
- [ ] WW
- [ ] OTHER: _____

TURN AROUND TIME:
- [x] SPECIAL RUSH
- [ ] REGULAR
- [ ] OTHER: _____

081910

COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

Environmental Toxicology Laboratory
11012 S. Garfield Ave.
South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

CA State DPH Certificate #1430
County Sanitation ID #10240

May 19, 2014

Iwen Tseng
LACo Dept of Public Works-Waterworks.
1000 South Fremont Avenue
Alhambra, CA 91803-1331

RE: Workorder: E1401269 Special Lancaster Arsenic

Dear Iwen Tseng:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, May 13, 2014. Results reported herein conform to the most current ELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me at (562)622-0437.

Sincerely,

Thant Zin Win

Chief

Enclosures
Note: All results have no blank correction unless otherwise specified

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South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

SAMPLE SUMMARY

Workorder: E1401269 Special Lancaster Arsenic

Lab ID	Sample ID	Location	Matrix	Date Collected	Date Received
E1401269001	#1 (Well #3 State Prison)	Well #3 State Prison -	Drinking Water	5/12/2014 12:20	5/13/2014 14:15
			Collector:	Gary	
E1401269002	#2 (Well #3 State Prison)	Well #3 State Prison -	Drinking Water	5/12/2014 15:00	5/13/2014 14:15
			Collector:	Gary	

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South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

ANALYTICAL RESULTS

Workorder: E1401269 Special Lancaster Arsenic

Lab ID: **E1401269001** Date Received: 5/13/2014 14:15 Matrix: Drinking Water
Sample ID: **#1 (Well #3 State Prison)** Date Collected: 5/12/2014 12:20
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	80.0	ug/L	2.00		1	5/14/2014 12:11	GS		8

Lab ID: **E1401269002** Date Received: 5/13/2014 14:15 Matrix: Drinking Water
Sample ID: **#2 (Well #3 State Prison)** Date Collected: 5/12/2014 15:00
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	86.0	ug/L	2.00		1	5/14/2014 12:15	GS		8

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ENVIRONMENTAL TOXICOLOGY BUREAU
11012 Garfield Avenue, Bldg B, South Gate, CA 90280
Phone# (562)622-0437 Fax# (562)622-0440

Profile # 2158

Lancaster special

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: STATE PRISON WELL #3

COMPANY NAME: LA County WWD Well #3

ADDRESS:

PHONE # / E-MAIL: ghilliard@dpw.lacounty.gov

SAMPLERS SIGNATURE: Gary Hilliard

WO# E1401269

ANALYSES REQUESTED

SAMPLE ID	DATE	TIME	LOCATIONS	ARSENIC												TEMP °C / pH	# OF BOTTLES	PRESERVATIVE	LAB NUMBER
#1	5/12/14	12:20PM	WELL #3	✓												8			-001
#2	5/12/14	3:00 PM	well #3	✓												8			-002

1 RELINQUISHED SIGNATURE: Gary Hilliard	DATE / TIME	2 RELINQUISHED SIGNATURE: [signature]	DATE / TIME: 5-13-14 / 14:15	REMARKS
PRINT NAME: GARY HILLIARD	SAMPLE CONDITION: ICE: YES / NO	PRINT NAME: Carolina Lopez	SAMPLE CONDITION: ICE: (YES) / NO	
COMPANY: LA County WWD	SEALED: YES / NO	COMPANY: ETL	SEALED: YES / (NO)	
RECEIVE SIGNATURE: [signature]	DATE / TIME: 5-13-14 / 14:15	RECEIVE SIGNATURE: CLEI	DATE / TIME: 5/13/14 / 4:10	
PRINT NAME: Carolina Lopez	SAMPLE CONDITION: ICE: (YES) / NO	PRINTED NAME: Carmen	SAMPLE CONDITION: ICE: (YES) / NO	
COMPANY: ETL	SEALED: YES / (NO)	COMPANY: ETL	SEALED: YES / (NO)	

SAMPLE MATRIX:
- ☒ DW
- ☐ WW
- ☐ OTHER: ______

TURN AROUND TIME:
- ☐ SPECIAL RUSH
- ☒ REGULAR
- ☐ OTHER: ______

081910

COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

Environmental Toxicology Laboratory
11012 S. Garfield Ave.
South Gate, California 90280
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Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

CA State DPH Certificate #1430
County Sanitation ID #10240

May 19, 2014

Iwen Tseng
LACo Dept of Public Works-Waterworks.
1000 South Fremont Avenue
Alhambra, CA 91803-1331

RE: Workorder: E1401293 Special Lancaster Arsenic

Dear Iwen Tseng:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, May 14, 2014. Results reported herein conform to the most current ELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me at (562)622-0437.

Sincerely,

Thant Zin Win

Chief

Enclosures
Note: All results have no blank correction unless otherwise specified

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COUNTY OF LOS ANGELES

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11012 S. Garfield Ave.
South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

SAMPLE SUMMARY

Workorder: E1401293 Special Lancaster Arsenic

Lab ID	Sample ID	Location	Matrix	Date Collected	Date Received
E1401293001	3(Well #3)	Well #3 -	Drinking Water	5/13/2014 09:05	5/14/2014 14:45
			Collector:	Gary Hilliard	
E1401293002	4 (Well #3)	Well #3 -	Drinking Water	5/13/2014 13:30	5/14/2014 14:45
			Collector:	Gary Hilliard	

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COUNTY OF LOS ANGELES

Department of Agricultural Commissioner/ Weights and Measures

Environmental Toxicology Laboratory
11012 S. Garfield Ave.
South Gate, California 90280
http://acwm.lacounty.gov

Kurt E. Floren
Agricultural Commissioner
Director of Weights and Measures

Richard K. Iizuka
Chief Deputy

ANALYTICAL RESULTS

Workorder: E1401293 Special Lancaster Arsenic

Lab ID: **E1401293001** Date Received: 5/14/2014 14:45 Matrix: Drinking Water
Sample ID: **3(Well #3)** Date Collected: 5/13/2014 09:05
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	82.5	ug/L	2.00		1	5/16/2014 10:53	GS		8

Lab ID: **E1401293002** Date Received: 5/14/2014 14:45 Matrix: Drinking Water
Sample ID: **4 (Well #3)** Date Collected: 5/13/2014 13:30
System Number: Purpose:
System Name: Sample Type:

Parameters	Results	Units	Report Limit	MDL	DF	Analyzed	By	Qual	MCL
METALS, DISSOLVED									
Analysis Desc: EPA 200.8, Dissolved	Analytical Method: EPA 200.8, Dissolved								
Arsenic	87.0	ug/L	2.00		1	5/16/2014 10:57	GS		8

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ENVIRONMENTAL TOXICOLOGY BUREAU
11012 Garfield Avenue, Bldg B, South Gate, CA 90280
Phone# (562)622-0437 Fax# (562)622-0440

Rush.

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: STATE PRISON WELLS
COMPANY NAME: LANCASTER WWD DISTRICT 40
ADDRESS:
PHONE # / E-MAIL: ghilliard@dpw.lacounty.gov
SAMPLERS SIGNATURE: Gary Hilliard

ANALYSES REQUESTED

WO# E14d293

SAMPLE ID	DATE	TIME	LOCATIONS	ARSENIC	TEMP °C / pH	# OF BOTTLES	PRESERVATIVE	LAB NUMBER
Sample #3	4/13/12	9:05AM	well #3	✓				001
Sample #4	4/13/12	1:30PM	well #3	✓				002

RELINQUISHED SIGNATURE	DATE / TIME	RELINQUISHED SIGNATURE	DATE / TIME
Gary Hilliard			5-14-14 14:45
PRINT NAME: GARY HILLIARD	SAMPLE CONDITION:	PRINT NAME: Oleg	SAMPLE CONDITION:
COMPANY: LANCASTER LA/COUNTY	ICE: YES / NO	COMPANY: ETC	ICE: YES / NO
	SEALED: YES / NO		SEALED: YES / NO
RECEIVE SIGNATURE:	DATE / TIME 5-14-14 12:15	RECEIVE SIGNATURE:	DATE / TIME 5-14-14 14:45
PRINT NAME: Oleg	SAMPLE CONDITION:	PRINTED NAME: Carolina Lopez	SAMPLE CONDITION:
COMPANY: ETC	ICE: YES / NO	COMPANY: ETL	ICE: YES / NO
	SEALED: YES / NO		SEALED: YES / NO

REMARKS

RECEIVED
MAY 14 2014
ENV TOX LAB

SAMPLE MATRIX:
☒ DW
☐ WW
☐ OTHER: _____

TURN AROUND TIME:
☒ SPECIAL RUSH
☐ REGULAR
☐ OTHER: _____

081910

Product sheet for Bayoxide Arsenic Removal Media/Ferric Oxide Adsorptive Media

Severn Trent

SEVERN TRENT SERVICES

Filtration Products

Bayoxide® Arsenic Removal Media - Ferric Oxide Adsorptive Media

The simple and economical SORB 33® arsenic removal technology uses Bayoxide® E33 granular or Bayoxide® E33P pelletized, ferric oxide media, developed by LANXESS and produced for Severn Trent specifically for groundwater source drinking water adsorption. The Bayoxide® media is long-lasting and once exhausted can be sent to a non-hazardous landfill for disposal.

Bayoxide® media has been successfully removing arsenic from drinking water treatment systems since 1999. The media is NSF Standard 61 approved, and has received regulatory approval from agencies in the United Kingdom, France, Hungary and more.

The Bayoxide® media is dry and designed to remove both arsenic (III) and (V) well below 10 µg/L from drinking water sources. Bayoxide® media has a high capacity for arsenic, providing long operating cycles and low operating costs. The media's life expectancy is dependent on site-specific water quality and operating levels. Bayoxide® media will adsorb arsenic in preference to these other ions. Under high pH conditions, high levels of vanadium, phosphate (>1.0 ppm) and silica (>40 ppm) can present interference and reduce the media's adsorption capacity for arsenic. Therefore, Severn Trent Services offers pre-treatment solutions to minimize the effect of interference from these ions.

As the global provider of Bayoxide®, Severn Trent Services inventories large volumes of the media and can readily meet first install and refill needs of our clients.

Bayoxide® E33 Media

Bayoxide® E33P Media

Features & Benefits

- Removes As (III) and As (V) to < 4 µg/L
- Robust Bayoxide media has high capacity for arsenic
- Long media life under continuous operation
- Very low residual (backwash) effluents: <0.1% of water treated
- No re-pumping required
- No chemicals for regeneration
- Small footprint
- Dry media

Severn Trent Services
5415 W. Sligh Avenue, Suite 102
Tampa, FL 33634
Tel 813 886 9331
Toll 800 364 3931
Fax 813 886 0651
info@severntrentservices.com
www.severntrentservices.com

565.0200.0

Bayoxide® media is filled into the adsorption vessels from sacks by gravity or by hydraulic eduction. The exhausted media is non-hazardous and can be sent to a landfill, passing TCLP or landfill leaching requirements. Spent media can be removed hydraulically or by vacuum.

Bayoxide® E33 Media Specification

The dry, crystalline granular Bayoxide® E33 media was designed with a high capacity for arsenic, providing long operating cycles and low operating costs.

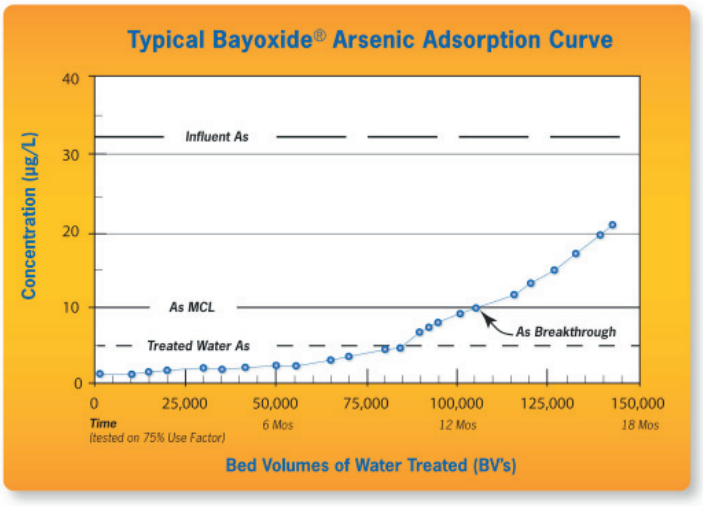
- Chemical Designation: Synthetic Iron Oxide
- Fe_2O_3 Content: >70%
- Specific Surface Area: 120 – 200 m^2/g
- Sieve Analysis:
  - <0.5 mm, 20 % max
  - >2.0 mm, 5% max
- Density: Approx. 3.6 gm/cm^3
- NSF Standard 61 and Drinking Water Inspectorate (DWI) Approved

Adsorption tests on Bayoxide® E33 have shown that it will adsorb antimony, cadmium, chromate, lead, molybdenum, selenium and vanadium.

Bayoxide® E33P Media Specification

Bayoxide® E33P is a pelletized version of the granular Bayoxide® E33 arsenic removal media, and offers advantages over the original granular formulation. The pelletized Bayoxide® E33P media has the same high capacity for arsenic removal as the original media. The pellet composition has a more uniform and sharper pore configuration, which improves product handling. As a result pressure drop is reduced across the media bed requiring less frequent backwashes. Bayoxide® E33P can also be loaded into the vessel in the dry state and creates minimal dust.

- Chemical Designation: Synthetic Iron Oxide
- Fe_2O_3 Content: >70%
- Specific Surface Area: 120 – 200 m^2/g
- Sieve Analysis:
  - <1.0 mm, 20 % max
  - >1.4 mm, 5% max
- Density: Approx. 3.6 gm/cm^3
- NSF Standard 61 and Drinking Water Inspectorate (DWI) Approved



In this illustration, water containing 32 µg/L arsenic can be treated to about 105,000 bed volumes before the treated water's arsenic level exceeds the 10 µg/L MCL. Bayoxide® E33 has a gradual breakthrough curve that allows operators to efficiently manage the system without the need for emergency media exchange due to sharp break through seen from other media.

565.0200.0 04/07

SORB 33® As Removal System Sizing & Estimate

Severn Trent

SORB 33® As Removal System Sizing & Estimate

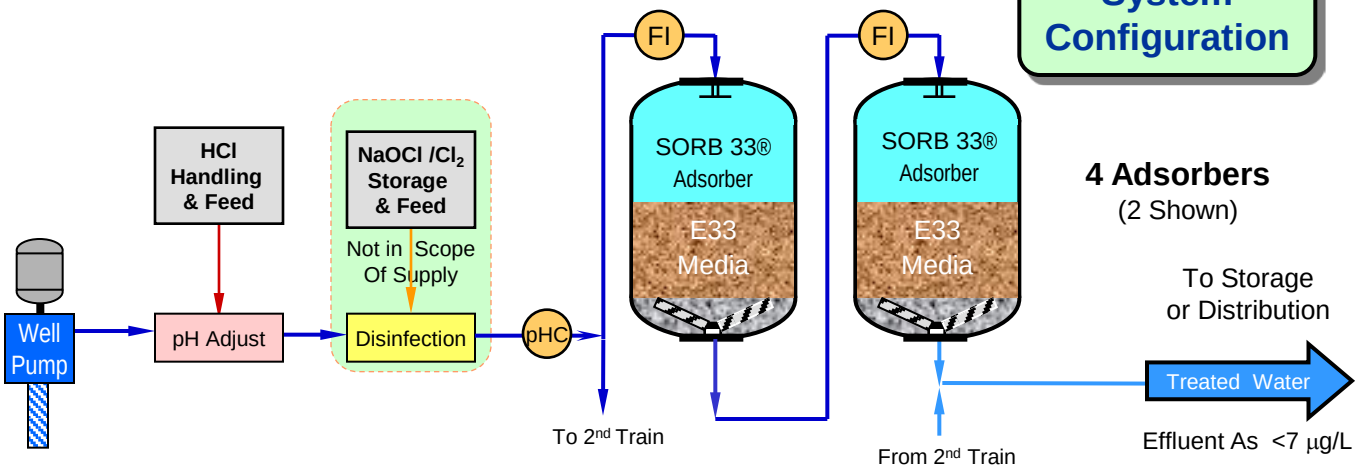
Project Name & General Information

Client:	**LA County, CA**	Average Flow:	**1.80**	MGD Avg
Name of Site:	Well No. 2 & 3 - Combined	Well Capacity:	**2,500**	gpm
Primary Contact:	Iwen Tseng	Treatment Flow:	**2,500**	gpm
Engineer:		Op Factor: 12.0 Hrs/Day or **50%**	0.0%	Bypass

System Design

SORB 33® Model No:	EAS-9014	Contact Time (EBCT) & Bed Depth:	6.2 Min / 3.4 ft
Adsorber No & Size:	Four 14.0 ft Diameter	Average Treatment Rate:	1,800,000 gals/Day
System Footprint:	64'L x 16'W x 14'H	Design Flow Rate per Adsorber:	1,250 gpm
Flow Configuration:	Series	Loading Rate (Specific Velocity):	8.1 gpm/ft^2
Adsorptive Media:	Bayoxide E33 Granules	Estimated Working Capacity:	59,600 BV's
Media Quantity:	66,115 lbs (29.98 MT)	Media Cycle Life:	16.9 Months
	2,076 cubic ft		8.5 Months/Vessel
Backwash Volume:	21,970 gals/vessel	Volume Treated per Cycle:	925.6 million gals
SORB Backwash Rate:	1690 gpm	Arsenic Analysis:	**73.2** µg/L As
pH Adjustment:	pH Adjust from 8.8 to 7.4	HCl Flow: 3.3 gpH	Annual Usage: 14,460 gals 35%
Special Features:		Norm HCl Flow: 3.3 gpH	Pres: 75 psig

System Configuration



Budgetary Capital & Operating Costs

Annual O&M Costs: **$316,000** per Yr or **$157 / Acre Ft**

Total Water Volume Treated: **926** Million Gallons

Special Notes

No PO_4, SiO_2 or V Assays

Projected BW every 6-9 days

Assumed: Well utilization = 50%

Well Pressure = 75 psig

Issued: 05-Jun-14 MAL : Y13

SEVERN TRENT SERVICES Inorganics Products

Case Studies for Ferric Oxide Adsorption Technology (Bayoxide)

Arsenic Treatment: Process Optimization Using Granular Ferric Oxide Adsorption

How U.K., U.S. Teams Optimized Arsenic Removal Process and Media Over Nearly a Decade

Teamwork Rids Southern California City of Arsenic Problem

Optimizing Arsenic Treatment System Yields Significant Cost Savings

2005 NEWS

2005 | Select News Article... | View All Stories

1 April 2005

Arsenic Treatment: Process Optimization Using Granular Ferric Oxide Adsorption

Introduction

With increasing regulation, the global water treatment market has been tasked with finding commercially available technologies suitable for treating and removing arsenic contamination in drinking water to levels below 10 µg/l. At Severn Trent, initial evaluation of arsenic removal technologies centered on a variety of technologies which were thought to be the best suited for this application (Table 1: Comparison Technologies). However, through detailed lab, pilot and full scale research, the use of iron oxide adsorptive media proved itself as a viable technology for reducing arsenic levels across varying drinking water supplies.

Adsorption is a continuous process conducted at a specific flow rate or velocity, normally about 7 gpm/ft, downward through a fixed bed adsorber. Empty bed contact time (EBCT), which dictates the amount of water resident within the bed required to effect complete arsenic adsorption, is another key process parameter. An attractive characteristic of adsorption technology is its simplicity and relatively low cost. For example, coagulation filtration has higher initial capital costs and is labor intensive, with labor costs often not adequately accounted for in operating cost estimates. In addition, this technology is more complex than adsorption, a key factor for utilities without centralized treatment plants.

Methods

At the onset of developing an arsenic removal research program, Severn Trent approached LANXESS (formerly Bayer AG, Germany) to develop a media that could be used to treat high levels. After lab testing different iron oxide media samples, Bayoxide® E33 demonstrated that it had the most important aspects of a viable iron oxide media, namely: it has a high capacity for arsenic, is mechanically robust, is stable with a uniform grain size, has a low leaching potential, has minimal head-loss build-up and is immediately effective in a start-stop process. Severn Trent also initiated a lab-based research program to characterize the performance of the media in a broad array of waters. A statistically significant array of tests was performed with a background water assay based upon NSF 53 water.

After the successful completion of laboratory testing, pilot plant work was undertaken to further research arsenic removal rates, effect of pH, pre-oxidation requirements, impact on disinfection and the effect of other ions. One of Severn Trent's most challenging pilot programs on the performance of the Bayoxide® E33 media was conducted on a potable water source in New Mexico, United States. The water source was considered challenging due to its high arsenic levels, high pH and high levels of vanadium, a metal that is co-adsorbed by the media. The water analysis, adsorption data and graph for the New Mexico pilot program, which includes a program summary, are shown in Figure 1.

Understanding the effects of other ions is important to the design of an adsorption process because water sources that contain iron, manganese, phosphate, silica, sulfate and vanadium, have been shown to affect process performance. Table 2 details the variations in water quality evaluated during pilot plant testing undertaken by Severn Trent to further refine the predicted full-scale performance of the Bayoxide® E33 media. Hydraulic performance was also studied; evaluating media grain size, empty bed contact time (EBCT), head-loss, differential pressure, bed expansion and backwash volume requirements.

Results and Discussion

The SORB 33™ system, as the adsorption process came to be called, has a relatively small footprint, making it suitable for retrofitting or upgrading existing treatment plants. The system consists of simple adsorber vessels normally operated in parallel flow configuration, (Figure 2: Standard SORB 33™ Adsorption Process). The primary operator functions for the system are monitoring flow, pressure, pressure differential and total flow treated data; collecting effluent samples for arsenic and other analyses; and ensuring each adsorber vessel is backwashed on a periodic basis.

The SORB 33™ systems are designed with an EBCT range of 3.3 – 4.5 minutes. Routine media backwash or service washes – done normally on a monthly basis – can be initiated automatically on a preset date and time, by volume of water treated, differential pressure readings or by operator initiation. Service washes are important as they stratify the media bed and remove fine particulate material, which could cause increased differential pressures during the normal downflow

operational mode.

Full scale SORB 33™ arsenic removal systems have been in commercial operation since 1999, beginning with 16 arsenic removal treatment facilities treating over 46 million gallons per day (MGD) in the United Kingdom. In the United States, over 45 SORB 33™ adsorbers are installed across 14 sites.

Through this extensive commercial application, the knowledge base for how this adsorptive media works and how best to optimize its performance has grown steadily. Service washing has been extended at some sites from 28 days to greater than 50 days. In fact, some full scale plants have achieved 90 days before experiencing significant increases in differential pressure and requiring a service wash. In addition to reducing service wash frequency, significant backwash volume reductions of up to 65% have also been made through process optimization.

Conclusions

Years of lab and field tests have shown that Bayoxide® E33 iron oxide media is a viable product with a high capacity to remove arsenic contamination in potable water sources. Still, continuous improvement is essential. Additional research is focusing on improving the Bayoxide® E33 media in order to manage difficult water qualities and increase process efficiencies.

To this end, LANXESS has developed a pelletized version of their media which is currently undergoing full scale evaluation at one of Severn Trent's well water sites. The trials to date have shown that the pelletized version of the Bayoxide® E33 media has the same high capacity for arsenic removal as the original media, its handling is better, it has lower associated fine levels with low solids release during backwash and it remains 'dust free' when being loaded into a vessel in the dry state.

In addition, the composition of a new media addresses the problems posed by complex water sources in both drinking and non-drinking water applications. Some of the advantages of this new media are predicted to include a higher capacity for arsenic adsorption together with greater robustness. The new media composition, which has increased adsorption capacity and faster kinetics, will help to address difficult water qualities, where high concentrations of arsenic and heavy metals may occur. A media with a higher mechanical stability leads to better handling and overall process efficiencies. Pilot plant testing on this new media is about to be undertaken.

Table 1-Comparison Technologies

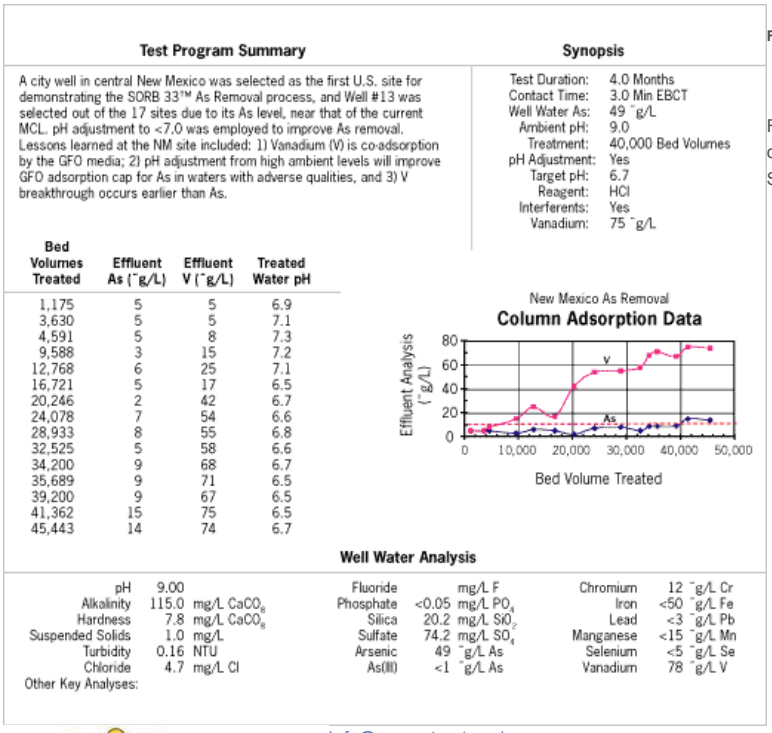
Technology	Process	Chemical Use	Waste Generated	Water Wasted
Iron Oxide Adsorption	Simple	None	Low	<0.1%
Reverse Osmosis	Moderate	Cleaning chemicals	Low	10-25%
Ion Exchange	Complex	Regeneration chemicals	High	2%
Activated Alumina	Complex	Regeneration chemicals	High	5%
Coagulation Microfiltration	Complex	Cleaning, coagulation chemicals	Moderate	5%

Table 2-Variations in Water Quality Assay Range From Pilot Programs

Assay	Range
pH	6.5-8.9
Alkalinity	60-400 mg/L
Hardness	7-350 mg/L
Fluoride	<0.1-2.0 mg/L
Phosphate	<0.01-0.90 mg/L
Silica	5-100 mg/L
Sulfate	5-150 mg/L
Total dissolved solids	100-800 mg/L
Metals:	
Arsenic	**11-200 µg/L**

Chromium	2-50 µg/L
Iron	<50-1,500 µg/L
Vanadium	<5-100 µg/L

Figure 1



Test Program Summary

A city well in central New Mexico was selected as the first U.S. site for demonstrating the SORB 33™ As Removal process, and Well #13 was selected out of the 17 sites due to its As level, near that of the current MCL. pH adjustment to <7.0 was employed to improve As removal. Lessons learned at the NM site included: 1) Vanadium (V) is co-adsorption by the GFO media; 2) pH adjustment from high ambient levels will improve GFO adsorption cap for As in waters with adverse qualities, and 3) V breakthrough occurs earlier than As.

Synopsis

Test Duration:	4.0 Months
Contact Time:	3.0 Min EBCT
Well Water As:	49 ˜g/L
Ambient pH:	9.0
Treatment:	40,000 Bed Volumes
pH Adjustment:	Yes
Target pH:	6.7
Reagent:	HCl
Interferents:	Yes
Vanadium:	75 ˜g/L

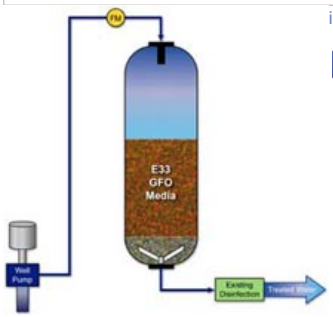
Bed Volumes Treated	Effluent As (˜g/L)	Effluent V (˜g/L)	Treated Water pH
1,175	5	5	6.9
3,630	5	5	7.1
4,591	5	8	7.3
9,588	3	15	7.2
12,768	6	25	7.1
16,721	5	17	6.5
20,246	2	42	6.7
24,078	7	54	6.6
28,933	8	55	6.8
32,525	5	58	6.6
34,200	9	68	6.7
35,689	9	71	6.5
39,200	9	67	6.5
41,362	15	75	6.5
45,443	14	74	6.7

New Mexico As Removal
Column Adsorption Data

Well Water Analysis

pH	9.00		Fluoride		mg/L F	Chromium	12 ˜g/L	Cr
Alkalinity	115.0	mg/L $CaCO_3$	Phosphate	<0.05	mg/L PO_4	Iron	<50 ˜g/L	Fe
Hardness	7.8	mg/L $CaCO_3$	Silica	20.2	mg/L SiO_2	Lead	<3 ˜g/L	Pb
Suspended Solids	1.0	mg/L	Sulfate	74.2	mg/L SO_4	Manganese	<15 ˜g/L	Mn
Turbidity	0.16	NTU	Arsenic	49	˜g/L As	Selenium	<5 ˜g/L	Se
Chloride	4.7	mg/L Cl	As(III)	<1	˜g/L As	Vanadium	78 ˜g/L	V
Other Key Analyses:								

Figure 2



For more information, contact Severn Trent Services at info@severntrentservices.com.

2007 NEWS

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1 October 2007

How U.K., U.S. Teams Optimized Arsenic Removal Process and Media Over Nearly a Decade

Arsenic contamination of drinking water is a global concern. The World Health Organization (WHO) recommended in 1993 that the arsenic standard of 50 µg/l be reduced to 10 µg/l. As a result, countries began implementing the 10 µg/l standard on varying time tables. Germany adopted the revised standard in 1996, a European directive was set in 2000 with compliance dates running through 2009, the United Kingdom adopted the standard in 2003 and the United States adopted the standard in 2006.

Facing compliance in December 2003, Severn Trent Water in the United Kingdom started searching in 1994 for a method of arsenic removal that would have high arsenic removal capacity; use a dry medium which was easy to handle, store and ship; and would be tough and reliable both in performance and results, all at an economic cost. Adsorption rapidly appeared as the most effective technology, and the choice of media was then considered.

Earlier research showed that promising results had been achieved on a small scale in a granular form of ferric hydroxide as an adsorption media. A follow-up resulted in a cooperative agreement with German chemical giant, LANXESS (formerly Bayer AG), which had developed a totally new granular ferric oxy hydroxide for Severn Trent Water.

Combining LANXESS's experience with chemicals and Severn Trent's expertise in water treatment resulted in the combination of an adsorption system and ferric oxide media specifically designed for arsenic removal. Following intensive laboratory tests, pilot schemes and full-scale field trials, adsorption systems were installed at 16 affected sites (59 vessels) in the United Kingdom where they have been operating successfully, in some cases since 1999, with arsenic levels consistently lowered to less than 3 µg/l.

The Test

In the course of their investigations, the Severn Trent Water team gathered an immense amount of data on such matters as optimum size and density of the media, adsorption performance, effective hydraulic pressures, backwash intervals and more, enabling them to optimize performance and operating costs.

In an effort to address global demand for a viable arsenic removal treatment technology, Severn Trent Water transferred its knowledge base on adsorption systems and ferric oxide media to its U.S. sister company Severn Trent Services, which then commercialized the SORB 33® arsenic removal system and Bayoxide® E33 adsorptive media. To date, Bayoxide media is the most widely accepted and employed arsenic removal adsorption media in the United States, permitted and operating in more than 26 states.

Tailoring a Proven Product to a New Market

Water quality in the affected areas containing arsenic contamination across the United States varies significantly from the water quality found in the United Kingdom. In the United Sates, a prevalence of interfering ions such as silica and vanadium and high pH can be found in hot spot areas such as in the West. Further, the co-occurrence of elevated arsenic levels with iron and manganese levels is experienced in areas such as the Northeast and Midwest.

As a result of varying water quality and the potential effect on SORB 33 system and Bayoxide media performance, Severn Trent Services established a lab-based research program on U.S. waters, focusing on levels of pH, arsenic, silica, phosphate, vanadium and more across a broad array of waters. Once completed, an extensive series of pilot tests were then undertaken to further predict full-scale operational performance of SORB 33 systems and Bayoxide media on U.S. waters.

The combination of practical experience transferred from Severn Trent Water and investigative back-up conducted by Severn Trent Services to address the U.S. market ensured the introduction of a commercial arsenic removal system with a proven track record, supported by a history of laboratory investigations and actual operational information.

System Optimization
Since the introduction of the SORB process and Bayoxide media in 1998, Severn Trent Water and Severn Trent Services personnel in the United Kingdom and the United States have worked together to develop a number of methods to optimize the performance of the system and media. The issues for which solutions were developed include:

- the “water hammer effect,” which causes media attrition
- interfering ions
- pretreatment to remove particulate matter
- vessel sequencing to optimize media life
- backwash media expansion with temperature

Hammer Effect
The mechanical properties of Bayoxide E33 media can be adversely affected if well water is rapidly brought into contact with the media. This phenomenon is referred to as the “water hammer effect,” whereby the media becomes friable and breaks down to form smaller particles or “fines,” primarily at the interface of the media and the water. The resulting fines cause a high differential pressure across the media bed resulting in a higher frequency of backwashing along with a loss of media.

Over a period of several years, the media depth readings from 64 vessels at U.K. SORB 33 plants were analyzed. The results are summarized below:

- 66% of the vessels in the plants showed no media attrition
- 25% of the vessels showed media attrition between 1% and 10%
- 8% of the vessels showed media attrition between 11% and 20%
- 2% of the vessels showed media attrition between 21% and 30%

The operational experience in the original U.K. plants and newer plants in the United States demonstrated that it is important to minimize the risk of the hammer effect by slowly introducing water when a vessel is brought into normal operation. There are numerous means of controlling the water velocity at start-up. Variable speed pumps with a slow start and motorized valves on the combined vessel inlet have both been used successfully.

It also is important to maintain approximately 24” to 36” of water above the media bed at start-up. The water attenuates the velocity of the incoming water and minimizes the risk of damaging the media.

Interfering Ions
Bayoxide E33 media will remove other cations and anions in addition to arsenic. These ions generally compete for the same adsorption sites as arsenic, and the resulting effect is to reduce the media’s capacity to adsorb arsenic. Experience in the United States has shown that antimony, phosphate, silica, and vanadium reduce the capacity for arsenic adsorption.

In 2006, Severn Trent Services received a U.S. patent for a technology related to a method for removing silica from water treatment adsorption media, including Bayoxide E33. The technology comprises a scrub solution composed of NSF-approved products that can significantly increase the adsorptive capacity of the bed. The arsenic removal media bed soaks in the scrub solution until silica is removed from the media particles, usually 20 minutes at the beginning of a routine backwash cycle. The scrub solution containing the silica is then removed and the media bed flushed during a normal backwash.

Pretreatment to Remove Particulate Matter
In early tests of the SORB system and Bayoxide media, it was discovered that the media will filter out finely divided particulate matter (e.g., precipitated iron, manganese and sand). However, this results in a need for increased frequency of backwashing. The SORB 33 system is designed for limited backwashing, from once every one to four months. As solids are removed by the Bayoxide media, the need to backwash will increase.

If chlorine is used upstream for chlorination or to oxidize arsenite +3 to arsenate +5, other soluble matter (such as iron and manganese) will oxidize to form insoluble solids that get filtered by the media and increase the need to backwash. If wells are prone to have sand, sand separation is a beneficial pretreatment step to limit backwashing requirements on the SORB 33 system and Bayoxide media. When trapped within the Bayoxide media, the abrasive nature of sand can be harmful and cause the media to break down.

In 2005, Severn Trent Services introduced the pretreatment Omni-SORB™ filter media, which is specifically designed to provide removal of iron and manganese compounds from water and wastewater supplies. This pretreatment media enhances the use of Bayoxide, which follows for arsenic removal. Unlike other iron and manganese removal media, Omni-SORB is not a processed mineral. It is an engineered product using refined manganese that has high catalytic activity for oxidation and adsorption of these metals.

Vessel Staggering to Optimize Media Life
Multiple vessels in a SORB 33 treatment plant can be arranged to provide parallel flow or series flow. Depending upon manpower resources or the level of plant automation, vessels can be managed to optimize media life. Provided that one or more vessels contain relatively new media (i.e., treated water from the vessel <5 µg/l arsenic), the vessel containing the oldest media can be kept in operation beyond the statutory arsenic limit of 10 µg/l. Vessel staggering is easier in SORB 33 treatment plants having three or more vessels.

Example:

- Vessel 1 outlet arsenic 1 µg/l

- Vessel 2 outlet arsenic 5 µg/l
- Vessel 3 outlet arsenic 10 µg/l
- Vessel 4 outlet arsenic 16 µg/l
- Combined outlet arsenic (1 + 5 + 10 + 16) / 4 = 8 µg/l

Backwash Media Expansion with Temperature
As with most media, Bayoxide E33 media expands at different rates depending upon backwash water temperatures. This physical property is an important criterion when designing new SORB 33 treatment plants because efficient backwashing of Bayoxide E33 media improves its overall performance. The fines generated in production, transportation, delivery and normal vessel operation are completely removed during a backwash.

Summary of SORB 33 treatment plant benefits
In their use at plants in the United Kingdom and United States, the SORB 33 arsenic removal process and the Bayoxide E33 ferric oxide media have demonstrated a number of operational benefits:

- Plants can be switched off and on to meet water demands
- Treatment plant has a small footprint
- Arsenic removal treatment time is only three minutes
- The wastewater generated is minimal and non-hazardous
- Some of the Severn Trent Water SORB 33 plants have had zero process water loss
- SORB 33 plants are designed with little or no automation, reducing operating complexity by limiting the number of interfacing systems
- If required, SORB 33 plants can be fully automated
- Exhausted Bayoxide E33 and OmniSORB media is generally disposed to landfill but it can be regenerated if deemed necessary.

For more information, e-mail info@severntrentservices.com.

2008 NEWS

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1 October 2008

Teamwork Rids Southern California City of Arsenic Problem

On May 13, 2008, a partnership between the City of Loma Linda, Calif., and one of the City's leading corporate citizens took the next step in the step in an 11-year process to improve the local water system. That's when Lockheed Martin, one of the world's leading aerospace companies, transferred to the City ownership and operations of an arsenic removal facility it had built.

The facility was designed and constructed in 2006 to remove naturally occurring arsenic levels in Loma Linda's groundwater to meet stringent USEPA arsenic level requirements of 10 parts per billion (ppb). Before construction, arsenic levels in two water system wells ranged from 18 to 22 ppb.

Since 1997, the City and Lockheed Martin have worked together to enhance the existing water system. Lockheed Martin became involved in the partnership because a predecessor company, Lockheed Propulsion Company, had operated a rocket fuel testing operation in nearby Mentone, Calif., during the 1960s and 1970s. Contaminants associated with those operations, trichloroethylene and perchlorate, had been discovered in the groundwater, and Lockheed Martin has voluntarily worked with local officials to clean up the water supply. System enhancements have included upgrading equipment and technology; developing new water connections with the Cities of Redlands and San Bernardino; and installing treatment facilities.

"Our goal is to provide Loma Linda with the safest water. Therefore, we knew this facility was a step forward in continuing to provide local residents with the highest quality of water," said Brad Owens, Director of Environmental Remediation for Lockheed Martin. "We are dedicated to our partnership with the City of Loma Linda and these improvements. It's something that is very important to us."

Earth Tech AECOM, a global provider of engineering, construction and operations services to the water and wastewater industry, was hired to select the most suitable arsenic treatment system. Pacific Hydratech, a company that provides construction services for the water and oil refining industries, served as the project's general contractor.

Earth Tech AECOM evaluated a number of arsenic removal technologies and eliminated many of them from consideration due to lack of demonstrated ability to meet the arsenic removal target. These technologies included microfiltration, ultrafiltration, nanofiltration, permeable reactive barriers, electrokinetic, phytoremediation and biological treatment. Reverse osmosis and electrodialysis reversal were rejected based on high cost and complications associated with residuals disposal. The precipitative processes were also eliminated from further consideration because of multiple chemical requirements, significant volumes of sludge processing and skilled operator attention needed for proper operation.

After the initial screening, ion exchange and adsorptive processes were selected for detailed evaluation. Two systems, one each from the ion exchange and adsorptive processes, were established as preferred systems, and proposals were requested for each technology. In the end, the SORB 33® arsenic removal technology and Bayoxide® E33 arsenic removal media were selected for the project.

Severn Trent Services developed the SORB 33 process to reduce arsenic contamination across a range of water treatment application sizes, and the technology has been commercially proven to effectively and economically meet USEPA standards for maximum arsenic contaminant levels. Bayoxide E33 is a dry, robust, granular ferric oxide media designed with a high capacity for arsenic, providing long operating cycles and low operating costs.

The City of Loma Linda SORB system is designed to treat up to 3,000 GPM, making it one of the largest such systems in California. The system serves 21,000 residents and businesses. It consists of four carbon steel pressure adsorbers, piping, instrumentation controls and the Bayoxide E33 adsorption media. The well water is fed in parallel downward flow generally through three of the four vessels containing the media. The fourth vessel is maintained in standby. The system includes a pH adjustment unit that feeds carbon dioxide into the feed water to reduce pH to about 8.0. The system also

has a bypass control loop to flow up to 25% of the well water flow around the pH adjustment and arsenic removal adsorbers, subsequently to be blended with the treated water.

Pressure differential through each vessel is measured and used to determine when it is necessary to backwash or “fluff” the media. It has been found that backwashing and resting the beds periodically extends media life. Periodically, each adsorber is taken offline for backwashing to remove media fines that have built up and to fluff up the compacted bed, and then rested for a few days. The backwash water is decanted and later mixed with the plant influent water.

Aside from backwashing, there are no other steps required until the end of the adsorbent’s capacity when it becomes exhausted.

According to Steve Wood, Severn Trent Services’ arsenic regional sales manager, the SORB system has operated as expected, reducing arsenic levels to less than the Maximum Contaminant Level of 10 ppb. “The Loma Linda/Lockheed Martin partnership was very deliberate in their approach to solving the arsenic problem in Loma Linda,” he said. “They investigated more than a dozen different arsenic removal technologies and then extensively tested the adsorptive technology they selected. Over the past 11 years, the partnership has constructed one of the most robust water treatment systems I’ve seen.”

“Our partnership with Lockheed Martin has led to great improvements to our water infrastructure and improved water quality for our residents now and into the future,” said Jarb Thaipejr, Public Works Director for the City of Loma Linda.

For more information, e-mail info@severntrentservices.com.

2010 NEWS

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1 October 2010

Optimizing Arsenic Treatment System Yields Significant Cost Savings

Since 1886, American Water has been "maintaining high water quality standards and dependable service" and "finding ways to do it better," according to the company's website. The country's largest investor-owned water and wastewater utility company serves the needs of 16 million customers in more than 1,600 communities across the United States.

Arizona American Water, a wholly-owned subsidiary of America Water, is the largest investor-owned utility in Arizona, serving a population of approximately 350,000 northwest of Phoenix. When the Surprise, Ariz., company committed to meeting the January 2006 federal arsenic MCL of 10 ppb, those responsible for choosing the arsenic removal technology stayed true to the parent company's culture. They selected and piloted two distinctly different technologies and then worked to optimize each through thorough testing and evaluation.

Arsenic, of course, is common throughout Arizona, and many water and wastewater utilities have installed a variety of arsenic removal technologies including reverse osmosis, coagulation filtration, ion exchange and adsorption. Arizona American Water decided to pilot one coagulation filtration system and five adsorption systems to treat arsenic levels ranging from 12 to 82 µg/L. The adsorption system selected was the SORB 33® fixed-bed arsenic treatment system and Bayoxide® E33 arsenic removal media from Severn Trent Services.

Arsenic treatment system design criteria

With a combined capacity of 27.1 mgd, the six Arizona American Water water treatment facilities serve a significant portion of the utility's customer base. In order to minimize the rate impact on customers, the company selected the two treatment technologies based on lowest capital, operating and maintenance requirements. The design criteria for the systems, whose arsenic treatment goal was <8 µg/L, included:

- pre-oxidation to be used at all facilities
- silica, phosphate, manganese and vanadium are present in the water supplies and must be monitored for interference with the arsenic removal
- pH must be adjusted as necessary
- incorporating blending vs. 100 percent source flows to maximize system efficiency
- the adsorption system would incorporate a lead/lag design

In order to maximize each system's performance, Arizona American Water implemented a sampling schedule that included biweekly sampling of treated and combined water and quarterly sampling for regulatory requirements. Dosage and bypass sampling results would be used to optimize system operations.

Arizona American Water's waste management strategy for the coagulation filtration system was to maintain a consistent concentration of discharge into its sewer system and to optimize solids handling processes through polymer dosing and mixing. For the SORB system, backwash water would be recycled when possible, and fines in the backwash effluent discharge would be minimized by increasing settling time.

At the adsorptive treatment plants, which became operational in February and March 2006, plant capacity ranged from the 3.1-mgd Agua Fria Water Plant 5, where arsenic levels measured from 6 to 82 µg/L, to the 8.0-mgd Sun City West Water Plant 2, where arsenic levels were found to be 6 to 25 µg/L. Blending was required at some of the plants to accommodate high levels of fluoride and/or nitrates, while arsenic levels in the 6.8-mgd Agua Fria Water Plant 2's source water were low enough that 100 percent bypass flows were possible.

The adsorptive process

The SORB system employs a simple "pump and treat" process that flows pressurized well or spring water through a fixed-bed pressure vessel containing the iron oxide media where the arsenic removal occurs. Bayoxide is a granular ferric oxide media, and arsenic has a high affinity for iron oxide-based minerals, adsorbing quickly to the surface of the media. This makes granular iron oxide media, such as Bayoxide, excellent for arsenic removal.

Other contaminants common to groundwater also have a high affinity for iron-based minerals. This creates competition among ions, resulting in less arsenic being adsorbed per volume of treated water. Bayoxide E33 is specifically designed to adsorb arsenic while reducing competition with other ions, thus improving the arsenic-adsorbing potential of the media. These characteristics enable systems using the dry, crystalline granular media to achieve long operating cycles, reduce pressure drops and improve the operational cost. The media does not need to be replaced for six months to two years, and the spent media is sent to a non-hazardous landfill.

Evaluating the arsenic treatment systems

As Arizona American Water staff completed monthly and quarterly milestones with the coagulation filtration and adsorption systems, they were impressed with the differences between the two systems. Operation of the coagulation filtration system was more labor intensive than the adsorption systems, requiring more chemicals, more instrumentation on site that needed monitoring and significantly more maintenance time each day. As staff became more familiar with the coagulation filtration system, they identified several operational improvements, including maintaining a more consistent concentration of sludge, preventing the sludge from "caking" in the collection system. This was done by continuously running the recycle pumps rather than operating them in normal duty. In addition, the staff increased the frequency of cleaning the clarifiers to semi-annually.

"By contrast, adsorption is a pretty simple process that was easily adopted by the staff," said Jeremiah Mecham, operations superintendent for Arizona American Water. "And that's what we expected based upon the system's reputation and the experience of others."

Among the enhancements Arizona American Water staff recommended for the adsorption systems was installing high pressure relief valves to replace rupture discs for pressure relief. "Two of our sites are below grade, and a ruptured disc would allow water to continue to flow from the vessels, potentially flooding the treatment area," said Mecham. "In addition, we installed piping to carry any water that was released by the pressure relief valves outside the treatment containment area, further preventing possible flooding.

"Process optimization, primarily by bypassing more of the water while still achieving arsenic levels of <8 µg/L, increased media bed volume performance over the performance guarantee by up to 43 percent at the Agua Fria Plant 1 and up to 160 percent at Agua Fria Plant 5. This led to a reduction in the cost per treated bed volume by 30 percent at Agua Fria Plant 1 and 62 percent at Agua Fria Plant 5. As a result, we achieved a savings of more than $1 million by extending the life of the Bayoxide granular iron media through our process optimization.

"Complying with the new arsenic MCL in the Agua Fria District was made relatively simple through the implementation of the SORB systems," Mecham said. "The systems have exceeded our expectations by enabling us to provide clean, safe, EPA-compliant water to our customers at a reasonable cost to Arizona American Water — and ultimately to ratepayers."

For more information, e-mail info@severntrentservices.com.

Memorandum of Understanding between the Antelope Valley-East Kern Water Agency and Los Angeles County Waterworks District No. 40

August 2013

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is effective as of 8-13-13 by and between Antelope Valley-East Kern Water Agency ("AVEK") and Los Angeles County Waterworks District No. 40 ("Waterworks District").

RECITALS

A. The Waterworks District provides retail water service to customers located within its service area, all of which is also located within AVEK's boundaries. The sources of supply for such service include the native groundwater supply and imported water supply which AVEK has obtained from the State Water Project for delivery on a wholesale basis to retail water purveyors within AVEK's boundaries, such as the Waterworks District.

B. The native groundwater supply available to the Waterworks District is limited in amount and is the subject of a pending adjudication involving scores of other parties who claim the right to a portion of that limited groundwater supply. The imported water supply available to the Waterworks District from AVEK is likewise limited. Depending upon the results of the pending adjudication, the Waterworks District believes that the total combined water supply available to the Waterworks District from native groundwater sources and from imported water sources is insufficient to satisfy existing water service commitments within its service area and additional anticipated development within its service area. The Waterworks District believes that it cannot make additional commitments to provide retail water service to additional customers within its service area unless arrangements are made to obtain additional imported water supplies to service the additional demand.

C. Additional imported water supplies from the State Water Project cannot be held by the Waterworks District, as it is not a State Water Project Contractor, but can be held by AVEK for the benefit of the Waterworks District.

D. The Waterworks District and AVEK have discussed a cooperative strategy to obtain additional imported water supplies that will be held by AVEK but committed to servicing additional demands caused by new development within the service area of the Waterworks District. The purpose of this MOU is to set forth the procedures to be implemented by the Waterworks District and AVEK, immediately, and the commitments that each will make to the other, to obtain the additional imported water supplies necessary to service additional demands caused by additional development within the Waterworks District's service area.

PROCEDURES

1. An applicant seeking a water service commitment from the Waterworks District shall submit a request to the Waterworks District for review and comment.

2. The Waterworks District will identify the local water resources available to address the anticipated water demand for the connection(s) sought by the applicant, which may include recycled water, or such other local resources that the Waterworks District determines are acceptable. The Waterworks District will determine how much additional imported water must be acquired in order to provide retail water service to the applicant's development.

3. The Waterworks District and AVEK will enter into an agreement by which the Waterworks District may require the applicant to deposit with the Waterworks District the amount of money estimated by AVEK to be necessary to fund AVEK's cost of purchasing the additional imported water supplies required by the Waterworks District as a condition of providing a service commitment to the applicant's development. Upon receipt of that deposit by the applicant, the Waterworks District will then deposit that amount with AVEK. The deposit shall cover the estimated purchase price of the additional water supplies, AVEK's cost of completing the environmental assessment under the California Environmental Quality Act and the National Environmental Policy Act (if required), and AVEK's transactional costs including document preparation and review by AVEK staff and legal counsel ("Costs"). As of the effective date of this MOU, Costs are estimated to equal $10,000 for each acre-foot of additional imported water supplies to be acquired; however, AVEK may revise that estimated dollar amount per acre-foot from time to time to reflect changes in anticipated purchase prices and costs, including litigation costs in the event of a legal challenge related to the purchase of the additional water supplies. AVEK may require the amount of the deposit to be augmented as necessary to cover actual Costs that AVEK expects to incur to complete the purchase of the additional imported water supplies, and in such event the Waterworks District will require the applicant to deposit the additional amount with the Waterworks District, which will then make the additional deposit with AVEK. The Waterworks District will develop a form of agreement to be executed between the applicant and the Waterworks District to implement the terms of this paragraph, including hold harmless and indemnification language to protect AVEK and the Waterworks District. The money provided by the applicant must be deposited directly with the Waterworks District, and not into a third party escrow account. AVEK will credit the Waterworks District with interest earned on the deposit with AVEK at the rate paid by the Local Agency Investment Fund of the State of California during the period that the money remains on deposit with AVEK, prorated as necessary to reflect the date of deposit and the date of expenditure or return to the applicant.

4. Upon receipt of the required deposit, AVEK will confirm to the Waterworks District in writing that AVEK has received the required deposit and is committed to acquiring the additional requested water supplies. The Waterworks District, at its option, may then provide the applicant with a written commitment to provide water service to the applicant's development, conditional upon satisfaction of all requirements set forth in the written agreement between the Waterworks District and the applicant.

5. Although AVEK cannot guarantee success, AVEK will undertake all objectively reasonable steps to identify and purchase additional State Water Project Table A Amounts or other water supply entitlements in the amounts requested by the Waterworks District to service the applicant's anticipated demand, including preparation and review of all agreements necessary to effect the purchase of the additional water supplies and the transportation of such supplies to AVEK, completion of environmental analysis pursuant to the California Environmental Quality Act and the National Environmental Policy Act (if applicable), acquisition of such permits as may be required, compliance with all regulatory requirements that may apply, and the defense of such lawsuits or other legal challenges as may be filed to challenge the acquisition of additional water supplies and the transportation of such supplies to their intended place of use. The Waterworks District will cooperate with AVEK in the defense of such lawsuits or legal challenges, will hold AVEK harmless from any such legal challenges, and will include

provisions in its agreement with the applicant which require the applicant to fully indemnify the Waterworks District, in addition to AVEK, from any such challenges.

6. Upon completion of acquisition of the additional water supplies as requested by the Waterworks District and conclusion of all legal proceedings to challenge the acquisition of such supplies or their transportation to the intended place of use, AVEK will notify the Waterworks District in writing, and will provide the Waterworks District with a final accounting of Costs incurred by AVEK. If a balance remains in the deposit by the Waterworks District, AVEK will deliver that excess deposit to the Waterworks District in exchange for the applicant's execution and transmittal to AVEK of a release which releases AVEK and the Waterworks District from all claims of any sort related to the acquisition of the additional water supplies, upon release to applicant of the remaining balance of applicant's deposit. If a final accounting reveals that the amount on deposit with AVEK was insufficient to fully reimburse AVEK for all Costs incurred, the Waterworks District will deposit with AVEK an amount equal to the amount of the deficit, which will be due and payable within ninety days of the date of the final accounting provided to the Waterworks District, and AVEK will concurrently provide the Waterworks District with a release to be signed by the applicant releasing AVEK and the Waterworks District from all claims of any sort related to the acquisition of the additional water supplies.

7. The additional water supplies acquired on behalf of the Waterworks District shall be held by AVEK for exclusive use by the Waterworks District within its retail distribution system. All annual or periodic charges from the State of California allocable to the additional Table A Amount, or from the seller of other water supply entitlements allocable to those entitlements, for the ongoing use of those entitlements, will be paid by AVEK, and in turn AVEK will invoice the Waterworks District for reimbursement. Each such invoice will identify the nature of the charge and how it was calculated. AVEK will provide the Waterworks District with such backup documentation as the Waterworks District may request, and which AVEK may have, upon request. The Waterworks District will pay the invoice to AVEK within forty-five days after receipt. The Waterworks District will be free to recover these amounts from the applicant's specific development, or from its rates and charges imposed on all customers, as the Waterworks District deems appropriate in its discretion.

8. If a temporary period of time exists between AVEK's acquisition of an additional water supply for use by the Waterworks District to provide service to the applicant, and the setting of service connections with meters for the Waterworks District to commence service to the applicant's development, AVEK itself may bear the expense of ongoing annual or periodic charges attributable to the new water supply, without invoicing to the Waterworks District for reimbursement of such charges to AVEK, and in such event AVEK will be authorized to use the additional water supply on a temporary basis to satisfy the demands of other AVEK customers. However, the additional water supply used by AVEK on a temporary basis to address other demands shall not be permanently committed to those other demands, but shall remain available for use by the Waterworks District to service the demands of the applicant when needed. If such water use requires proration of charges between the period of AVEK's use and the commencement of use by the Waterworks District, AVEK will provide the Waterworks District with a copy of its calculation of the prorated charges. If necessary, AVEK and the Waterworks District will meet to resolve any differences or disputes amicably.

9. The above described procedures and commitments may be revised by mutual consent from time to time as appropriate to adjust to changing circumstances or needs, or to conform to orders or procedures resulting from the pending adjudication of groundwater rights in the Antelope Valley. As a new program, AVEK and the Waterworks District commit to meeting annually to review the MOU and implementing agreements, to make modifications as necessary to improve the procedures and correct any inequities that may arise, and, to deal with each other in good faith to address such circumstances or needs.

LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40

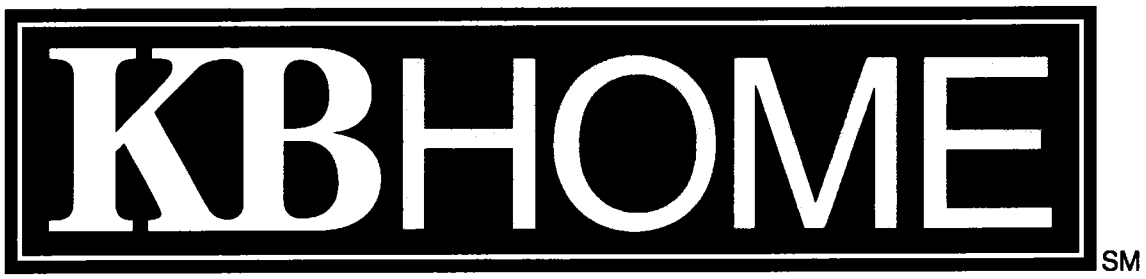
By _____

Date: 9/3/13

ANTELOPE VALLEY-EAST KERN WATER AGENCY

By _____

Date: 8/13/13



Utility Site

County Reimbursement Submission
July 21, 2009

Summary

Utility Site

	Billed Amount	Projected Future Billing	Total
Best Drilling & Pump	$804,291.00	$181,358.10	$985,649.10
CSI Services	$14,680.00	$353.00	$15,033.00
Pacific Hydrotech	$2,331,370.44	$496,479.56	$2,827,850.00
South Pac Industries	$4,760.00	-	$4,760.00
High Sierra Engineering	$5,490.00	-	$5,490.00
Action Iron Works	-	$19,454.00	$19,454.00
AGI Geotechnical-Geotechnical	$10,300.00	-	$10,300.00
AGI Geotechnical-Concrete	$1,066.55	-	$1,066.55
Power Plus	$9,468.63	$1,052.07	$10,520.70
Edison	$12,754.50	-	$12,754.50
Forma Engineering	$850.00	-	$850.00
Brockmeier	$609,079.05	-	$609,079.05
Pinnacle Land Surveying	$820.00	-	$820.00
Risk Management Professionals	-	$8,630.00	$8,630.00
Certified Payroll			
Total	$3,804,930.17	$707,326.73	$4,512,256.90

60th Street West Wellhead Arsenic Treatment Project

Work Summary

This attachment contains descriptive summaries of the tasks necessary to complete the Project, discusses the deliverables that will be provided, and discusses the current status of the Project, including work already completed.

Task	Description of Work Completed, In Progress or to be Completed for Task (listed as % Complete)	Deliverables	Status
Category (a): Direct Project Administration			
Task 1: Administration	Administration activities will consist of preparing an MOU with the California Department of Corrections and Rehabilitation (CDCR) (see Task 4) **(25%)**, managing the planning and design efforts; data management; coordinating with District budgeting personnel; coordinating with the State on grant management, including invoicing and status reports; and resolving any issues that arise **(0%).**	MOU document, and Invoices and status reports; complete grant application and other documents as necessary	In progress
Task 2: Labor Compliance Program	The Los Angeles County Waterworks District No. 40, Antelope Valley (District) is a Division of the County of Los Angeles Department of Public Works (County). The County has a Labor Compliance Program (LCP) in place that is in compliance with the 2012 Standard Specifications for Public Works Construction and the California Labor Code. 2012 Standard Specifications for Public Works Construction, California Labor Code (Sections 1773.2, 1774, and 1775 for prevailing wages, Section 1776 for certified payroll records, and Sections 1810, 1813, and 1815 for working hours. **(100%)**	Labor Compliance Program	Complete
Task 3: Reporting	The District will submit quarterly, final, and post completion reports to the State as specified in the grant agreement. **(0%)**	Quarterly Final, and Post Completion Reports	Not yet begun
Category (b): Land Purchase/Easement			
Task 4: Land Acquisition	CDCR owns the land the wells are located on. The District will attain an MOU with CDCR to gain access to the property for construction, operation, and maintenance. **(25%)**	Executed MOU with CDCR	In progress
Category (c): Planning / Design / Engineering / Environmental Documentation			
Task 5: Assessment and Evaluation	The following assessments have been completed for the Project: • Arsenic levels in Wells 2A and 3 **(100%)** • Bayoxide Arsenic Removal Media/Ferric Oxide Adsorptive Media **(100%)** • Preliminary sizing and estimate for treatment system from vendor **(100%)** • Concept drawing with Project components **(100%)** • Case Studies from Seven Trent on the arsenic treatment technology **(100%)**	• Laboratory results for arsenic testing • Product sheet and case studies for arsenic removal system and media • Preliminary Sizing/Estimate • Concept drawing • Case studies	Complete
Task 6: Final Design	The District will complete Project plans and specifications for the 30% design **(25% complete**), 60% design **(0% complete)**, 90% design **(0% complete)**, and 100% design **(0% complete)** for water main and arsenic treatment system.	30%, 60%, 90%, and 100% design plans and specs	In progress
Task 7: Environmental Documentation	The Project has a categorical exemption (Public Resources Code 21080.21 CEQA Section 15301 (b, f)). **(100%)** The categorical exemption will be filed with the County of Los Angeles Board of Supervisors September 1, 2014. **(0%)**	Adopted Categorical Exemption	In progress

60th Street West Wellhead Arsenic Treatment Project

Work Summary

Task	Description of Work Completed, In Progress or to be Completed for Task (listed as % Complete)	Deliverables	Status
Task 8: Permitting	An encroachment permit is required from the City of Lancaster since part of the proposed water main is located on Avenue J. **(0%)** A permit amendment with the California State Water Resources Control Board (Drinking Water Program) is required prior to using the arsenic treatment system in the distribution system. **(0%)** The District will create a Traffic Control Plan **(0%)**	Encroachment permit from the City of Lancaster, Drinking Water Program Permit Amendment , Traffic Control Plan	Not yet begun
Category (d): Construction / Implementation			
Task 9: Construction Contracting	Construction contracting will be handled by District staff in compliance with the California Public Contracting Code. Prior to bid solicitation, the District's governing body, the Los Angeles County Board of Supervisors (Board), is required to approve the Project. Tasks include: advertisement for bids, a pre-bid contractors meeting, bid opening, bid evaluation and selection of contractor. The Board will award the contract unless it has delegated that authority to the Director of Public Works. A Notice to Proceed (NTP) would then be issued. **(0%)** The District will utilize its own labor force to install the wellhead pumps, electrical panel components, flow meters, and transducers, and SCADA communication. **(0%)**	Bid Advertisement Contract award NTP	Not yet begun
Task 10: Construction			
Subtask 10.1: Mobilization and Site Preparation	This subtask will include the mobilization of equipment and construction materials. **(0%)**	No deliverables	Not yet begun
Subtasks 10.2: Project Construction	The Project construction will include the installation of two wellhead pumps, the arsenic treatment system, electrical panel replacements, a flow meter and transducer for each well, SCADA installation, and installation of new water main. **(0%)**	Field Acceptance Memo, Notice of Completion for construction of water main	Not yet begun
Subtasks 10.3: Performance Testing and Demobilization	Following installation, the pumps and arsenic treatment system will be tested to ensure that they are working properly. A final inspection will be completed and demobilization will occur. A Monitoring Plan will be developed for the project. **(0%)**	Installation Report for arsenic treatment system (with performance testing and water quality results), and Monitoring Plan	Not yet begun
Task 11: Environmental Compliance / Mitigation / Enhancement	No mitigation or enhancement is required.	Not Applicable	Not Applicable
Task 12: Construction Administration	The District has a dedicated Construction Division that administers numerous civil construction projects every year in conformance with the Public Contracting Code. Construction Division Staff will manage the Project construction contract process and implementation. Construction administration activities will include general preparation of construction documents, construction contract administration, and construction inspection.	Deliverables included as part of Task 9	Not yet begun

Project Budget Summary

Table 7 – Project Budget					
Proposal Title: Antelope Valley IRWM 2014 Drought Solicitation Implementation Grant Proposal					
Project Title: 60th Street West Wellhead Arsenic Treatment Project					
Project serves a need of a DAC?: No					
Funding Match Waiver request?: No					
Category		**(a)** Requested Grant Amount	**(b)** Cost Share: Non-State Fund Source* (Funding Match)	**(c)** Cost Share: Other State Fund Source*	**(d)** Total Cost
(a)	**Direct Project Administration**	$0	$109,800.00	$0	$109,800.00
(b)	**Land Purchase/Easement**	$0	$0	$0	$0
(c)	**Planning/Design/Engineering/ Environmental Documentation**	$0	$118,503.60	$0	$118,503.60
(d)	**Construction/Implementation**	$1,666,244.00	$2,243,468.50	$0	$3,909,712.50
(e)	**Grand Total (Sum rows (a) through (d) for each column)**	$1,666,244.00	$2,471,772.10	$0	$4,138,016.10
***List sources of funding:** Funding for the arsenic treatment project will come from retail water sales revenue.					

This attachment presents the Project and Proposal budget. The budget presented in the table above is considered reasonable based on current available information. The justification for each category of budget presented is provided below:

Direct Project Administration: Costs associated with Project management, administration, development of a Memorandum of Understanding (MOU) with the partner agency (California Department of Corrections and Rehabilitation (CDCR)), and reporting costs are all based on the District's prior experience with capital improvement projects. These costs, as well as the costs associated with filing the categorical exemption (see environmental documentation category below), were assumed to be 3% of the construction contract.

Land Purchase/Easement: The wells that are part of the Project are owned by CDCR and located on CDCR property. An MOU will be executed between the District and CDCR to allow access for construction, operation, and maintenance of the wells. There is no land purchase or easement required. Costs associated with the development of the MOU are included in the Project Administration task.

Planning/Design/Engineering/Environmental Documentation: Costs associated with assessments and evaluations were based on actual costs to test the wells for arsenic and produce the Concept Drawing. Final design budget included a geotechnical investigation based on 5% of the water main construction costs, a budget for surveying based on previous experience, and a budget to produce the design plans for the arsenic treatment system that were originally included in the overall cost of the treatment system provided by Severn Trent. Environmental documentation budget consists of the cost to file the categorical exemption with the Los Angeles County Board of Supervisors. Permitting costs were estimated as 2% of the water main construction costs.

Construction/Implementation: Budget for construction contracting is based on previous Requests for Proposals. Mobilization costs were estimated as 4% of the water main construction. Cost estimates for the two wellhead pumps, 1,500 linear feet of 12-inch water main, and additional labor and materials for the SCADA installation, electrical panel, flow meter, and transducer replacement were used to develop the construction budget. Construction costs for the design, fabrication, delivery, installation, and performance testing for arsenic treatment system are based on the overall cost estimate for the treatment system provided by Severn Trent. The entire grant request of $1,666,244 will be applied toward Project construction. No environmental mitigation is required for the Project so no costs are expected for that task. Construction administration budget was estimated as 20% of the water main construction costs based on previous project experience, and a 15% contingency on the contract amount was included for the construction category based on past capital improvement projects.

Proposal Budget Summary

The table below shows the Proposal budget. There is only one Project in this Proposal.

Table 8 – Summary Budget

Proposal Title: Antelope Valley IRWM 2014 Drought Solicitation Implementation Grant Proposal

Individual Project Title	(a) Requested Grant Amount	(b) Cost Share: Non-State Fund Source (Funding Match)	(c) Cost Share: Other State Funding Sources	(d) Total Cost	(e) % Funding Match
60th Street West Wellhead Arsenic Treatment Project	$1,666,244.00	$2,471,772.10	$0	$4,138,016.10	60%
Proposal Total	$1,666,244.00	$2,471,772.10	$0	$4,138,016.10	60%
DAC Funding Match Waiver Total	-	-	-	-	-
Grand Total	**$1,666,244.00**	**$2,471,772.10**	**$0**	**$4,138,016.10**	**60%**

60th Street West Wellhead Arsenic Treatment Project

Schedule

This attachment presents the Project schedule. The schedule presented is reasonable based on the current available information and assuming a grant award date of October 16, 2014. The 30% design for the Project has begun and the Notice to Proceed will be issued prior to April 1, 2015. The justification for each category of the schedule is provided below:

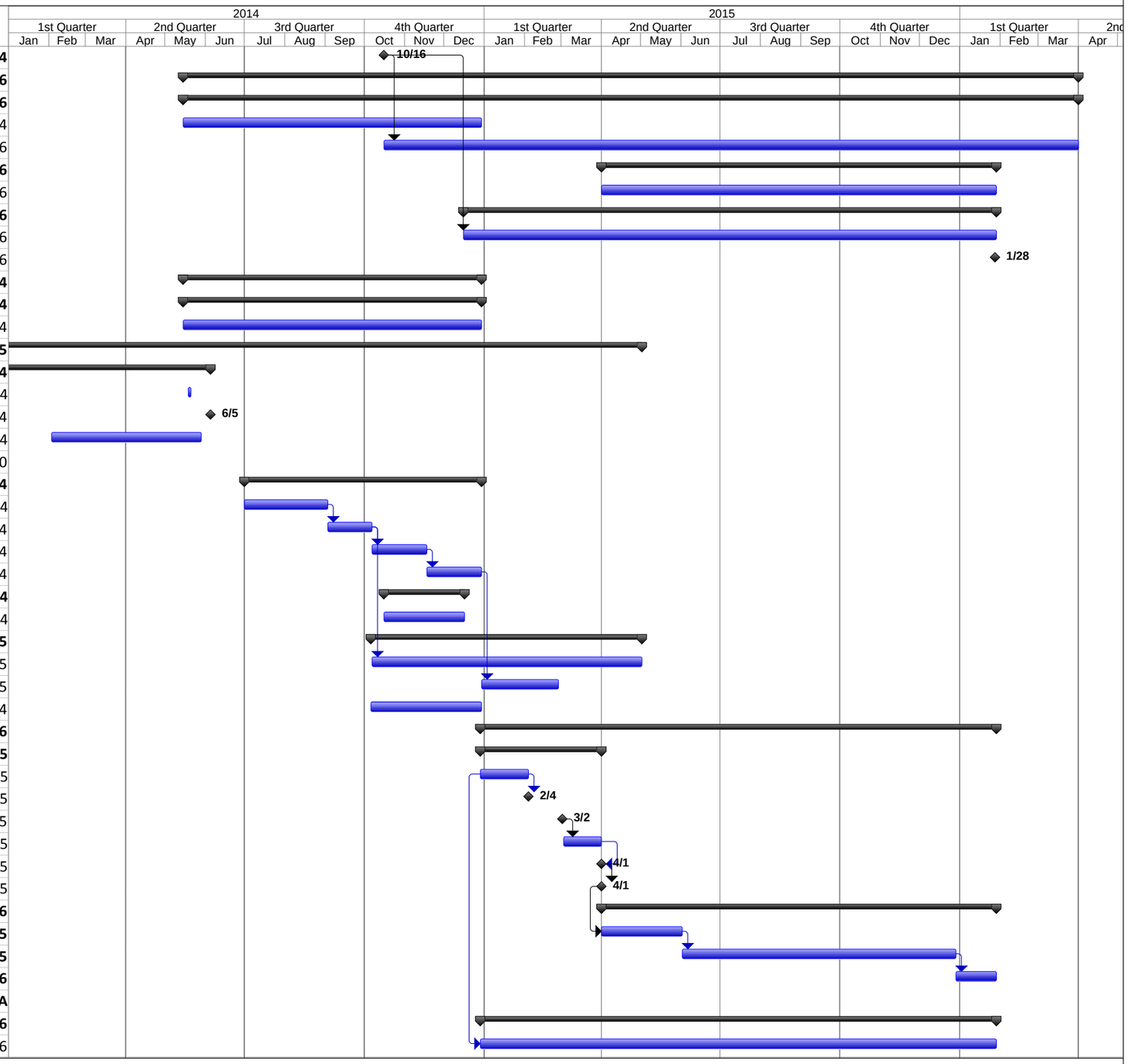
Direct Project Administration: *Task 1: Project Administration* – The Los Angeles County Waterworks District No. 40, Antelope Valley (District) will be responsible for ensuring the steps necessary to complete this Project are underway and will generate invoices for the duration of the Project. A Memorandum of Understanding (MOU) between the District and the California Department of Corrections and Rehabilitation (CDCR) has been drafted and is waiting for the CDCR to review. Additional administrative activities will continue through submitting the final invoices and reports. *Task 2: Labor Compliance Program* – A Labor Compliance Program is in place through the County of Los Angeles Department of Public Works of which the District is a part. Implementation of the program will occur through the duration of construction (April 1, 2015 – January 28, 2016). *Task 3: Reporting* – Quarterly Progress Reports will be produced by District staff for the Project as required for grant funding beginning the first quarter the grant is awarded through the completion of the Project (December 16, 2014 – January 28, 2016). The Final Report will be submitted when the Project is complete (January 28, 2016).

Land Purchase/Easement: *Task 4: Land Purchase/Easement* – An MOU with the CDCR has been drafted and is currently waiting for State review. The MOU will be executed before construction contracting begins (December 29, 2014).

Planning/Design/Engineering/Environmental Documentation: *Task 5: Assessment and Evaluation* – Arsenic testing at the two wells for the Project was completed May 19 and May 20, 2014. A Concept Drawing, Sizing and Estimate for the treatment system, and additional case studies relating to the treatment system have been completed as well. *Task 6: Final Design* – The production of the 30% design plan began in early July 1, 2014. The completion of the 30%, 60%, 90%, and 100% design plans will be completed prior to the beginning of construction contracting (December 29, 2014). *Task 7: Environmental Documentation* – The Project is Categorically Exempt and the Categorical Exemption will be filed with the County of Los Angeles Board of Supervisors upon award of the grant October 16, 2014; it will take approximately two months to complete (December 16, 2014). *Task 8: Permitting* – Permitting will begin after the completion of the 60% Design on October 6, 2014. The Contractor will obtain the Encroachment Permit from the City of Lancaster after the construction contract is awarded, during site mobilization (starting April 1, 2015) since the City will only issue the permit to the contractor. The District will pay all fees and prepare the necessary paperwork for the permit in advance of hiring the contractor. The Drinking Water Program Permit Amendment will be obtained within two months of completing 100% Design (December 30, 2014 – February 26, 2015).

Construction/Implementation: *Task 9: Construction Contracting* – Bid Package preparation will commence upon completion of final design (December 29, 2014). The bid will be awarded and Notice to Proceed (NTP) issued by April 1, 2015. *Task 10: Construction* – Following NTP, the contractor will mobilize to the Project site and prepare the site for construction. Within these two months the contractor will obtain any remaining permits (City Encroachment Permit). Project construction will commence June 2, 2015, and be complete within six months (December 28, 2015). The contractor will demobilize the site and conduct performance testing for the pumps and arsenic treatment system the first month of 2016. *Task 11: Environmental Compliance/Mitigation/Enhancement* – No mitigation or enhancement is required for this Project. *Task 12: Construction Administration* – The District's Construction Division Staff will manage Project construction throughout the duration of the contracting and construction process (December 29, 2014 – January 28, 2016).

Task Name	Start	Finish
Grant Award Date	**Thu 10/16/14**	**Thu 10/16/14**
Row (a) Direct Project Administration	**Thu 5/15/14**	**Thu 3/31/16**
Task 1: Project Administration	**Thu 5/15/14**	**Thu 3/31/16**
Prepare MOU with CDCR to gain access to wells	Thu 5/15/14	Mon 12/29/14
Prepare Invoices for Reimbursement	Thu 10/16/14	Thu 3/31/16
Task 2: Labor Compliance Program	**Wed 4/1/15**	**Thu 1/28/16**
Labor Compliance Program Management	Wed 4/1/15	Thu 1/28/16
Task 3: Reporting	**Tue 12/16/14**	**Thu 1/28/16**
Quarterly Progress Reports	Tue 12/16/14	Thu 1/28/16
Final Report	Thu 1/28/16	Thu 1/28/16
Row (b) Land Purchase/Easement	**Thu 5/15/14**	**Mon 12/29/14**
Task 4: Land Purchase/Easement	**Thu 5/15/14**	**Mon 12/29/14**
Prepare MOU with CDCR for access to land	Thu 5/15/14	Mon 12/29/14
Row (c) Planning/Design/Engineering/Environmental Documentation	**Fri 4/1/05**	**Fri 5/1/15**
Task 5: Assessment and Evaluation (Completed)	**Fri 4/1/05**	**Thu 6/5/14**
Arsenic Testing for Wells 2A and 3	Mon 5/19/14	Tue 5/20/14
Sizing and Estimate for Treatment System	Thu 6/5/14	Thu 6/5/14
Concept Drawing	Mon 2/3/14	Wed 5/28/14
Arsenic Treatment System Case Studies	Fri 4/1/05	Fri 10/1/10
Task 6: Final Design	**Tue 7/1/14**	**Mon 12/29/14**
30% Design	Tue 7/1/14	Tue 9/2/14
60% Design	Wed 9/3/14	Mon 10/6/14
90% Design	Tue 10/7/14	Mon 11/17/14
Final (100%) Design Plans	Tue 11/18/14	Mon 12/29/14
Task 7: Environmental Documentation	**Thu 10/16/14**	**Tue 12/16/14**
File Categorical Exemption	Thu 10/16/14	Tue 12/16/14
Task 8: Permitting	**Mon 10/6/14**	**Fri 5/1/15**
Encroachment Permit with City of Lancaster	Tue 10/7/14	Fri 5/1/15
Drinking Water Program Permit Amendment	Tue 12/30/14	Thu 2/26/15
Traffic Control Plan	Mon 10/6/14	Mon 12/29/14
Row (d) Construction / Implementation	**Mon 12/29/14**	**Thu 1/28/16**
Task 9: Construction Contracting	**Mon 12/29/14**	**Wed 4/1/15**
Prepare Bid Package	Mon 12/29/14	Tue 2/3/15
Advertisement/Bid Opening	Wed 2/4/15	Wed 2/4/15
Bid Package Due	Mon 3/2/15	Mon 3/2/15
Evaluation of Bids	Tue 3/3/15	Tue 3/31/15
Award Contract	Wed 4/1/15	Wed 4/1/15
Issue Notice to Proceed	Wed 4/1/15	Wed 4/1/15
Task 10: Construction	**Wed 4/1/15**	**Thu 1/28/16**
Subtask 10.1 Mobilization	**Wed 4/1/15**	**Mon 6/1/15**
Subtask 10.2 Project Construction	**Tue 6/2/15**	**Mon 12/28/15**
Subtask 10.3 Performance Testing and Demobilization	**Tue 12/29/15**	**Thu 1/28/16**
Task 11: Environmental Compliance (Not Required)	**N/A**	**N/A**
Task 12: Construction Administration	**Mon 12/29/14**	**Thu 1/28/16**
Construction Management	Mon 12/29/14	Thu 1/28/16



This attachment discusses how this proposal addresses the program preferences outlined in Section II.F of the 2014 Integrated Regional Water Management Guidelines. Specifically, it describes the Human Right to Water Policy as well as the following for the Antelope Valley (AV) Region (Region): (1) the specific Program Preferences that are met by the Project, (2) the certainty that the Proposal Project will meet the Program Preferences, and (3) the breadth and magnitude to which the Program Preferences will be met. The following terms are used to define the breadth and magnitude to which the Project addresses these IRWM program elements:

- Local: Project benefits are focused locally within the Project area.
- Regional: Project benefits extend throughout the Region.
- Statewide: Project benefits are widespread and will benefit other areas throughout California.

Human Right to Water Policy

Implementation of Los Angeles County Waterworks District No. 40's (District's) 60th Street West Wellhead Arsenic Treatment Project (Project) addresses the Human Right to Water Policy by providing an affordable and reliable locally-produced water supply for our customers. Use of grants to fund the Project will help the District keep water rates affordable for our customers. The Project increases local water supply reliability by adding a new water source and by reducing the District's dependence on imported water from the State Water Project (SWP). Furthermore, the Project is located outside the main depression zone in the Antelope Valley groundwater basin (Lancaster sub-basin); as a result, the Project will not impact groundwater levels in the depression zone, increasing local groundwater supply reliability.

Project 1: 60th Street West Wellhead Arsenic Treatment Project

The Project included in this Proposal meets seven out of nine Program Preferences identified in the 2014 Integrated Regional Water Management Guidelines (including the Human Right to Water Policy), and the Project addresses multiple Statewide Priorities.

Program Preferences Addressed by this Project: **Regional Project**: This Project meets the regional criteria as defined by CWC §10537, by improving operational efficiency, Regional water supply reliability and water quality by providing arsenic treatment for two previously unusable wells that produce groundwater from the Lancaster sub-basin. **Integrates Projects within a Hydrological Region:** This Project integrates with other projects in the AV Region that also meet the IRWM objectives to optimize local water resources to reduce the Region's reliance on SWP water and improve drinking water quality. **Resolves Significant Water-Related Conflicts:** This Project effectively resolves significant water-related conflicts between regions by offsetting demands for imported water, a scarce supply that much of the Region's population currently depends on. **Contributes to Attainment of one or more CALFED objectives:** This Project contributes to the attainment of the Water Supply Reliability Program of the CALFED-Bay Delta Program by offsetting demands for imported water. It also contributes to the Ecosystem Restoration program objectives of improving Bay-Delta watershed ecological health by offsetting SWP demands. **Is Part of an IRWM Plan that helps reduce Delta reliance:** This Project is included in the AV IRWM Plan 2013 Update which has objectives and targets to reduce imported water reliance on the SWP and Delta. **Statewide Priorities:** This Project addresses several Statewide Priorities described as follows: *Drought Preparedness.* This Project will increase local water supply and reliability during water shortages. Local water supply from the groundwater basin will offset demands for less reliable imported supplies. *Use and Reuse Water More Efficiently.* This Project will improve the water supply reliability by increasing local water use and reducing the reliance on the Delta. *Climate Change Response Actions.* This Project will reduce the energy consumption of water systems by replacing energy-intensive imported water supplies with lower-energy local groundwater supplies from the Lancaster sub-basin. Reducing energy use will reduce overall greenhouse gas (GHG) emissions. *Expand Environmental Stewardship.* This Project will help to protect, restore, and enhance habitat in the Delta ecosystem.

Certainty of Preferences Being Met: This Project addresses these preferences with a **HIGH** degree of certainty. The District anticipates completing final design and obtaining a categorical exemption for CEQA by the end of 2014. The Project is not dependent on any other project and there are no known regulatory or institutional obstacles.

Breadth and Magnitude of Preferences and Priorities Being Met: By providing local water supply reliability, the Project provides **LOCAL** water supply to the AV Region. By providing valuable groundwater quality improvements in the Lancaster sub-basin, the Project provides **REGIONAL** benefits**;** and by reducing reliance on Delta supplies (and the energy and GHG consequences of imported supplies), the Project provides **STATEWIDE** benefits.

This Proposal is not seeking a DAC waiver of funding match, nor is it claiming to help meet DAC program preferences; therefore Attachment 8 is not applicable.