Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Submitted by Coachella Valley Water District
On behalf of the Regional Water Management Group
and the Planning Partners

This *Coachella Valley IRWM Implementation Grant Proposal* is being submitted to the California Department of Water Resources (DWR) for consideration of implementation grant funding through the IRWM Grant Program. The following checklist presents the required elements of a grant application funded by the IRWM Grant Program. The checklist consists of four sections or "tabs" as outlined in the IRWM Grant Program Guidelines (DWR 2010). The *Coachella Valley IRWM Implementation Grant Proposal* has been submitted electronically through the BMS and four hard copies have been delivered to DWR.

The *Coachella Valley IRWM Implementation Grant Proposal*, comprised of this checklist and 15 attachments, will verify individual project eligibility, completeness, and readiness-to-proceed to implementation. The projects selected for this proposal were screened through the region's adopted prioritization process and four priority projects were identified. These four projects were specifically selected by the Coachella Valley Regional Water Management Group (CVRWMG) and Planning Partners to meet the critical water resource issues and concerns of the Coachella Valley.

Grant Application Checklist

APPLICANT INFORMATION TAB		
APPLICANT INFORMATION		
✓	Organization Name	Coachella Valley Water District
✓	Tax ID	95-6000827
✓	Proposal Name	*Coachella Valley IRWM Implementation Grant Proposal*
✓	Proposal Objective	The Coachella Valley IRWM Region is committed to implementing the regional goals and objectives established in the Coachella Valley IRWM Plan, including (1) optimizing water supply reliability, (2) protecting or improving water quality, (3) providing stewardship of water-related natural resources, (4) coordinating and integrating water resources management, and (5) ensuring cultural, social, and economic sustainability of water in the Coachella Valley. The project prioritization process used to select from the region's project list emphasized projects that contribute to these regional goals. Four projects were specifically selected by the CVRWMG and Planning Partners to meet the critical issues of the Valley. The objective of this proposal is to present a suite of projects that: • Further the regional goals and objectives established in the IRWM Plan; • Provide multiple benefits through integration of water management strategies; and • Assist in meeting the Valley's critical water supply and water quality needs.

		The four projects in this proposal will diversify water supply and improve water quality, two critical issues in the Coachella Valley. Because groundwater is the primary source of urban water supply, groundwater protection is a primary concern to stakeholders. The *Regional Water Conservation Program* addresses groundwater overdraft by reducing future demands on groundwater pumping and thus diversifying water supplies. The *Short Term Arsenic Treatment Project* will remove naturally-occurring arsenic from drinking water supplies in the East Valley. The two *Groundwater Quality Protection Program* projects are septic-to-sewer conversion projects that will decrease nitrate concentrations in groundwater. This proposal includes a suite of projects identified by the CVRWMG and Planning Partners to best meet the current challenges of Coachella Valley. The complete proposal offers an integrated solution to the Valley's water supply and water quality needs.
BUDGET		
✓	Other Contribution	$0
✓	Local Contribution	$2,992,375
✓	Federal Contribution	$0
✓	In-kind Contribution	$0
✓	Grant Funds Requested	$4,000,000
✓	Total Proposal Cost	$6,992,375
GEOGRAPHIC INFORMATION		
✓	Latitude	DD 33 MM 45 SS 19
✓	Longitude	DD -116 MM 19 SS 43
✓	Longitude/Latitude Clarification	http://itouchmap.com/latlong.html
✓	Location	Coachella Valley IRWM Region
✓	County	Imperial County Riverside County San Bernardino County San Diego County
✓	Groundwater Basin	Coachella Valley – Desert Hot Springs Coachella Valley – Indio Coachella Valley – Mission Creek
✓	Hydrologic Region	Colorado River
✓	Watershed	Whitewater River
LEGISLATIVE INFORMATION		
✓	State Assembly District	64, 65, 77, 80

✓	State Senate District	18, 31, 36, 37, 40
✓	U.S. Congressional District	41, 45, 51, 52
APPLICANT INFORMATION AND QUESTIONS TAB		
✓	Q1. Proposal Description	The Coachella Valley IRWM Region is committed to implementing the regional goals and objectives established in the 2010 Coachella Valley IRWM Plan, including (1) optimizing water supply reliability, (2) protecting or improving water quality, (3) providing stewardship of water-related natural resources, (4) coordinating and integrating water resources management, and (5) ensuring cultural, social, and economic sustainability of water in the Coachella Valley. Implementation of the water resource projects identified in the IRWM Plan are now needed in order to fully realize the regional benefits offered by integrated planning. The four projects in this proposal will diversify water supply and improve water quality, two critical issues in the Coachella Valley. The *Coachella Valley IRWM Implementation Grant Proposal* provides authorization documentation, proof of formal adoption, work plans, budges, schedules, and other project details. Below is a listing of the four proposed projects: • *Regional Water Conservation Program* – This program is to bring water conservation activities to an accessible level to a wide range of constituents throughout the region, through outreach, water audits, and various mechanisms to assist in implementation of water conservation methods. New programs will be developed and existing conservations plans will be expanded. The program will stretch supplies and provide a shield against drought which addresses critical water supply issues in the Coachella Valley. • *Short Term Arsenic Treatment (STAT) Project* – The STAT Project uses cost effective and reliable technology to remove naturally-occurring arsenic and provide new short term alternatives to improve quality drinking water for DACs without access to public water systems. Additionally, the program has training and education component that consists of helping farmworker families understand the proper monitoring of the quality of the water and functioning of decentralized wastewater systems. This project will address water quality issues in DACs located in the eastern Coachella Valley, including on lands owned by the Torres Martinez Desert Cahuilla Indians. • *Groundwater Quality Protection Program-Desert Hot Springs* – This project will extend municipal sewers to Sub-area D1 in Assessment District 12, thus eliminating the need for on-site septic systems that that overlie the Desert Hot Springs Subbasin. This project will eliminate 181 septic tanks that threaten contamination of groundwater supply, protect hot mineral water which is the economic basis of the community's spa industry and protect residents of a DAC from significant costs that would result if treatment of the potable water supply were necessary due to contamination.

		• *Groundwater Quality Protection Program-Cathedral City* – This project will expand existing municipal sewers in order to eliminate septic tanks in the Indio Hydrologic Subarea that threaten contamination of groundwater supply. It will replace existing septic tanks with sanitary sewers for 132 individual businesses in the vicinity of Perez Road and on Cathedral Canyon Drive. It will expand the CVWD wastewater collection system and connect the project area to a booster pump station.
✓	Q2. Project Director	Mr. Steve Robbins General Manager – Chief Engineer Coachella Valley Water District P.O. Box 1058 Coachella, CA 92236 (760) 398-2651 srobbins@cvwd.org
✓	Q3. Project Management	Mrs. Patti Reyes Planning and Special Programs Manager Coachella Valley Water District P.O. Box 1058 Coachella, CA 92236 (760) 398-2651 preyes@cvwd.org
✓	Q4. Applicant Information	Coachella Valley Water District P.O. Box 1058 Coachella, CA 92236 (760) 398-2661
✓	Q5. Additional Information	The projects are located within the Colorado River Basin Funding Area.
✓	Q6. Responsible Regional Water Quality Control Board(s):	The Coachella Valley IRWM Region lies within the Colorado River Regional Water Quality Control Board (Region 7).
✓	Q7. Eligibility	This proposal meets the requirements of Proposition 84. The projects within this proposal have a cumulative funding match of 42% of total project costs.
✓	Q8. Eligibility	Yes, the application represents a single application from an IRWM Region approved in the RAP. The Coachella Valley IRWM Region was approved in the 2009 RAP cycle.
✓	Q9. Eligibility	Yes. The Coachella Valley Water District (representing the CVRWMG) is a local agency as defined in Appendix B of the Grant Guidelines.
✓	Q10. Eligibility	The urban water suppliers that will receive funding from the proposed grants include: Coachella Valley Water District and Mission Springs Water District. CVWD has been approved by DWR, and MSWD will submit self certification of compliance with CWC §525 et seq. and AB 1420.
✓	Q11. Eligibility	Yes. The Coachella Valley Water District and Mission Springs Water District have both submitted and received verification from DWR of a complete 2005 UWMP. Both water suppliers will submit an updated 2010 UWMP consistent with the 2010 Guidebook by the July 1, 2011 deadline.

✓	Q12. Eligibility	Yes. Coachella Valley Water District submitted an AB1420 Self-Certification Statement - Table 1 & 2 (dated September 20, 2010) to DWR with the recent Planning Grant proposal. Based on DWR's review, Coachella Valley Water District has and is currently implementing the BMPs consistent with AB 1420 and, therefore, is eligible to receive water management grant or loan funds.
✓	Q13. Eligibility	No. The two Groundwater Quality Protection Program projects will both extend municipal wastewater collection systems to protect groundwater quality; however, neither project will affect groundwater volume/supplies.
✓	Q14. Eligibility	N/A
✓	Q15. Eligibility	Yes, the Coachella Valley Region receives imported water supplies through the State Water Project.
✓	Q16. Eligibility	Yes, the Coachella Valley IRWM Plan reduces dependence on future additional imported water supplies through water conservation, source substitution, and recycling.
✓	Q17. Eligibility	Yes, the planned 2012 Coachella Valley IRWM Plan Update will continue to reduce dependence on Delta water supplies.
PROJECTS TAB		
1. PROJECT BENEFITS INFORMATION		
✓	Project Name	Regional Water Conservation Program
✓	Benefit Type	Water Use Efficiency – Conservation-Water Demand/Conservation
✓	Benefit Level	Primary
✓	Description	The *Regional Water Conservation Program* is designed to bring water conservation activities to an accessible level to a wide range of constituents through outreach, water audits, and various mechanisms to assist in implementation of water conservation methods. Through water auditing processing agencies will employ agency staff or irrigation professionals to evaluate irrigation systems for inefficiencies. These audits are an efficient way to communicate recommendations to constituents and identify potential conservation opportunities. When these deficiencies are addressed there is the potential for increasing water supply during critical times and ensuring water reliability. Outreach and education will be achieved by program measures such as the release of public service announcements, fliers, workshop details and other public relations techniques to encourage water use efficiency.
✓	Measurement	6,625average acre-feet per year
BUDGET		
✓	Other Contribution	$0
✓	Local Contribution	$347,500
✓	Federal Contribution	$0

✓	In kind Contribution	$0
✓	Grant Funds Requested	$1,025,641
✓	Total Project Cost	$1,373,141
GEOGRAPHIC INFORMATION		
✓	Latitude	DD 33 MM 45 SS 19
✓	Longitude	DD -116 MM 19 SS 43
✓	Location	Coachella Valley IRWM Region
✓	County	Imperial County Riverside County San Bernardino County San Diego County
✓	Groundwater Basin	Coachella Valley – Desert Hot Springs Coachella Valley – Indio Coachella Valley – Mission Creek
✓	Hydrologic Region	Colorado River
✓	Watershed	Whitewater
LEGISLATIVE INFORMATION		
✓	State Assembly District	64, 65, 77, 80
✓	State Senate District	18, 31, 36, 37, 40
✓	U.S. Congressional District	41, 45, 51, 52
2. PROJECT BENEFITS INFORMATION		
✓	Project Name	Short Term Arsenic Treatment (STAT) Project
✓	Benefit Type	Water Quality Treatment Technology
✓	Benefit Level	Primary
✓	Description	This project will address the short term needs for provision of safe drinking water to rural and remote areas of the Coachella Valley. The first implementation projects are in the Eastern Coachella Valley. The project will provide short term implementation of treatment for Arsenic contamination of waters that are not readily connectable to municipal systems. Point of Entry and Point of Use technology and systems are proposed for the project areas. The project will offer cost effective and reliable technology to remove high levels of Arsenic and improve the quality of drinking water for disadvantaged communities.
✓	Measurement	N/A
BUDGET		
✓	Other Contribution	$0

✓	Local Contribution	$106,060
✓	Federal Contribution	$0
✓	In kind Contribution	$0
✓	Grant Funds Requested	$564,103
✓	Total Project Cost	$670,163
GEOGRAPHIC INFORMATION		
✓	Latitude	DD 33 MM 34 SS 12.036
✓	Longitude	DD -116 MM 2 SS 57.372
✓	Location	East Valley of Coachella Valley
✓	County	Riverside County
✓	Groundwater Basin	Coachella Valley-Indio
✓	Hydrologic Region	Colorado River
✓	Watershed	Whitewater
LEGISLATIVE INFORMATION		
✓	State Assembly District	64, 80
✓	State Senate District	40
✓	U.S. Congressional District	45
3. PROJECT BENEFITS INFORMATION		
✓	Project Name	Groundwater Quality Protection Program-Desert Hot Springs
✓	Benefit Type	Conveyance – Water Quality Improvement
✓	Benefit Level	Primary
✓	Description	The purpose of the MSWD Groundwater Quality Protection Project is to (1) extend the MSWD municipal wastewater collection system to 238 parcels Sub-area D1 in Assessment District 12, (2) eliminate the need for 181 on-site septic systems in the project area, and (3) assist compliance with State law and an MSWD ordinance that require customers to connect to the wastewater collection system once it is available to their property. The project will abate potential water quality threats associated with septic system sites and protect both drinking water supply and the hot mineral water that is the basis of the spa economy for the City of Desert Hot Springs and the Coachella Valley.
✓	Measurement	N/A
BUDGET		
✓	Other Contribution	$0
✓	Local Contribution	$2,071,540
✓	Federal Contribution	$0

✓	In kind Contribution	$0
✓	Grant Funds Requested	$1,025,641
✓	Total Project Cost	$3,097,181
GEOGRAPHIC INFORMATION		
✓	Latitude	DD 33 MM 57 SS 47.952
✓	Longitude	DD -116 MM 29 SS 59.2794
✓	Location	MSWD service area
✓	County	Riverside
✓	Groundwater Basin	Coachella Valley – Desert Hot Springs
✓	Hydrologic Region	Colorado River
✓	Watershed	Whitewater
LEGISLATIVE INFORMATION		
✓	State Assembly District	80
✓	State Senate District	37
✓	U.S. Congressional District	41, 45
4. PROJECT BENEFITS INFORMATION		
✓	Project Name	Groundwater Quality Protection Program-Cathedral City
✓	Benefit Type	Conveyance – Water Quality Improvement
✓	Benefit Level	Primary
✓	Description	The purpose of the *Groundwater Quality Protection Program-Cathedral City* is to (1) eliminate septic tanks in Cathedral City (within the Indio Hydrologic Subarea) that threaten contamination of groundwater, (2) eliminate the need for existing septic tanks for 132 individual businesses in the vicinity of Perez Road from Date Palm Drive to Cathedral Canyon Drive and on Cathedral Canyon Drive from Perez Road to the Whitewater River, (3) expand the Coachella Valley Water District (CVWD) wastewater collection system to serve the proposed project area, and (4) connect the CVWD wastewater collection system to a booster pump station. This project will aim to convert septic to sewer systems in order to protect groundwater quality in accordance with the Colorado River RWQCB's Basin Plan, increase groundwater protection in an area that borders tribal land, and addresses sanitation needs relative to failing septic tank systems.
✓	Measurement	N/A
BUDGET		
✓	Other Contribution	$0
✓	Local Contribution	$467,275

✓	Federal Contribution	$0
✓	In kind Contribution	$0
✓	Grant Funds Requested	$1,384,615
✓	Total Project Cost	$1,851,890
GEOGRAPHIC INFORMATION		
✓	Latitude	DD 33 MM 47 SS 1.3554
✓	Longitude	DD -116 MM 27 SS 44.8554
✓	Location	Perez Road in Cathedral City
✓	County	Riverside
✓	Groundwater Basin	Coachella Valley - Indio
✓	Hydrologic Region	Colorado River
✓	Watershed	Whitewater
LEGISLATIVE INFORMATION		
✓	State Assembly District	80
✓	State Senate District	37, 40
✓	U.S. Congressional District	45
APPLICATION ATTACHMENTS TAB		
✓	Attachment 1: Authorization and Eligibility Documentation	Att1_IG1_CoachellaValleyIRWM_Eligible_1of1.pdf
✓	Attachment 2: Adopted Plan and Proof of Formal Adoption	Att2_IG1_CoachellaValleyIRWM_Adopt_1of1.pdf
✓	Attachment 3: Work Plan	Att3_IG1_CoachellaValleyIRWM_WorkPlan_1of1.pdf
✓	Attachment 4: Budget	Att4_IG1_CoachellaValleyIRWM_Budget_1of1.pdf
✓	Attachment 5: Schedule	Att5_IG1_CoachellaValleyIRWM_Schedule_1of1.pdf
✓	Attachment 6: Monitoring, Assessment, and Performance Measures	Att6_IG1_CoachellaValleyIRWM_Measures_1of1.pdf
✓	Attachment 7: Economic Analysis-Water Supply Costs and Benefits	Att7_IG1_CoachellaValleyIRWM_WSBen_1of1.pdf

✓	Attachment 8: Water Quality and Other Expected Benefits	Att8_IG1_CoachellaValleyIRWM_WQOtherBen_1of1.pdf
✓	Attachment 9: Economic Analysis-Flood Damage Reduction Costs and Benefits	Att9_IG1_CoachellaValleyIRWM_DReduc_1of1.pdf
✓	Attachment 10: Cost and Benefits Summary	Att10_IG1_CoachellaValleyIRWM_BSummary_1of1.pdf
✓	Attachment 11: Program Preferences	Att11_IG1_CoachellaValleyIRWM_Preference_1of1.pdf
✓	Attachment 12: Disadvantaged Community Assistance	Att12_IG1_CoachellaValleyIRWM_DAC_1of1.pdf
✓	Attachment 13: AB 1420 and Water Meter Compliance Information	Att13_IG1_CoachellaValleyIRWM_AB1420_1of1.pdf
✓	Attachment 14: Consent Form	Att14_IG1_CoachellaValleyIRWM_Consent_1of1.pdf
✓	Attachment 15: Delta Water	Att15_IG1_CoachellaValleyIRWM_Delta_1of1.pdf

Attachment 1

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Authorization and Eligibility Documents

Attachment 1 consists of the following items:

- ✓ **Authorization and Eligibility Requirements**

  This attachment consists of authorizing documentation, eligible applicant documentation, Groundwater Management Plan (GWMP) compliance, Urban Water Management Plan (UWMP) compliance, AB 1420 and water meter compliance, groundwater monitoring program, the adopted Coachella Valley IRWM Plan, and consistency with the adopted IRWM Plan.

- ✓ **Resolution**

  Resolution 2010-218 authorizes the Coachella Valley Water District (CVWD) to submit this *Coachella Valley IRWM Implementation Grant Proposal* and execute an agreement with the State of California for IRWM implementation activities. This resolution is provided as Appendix 1-1.

- ✓ **Memorandum of Understanding**

  The adopted *Memorandum of Understanding among City of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City of Indio/Indio Water Authority, and Mission Springs Water District for Development of an Integrated Regional Water Management Plan* establishes the Coachella Valley Water District as a partner in the Coachella Valley IRWM program. This MOU is provided as Appendix 1-2.

- ✓ **Consistency with Coachella Valley IRWM Plan**

  This proposal contains information (see Appendix 1-3) that demonstrates that the selection process that took place to determine the projects within this Implementation Grant Proposal is consistent with the Coachella Valley IRWM Plan.

Authorizing Documentation

Resolution 2010-218 was adopted by the Coachella Valley Water District Board of Directors on December 14, 2010 and authorizes CVWD to submit this *Coachella Valley IRWM Implementation Grant Proposal* and execute an agreement with the State of California for IRWM implementation activities (see Attachment 1-1).

Eligible Applicant Documentation

This *Coachella Valley IRWM Implementation Grant Proposal* is being submitted by CVWD on behalf of the following cities, agencies, and non-governmental organizations:

- Coachella Valley Water District (CVWD) – *Regional Water Conservation Program*
- Pueblo Unido Community Development Corporation (PUCDC) – *Short Term Arsenic Treatment Project*

- Mission Springs Water District (MSWD) – *Groundwater Quality Protection Program-Desert Hot Springs*
- City of Cathedral City – *Groundwater Quality Protection Program-Cathedral City*

CVWD is an eligible applicant, because it is a public agency of the State of California organized and operating under County Water District Law, California Water Code §30000, et seq. and Coachella District Merger Law, Water Code Section §33100, et seq. CVWD is a State Water Project Contractor and Colorado River Contractor empowered to import water supplies to its service area, and has statutory authority over water supply.

Per the adopted *Memorandum of Understanding among City of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City of Indio/Indio Water Authority, and Mission Springs Water District for Development of an Integrated Regional Water Management Plan*, CVWD is a member of the Coachella Valley Regional Water Management Group (CVRWMG) (see Attachment 1-2). As directed by the Coachella Valley IRWM Grant Program Liaison, Anna Aljabiry, and consensus agreement by the CVRWMG, CVWD shall serve as the submitting agency for this *Coachella Valley IRWM Implementation Grant Proposal* consistent with the Region Acceptance Process submittal.

The Coachella Valley IRWM Region, within which all projects included within this grant proposal are located, was accepted into the IRWM Grant Program through the 2009 Region Acceptance Process.

GWMP Compliance

None of the projects included within this *Coachella Valley IRWM Implementation Grant Proposal* would directly involve groundwater management or groundwater recharge or have direct positive or negative groundwater impacts. The *Regional Conservation Program* would increase water conservation and aim at reducing water demand within the region through various outreach, education, demand management measures, and Resource Action Programs. As such, these projects would not directly affect groundwater from a management, recharge, or impact standpoint. Similarly, the *Short Term Arsenic Treatment Project* would reduce arsenic concentrations from local drinking water near the point of use. As such, this project would not address arsenic concentrations within groundwater basins, and would not directly impact groundwater. These projects do not require GWMP compliance in accordance with IRWM Program Guidelines.

The projects proposed to address groundwater quality protection (*Groundwater Quality Protection Program-Cathedral City* and *Groundwater Quality Protection Program-Desert Hot Springs*) would affect groundwater quality by removing a source of nitrate pollutants. These projects would involve extending municipal wastewater collection systems to properties with existing septic systems, thereby removing nitrate contamination from the local groundwater basin. These beneficial activities, however, do not constitute active groundwater management requiring development of a GWMP because they constitute future avoided impacts to the groundwater basin. Therefore, these projects do not require GWMP compliance in accordance with IRWM Program Guidelines.

UWMP Compliance

The five water purveyors that constitute the CVRWMG (CWA, CVWD, DWA, IWA, and MSWD) are all required by the Urban Water Management Planning Act (CWC §10610 *et seq.*) to submit a 2010 UWMP to DWR by July 1, 2011. There are two urban water suppliers included in this grant proposal which must comply with UWMP requirements in a timely manner: CVWD and MSWD. These two agencies have submitted and received approval by DWR for their 2005 UWMPs, and are currently eligible to receive State grant and loans. CVWD and MSWD are planning to submit their 2010 UWMPs to DWR by the deadline of July 1, 2011, and will work with DWR to ensure that they are verified as complete.

AB 1420 Compliance

As defined in the *IRWM Grant Program Guidelines*, AB 1420 conditions the receipt of IRWM grant funds on implementation of demand management measures in compliance with CWC §10631. There are two urban water suppliers included in this grant proposal which must also comply with AB 1420 requirements: CVWD and MSWD. Per these requirements, each of these water suppliers has submitted AB 1420 compliance forms (see Attachment 13).

Water Meter Compliance

As defined in the *IRWM Grant Program Guidelines*, CWC §529.5 requires urban water suppliers applying for IRWM grant funds to demonstrate that they meet the State's water meter requirements. There are two urban water suppliers included in this grant proposal which must also comply with Water Meter requirements: CVWD and MSWD. Per these requirements, each of these water suppliers has submitted Water Meter compliance forms (see Attachment 13).

Groundwater Monitoring Program

As defined in the *IRWM Grant Program Guidelines*, CWC §10920 establishes a groundwater monitoring program designed to monitor and report groundwater elevations. The CVRWMG has coordinated to identify the appropriate reporting entities for the Coachella Valley groundwater basin.

Adopted Coachella Valley IRWM Plan

Projects covered by this grant proposal are included within the Coachella Valley IRWM Plan (IRWM Plan), which was adopted by the CVRWMG governing bodies in December 2010. The IRWM Plan already complies with Part 2.2 of Division 6 of the CWC, commencing with §10530. The final Coachella Valley IRWM Plan is included in Appendix 1-4 of this implementation grant proposal.

To demonstrate compliance with the aforementioned statute, this attachment contains verification that the IRWM Plan has been adopted by all five CVRWMG agencies. In addition, the two other project sponsors (City of Cathedral City and Pueblo Unido Community Development Corporation) have also adopted the IRWM Plan. Attachment 2 contains the resolutions of adoption from each of these entities.

Table 1-1 demonstrates that the Coachella Valley IRWM Plan addresses all IRWM Plan Standards as listed in the Guidelines. Verification that the IRWM Plan addresses all the Plan Standards will be completed pending review of the Coachella Valley IRWM Plan by DWR.

Table 1-1: Coachella Valley IRWM Plan Contents with respect to IRWM Plan Standards

IRWM Plan Standards	Location in Coachella Valley IRWM Plan
Governance	Stakeholder Involvement (Chapter 5) Agency Coordination (Chapter 8) Framework for Implementation (Chapter 9)
Region Description	Region Description (Chapter 2) Agency Coordination (Chapter 8)
Objectives	Issues and Needs (Chapter 3) Objectives (Chapter 4)
Resource Management Strategies	Resource Management Strategies (Chapter 6)
Integration	Resource Management Strategies (Chapter 6)
Project Review Process	Project Review and Prioritization Process (Chapter 7) Appendix B: Coachella Valley IRWM Project List
Impact and Benefit	Framework for Implementation (Chapter 9)
Plan Performance and Monitoring	Framework for Implementation (Chapter 9)
Data Management	Framework for Implementation (Chapter 9)
Finance	Framework for Implementation (Chapter 9)
Technical Analysis	Issues and Needs (Chapter 3)
Relation to Local Water Planning	Agency Coordination (Chapter 8)
Relation to Local Land Use Planning	Agency Coordination (Chapter 8)
Stakeholder involvement	Stakeholder Involvement (Chapter 5)
Coordination	Stakeholder Involvement (Chapter 5) Agency Coordination (Chapter 8)
Climate Change	Region Description (Chapter 2) Resource Management Strategies (Chapter 6)

Consistency with Adopted IRWM Plan

Projects included within this grant proposal are consistent with the adopted Coachella Valley IRWM Plan, because all projects proposed for implementation grant funding were submitted for consideration to the Coachella Valley IRWM program as outlined in the IRWM Plan.

The CVRWMG and Planning Partners developed the project submittal process in May 2010. Described in *Chapter 7, Project Review and Prioritization Process* of the IRWM Plan, this process involves three major steps: solicitation, prioritization, and selection. Solicitation can be described as a "Call for Projects" that help meet the region's established goals and objectives. This step's objective is to compile a comprehensive list of water-related projects for the region. Any individual(s) that represent a public agency or non-profit organization with common water interests and needs can submit a project to the IRWM program via the project website (www.cvrwmg.org). An online project database was developed to assist in the management of project information (http://irwm.wrime.com/cvirwm/login.php). The database provided stakeholders with access to project information based on username/login functionality. Stakeholders accessed the online project database from the project website, entered and edited their project information, and submitted the projects for consideration in the IRWM Plan. Using an online web tool for management of the IRWM project list allows all project information to be shared with other users.

After the July 30, 2010 deadline, projects submitted through the open "Call for Projects" were reviewed, ranked, and prioritized using a two-step screening and scoring approach. Projects were first evaluated for consistency with the regional objectives. Projects that did not meet any regional objectives were excluded from the IRWM Plan. Projects that were found to meet at least one objective passed the screening process and moved on to the next step of the project review process: scoring and ranking. To evaluate and prioritize projects as part of the IRWM planning process, the scoring and ranking process takes into account three fundamental components:

1) Principles of IRWM planning,
2) Priorities of the Coachella Valley region,
3) Feasibility of projects to proceed.

Through a consensus process, the CVRWMG and Planning Partners established the relative importance of each of these criteria. The ranked project list was then reviewed against these priorities and specific projects were identified for the grant application. Each project was listed as a project within Appendix B of the IRWM Plan (the *Regional Conservation Program* is an integration for four proposed projects in the IRWM Plan), and was voted upon for inclusion within this proposal by the Planning Partners at a public meeting.

Proposed Funding Package

As described above, the Planning Partners used the Coachella Valley IRWM Plan as its guidebook in evaluating and selecting projects for this *Coachella Valley IRWM Implementation Grant Proposal*. All projects proposed within this funding package are consistent with and help to implement the goals and objectives laid out in the IRWM Plan. Table 1-2 shows the various goals and objectives established within the IRWM Plan, and Table 1-3 demonstrates that all of the projects included within this *Coachella Valley IRWM Implementation Grant Proposal* would directly meet at least four of those objectives. The four projects will diversify water supply and improve water quality, two critical issues in the Coachella Valley:

- *Regional Water Conservation Program* (Project IDs 219, 223, 224, and 225 in the IRWM Plan, Appendix B) – This program is designed to make water conservation activities accessible to a wide range of constituents throughout the region. New programs will be developed and existing conservations plans will be expanded. The program will stretch supplies and provide a shield against drought which addresses critical water supply issues in the Coachella Valley.
- *Short Term Arsenic Treatment (STAT) Project* (Project ID 254 in the IRWM Plan, Appendix B) – The STAT Project uses cost effective and reliable technology to remove naturally-occurring arsenic and provide new short term alternatives to improve quality drinking water for DACs without access to public water systems. This project will address water quality issues in DACs located in the eastern Coachella Valley, including on lands owned by the Torres Martinez Desert Cahuilla Indians.
- *Groundwater Quality Protection Program-Desert Hot Springs* (Project ID 189 in the IRWM Plan, Appendix B) – This project will extend municipal sewers to Sub-area D1 in Assessment District 12, thus eliminating the need for on-site septic systems that that overlie the Desert Hot Springs Sub-basin. This project will eliminate 181 septic tanks that threaten contamination of groundwater supply, protect hot mineral water which is the economic basis of the community's spa industry, and protect residents of a DAC from significant costs that would result if treatment of the potable water supply were necessary due to contamination. This project will address water quality issues in DACs.

- *Groundwater Quality Protection Program-Cathedral City* (Project ID 229 in the IRWM Plan, Appendix B) – This project will expand existing municipal sewers in order to eliminate septic tanks in the Indio Hydrologic Subarea that threaten contamination of groundwater supply. It will replace existing septic tanks with sanitary sewers for 132 individual businesses in the vicinity of Perez Road and on Cathedral Canyon Drive.

Table 1-2: Coachella Valley IRWM Plan Goals and Objectives

Goals	Objectives
1. Optimize water supply reliability.	A. Provide reliable water supply for residential and commercial, agricultural community, and tourism needs.
	B. Manage groundwater levels to manage and reduce overdraft, manage perched water, and minimize subsidence.
	C. Secure reliable imported water supply, including restoring/improving reliability of State Water Project supply and securing other imported water supplies.
	D. Maximize local supply opportunities, including water conservation, water recycling and source substitution, and capture and infiltration of runoff.
2. Protect or improve water quality.	E. Protect groundwater quality and improve, where feasible.
	F. Preserve and improve surface water quality by maintaining integrity of agricultural drainage systems, protecting the quality of natural runoff used for potable supply, and reducing pollution in stormwater runoff.
3. Provide stewardship of our water-related natural resources.	G. Preserve local environment and restore, where feasible.
	H. Manage flood risks, including current acute needs and needs for future development.
4. Coordinate and integrate water resource management.	I. Optimize conjunctive use of available water resources.
	J. Maximize stakeholder involvement and stewardship in water resource management.
5. Ensure cultural, social, and economic sustainability of water in the Valley.	K. Address water-related needs of local Native American culture.
	L. Address water and sanitation needs of disadvantaged communities, including those in remote areas.
	M. Maintain affordability of water.

Table 1-3: Consistency with IRWM Plan Objectives

Proposed Project	Contribution to IRWM Plan Objectives												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Regional Water Conservation Program	○	○	-	●	○	-	○	-	-	●	-	●	●
Short Term Arsenic Treatment Project	●	-	-	-	○	-	○	-	-	●	-	●	●
Groundwater Quality Protection Program - Desert Hot Springs	-	-	-	○	●	-	-	-	○	-	-	●	○
Groundwater Quality Protection Program - Cathedral City	-	-	-	○	●	-	-	-	○	-	●	●	○

● = directly related
○ = indirectly related

Appendix 1-1: CVWD Authorization Documentation

RESOLUTION NO. 2010-218

RESOLUTION OF THE BOARD OF DIRECTORS OF
COACHELLA VALLEY WATER DISTRICT
ADOPTION FOR THE COACHELLA VALLEY INTEGRATED
REGIONAL WATER MANAGEMENT PLAN

WHEREAS water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate; and

WHEREAS the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans; and

WHEREAS the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District; and

WHEREAS the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects; and

WHEREAS the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan.

NOW, THEREFORE, BE IT RESOLVED that the Coachella Valley Water District adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to continued development and implementation of the Plan to help address the critical water related needs of Coachella Valley; and

BE IT FURTHER RESOLVED that we support and encourage the Coachella Valley Regional Water Management Group Member Agencies to quickly adopt this Plan to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program and we encourage the Department of Water Resources to fully fund the grant applications that are prepared as a result of this Plan; and

BE IT FURTHER RESOLVED that the General Manager-Chief Engineer is hereby authorized to direct staff to prepare necessary data, conduct investigations, file applications, and execute grant agreements with the California Department of Water Resources in association with this application process; and

BE IT FINALLY RESOLVED that we pledge to continue working to develop the planning and projects that address the long- and short-term solutions to the Valley's critical water needs, address our regional goals and objectives, and improve the conditions and the quality of life for our communities.

ADOPTED this 14th day of December, 2010.

Patricia A. Larson
President of the Board of Directors
of the Coachella Valley Water District

ATTEST:

Julia Fernandez
Board Secretary

STATE OF CALIFORNIA)
COACHELLA VALLEY WATER DISTRICT) ss.
OFFICE OF THE SECRETARY)

I, JULIA FERNANDEZ, Secretary of the Board of Directors of the Coachella Valley Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 2010-218 adopted by the Board of Directors of said District at a regular meeting thereof duly held and convened on the 14th day of December, 2010, at which meeting a quorum of said Board was present and acting throughout. The Resolution was adopted by the following vote:

AYES: Five

NOES: None

ABSTAIN: None

Dated this 14th day of December, 2010.

(SEAL)

Board Secretary

Exhibit 2 - MOU

MEMORANDUM OF UNDERSTANDING
among
CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, AND MISSION SPRINGS WATER DISTRICT
for
DEVELOPMENT OF AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This Memorandum of Understanding (MOU) dated Sept. 9,2008 is entered into among the City of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City of Indio/Indio Water Authority, and Mission Springs Water District (collectively known as Partners) for the purpose of coordinating water resources planning activities undertaken by the water agencies.

WHEREAS, each Partner has adopted a Resolution of commitment pledging to create an Integrated Regional Water Management Plan (IRWMP).

WHEREAS, it is in the interests of the signatory Partners and the region served by the Partners that these water resources are responsibly managed and conserved to the extent feasible; and

WHEREAS, the Partners wish to coordinate their long term water supply planning efforts in accordance with Section 10531 of the *Integrated Regional Water Management Planning Act of 2002* and Division 43 of the *Safe Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act* of 2006 (Acts); and

WHEREAS, the Partners anticipate the potential need for future agreements on specific projects or programs and with other affected agencies to further coordinate long term water supply planning.

NOW, THEREFORE, it is mutually understood and agreed as follows:

SECTION 1:
AUTHORITY OF PARTNERS

1.1 The Coachella Water Authority is a joint powers authority formed as a component of the City of Coachella and Redevelopment Agency of the City of Coachella and has statutory authority over water supply.

1.2 The Coachella Valley Water District is a public agency of the State of California organized and operating under County Water District Law, California Water Code section 30000, et seq, and Coachella District

Merger Law, Water Code section 33100, et seq. Coachella Valley Water District is a State Water Project Contractor and Colorado River Contractor empowered to import water supplies to its service area, and has statutory authority over water supply.

1.3 The Desert Water Agency is an independent special district created by a special act of the state legislature contained in chapter 100 of the appendix of the California Water Code. Desert Water Agency is also a State Water Project Contractor empowered to import water supplies to its service area, replenish local groundwater supplies, and collect assessments necessary to support a groundwater replenishment program as provided for in the Desert Water Agency Law and has statutory authority over water supply.

1.4 The Indio Water Authority is a joint powers authority formed as a component of the City of Indio and Redevelopment Agency of the City of Indio and has statutory authority over water supply.

1.5 Mission Springs Water District is a County Water District formed under Section 30000 et seq of the California Water Code and has statutory authority over water supply.

SECTION 2: DEFINITIONS

The abbreviations and capitalized words and phrases used in this MOU shall have the following meanings:

2.1 Acts – mean Section 10531 of the Integrated Regional Water Management Planning Act of 2002 and California Water Code Division 43, known as the *Safe Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act* of 2006

2.2 Coachella Valley Region – the watershed bounded on the North by the San Bernardino Mountains, Little San Bernardino Mountains and Mecca Hills Area, on the East by Mortmar and Travertine Rock, on the South by the Santa Rosa Mountains and San Jacinto Mountains and on the West by Stubbe Canyon.

2.3 CVWD – Coachella Valley Water District

2.4 CVRWMG – Coachella Valley Regional Water Management Group

2.5 CWA – Coachella Water Authority

2.6 DWA – Desert Water Agency

2.7 IRWMP – Integrated Regional Water Management Plan

2.8 IWA – Indio Water Authority

2.9 MSWD – Mission Springs Water District

SECTION 3:
PURPOSES AND GOALS OF THIS MOU

3.1 **Purpose and Goals:**

3.1.1 This MOU is to memorialize the intent of the Partners to coordinate and share information concerning water supply planning programs and projects and other information, and to improve and maintain overall communication among the Partners involved. It is anticipated that coordination and information sharing among the Partners will assist the agencies in achieving their respective missions to the overall well-being of the region. Coordination and information sharing shall focus on issues of common interest in Section 3.2.

3.1.2 The execution of this MOU by the Partners shall constitute the formation of a Regional Water Management Group consisting of the Partners, in accordance with the Acts. The Regional Water Management Group shall be named the Coachella Valley Regional Water Management Group(CVRWMG).

3.1.3 It is the goal of the Partners to prepare and adopt an IRWMP for the Coachella Valley Region and to implement projects and programs individually or jointly in groups that address issues of common interest, as the group so identifies.

3.2 **Common Issues and Interest:**

3.2.1 Water supply programs and projects that may provide mutual benefits in improving water supply reliability and/or water quality.

3.2.2 Coordination of near-term and long-term water supply planning activities.

3.2.3 Development of regional approaches to problem-solving and issues resolution as well as to further common interest.

3.3 **Future Agreements By Partners:** The Partners acknowledge that by virtue of commitments and intentions stated within this MOU, the need for

certain other considerations that will facilitate the preparation of an IRWMP for the Coachella Valley Region will likely emerge. These include and are not limited to:

3.3.1 Developing a Scope of Work

3.3.2 Determining the cost sharing of projects

3.3.3 Establishing methods for project management

3.3.4 Establishing a project timeline

SECTION 4:
JOINT PLANNING FOR PROJECTS AND PROGRAMS

4.1 **Projects and Programs Covered by this MOU:** it is the intent of the Partners that they coordinate and collaborate to address the common issues identified. The Partners may develop and implement projects and programs individually or jointly in groupings of two or more, or enter into additional agreements in furthering those goals. Applicable projects and programs include, but are not limited to the following:

4.1.1 Water conservation programs and other demand management programs.

4.1.2 Water recycling, desalination, groundwater basin management, and water quality improvement programs and projects.

4.1.3 Water banking, conjunctive use and transfer arrangements.

4.1.4 Storage development to improve system reliability, efficiencies, and flexibility.

4.1.5 Project and program planning and development to solicit external funding.

4.1.6 Other meritorious projects or programs consistent with the purposes of this MOU.

4.2 **Communication and Coordination:** It is the intent of the Partners to meet on a monthly basis in order to carry out the purposes and goals of this MOU. The frequency and location of meetings are subject to the discretion of the Partners and may be changed when appropriate.

SECTION 5:
GENERAL PROVISIONS GOVERNING MOU

5.1 **Term:** The term of this MOU is indefinite. Any Partner may withdraw from the MOU by written notice given at least 45 days prior to the effective date.

5.2 **Construction of Terms:** This MOU is for the sole benefit of the Partners and shall not be construed as granting rights to any person other than the Partners or imposing obligations on a Partner to any person other than another Partner.

5.3 **Good Faith:** Each Partner shall use its best efforts and work wholeheartedly and in good faith for the expeditious completion of the objectives of this MOU and the satisfactory performance of its terms.

5.4 **Rights of the Partners and Constituencies:** This MOU does not contemplate the Partners taking any action that would:

5.4.1 Adversely affect the rights of any of the Partners; or

5.4.2 Adversely affect the customers or constituencies of any of the Partners.

5.5 This document and participation in this IRWMP are nonbinding, and in no way suggest that a Partner may not continue its own planning and undertake efforts to secure project funding from any source.

5.6 It is expected that Partners will contribute the personnel and financial resources necessary to develop the IRWMP.

IN WITNESS WHEREOF, the parties have executed this Memorandum of Understanding as of the day and year indicated on the first page of this MOU.

Tim Brown, City Manager
City of Coachella:

Tim Brown, Executive Director
Coachella Water Authority:

Steve Robbins, General Manager/Chief Engineer
Coachella Valley Water District:

Dave Luker, General Manager
Desert Water Agency:

Glenn Southard, City Manager
City of Indio:

Glenn Southard, Executive Director
Indio Water Authority:

Arden Wallum, General Manager
Mission Springs Water District:

Coachella Valley Integrated Regional Water Management Program
Planning Partners

Tuesday October 26, 2010
1:30 – 3:30 p.m.

Coachella Valley Association of Governments
73-710 Fred Waring Drive, Room 115
Palm Desert, CA 92260

Conference Line
Dial-in Number: 888-870-8306
Participant Access Code: 858 875 7424

DRAFT NOTES

Attendees:

Planning Group

Anna Vargas, Poder Popular
Anna Aljabiry, Department of Water Resources
Bill Bayne, City of Cathedral City
Bill Simmons, NAI Consulting
Bud Kopp, City of Rancho Mirage
Christina Mokhtarzadeh, Bureau of Indian Affairs
Dave Barakian, City of Palm Springs
David Saldivar, Augustine Band of Cahuilla Indians
Debi Livesay, Torres Martinez Desert Cahuilla Indians
Jennifer Wong, Department of Water Resources
Jose Cortez, Colorado River RWQCB
Margaret Park, Agua-Caliente Band of Cahuilla Indians
Megan Beaman Carlson, California Rural Legal Assistance Foundation (via phone)
Mike Gialdini, Riverside County
Sergio Carranza, Pueblo Unido CDC
Yvonne Parks, City of Desert Hot Springs

CVRWMG

Anders Wistrom, IWA
Gary Lewis, IWA
Arden Wallum, MSWD
Danny Friend, MSWD
Brent Gray, MSWD
Mark Krause, DWA
Katie Ruark, DWA
David Tate, DWA
Dan Parks, CVWD
Patti Reyes, CVWD
Rosalyn Prickett, RMC
Scott Lynch, RMC
Crystal Mohr, RMC
Daniel Cozad, IPM

Meeting Objectives:

A. Keep participants up-to-date on the Coachella Valley IRWM program.
B. Review proposed implementation grant package for Prop 84-Round 1 cycle.
C. Discuss and provide feedback on Screen Check Draft Coachella Valley IRWM Plan.
D. Identify future agenda items for Planning Partners meetings.

Meeting Notes:

Welcome and Introduction

Rosalyn Prickett, RMC Water and Environment, welcomed the Planning Partners and the group did self introductions. Rosalyn Prickett noted that Anna Aljabiry and Jennifer Wong from the California Department of Water Resources (DWR) were in attendance, and asked if they would like to give the group any updates on the IRWM program or other DWR matters.

Update on IRWM Planning and Schedule

Anna Aljabiry, DWR, noted that the Planning Grants were sent for senior review, and after that will be sent to supervisory review. DWR anticipates that this review process will be finalized in December 2010. DWR expects to receive approximately forty applications for the IRWM Round 1 Implementation Grant funding, and is still anticipating that the award date will be June 1, 2011. Anna Aljabiry was asked if there are any updates for the Colorado River Funding Area. She responded that everybody within the region applied, including Mojave, who is asking for funding from the Colorado River Funding Area and the Lahontan Funding Area (Mojave region is divided between the two funding areas).

Anna Aljabiry was asked to give an update on the DAC Demonstration Outreach Program. She noted that five total will be packaged and sent to the Department of General Services (DGS) for review. She noted that DGS does not want to accept packages with prior decisions of consultants.

Review and Discuss Proposed Implementation Grant Package

Rosalyn Prickett noted that the CVRWMG intends to publish the Final IRWM Plan according to the schedule, which would be to release the final plan in December 2010. Implementation Grant applications are due January 7, 2011.

At the last Planning Partners meeting, the CVRWMG and Planning Partners agreed on two priority projects: Regional Water Conservation Program ($1 million grant request), Short-term Arsenic Treatment Project ($550,000 grant request). The CVRWMG would like the Planning Partners to select one or two groundwater quality protection projects (septic-to-sewer conversion projects) for a total of approximately $2.45 million.

Rosalyn Prickett initiated discussion of the three potential groundwater quality protection projects (Palm Springs, Cathedral City, and Desert Hot Springs) identified as high-ranking in the prioritization process.

Dan Parks of CVWD noted that the Desert Hot Springs project has more “bang for the buck” and also has a larger funding match. Sergio Carranza of Pueblo Unido CDC noted that connection fees for families, especially within DACs, are very expensive. He noted that the Desert Hot Springs project has the benefit of providing money for homeowner connection.

Planning Partners asked DWR if there is a preference for the type of funding match. Anna Aljabiry said there is not.

Patti Reyes of CVWD asked about the incentive to connect, and expressed concern for high connecting costs. It was noted that perhaps this issue could be deferred to the Round 2 Implementation Grant. There was a question if connection fees could be included in a grant application? Anna Aljabiry answered no.

Planning Partners expressed concern for water quality migration from West to East Valley. It was noted that the density of septic systems is the main concern with respect to water quality degradation.

Question was asked if one project does not go through this round, can it have special consideration within a subsequent round? Planning Partners decided that that is not necessarily appropriate given changing priorities and the selection process. There was a suggestion that the Planning Partners form a Septic-Conversion Issues Group to prepare consensus on how to rate projects for Round 2 of the Implementation Grant cycle.

Sergio Carranza makes motion to move Desert Hot Springs project forward with a grant request of $1 million. Megan Beaman Carlson seconds the motion. The motion passes 13-0.

Mark Krause makes a motion to move the Cathedral City project forward with a grant request of $1.35 million. Dan Parks seconds the motion. The motion passes 12-1.

Group notes that it is important to continue groundwater quality protection projects within the Round 2 funding cycle and to encourage project submittals in the next round. In the next round, project selection decisions may be made at the Issues Group level with consensus from Planning Partners and CVRWMG, and conformance with IRWM Plan priorities.

Schedule for Implementation grant Application Submittal

Rosalyn Prickett noted that all project proponents (now including Desert Hot Springs and Cathedral City projects) must adopt the Final IRWM Plan by December. Implementation grants are due January 7, 2011.

Comments on Screen Check Draft Coachella Valley IRWM Plan

Rosalyn Prickett solicited any comments from the group and notes that if there are no comments now, the group will have further time to comment during the public review period in November. Note that the group will maintain their structure of requiring consensus to incorporate issues and changes.

Public Workshop

The CVRWMG intends to hold a Public Workshop in November to discuss the Public Review Draft of the IRWM Plan. Rosalyn Prickett encourages Planning Partners to get the word out and to attend the workshop.

Next Steps

Rosalyn Prickett notes that the CVRWMG would like letters of support from any Planning Partners entities, and will send out a draft resolution for board adoptions and a draft letter of support.

Attachment 2

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Adopted Plan and Proof of Formal Adoption Documentation

Attachment 2 consists of the following items:

- ✓ **Consistency with CWC §10543**

  This attachment contains documentation that the IRWM Plan was adopted consistent with CWC §10543. Appendix 2-1 contains the published notices to adopt the IRWM Plan, which were inserted once a week for two successive weeks in The Desert Sun newspaper in accordance with §6066 of the Government Code.

- ✓ **Proof of Formal Adoption**

  The Coachella Valley IRWM Plan was adopted by each of the CVRWMG governing bodies, as well as the other two project proponents (City of Cathedral City and Pueblo Unido Community Development Corporation) in December 2010. Proof of formal adoption is attached as Appendix 2-2.

- ✓ **Coachella Valley IRWM Plan**

  This attachment contains the Executive Summary of the final Coachella Valley IRWM Plan (Appendix 2-3). The full IRWM Plan document is included on a CD with this proposal.

Consistency with CWC §10543

In accordance with CWC§10543, the five CVRWMG agencies published notices of intention to adopt the IRWM Plan consistent with requirements of §6066 of the Government Code (Appendix 2-1), and held public meetings to formalize adoption of the IRWM Plan as follows:

- The Coachella Water Authority Board of Directors adopted the Plan at a public meeting held on December 15, 2010;
- The Coachella Valley Water District Board of Directors adopted the Plan at a public meeting held on December 14, 2010;
- The Desert Water Agency Board of Directors adopted the Plan at a public meeting held on December 7, 2010;
- The Indio Water Authority Board of Directors adopted the Plan at a public meeting held on December 7, 2010; and
- The Mission Springs Water Dis*trict* Board of Directors adopted the Plan at a public meeting held on December 20, 2010.

The non-CVRWMG project proponents also adopted the IRWM Plan in December 2010:

- The City of Cathedral City adopted the Plan at a public meeting held on December 8, 2010; and
- Pueblo Unido CDC adopted the Plan at a meeting held on December 10, 2010.

Proof of Formal Adoption

Appendix 2-2 contains formal resolutions for each of the CVRWMG entities and the project proponents, which indicate formal adoption of the IRWM Plan.

Coachella Valley IRWM Plan

Appendix 2-3 contains the Executive Summary of the adopted Coachella Valley IRWM Plan, and a complete copy of the IRWM Plan is included on a CD with this proposal.

Appendix 2-1: Public Notices for Consistency with CWC §10543

The Desert Sun
750 N Gene Autry Trail
Palm Springs, CA 92262
760-778-4578 / Fax 760-778-4731

Certificate of Publication

State Of California ss:
County of Riverside

Advertiser:

RMC WATER & ENVIRONMENT
4225 EXECUTIVE SQUARE STE 750
SAN DIEGO CA 92037

2000235722

I am over the age of 18 years old, a citizen of the United States and not a party to, or have interest in this matter. I hereby certify that the attached advertisement appeared in said newspaper (set in type not smaller than non pariel) in each and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

Newspaper: .The Desert Sun

11/24/2010

I acknowledge that I am a principal clerk of the printer of The Desert Sun, printed and published weekly in the City of Palm Springs, County of Riverside, State of California. The Desert Sun was adjudicated a newspaper of general circulation on March 24, 1988 by the Superior Court of the County of Riverside, State of California Case No. 191236.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 24th day of November, 2010 in Palm Springs, California.

Declarant

No 5035
Notice of Public Meetings to Adopt the Coachella Valley Integrated Regional Water Management Plan

The Coachella Valley Integrated Regional Water Management Plan will be considered for adoption by the governing bodies of the five water purveyors making up the Coachella Valley Regional Water Management Group. The Plan was created to meet Proposition 84 requirements for integrated water resource planning where multiple agencies, along with input from stakeholder advisory groups, collaborate on regional water issues and needs.

- The Coachella Water Authority Board of Directors will adopt the Plan on December 8, 2010 at 6:00 p.m. at 1515 6th Street, Coachella CA 92236;
- The Coachella Valley Water District Board of Directors will adopt the Plan on December 14, 2010 at 9:00 a.m. at 85-995 Avenue 52, Coachella CA 92236;
- The Desert Water Agency Board of Directors will adopt the Plan on December 7, 2010 at 8:00 a.m. at 1200 Gene Autry Trail South, Palm Springs CA 92264;
- The Indio Water Authority Board of Directors will adopt the Plan on December 7, 2010 at 4:00 p.m. at 100 Civic Center Mall, Indio CA 92201; and
- The Mission Springs Water District Board of Directors will adopt the Plan on December 20, 2010 at 3:00 p.m. at 66575 Second Street, Desert Hot Springs CA 92240.

The draft Coachella Valley Integrated Regional Water Management Plan, available at www.cvrwmg.org, was created to provide a mechanism for coordinating water resource planning efforts, identifying regional priorities for implementation, and generating funding support for the plans, programs, and projects of existing agencies and stakeholders.

For more information, please contact Public Information Associate Katie Ruark at (760) 323-4971 ext. 184 or kruark@dwa.org.

Published: 11/24/10

Appendix 2-1: Public Notices for Consistency with CWC §10543

The Desert Sun
750 N Gene Autry Trail
Palm Springs, CA 92262
760-778-4578 / Fax 760-778-4731

Certificate of Publication

State Of California ss:
County of Riverside

Advertiser:

RMC WATER & ENVIRONMENT
4225 EXECUTIVE SQUARE STE 750
SAN DIEGO CA 92037

2000236596

I am over the age of 18 years old, a citizen of the United States and not a party to, or have interest in this matter. I hereby certify that the attached advertisement appeared in said newspaper (set in type not smaller than non pariel) in each and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

Newspaper: .The Desert Sun

12/1/2010

I acknowledge that I am a principal clerk of the printer of The Desert Sun, printed and published weekly in the City of Palm Springs, County of Riverside, State of California. The Desert Sun was adjudicated a newspaper of general circulation on March 24, 1988 by the Superior Court of the County of Riverside, State of California Case No. 191236.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 1st day of November, 2010 in Palm Springs, California.

Declarant

No 5072
Notice of Public Meetings to Adopt the Coachella Valley Integrated Regional Water Management Plan

The Coachella Valley Integrated Regional Water Management Plan will be considered for adoption by the governing bodies of the five water purveyors making up the Coachella Valley Regional Water Management Group. The Plan was created to meet Proposition 84 requirements for integrated water resource planning where multiple agencies, along with input from stakeholder advisory groups, collaborate on regional water issues and needs.

- **The Coachella Water Authority** Board of Directors will adopt the Plan on December 8, 2010 at 6:00 p.m. at 1515 6th Street, Coachella CA 92236;
- **The Coachella Valley Water District** Board of Directors will adopt the Plan on December 14, 2010 at 9:00 a.m. at 85-995 Avenue 52, Coachella CA 92236;
- **The Desert Water Agency** Board of Directors will adopt the Plan on December 7, 2010 at 8:00 a.m. at 1200 Gene Autry Trail South, Palm Springs CA 92264;
- **The Indio Water Authority** Board of Directors will adopt the Plan on December 7, 2010 at 4:00 p.m. at 100 Civic Center Mall, Indio CA 92201; and
- **The Mission Springs Water District** Board of Directors will adopt the Plan on December 20, 2010 at 3:00 p.m. at 66575 Second Street, Desert Hot Springs CA 92240.

The final Coachella Valley Integrated Regional Water Management Plan, available at www.cvrwmg.org, was created to provide a mechanism for coordinating water resource planning efforts, identifying regional priorities for implementation, and generating funding support for the plans, programs, and projects of existing agencies and stakeholders.

For more information, please contact Public Information Associate Katie Ruark at (760) 323-4971 ext. 184 or kruark@dwa.org.
PUB; 12/1/2010

RESOLUTION NO. 2010-04

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE COACHELLA WATER AUTHORITY, COACHELLA, CALIFORNIA, ADOPTING THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate, and

WHEREAS, the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans, and

WHEREAS, the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District, and

WHEREAS, the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects, and

WHEREAS, the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan, and

NOW THEREFORE BE IT RESOLVED; that the Board of Directors of the Coachella Water Authority adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to continued development and implementation of the Plan to help address the critical water related needs of Coachella Valley.

[THIS PORTION LEFT BLANK INTENTIOANLY]

Appendix 2-2: Proof of Formal Adoption

PASSED, APPROVED AND ADOPTED at a regular meeting of the Board of Directors of the Coachella Water Authority on this 15th day of December 2010, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
Eduardo Garcia, President

ATTEST:

_____
Isabel Castillon, Secretary

STATE OF CALIFORNIA)
COACHELLA WATER AUTHORITY) ss
OFFICE OF THE SECRETARY)

I, Isabel Castillon, Secretary of the Board of Director of the Coachella Water Authority, do hereby certify that the foregoing is a full, true and correct copy of Resolution No. 2010-04, adopted by the Board of Directors of said authority at a regular meeting therefore duly held and convened on the 8th day of December 2010, at which meeting a quorum of said Board was present and acting throughout.

_____
Isabel Castillon, Secretary

APPROVED AS TO FORM:

_____
Best Best & Krieger, City Attorney

Appendix 2-2: Proof of Formal Adoption

RESOLUTION NO. 2010-218

RESOLUTION OF THE BOARD OF DIRECTORS OF
COACHELLA VALLEY WATER DISTRICT
ADOPTION FOR THE COACHELLA VALLEY INTEGRATED
REGIONAL WATER MANAGEMENT PLAN

WHEREAS water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate; and

WHEREAS the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans; and

WHEREAS the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District; and

WHEREAS the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects; and

WHEREAS the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan.

NOW, THEREFORE, BE IT RESOLVED that the Coachella Valley Water District adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to continued development and implementation of the Plan to help address the critical water related needs of Coachella Valley; and

BE IT FURTHER RESOLVED that we support and encourage the Coachella Valley Regional Water Management Group Member Agencies to quickly adopt this Plan to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program and we encourage the Department of Water Resources to fully fund the grant applications that are prepared as a result of this Plan; and

BE IT FURTHER RESOLVED that the General Manager-Chief Engineer is hereby authorized to direct staff to prepare necessary data, conduct investigations, file applications, and execute grant agreements with the California Department of Water Resources in association with this application process; and

BE IT FINALLY RESOLVED that we pledge to continue working to develop the planning and projects that address the long- and short-term solutions to the Valley's critical water needs, address our regional goals and objectives, and improve the conditions and the quality of life for our communities.

ADOPTED this 14th day of December, 2010.

Patricia A. Larson
President of the Board of Directors
of the Coachella Valley Water District

ATTEST:

Julia Fernandez
Board Secretary

Appendix 2-2: Proof of Formal Adoption

STATE OF CALIFORNIA)
COACHELLA VALLEY WATER DISTRICT) ss.
OFFICE OF THE SECRETARY)

I, JULIA FERNANDEZ, Secretary of the Board of Directors of the Coachella Valley Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 2010-218 adopted by the Board of Directors of said District at a regular meeting thereof duly held and convened on the 14th day of December, 2010, at which meeting a quorum of said Board was present and acting throughout. The Resolution was adopted by the following vote:

AYES: Five

NOES: None

ABSTAIN: None

Dated this 14th day of December, 2010.

(SEAL)

Board Secretary

Appendix 2-2: Proof of Formal Adoption

RESOLUTION NO. 1031

RESOLUTION OF THE BOARD OF DIRECTORS OF DESERT WATER AGENCY ADOPTING THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate; and

WHEREAS the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans; and

WHEREAS the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District; and

WHEREAS the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects; and

WHEREAS the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan; and

NOW THEREFORE BE IT RESOLVED that the Desert Water Agency Board of Directors adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to continued development and implementation of the Plan, subject to available funding, to help address the critical water-related needs of Coachella Valley; and

BE IT FURTHER RESOLVED that we support and encourage all Coachella Valley Regional Water Management Group partners to quickly adopt this Plan to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program and we encourage the Department of Water Resources to fully fund the grant applications that are prepared as a result of this Plan; and

BE IT FINALLY RESOLVED that we pledge to continue working to develop the planning and projects that address the long- and short-term solutions to the Valley's critical water needs, address our regional goals and objectives through the regional planning group as long as is beneficial for all parties.

ADOPTED this seventh day of December 2010.

Patricia G. Oygar, President

Attest:

James Cioffi, Secretary-Treasurer

Appendix 2-2: Proof of Formal Adoption

RESOLUTION NO. 2010-51

RESOLUTION OF THE INDIO WATER AUTHORITY ADOPTING THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate, and

WHEREAS, the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans, and

WHEREAS, the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District, and

WHEREAS, the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects, and

WHEREAS, the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan, and

WHEREAS, the Coachella Valley IRWM Plan is a planning document exempt from CEQA (pursuant to CEQA Guidelines sections 15262, 15306 and 15307); and

WHEREAS, the Coachella Valley Regional Water Management Group has made the IRWM Plan available for public review, and noticed of a public hearing to adopt the IRWM Plan, in a manner prescribed by law and consistent with Water Code section 10543; and

WHEREAS, all persons desiring to be heard at the public hearing held by the Coachella Valley Regional Water Management Group were given the opportunity to present their views, and written comments received concerning adoption of the IRWM Plan were publicly presented at the public hearing; and

WHEREAS, consistent with Water Code section 10543, subdivision (c), each of the individual members of the Coachella Valley Regional Water Management Group will be adopting the IRWM Plan at a noticed public hearing in the month of December.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors of the Indio Water Authority adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to the continued development and implementation of the objectives of the Plan to help address the critical water related needs of Coachella Valley.

BE IT FURTHER RESOLVED, that Indio Water Authority supports and encourages the Coachella Valley Regional Water Management Group to quickly adopt and submit a funding proposal to the Department of Water Resources (DWR) to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program, and Indio Water Authority encourages DWR to fully fund Coachella Valley Regional Water Management Group grant applications that are prepared as a result of the IRWM Plan.

BE IT FURTHER RESOLVED, that Indio Water Authority pledges to continue working to develop the planning and projects consistent with the IRWM Plan that address the long- and short-term solutions to the Valley's critical water needs, address regional goals and objectives, and improve the conditions and the quality of life for our communities.

BE IT FINALLY RESOLVED, that the General Manager of Indio Water Authority is authorized to execute any further documents necessary in support of Coachella Valley Regional Water Management Group's grant application for Round 1 of the Proposition 84 IRWM Grant Program.

PASSED, APPROVED AND ADOPTED this 7th day of December 2010, by the following vote:

AYES: Barba, Friestad, Miller, Tunis, Wilson, Ramos Watson
NOES: None
ABSENT: Holmes, Lamb, Torres

LUPE RAMOS WATSON, PRESIDENT

ATTEST:

CYNTHIA HERNANDEZ
SECRETARY

RESOLUTION NO. 2010-27

A RESOLUTION ADOPTING THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate, and

WHEREAS, the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans, and

WHEREAS, the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District, and

WHEREAS, the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects, and

WHEREAS, the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan, and

NOW, THEREFORE, BE IT RESOLVED that the Mission Springs Water District adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to continued development and implementation of the Plan to help address the critical water related needs of Coachella Valley, and

BE IT FURTHER RESOLVED that Mission Springs Water District supports and encourages the Coachella Valley Regional Water Management Group to quickly adopt this Plan to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program and encourages the Department of Water Resources to fully fund the grant applications that are prepared as a result of this Plan, and

BE IT FURTHER RESOLVED that Mission Springs Water District pledges to continue working to develop the planning and projects that address the long- and short-term solutions to the Valley's critical water needs, address our regional goals and objectives, and improve the conditions and the quality of life for our communities.

BE IT FINALLY RESOLVED, that the General Manager of the Mission Springs Water District is authorized to execute any further documents necessary in support of Coachella Valley Regional Water Management Group's grant application for Round 1 of the Proposition 84 IRWM Grant Program.

Appendix 2-2: Proof of Formal Adoption

Adopted this 20th day of December 2010 by the following vote:

Ayes:	Bowman, Brown, Furbee, Martin, Wright
Noes:	None
Abstain:	None

President of Mission Springs Water District
and its Board of Directors

ATTEST:

Secretary of Mission Springs Water District
and its Board of Directors

Appendix 2-2: Proof of Formal Adoption

CERTIFICATION OF ADOPTION

STATE OF CALIFORNIA)
)
COUNTY OF RIVERSIDE)

I, Arden Wallum, Secretary of the Board of Directors of Mission Springs Water District, certify that the foregoing is a full, true and correct copy of Resolution No. **2010-27**, which was adopted by the Board of Directors of said District at its regular meeting held December 20, 2010.

It has not been amended or repealed.

Dated December 21, 2010

Secretary of Mission Springs Water District
and its Board of Directors

(SEAL)

RESOLUTION NO. 2010-115

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CATHEDRAL CITY, ADOPTING THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN DATED NOVEMBER 30, 2010

WHEREAS water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate, and

WHEREAS the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) to activities contained in IRWM Plans, and

WHEREAS the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District, and

WHEREAS the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects, and

WHEREAS the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan, and

NOW THEREFORE BE IT RESOLVED, DETERMINED, AND ORDERED BY THE CITY COUNCIL FOR THE CITY OF CATHEDRAL CITY, AS FOLLOWS:

SECTION 1. that the City of Cathedral City hereby adopts the Final Coachella Valley Integrated Regional Water Management Plan dated November 30, 2010 and is committed to the continued development and implementation of the Plan to help address the critical water related needs of the Coachella Valley, and

SECTION 2. that the City of Cathedral City supports and encourages the Coachella Valley Regional Water Management Group to collectively and quickly adopt this Plan to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program and the City of Cathedral City encourages the Department of Water Resources to fully fund the grant applications that are prepared as a result of this Plan, and

SECTION 3. that the City of Cathedral City pledges to continue working to develop the planning and projects that address the long- and short-term solutions to the Valley's critical water needs, address the regional goals and objectives, and improve the conditions and the quality of life for all Coachella valley communities.

SECTION 4. **EFFECTIVE DATE**

This Resolution shall take effect upon its adoption.

SECTION 5. **CERTIFICATION**

That the City Clerk shall certify to the passage and adoption of this Resolution; shall enter the same in the book of original Resolutions of said City; and shall make a minute of passage and adoption thereof in the records of the proceedings of the City Council of said city, in the minutes of the meeting at which Resolution is passed and adopted.

PASSED, APPROVED, and **ADOPTED** at a regular meeting of the City Council for the City of Cathedral City held on this 15th day of December 2010 by the following vote:

Ayes: 4 Councilmembers Toles; England; Mayor Pro Tem Vasquez Mayor De Rosa

Noes: 0

Absent: 1 Councilmember Pettis

Abstain: 0

Kathleen J. DeRosa, Mayor
City of Cathedral City, California

ATTEST:

Pat Hammers, MMC, City Clerk City Clerk

APPROVED AS TO FORM:

Charles R. Green, City Attorney

APPROVED AS TO CONTENT:

William O. Bayne P.E., City Engineer

REVIEWED:

Donald E. Bradley, City Manager

Pueblo Unido CDC
of the Eastern Coachella Valley

RESOLUTION NO._1210__

BOARD OF DIRECTORS OF _PUEBLO UNIDO CDC__

A RESOLUTION OF ADOPTION FOR THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS water resource planning in the Coachella Valley is of the utmost importance to sustain the area's residents, businesses, and agriculture in a desert climate, and

WHEREAS the State of California encourages integrated water resource planning on a regional basis through Integrated Regional Water Management (IRWM) Plans and by conditioning certain existing and possibly future grant funding programs – including Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resources Code section 75001 *et seq.*) – to activities contained in IRWM Plans, and

WHEREAS the Coachella Valley Regional Water Management Group was formed as a collaboration of the five Coachella Valley public water agencies: the City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District, and

WHEREAS the Coachella Valley Regional Water Management Group partners have committed through a Memorandum of Understanding to developing a Coachella Valley IRWM Plan that coordinates and shares information concerning water supply planning and projects, and

WHEREAS the Coachella Valley stakeholders have worked collaboratively to identify water related issues and needs, establish regional goals and objectives, develop a project submittal and prioritization process, and provide recommendations on the projects and programs included in the Plan, and

NOW THEREFORE BE IT RESOLVED that the **_PUEBLO UNIDO CDC ___** adopts the Coachella Valley Integrated Regional Water Management Plan and is committed to continued development and implementation of the Plan to help address the critical water related needs of Coachella Valley, and

BE IT FURTHER RESOLVED that we support and encourage the Coachella Valley Regional Water Management Group to quickly adopt this Plan to qualify for funding under Round 1 of the Proposition 84 IRWM Grant Program and we encourage the Department of Water Resources to fully fund the grant applications that are prepared as a result of this Plan, and

BE IT FINALLY RESOLVED that we pledge to continue working to develop the planning and projects that address the long- and short-term solutions to the Valley's critical water needs, address our regional goals and objectives, and improve the conditions and the quality of life for our communities.

ADOPTED this ___10_____ day of December 2010

53040 Avenida Mendoza, La Quinta, CA 92253 - PO Box 1130, Thermal CA 92274 - Phone (427) 0985 Fax (760) 777-7550 www.pucdc.org

Appendix 2-2: Proof of Formal Adoption

Chair of the Board of Directors

Attest:

Secretary

Executive Summary

This executive summary of the Coachella Valley Integrated Regional Water Management (IRWM) Plan provides an overview of the planning effort.

Overview of IRWM Planning

IRWM planning is a process by which multiple agencies and stakeholders within a region work together to address water management issues through a collaborative process. In this sense, IRWM planning is an efficient method of regional planning that synthesizes previous planning efforts and allows various stakeholders to collaborate more effectively.

IRWM planning enables a region to apply for grants related to the IRWM program led by the California Department of Water Resources (DWR).

Coachella Valley IRWM Plan

This IRWM Plan covers the Coachella Valley Region, which is located in central Riverside County. The Region is generally the same as the Whitewater River watershed, but does not include portions of the watershed that are under the jurisdiction of the San Gorgonio Pass Water Agency.

This IRWM Plan was created by the Coachella Valley Regional Water Management Group (CVRWMG), which is a partnership of the following five Coachella Valley water purveyors: Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, Indio Water Agency, and the Mission Springs Water District.

The Coachella Valley Region is appropriate for integrated regional water management because is all-encompassing and allows for the inclusion of all pertinent agencies and stakeholders interested in water management in the Coachella Valley. The boundary selected also shares a common water supply, wastewater, and flood control infrastructure, making it easier to coordinate and establish regional goals and objectives. The selected regional boundary was formalized by within a Region Acceptance Process in April 2009.

Goals and Objectives

The Coachella Valley Region is facing a variety of water-related issues that can be addressed through the IRWM planning process. Input and discussion by the CVRWMG and regional stakeholders led to the formulation of the following goals for this IRWM Plan:

1. Optimize water supply reliability,
2. Protect or improve water quality,
3. Provide stewardship of water-related natural resources,
4. Coordinate and integrate water resource management, and
5. Ensure cultural, social, and economic sustainability of water in the Coachella Valley.

Following a series of facilitated public workshops and meetings, the CVRWMG and stakeholders developed thirteen specific IRWM Plan objectives to accomplish the five goals. These objectives include:

A. Provide reliable water supply for residential and commercial, agricultural community, and tourism needs.
B. Manage groundwater levels to reduce overdraft, manage perched water, and minimize subsidence.
C. Secure reliable imported water supply, including restoring/improving reliability of State Water Project supply and securing other imported water supplies.
D. Maximize local supply opportunities, including water conservation, water recycling and source substitution, and capture and infiltration of runoff.
E. Protect groundwater quality and improve, where feasible.
F. Preserve and improve surface water quality by maintaining integrity of agricultural drainage systems, protecting the quality of natural runoff used for potable supply, and reducing pollution in stormwater runoff.
G. Preserve the water-related local environment and restore, where feasible.
H. Manage flood risks, including current acute needs and needs for future development.
I. Optimize conjunctive use of available water resources.
J. Maximize stakeholder involvement and stewardship in water resource management.
K. Address water-related needs of local Native American culture.
L. Address water and sanitation needs of disadvantaged communities, including those in remote areas.
M. Maintain affordability of water.

Future IRWM Planning in Coachella Valley

This IRWM Plan is intended to be the first in an ongoing process of regional collaboration that will continue in the Coachella Valley. Subsequent updates are anticipated to involve updating the Plan itself, and also refining the identified stakeholder involvement effort, issues and needs, and other items relevant to water resources planning within the Coachella Valley.

Organization and Contents

The IRWM Plan follows DWR's IRWM Plan Standards, and is organized as follows.

Chapter 1, Introduction

Chapter 1, Introduction of the IRWM Plan contains background information regarding the Coachella Valley and the Whitewater River watershed. This chapter also provides background information regarding the Coachella Valley Regional Water Management Group (CVRWMG), which is a collaborative group comprised of five water purveyors (City of Coachella, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District). In addition, Chapter 1 describes various coordination efforts that were taken between CVRWMG and interested parties such as stakeholders, the public, advisory groups, disadvantaged communities (DAC), and Native American Tribes to develop the IRWM Plan.

Chapter 2, Region Description

Chapter 2, Region Description provides a comprehensive overview of the Coachella Valley. This chapter contains detailed information regarding the Valley's watershed, water systems, and water distribution. Specifically, this chapter describes various issues and attributes of the Valley, including the Valley's internal boundaries, regional boundary, water supplies and demand, water quality, social and cultural make-up, major water-related objectives and conflicts, and discusses neighboring and/or overlapping IRWM planning efforts. In addition, this chapter gives information regarding the legislative and policy context of climate change, and incorporates information regarding potential implications that could result from climate change.

Chapter 3, Issues and Needs

Chapter 3, Issues and Needs details the specific issues, needs, and conflicts relevant to water management in the Valley, which were used to develop the IRWM Plan objectives. This chapter covers topics such as water demand, water supply, water quality, flood management, natural resources, and issues specific to DAC and Tribal Issues Groups.

Chapter 4, Objectives

Chapter 4, Objectives builds on information from *Chapter 3, Issues and Needs*, identifying goals and objectives of the IRWM Plan. This chapter also establishes planning targets that will be used in the future to measure the successfulness of meeting objectives within the IRWM Plan. In addition, this chapter provides information regarding the measurability of IRWM Plan objectives, and details how the objectives were prioritized by the CVRWMG, Planning Partners, and stakeholders.

Chapter 5, Stakeholder Involvement

Chapter 5, Stakeholder Involvement provides an overview of the stakeholder involvement process that was developed to allow for continual involvement, engagement, and participation from various stakeholder groups as part of the IRWM planning process. Specifically, this chapter provides information regarding the governance structure that is set in place for the IRWM Plan, including governance for the CVRWMG, Planning Partners, and Issues Groups. This chapter contains information regarding stakeholder composition, including development of the Planning Partners, and the formation of DAC and Native American Issues Groups.

Chapter 6, Resource Management Strategies

Chapter 6, Resource Management Strategies includes information regarding the integration principles and methods that were used to develop the IRWM Plan. This chapter describes the integration approach and its components, including: stakeholder/institutional integration, resource integration, project integration, and strategy integration. Furthermore, this chapter discusses the Resource Management Strategies (RMS) that were considered to achieve the goals and objectives of the IRWM Plan, explains the RMS selection process, and describes each RMS that was selected. Lastly, this chapter includes an evaluation of possible effects of climate change and discusses the potential of various selected RMS to reduce greenhouse gas emissions.

Chapter 7, Project Evaluation and Prioritization

Chapter 7, Project Evaluation and Prioritization discusses information regarding the way in which various projects were selected for inclusion within the IRWM Plan. This chapter provides detailed

information regarding the processes for project submittal, project review, and project prioritization, and explains how projects were ultimately selected. Additionally, this chapter explains methods that were created to develop the IRWM Plan, to evaluate project and plan performance, and discusses the supplemental prioritization processes that may be used to identify appropriate projects to be included in future funding applications.

Chapter 8, Agency Coordination

Chapter 8, Agency Coordination provides information regarding coordination activities within the IRWM Region, and describes neighboring and/or overlapping IRWM efforts. This chapter discusses agency coordination between the CVRWMG and various state, federal, and local agencies. Lastly, this chapter provides information regarding the IRWM Plan and its relation to local water planning and local land use planning, and discusses future efforts to establish proactive relationships.

Chapter 9, Framework for Implementation

Chapter 9, Framework for Implementation discusses impacts and benefits associated with implementation of the IRWM Plan and priority projects. This chapter also contains information regarding climate change mitigation and the greenhouse gas reduction potential associated with the IRWM Plan. In addition, this chapter identifies technical analyses used to develop the IRWM Plan, and discusses data management, plan performance/monitoring efforts, and financing/funding mechanisms.

Attachment 3

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Work Plan

Attachment 3 consists of the following item:

- ✓ **Work Plan**

  Attachment 3 contains detailed information regarding the tasks that were and will be performed for each project constituting the proposal, as well as supporting documents such as regional and project maps, and existing data and studies.

This Work Plan contains summary descriptions of all the projects constituting the *Coachella Valley IRWM Implementation Grant Proposal* and tasks necessary to complete each project in the proposal. The Work Plan demonstrates that the proposal is ready for implementation, and includes a brief discussion of the supporting studies, data, resources, and deliverables for each project, to ensure implementation of the proposal is based on sound scientific and technical principles. The Work Plan tasks are also consistent with the major tasks and sub-tasks identified in the Budget (Attachment 4) and Schedule (Attachment 5) of this Implementation Grant Proposal.

Introduction

The Coachella Valley Regional Water Management Group (CVRWMG) is comprised of the Coachella Water Authority (CWA), Coachella Valley Water District (CVWD), Desert Water Agency (DWA), Indio Water Authority (IWA), and Mission Springs Water District (MSWD). The IRWM regional boundary was selected because it is all-encompassing, and allows for the inclusion of all pertinent agencies and stakeholders interested in water management in the Coachella Valley. As such, besides the CVRWMG, the Coachella Valley IRWM planning process also includes input from key water-related stakeholders throughout the region. The established governance structure for the Coachella Valley IRWM process is a collaborative, consensus-seeking process made up of the CVRWMG, Planning Partners, Issues Groups, and stakeholders.

The Coachella Valley IRWM Plan identifies five goals and thirteen objectives that were established to meet those goals. Each of the IRWM Plan goals and their corresponding objectives are listed in Table 3-1. The project prioritization process used to select from the region's IRWM project list emphasized projects that contribute to these regional goals. Four projects were specifically selected by the CVRWMG and Planning Partners to meet the critical water resource issues and concerns of the Coachella Valley.

The four projects in this proposal will diversify water supply and improve water quality, two critical issues in the Coachella Valley. Because groundwater is the primary source of water supply in the Valley, groundwater protection is a primary concern to regional stakeholders. The *Regional Water Conservation Program* addresses groundwater overdraft by reducing future demands on pumping and thus diversifying water supplies. The *Short-Term Arsenic Treatment Project* will use point-of-use and point-of-entry devices to reduce naturally-occurring arsenic from drinking water supplies in the East Valley. The two

Groundwater Quality Protection Program projects (in Cathedral City and Desert Hot Springs) are septic-to-sewer conversion projects that will decrease nitrate concentrations in local groundwater supplies.

This proposal includes a suite of projects identified by the CVRWMG and Planning Partners to best meet the current challenges of Coachella Valley. The complete proposal offers an integrated solution to the Valley's water supply and water quality needs.

Table 3-1: Coachella Valley Region IRWM Plan Goals and Objectives

Goals	Objectives
1. Optimize water supply reliability.	A. Provide reliable water supply for residential and commercial, agricultural community, and tourism needs.
	B. Manage groundwater levels to reduce overdraft, manage perched water, and minimize subsidence.
	C. Secure reliable imported water supply, including restoring/improving reliability of State Water Project supply and securing other imported water supplies.
	D. Maximize local supply opportunities, including water conservation, water recycling and source substitution, and capture and infiltration of runoff.
2. Protect or improve water quality.	E. Protect groundwater quality and improve, where feasible.
	F. Preserve and improve surface water quality by maintaining integrity of agricultural drainage systems, protecting the quality of natural runoff used for potable supply, and reducing pollution in stormwater runoff.
3. Provide stewardship of our water-related natural resources.	G. Preserve local environment and restore, where feasible.
	H. Manage flood risks, including current acute needs and needs for future development.
4. Coordinate and integrate water resource management.	I. Optimize conjunctive use of available water resources.
	J. Maximize stakeholder involvement and stewardship in water resource management.
5. Ensure cultural, social, and economic sustainability of water in the Valley.	K. Address water-related needs of local Native American culture.
	L. Address water and sanitation needs of disadvantaged communities, including those in remote areas.
	M. Maintain affordability of water.

Proposal Goals and Objectives

The objective of this *Coachella Valley IRWM Implementation Grant Proposal* is to present a suite of projects that:

- Further the regional goals and objectives established in the IRWM Plan;
- Provide multiple benefits through integration of water management strategies; and
- Assist in meeting the Coachella Valley's critical water supply and water quality needs.

Purpose and Need

The purpose and need of this Implementation Grant Proposal are intrinsically linked to the goals and objectives of the Coachella Valley IRWM Plan. This is evident in the fact that part of the criteria used by the CVRWMG and Planning Partners to select projects to include as part of this proposal was the ability of a project to meet the goals and objectives of the Coachella Valley IRWM Plan. Table 3-2 provides a summary of the four projects contained within this proposal, and their contribution to the IRWM Plan

Objectives. For a full explanation of the purpose and need of each project, and how the purpose and need address the Coachella Valley IRWM Plan's goals and objectives, please refer to individual project Work Plans included in this attachment.

Table 3-2: Contribution to IRWM Plan Objectives

Proposed Project	Contribution to IRWM Plan Objectives												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Regional Water Conservation Program	○	○	-	●	○	-	○	-	-	●	-	●	●
Short-Term Arsenic Treatment Project	●	-	-	-	○	-	○	-	-	●	-	●	●
Groundwater Quality Protection Program - Desert Hot Springs	-	-	-	○	●	-	-	-	○	-	-	●	○
Groundwater Quality Protection Program - Cathedral City	-	-	-	○	●	-	-	-	○	-	●	●	○

● = directly related
○ = indirectly related

Project List

The four projects in this proposal will diversify water supply and improve water quality, two critical issues in the Coachella Valley. This proposal provides authorization documentation, proof of formal adoption, work plans, budges, schedules, and other project details. Table 3-3 presents the specific projects included as part of the proposal. An abstract, current project status, priority of the project, and implementing agency is provided for each project.

Table 3-3: Projects Included in the Coachella Valley IRWM Implementation Proposal

Project	Description	
1: Regional Water Conservation Program	*Abstract:*	The *Regional Water Conservation Program* is designed to bring water conservation activities to an accessible level to a wide range of constituents throughout the region, through outreach, water audits, and various mechanisms to assist in implementation of water conservation methods. New programs will be developed and existing conservations plans will be expanded. The program will stretch supplies and provide a shield against drought which addresses critical water supply issues in the Coachella Valley.
	Status:	Tasks of the *Regional Water Conservation Program* are already in place. Separately the agencies have performed a number of tasks to establish existing conservation plans. On October 20, 2010, the agencies met to pool resources and develop the most effective ways to collaborate and create the *Regional Water Conservation Program*. Establishing the structure, budget, and goals of this program were the first step. Completion of design is not relevant to this project, because it will not include final design efforts.
	Priority:	High. This project was ranked Tier 1 in the prioritization process and was selected by the Planning Partners as a project that should be implemented without delay.
	Lead Agency:	Coachella Valley Water District

Project	Description	
2: Short-Term Arsenic Treatment Project	*Abstract:*	The proposed *STAT Project* is based on a pilot program implemented at San Antonio del Desierto. Pueblo Unido CDC developed engineering design that will be replicated at new sites. The STAT Project uses cost effective and reliable technology to remove naturally-occurring arsenic and provide new short term alternatives to improve quality drinking water for DACs without access to public water systems. Additionally, the program has training and education component that consists of helping farmworker families understand the proper monitoring of the quality of the water and functioning of decentralized wastewater systems. This project will address water quality issues in DACs located in the eastern Coachella Valley, including on lands owned by the Torres Martinez Desert Cahuilla Indians.
	Status:	Design and permitting have been completed. All design submittals prior to June 1, 2011 will be in relation to the pilot project, and all design submittals after June 1, 2011 will be specifically for the *STAT Project* and will include an engineering layout for the point-of-entry reverse osmosis system. The design status is 90% complete for this project.
	Priority:	High. This project was ranked Tier 1 in the prioritization process and was selected by the Planning Partners as a project that should be implemented without delay.
	Lead Agency:	Pueblo Unido CDC (PUCDC)
3: Groundwater Quality Protection Program – Desert Hot Springs	*Abstract:*	This project will extend municipal sewers to Sub-area D1 in Assessment District 12, thus eliminating the need for on-site septic systems that that overlie the Desert Hot Springs Subbasin. This project will eliminate 181 septic tanks that threaten contamination of groundwater supply, protect hot mineral water which is the economic basis of the community's spa industry and protect residents of a DAC from significant costs that would result if treatment of the potable water supply were necessary due to contamination.
	Status:	Environmental work for the *Groundwater Quality Protection Program* was completed in 1998 and recertified in 2007, design work was completed in 2010, and construction is currently ready to bid. As such, to date this project is at 100% completion of design.
	Priority:	High. This project was ranked Tier 1 in the prioritization process and was selected by the Planning Partners as a project that should be implemented without delay.
	Lead Agency:	Mission Springs Water District
Groundwater Quality Protection Program – Cathedral City	*Abstract:*	The RWQCB has identified water quality issues relating to failing and/or densely located septic systems within the Colorado River Basin, and has specifically noted that Cathedral City as an area that should convert septic tanks to sewer systems to improve water quality. This project will expand existing municipal sewers in order to eliminate septic tanks in the Indio Hydrologic Subarea that threaten contamination of groundwater supply. It will replace existing septic tanks with sanitary sewers for 132 individual businesses in the vicinity of Perez Road and on Cathedral Canyon Drive. It will expand the CVWD wastewater collection system and connect the project area to a booster pump station.
	Status:	Final design for the project was completed in April 2010, so no design will be required after initiation of the Grant Agreement (June 1, 2011). As such, to date this project is at 100% completion of design.
	Priority:	High. This project was ranked Tier 1 in the prioritization process and was selected by the Planning Partners as a project that should be implemented without delay.
	Lead Agency:	City of Cathedral City

Integrated Elements of Projects

Several of the projects included in this proposal are linked, and the coordinated implementation of each project is critical to the success of the proposal as a whole. The proposal has been crafted to maximize the linkages and integration between the projects within the proposal, and projects included in the proposal have been selected based on their ability to generate multiple benefits.

For a full explanation of the linkages and synergies between projects, please refer to individual project Work Plans included in this attachment.

Regional Map

Figure 3-1 provides a regional map containing the location of proposed activities or facilities of the projects, the water resources that will be affected, DACs within the region, and proposed monitoring locations (where applicable).

Completed Work

Each individual Work Plan provides a description of both completed work (work that has been or is expected to be completed prior to the grant award date of June 1, 2011), and future work for each of the four projects included within this proposal.

Existing Data and Studies

Available data and studies have been collected and reviewed to support the feasibility and technical methods of the projects included within this proposal. For a list of the existing data and studies for each project, please refer to individual project Work Plans included in this attachment. The existing data and studies included for each individual project have been submitted on a separate CD as part of this Implementation Grant proposal.

Project Map

Site maps showing the project's geographical location and the surrounding work boundary will be included in individual project work plans provided in this attachment. Please refer to those individual project maps.

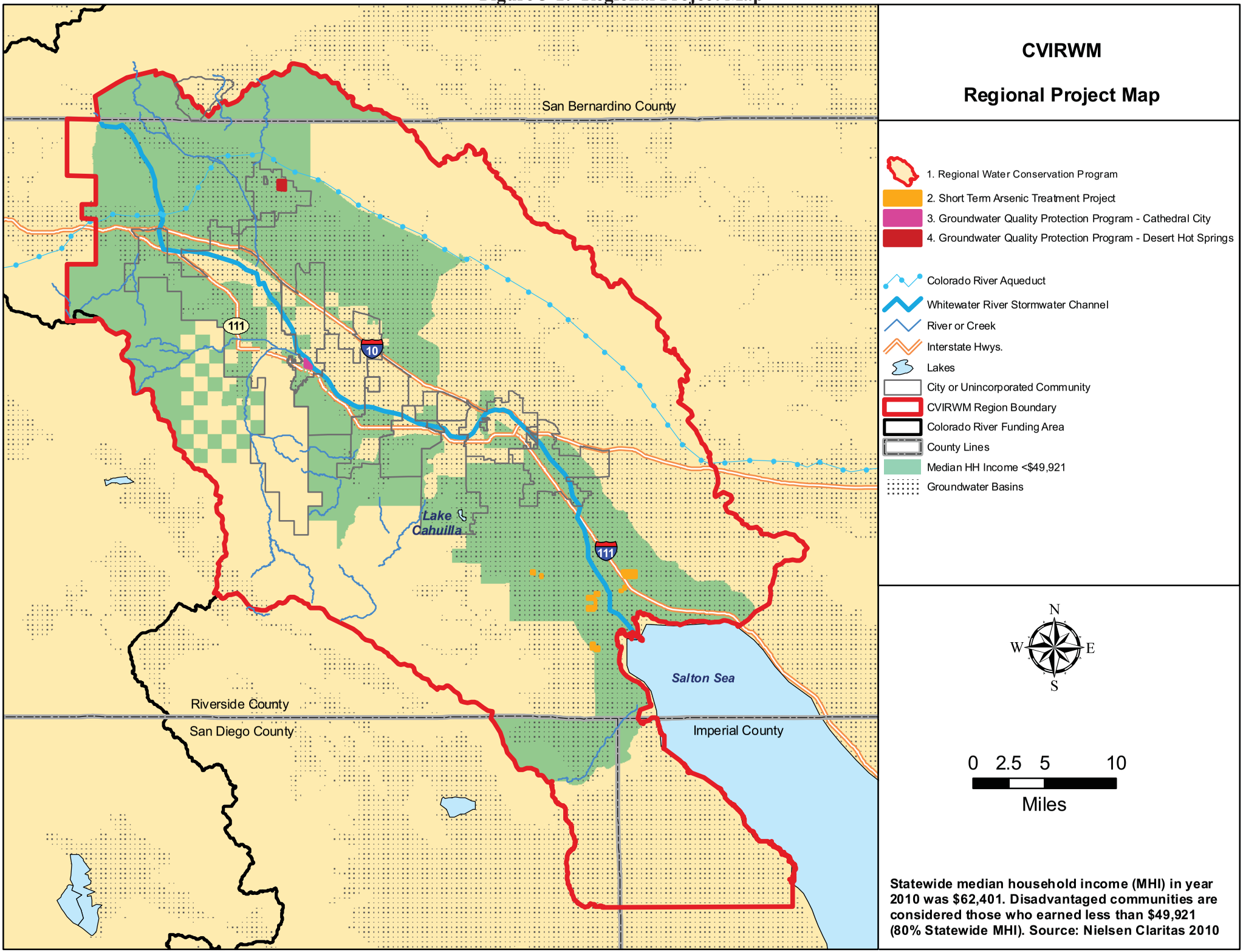
Project Timing and Phasing

Some projects included in this proposal are multi-phases projects and can operate on a standalone basis whiles others are not. For project timing and phasing for each project please refer to individual project work plans included in this attachment.

Work Plan Tasks

The following sections outline the specific activities that will be performed to implement each project in the *Coachella Valley IRWM Implementation Grant Proposal*. In addition, the following sections describe the specifics of each project with respect to project sponsors, project need, project purpose, project objectives, project partners, project abstract, linkages and synergies between projects, existing data and studies, project timing and phasing, and project mapping.

Figure 3-1: Regional Project Map



Regional Water Conservation Program

I. Introduction

Project Sponsor

The Coachella Valley Water District (CVWD) is the project sponsor for the *Regional Water Conservation Program*.

Project Need

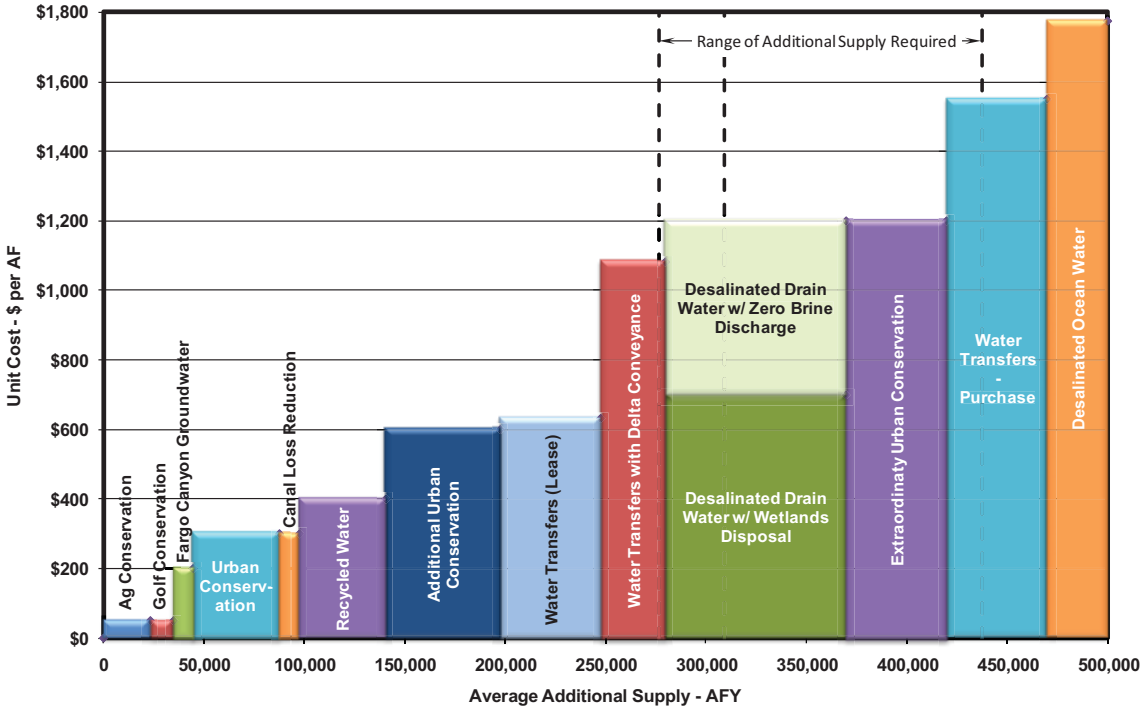
The 20x2020 Plan determined that California residents need to reduce the amount of water each person uses per day (i.e., per capita daily consumption) in order to continue to have enough water support the growing population. This reduction of 20 percent per capita use by the year 2020 is supported by legislation passed in November 2009 (SBx7-7 Steinberg) and has been incorporated into the Urban Water Management Planning act. To comply with the 20x2020 Plan, the Urban Water Management Planning Act requires that water suppliers calculate a baseline water use and baseline reduction targets of 10 percent by 2015 and by 20 percent by 2020.

Assembly Bill (AB) 1420 further amended the Urban Water Management Planning Act to condition eligibility for water management grants and loans on implementing fourteen demand management measures (DMMs) listed in Water Code §10631(f). These DMMs correspond to the fourteen best management practices (BMPs) listed and described in the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU).

The need for the *Regional Water Conservation Program* is illustrated in the Draft Coachella Valley Water Management Plan (CVWMP) Update, developed by CVWD for that part of the Coachella Valley that overlies the Indio Subbasin. The Draft CVWMP estimates that the average annual cost for the Coachella Valley to comply with the 20x2020 Plan is approximately $6 million. This cost includes the costs of maintaining trained conservation staff, program funding, and ongoing program maintenance. The CVRWMG estimated that the 20x2020 Plan will result in a savings of approximately 70,000 acre-feet of water annually by 2020 within the region (see Figure 3-2). The estimated average cost of water conservation on a per acre-foot basis in the project area is approximately $200; this is based on previous conservation efforts by the Valley's water purveyors. Compared to a cost of $600 to $1,000 per acre-foot for imported water supplies, urban water conservation costs of approximately $200 per acre-foot demonstrate that conservation is one of the most cost-efficient ways to meet future demands.

Future development in the Coachella Valley will comply with relevant landscaping ordinances, demand management measures (DMMs), and conservation programs. The *Regional Water Conservation Program* will provide funding to the five Coachella Valley water purveyors that constitute the CVRWMG to assist in implementing DMMs and other water conservation efforts that will reduce per capita daily consumption levels throughout the Coachella Valley.

Figure 3-2: Relative Costs of Water Supplies in the Coachella Valley



Source: CVWD. 2010. Draft 2010 Update of the Coachella Valley Water Management Plan.

Project Purpose

The *Regional Water Conservation Program* is a multifaceted program consisting of a suite of conservation programs and activities designed to increase efficiency, reduce future water demand, and assist the Coachella Valley in meeting the requirements of the 20x2020 Plan. The *Regional Water Conservation Program* will also increase coordination and collaboration between the member agencies of the CVRWMG.

Project Objectives

The *Regional Water Conservation Program* seeks to accomplish the following objectives:

- Continue to conduct outreach activities to encourage regional water use efficiency;
- Perform a concentrated outreach effort to extend to local schools through the Water Wise outreach program;
- Continue to conduct water audits and corresponding workshops to communicate recommendations regarding ways to increase water use efficiency to local constituents; and
- Assist in the ability of local constituents to act upon recommendations from water audits by subsidizing the costs of these audits both indoor and outdoor.

Table 3-4 provides an overview of the Coachella Valley IRWM Plan Objectives that are expected to be indirectly (○) or directly (●) achieved through implementation of the *Regional Water Conservation Program*.

Table 3-4: Contribution to IRWM Plan Objectives

Proposed Project	Contribution to IRWM Plan Objectives												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Regional Water Conservation Program	○	○	-	●	○	-	○	-	-	●	-	●	●

● = directly related; ○ = indirectly related

The *Regional Water Conservation Program* contributes to the IRWM Plan objectives in the following ways:

- ***A: Provide reliable water supply.*** This program will improve the reliability of the regional water supply by increasing conservation (reducing future water demand and future groundwater pumping) throughout the Valley. By reducing future demand and groundwater pumping, this program will potentially make current and future water supplies available for other uses.
- ***B: Manage groundwater levels***. This program will indirectly help to manage groundwater levels to reduce overdraft, manage perched water, and minimize subsidence by reducing demand and therefore potentially reducing groundwater future demand in the Coachella Valley. In total, this program is anticipated to reduce future groundwater pumping by approximately 6,625 AFY, which would assist in reducing overdraft and minimizing land subsidence.
- ***D: Maximize local supply opportunities.*** This program, by reducing water demand and use, will help maximize local supply opportunities.
- ***E: Protect groundwater quality.*** This program will reduce overdraft (refer to Objective B), which is known to have a deteriorating effect on groundwater quality. Therefore, this program will indirectly protect groundwater quality by reducing a potential threat to groundwater quality.
- ***G: Preserve water-related local environment.*** This program will indirectly preserve the local environment by reducing agricultural and urban irrigation, and therefore reducing runoff. Runoff in agricultural and urban areas can potentially contain chemical fertilizers and pesticides that can have a deleterious impact on the water-related local environment. By reducing the amount of runoff that occurs throughout the Valley, this program will potentially reduce chemical constituents in runoff from entering the water-related local environment.
- ***J: Maximize stakeholder involvement and stewardship in natural resource management.*** This program includes a wide range of stakeholder involvement by including all of the CVRWMG agencies and placing an emphasis on education and outreach. In addition, the emphasis of many components of this program is to educate residents about stewardship in natural resource (water) management. Through this program, the participating agencies will better coordinate their efforts and will establish regular meetings whereby program success and lessons learned can be shared with conservation staff, and adjustments can be made to better target the most effective education and conservation projects/programs. Through this coordination, a stronger valley-wide conservation message is expected to be achieved along with greater agency synergies and ultimately, more effective regional and local conservation achievements. The partner agencies will coordinate on various aspects of this program including but not limited to co-hosting workshops, purchasing equipment in bulk and coordinating public outreach efforts that are regional in nature.
- ***L: Address water and sanitation needs of disadvantaged communities.*** There are pockets of disadvantaged communities throughout the entire Coachella Valley. As such, this regional conservation program will also reach out to DACs. In addition, water conservation is one of the

most cost-effective means of increasing the local water supply, so it helps in addressing the water needs of DACs by maintaining the affordability of water.

- ***M: Maintain affordability of water.*** Water conservation is the most cost-effective means of increasing the local water supply, so this program will assist in maintaining affordability of water.

Project Partners

Project partners in the *Regional Water Conservation Program* include: CVWD, CWA, DWA, IWA, and MSWD. In addition, this program will include extensive outreach and education efforts that will involve a variety of stakeholders throughout the Coachella Valley.

Project Abstract

The *Regional Water Conservation Program* is designed to bring water conservation activities to an accessible level to a wide range of constituents throughout the region, through outreach, water audits, and various mechanisms to assist in implementation of water conservation methods. Completion of design is not relevant to this project, because it will not include final design efforts.

Outreach

The program begins with outreach and education, which will include Public Service Announcements, fliers, workshops and other public relations techniques to encourage water use efficiency. A more concentrated effort of outreach is then extended to local schools through the Water Wise programs. Water Wise equips students with tools to conduct their own water audit as a class assignment, and then provides the student with more efficient items for use in their home. Students have the opportunity to track their families use. Through the *Regional Water Conservation Program*, students across the region will participate in this program as part of the curriculum. These outreach efforts will build on existing efforts from Water Agencies of the Desert Region (WADR), which are described further below.

Water Audits

The other branch of outreach and education is Water Audits. Through these audits, agency staff or irrigation professionals evaluate irrigation systems for inefficiencies which are then reported to the owner, property manager, landscaper, etc. The agencies believe these audits are an efficient way to communicate recommendations to constituents. Audits also work to educate the agency staff and local professions engaged in enforcement of local Landscape Ordinances. Plan check regarding landscape ordinances is an on-going task of agency staff and will be enhanced through the audit process. In addition, public workshops for irrigation professionals are currently being conducted during which information from water audits regarding local irrigation is shared and disseminated. An expansion of these workshops will both serve as a function and effect of outreach efforts.

Implementing Water Conservation Efforts

While water audits are an efficient way to educate constituents and lead to recommendations, agencies find that effectiveness drops off after the audit. Acting upon recommendations could be costly or otherwise complicated. The next step in the process will be the largest function of the *Regional Water Conservation Program*. Agencies, at the discretion of their local needs, will subsidize the costs of implementing both indoor and outdoor improvements. As the constituents of each agency are different, the programs will vary but will include turf reduction, retrofitting inefficient irrigation systems, installing weather-based irrigation timers, separating irrigation stations, and other conservation efforts. Each agency will be responsible for administering this portion of the program within its boundaries; however, the agencies have agreed that if crossover becomes necessary, there will be options for collaboration.

Progress to Date

The CVRWMG agencies have created an umbrella conservation program that allows the region to address conservation needs through a collaborative and united process, but still allows each agency the flexibility to address the specific needs of the communities they serve. For example, MSWD customers are predominantly renters and already have a low per capita consumption, so turf conversion programs are less effective; whereas in some DWA communities, older irrigation systems are a concern for residents who need education on how to retrofit their systems.

The CVRWMG agencies have already implemented and are conducting some of the aforementioned water conservation efforts. These experiences will help inform and shape the *Regional Water Conservation Program* by providing important information regarding effectiveness and what constitutes the region's most pressing conservation needs. For example, MSWD currently participates in the Water Wise program. Approximately 50% of sixth graders in MSWD's service area are given the opportunity to participate. The knowledge that MSWD has gained in their Water Wise program experience will be shared with the partnering agencies as part of the *Regional Water Conservation Program*.

In addition, many of the CVRWMG agencies currently participate in water audits. The audits have led to a broader range of knowledge about local irrigation techniques. That knowledge can then be incorporated into workshops for irrigation professionals, which are currently being conducted by CVWD in both English and Spanish. Such workshops will be expanded throughout the region and held at various times to attract new residents through the *Regional Water Conservation Program*.

Lastly, WADR – also made up of the water agencies throughout the Region – have undertaken joint conservation efforts, including posting conservation-related billboards on the I-10 highway and completing various outreach and education efforts at local community events and festivals. Such efforts from this group will be utilized further through this program.

Linkages and Synergies between Projects

The *Regional Water Conservation Program* was developed by integrating multiple individual water conservation programs being implemented by the CVRWMG agencies. During the IRWM planning process, the agencies submitted individual projects ranging from smart water controller rebates to Resource Action Plans. During the project review and prioritization process, the agencies recognized the synergies between those projects and the potential cost savings that could be achieved through a regional integrated program. This *Regional Water Conservation Program* gives the partner agencies a unique opportunity to coordinate water conservation efforts throughout the region and capitalize on the work completed to date.

Existing Data and Studies

The type, scope, and focus of the conservation measures within this program are identified in the following plans and studies:

- Urban Water Management Plans from each agency
- Coachella Valley Water Management Plan (CVWD 2010): this plan contains a detailed list of existing conservation programs on pages 2-9 through 2-11.
- Urban Water Efficiency and Conservation Plan (IWA 2010)
- Water Conservation Master Plan (MSWD 2004)
- Water Wise Program Reports, issued annually to MSWD

Project Timing and Phasing

Outreach efforts are an on-going part of agency operations for all of the water agencies in the region. Several agencies are already engaged in multiple aspects of the *Regional Conservation Program*; however, grant funding and initiation of the program will increase these efforts dramatically. The program will involve a "regional water conservation kick-off," which entails a surge of public relations including but not limited to press releases, demonstrations, and paid advertising.

The *Regional Water Conservation Program* is not phased, but considered a logical chronology of conservation efforts. While any portion of this program could stand alone and increase water use efficiency, the program as a whole was created for optimum success in meeting the DMMs and the goals and objectives of the Coachella Valley IRWM Plan.

Project Map

Figure 3-3 provides a project site map for the *Regional Water Conservation Program* showing the project boundary, surface waters, groundwater basins, locations of DACs, and any proposed monitoring locations.

II. Proposed Tasks

Grant Administration

CVWD will be responsible for administration and processing of the overall Coachella Valley IRWM Implementation Grant contract, including tasks associated with compiling and submitting program invoices, quarterly reports, and completion reports for DWR.

Direct Project Administration Costs

Separately, the partner agencies have performed a number of tasks to establish existing conservation program. On October 20, 2010, the agencies met to pool resources and develop the most effective ways to collaborate and create the *Regional Water Conservation Program.* Establishing the structure, budget, and goals of this program were the first step to regional program administration.

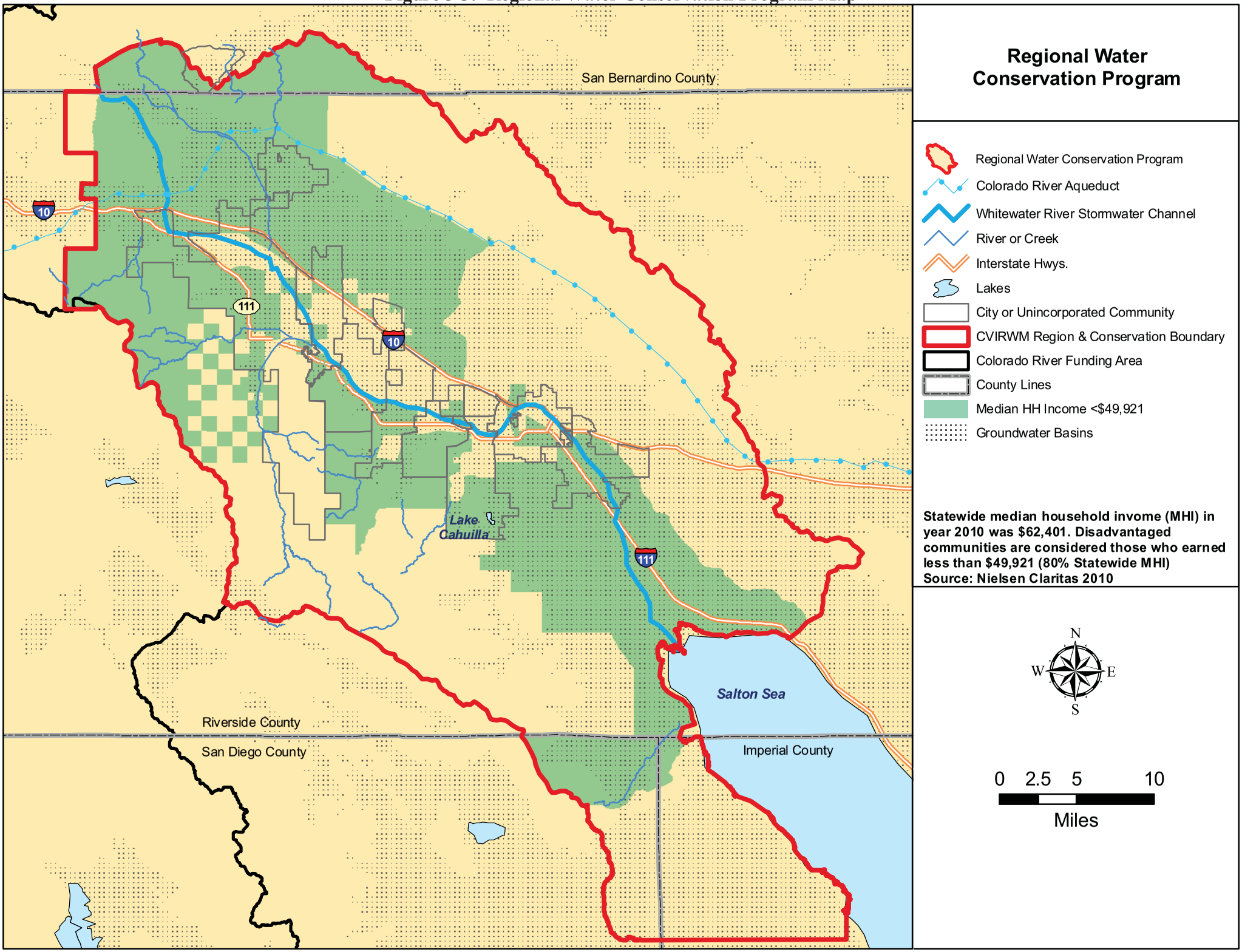
Expansion of existing conservation programs, as well as development of new programs, will require collaboration of the agencies and communities. The *Regional Water Conservation Program* allows the agencies to pool knowledge and resources in an effort to enhance conservation across the region.

Task 1: Project Administration - This program will involve project administration before and after the Implementation Grant agreement is formalized (June 1, 2011).

Completed Work

Project administration before June 1, 2011 will involve working with other agencies on coordinating the *Regional Water Conservation Program.* Actions that have completed to date include an agreement between the partnering water agencies to pursue a regional conservation program, and sharing of data, research, quotes, results, and ideas. Each agency has employed a project administrator and conservation coordinator for 5 hours each to the aforementioned project administration tasks.

Figure 3-3: Regional Water Conservation Program Map



Future Work

Project administration after June 1, 2011 will involve further efforts in workforce with the other agencies on coordinating and administering the *Regional Water Conservation Program*. Each agency has a conservation coordinator currently working on administration of existing conservation programs and working with other agencies on coordinating the *Regional Water Conservation Program*. The agencies will continue to meet and share data, research, quotes, results, and ideas. As the program progresses, administrative tasks will increase with each agency. Some may continue to use internal staff while other may deem it necessary to contract some or all of the tasks outside their agencies. Project administration will also include accounting and project administrator efforts to complete invoicing and project tracking procedures. Each agency will employ a project administrator, accounting staff, and conservation coordinator for 90 hours to complete all future project administration tasks.

Labor Category	Level of Effort	Status
BEFORE June 1, 2011		
CVWD Conservation Coordinator	5 hours	Ongoing
CVWD Project Administrator	5 hours	Ongoing
CWA Conservation Coordinator	5 hours	Ongoing
CWA Project Administrator	5 hours	Ongoing
DWA Conservation Coordinator	5 hours	Ongoing
DWA Project Administrator	5 hours	Ongoing
IWA Conservation Coordinator	5 hours	Ongoing
IWA Project Administrator	5 hours	Ongoing
MSWD Conservation Coordinator	5 hours	Ongoing
MSWD Project Administrator	5 hours	Ongoing
AFTER June 1, 2011		
CVWD Conservation Coordinator	15 hours	Ongoing
CVWD Accounting Staff	20 hours	Not Started
CVWD Project Administrator	15 hours	Ongoing
CWA Conservation Coordinator	15 hours	Ongoing
CWA Accounting Staff	20 hours	Not Started
CWA Project Administrator	15 hours	Ongoing
DWA Conservation Coordinator	15 hours	Ongoing
DWA Accounting Staff	20 hours	Not Started
DWA Project Administrator	15 hours	Ongoing
IWA Conservation Coordinator	15 hours	Ongoing
IWA Accounting Staff	20 hours	Not Started
IWA Project Administrator	15 hours	Ongoing
MSWD Conservation Coordinator	15 hours	Ongoing
MSWD Accounting Staff	20 hours	Not Started
MSWD Project Administrator	15 hours	Ongoing

Task 2: Labor Compliance Program - This program will not involve construction activities or any other activities that would necessitate a Labor Compliance Program.

Task 3: Reporting - To assess progress and accomplishments of the program, the following submittals will be completed by each individual agency and submitted to CVWD as the project sponsor. CVWD will compile the quarterly reports and invoices for ultimate submittal to DWR. All staff labor for the required reporting and invoicing tasks have been show under *Task 1: Direct Project Administration* above.

Project Administration Submittals	Date	Status
AFTER June 1, 2011		
Project Assessment and Evaluation Plan (PAEP)	December 1, 2011	Not started
Quarterly Progress Reports and Invoices	Quarterly as determined by Start	Not started
Project Completion Report	Due upon program completion	Not started

B. Land Purchase Easement

A land purchase easement is not required for implementation of this program.

C. Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation - This task involves preparation of all studies that will be completed after initiation of the Implementation Grant agreement to assess and evaluate the program. No efforts regarding this task will be completed prior to June 1, 2011.

To assess progress and accomplishments of the program, the following submittals will be performed:

- Each agency will produce an *Annual Conservation Report*, each of which will be compiled to share with the CVRWMG for program monitoring purposes. The conservation coordinators from each agency will work together to create a combined annual report.

Study Performed	Date	Status
AFTER June 1, 2011		
Annual Conservation Report	Annually until program end date	Not started

Task 5: Final Design - Not applicable. This program does not require design work.

Task 6: Environmental Documentation - Environmental documentation for this program is not required.

Task 7: Permitting - Not applicable. This program does not require permits.

D. Construction/Implementation

Task 8: Construction Contracting - Some aspects of the Regional Water Conservation Program will be conducted by contractors, while other tasks will be performed by agency staff. The agencies will select and retain various contractors based on individual agency policy, protocol, and on the conservation measures enacted. For implementing the construction/implementation tasks outlined below (in Task 9), it is anticipated that the agencies may use contractors or staff to conduct water audits, supply and install irrigation controls, supply and install smart controls, and for advertisement and outreach publications.

Contractor	Task	Agency
AFTER June 1, 2011		
Water Auditing Specialist/Staff	Water Auditor	CWA, CVWD, DWA, IWA and MSWD
Irrigation Contractor/Staff	Irrigation Controller Supplier / Installer	CWA, CVWD, DWA, IWA and MSWD
Irrigation Contractor/Staff	Smart Controller Supplier / Installer	CWA, CVWD, DWA, IWA and MSWD
Advertising Agencies and Printing Companies/Staff	Advertisement and Outreach	CWA, CVWD, DWA, IWA and MSWD

Task 9: Construction/Implementation – Construction/implementation for this program will involve nine tasks, as described below. The first eight tasks will be performed before and after initiation of the Implementation Grant Agreement.

Completed Work

Some of the portions of the *Regional Water Conservation Program* are in place by individual agencies:

Task	Agency(s)	Activity Description	Status
BEFORE June 1, 2011			
Subtask 9.1: Outreach	CWA, CVWD, DWA, IWA and MSWD	Performs outreach activities through Public Service Announcements, websites, community activities, speaking engagements, classroom demonstrations, field trips, and paid advertisements. In addition, WADR performs outreach through billboards, community events, and festivals. These outreach efforts include information about the importance of conserving water and tips on how conservation can be carried out by constituents.	Ongoing
Subtask 9.2: Water Audit Program	CVWD, DWA, and IWA	Conducts water audits for large and residential water users to recommend potential improvements that can be made to increase efficiency.	Ongoing
Subtask 9.3: Water Wise Program	MSWD	Gives kits to students to measure their own water use and improve water use efficiency at home.	Ongoing
Subtask 9.4: Workshops	CVWD and DWA	Conducts water workshops for landscape professionals, as well as homeowners and Homeowner's Associations. These workshops provide landscape professionals and large water users with information about the most efficient uses of water for irrigation.	Ongoing
Subtask 9.5: Irrigation Clocks	CVWD, DWA, and IWA	Pays for or subsidizes the cost of smart irrigation controllers and/or installation of controllers for customers. Each agency has a customized subsidization and/or cost-sharing protocol that they implement according to agreements they have with the various regional jurisdictions.	Ongoing
Subtask 9.6: Turf Reduction Programs	CVWD and IWA	Offers financial incentives to replace water consumptive turf with low water use native landscaping	Ongoing

Task	Agency(s)	Activity Description	Status
Subtask 9.7: Sprinkler Upgrades	CVWD and IWA	Subsidizes the cost of upgrading sprinkler heads and general upgrades for inefficient systems.	Ongoing
Subtask 9.8: Residential Leak Detection Program	IWA and MSWD	Customers may request a leak detector to be installed on their meter to register and record water use for one week to determine possible leaks and educating residents on their water use.	Ongoing
Subtask 9.9: Irrigation System Upgrades	N/A	N/A	N/A

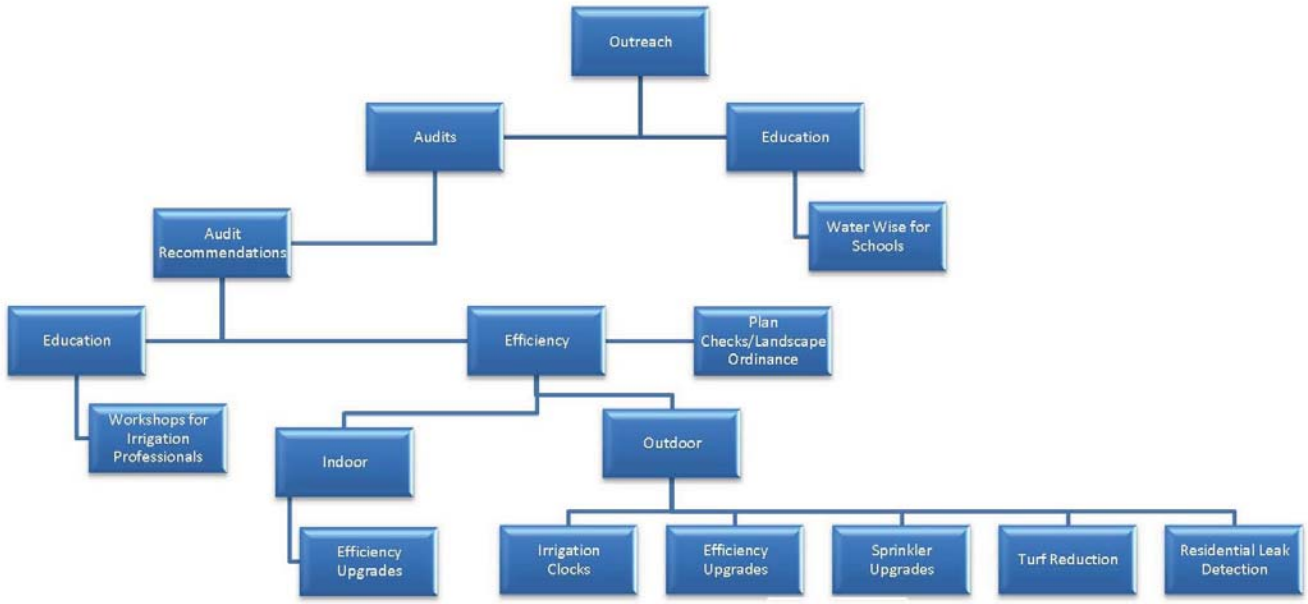
Future Work

The *Regional Water Conservation Program* includes an array of conservation measures that tie together to create the most comprehensive and efficient way to promote conservation in the region. Efforts that will occur after June 1, 2011 involve continuing and/or expanding the subtasks presented above. In addition, CWA, CVWD, DWA, IWA, and MSWD will initiate a new program, Task 9.9: Irrigation System Upgrades. The table below explains the efforts that will be carried out as part of this program after initiation of the Implementation Grant agreement. See Figure 3-4 (below) for details on the structure of the program.

Task	Agency(s)	Activity Description	Status
AFTER June 1, 2011			
Subtask 9.1: Outreach	CWA, CVWD, DWA, IWA and MSWD	Through public service announcements, websites, community activities, speaking engagements, classroom demonstrations, field trips, paid advertisements and other efforts, agencies will conduct outreach about the importance and tips for water conservation. Expansion of this program will allow for more saturation of the message. As constituents become more familiar with the need to conserve, agencies will be able to be more specific in outreach messages by providing customer-targeted conservation tips and direction.	Program will be expanded with grant funding and will utilize the existing WADR conservation group to coordinate regional communications.
Subtask 9.2: Water Audit Program	CWA, CVWD, DWA, IWA and MSWD	Agencies will conduct water audits for large water users and residents to recommend improvements in efficiency. The agencies plan to expand the audit program to segue into Tasks 9.5-9.9.	Program will be expanded with grant funding.
Subtask 9.3: Water Wise Program	CWA, CVWD, DWA, IWA and MSWD	Students will be given kits to measure their own water use and improve efficiency at home. The Water Wise Program will be expanded Valley-wide.	Program will be expanded with grant funding.
Subtask 9.4: Workshops	CWA, CVWD, DWA, IWA and MSWD	Agencies will conduct water workshops for landscape professionals, as well as homeowners and Homeowner's Associations. Expansion of these workshops will create a more educated base of irrigation professionals and large water users.	Program will be expanded with grant funding.
Subtask 9.5: Irrigation Clocks	CWA, CVWD, DWA, IWA and MSWD	Agencies will pay for or subsidize the cost of smart irrigation controllers and/or installation of controllers for customers	Program will be expanded with grant funding.

Task	Agency(s)	Activity Description	Status
Subtask 9.6: Turf Reduction Programs	CWA, CVWD, DWA, IWA, and MSWD	Agencies will offer financial incentives to replace turf with native landscaping	Program will be expanded with grant funding.
Subtask 9.7: Sprinkler Upgrades	CWA, CVWD, DWA, IWA and MSWD	Agencies will pay for or subsidize the cost of upgrading sprinkler heads. This program will be expanded as a second phase of Task 9.2. Following an audit, customers will have the opportunity to upgrade their systems.	Program will be expanded with grant funding.
Subtask 9.8: Residential Leak Detection Program	CWA, CVWD, DWA, IWA and MSWD	Customers may request a leak detector to be installed on their meter to register and record water use for one week to determine possible leaks and educating residents on their water use.	Program will be expanded with grant funding.
Subtask 9.9: Efficiency Upgrades and Retrofits	CWA, CVWD, DWA, IWA and MSWD	Agencies will provide reasonable reimbursements to urban users for other efficiency upgrades and retrofits deemed appropriate during the water audit process.	Program will be initiated with grant funding.

Figure 3-4: Regional Water Conservation Program Structure



E. Environmental Compliance/Mitigation/Enhancement

Task 10: Environmental Compliance/Mitigation/Enhancement - Not applicable.

F. Construction Administration

Task 11: Construction Administration – All administration, coordination, and review of the water conservation programs listed above will be addressed by conservation staff of each CVRWMG agency. These efforts have been included in the budget for *Task 9: Construction/Implementation*.

Short Term Arsenic Treatment Project

I. Introduction

Project Sponsor

The project sponsor for the *Short-Term Arsenic Treatment (STAT) Project* is Pueblo Unido Community Development Corporation (PUCDC).

Project Need

Arsenic is a naturally occurring constituent in the Coachella Valley bedrock, and due to its presence in the bedrock it has also been detected in the local groundwater. This constituent can pose potential health threats, and as such the United States Environmental Protection Agency has set Maximum Containment Levels (MCLs) for arsenic at 10 parts per million (ppm). According to the County of Riverside Department of Environmental Health (DEH), consuming water that contains arsenic levels above the MCLs can potentially pose health concerns by increasing cancer risks and impacting arteries and veins.

While water quality monitoring from wells owned and operated by the local water purveyors show that arsenic concentrations do not exceed MCLs, other reports suggest that arsenic concentrations of 60-70 ppm have been detected in localized areas, particularly in the East Valley. Arsenic concentrations at these levels present unhealthy conditions for East Valley residents, and demonstrate an urgent need for immediate technical solutions.

Farmworker families have enabled the Coachella Valley agricultural industry to be one of the few that have remained strong despite the recent economic downturn. According to the 2008 Riverside County Agricultural Report, the farming industry made a new profit record of 1.3 billion dollars in 2007. The agricultural industry also sustains the regional food system, and constitutes the majority of the local and regional economies. Despite this significant contribution, farmworker communities experience pervasive poverty and lack of necessary infrastructure.

The large majority of farmworker and low-income families live in small, unpermitted mobile home parks (Polanco parks), which rely on onsite wells for drinking water. A program for arsenic treatment in the Coachella Valley is needed to address the long and short-term needs for provision of safe drinking water to rural and remote areas of the Coachella Valley.

The DEH has found that approved point-of-use or point-of-entry treatment units can be effective in removing arsenic and other constituents of concern from local drinking water supplies. However, the East Valley communities that have experienced arsenic concentrations exceeding the MCLs are often disadvantaged communities (DACs) that cannot afford to purchase or install these systems on their own.

This project will address both arsenic-related water quality issues and address water-related needs of DACs by providing cost-effective and reliable ways to remove high levels of arsenic from drinking water supplies for farm worker families in the East Valley.

Project Purpose

The purpose of the *Short-Term Arsenic Treatment Project* is to (1) implement five point-of entry reverse osmosis water treatments systems, (2) implement 280 point-of-use Reverse Osmosis Water Treatment Systems, (3) address arsenic-related water quality issues within the local drinking water supply, and (4) provide water that is reliable and of improved quality to disadvantaged communities (farm worker families).

Project Objectives

The *Short-Term Arsenic Treatment Project* includes the following project objectives:

- Offer cost-effective and reliable technology to remove high levels of arsenic.
- Provide new short-term alternatives to deliver quality drinking water for disadvantaged communities.

Table 3-5 provides an overview of the Coachella Valley IRWM Plan objectives that are expected to be indirectly (○) or directly (●) achieved through implementation of the *Short-Term Arsenic Treatment Project.*

Table 3-5: Contribution to IRWM Plan Objectives

Proposal Project	Contribution to IRWM Plan Objectives												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Short-Term Arsenic Treatment Project	●	-	-	-	○	-	○	-	-	●	-	●	●

● = directly related; ○ = indirectly related

The project contributes to the IRWM Plan objectives in the following ways:

- ***A: Provide reliable water supply.*** This project intends to improve the quality of local water supplies, thereby reducing the need for communities to rely on other, less reliable water supplies such as hauled water.
- ***E: Protect groundwater quality and improve, where feasible.*** This project will indirectly protect groundwater quality by reducing constituents of concern from entering the wastewater supply, and therefore preventing this water from percolating into the groundwater.
- ***J: Maximize stakeholder involvement.*** This project provides education and job training in water management operations, thereby increasing the amount of stakeholders involved.
- ***L: Address water and sanitation needs of disadvantaged communities.*** This project directly addresses water quality issues of DACs within the Coachella Valley.
- ***M: Maintain affordability of water.*** This project will provide a cost-effective solution to local water quality issues within a DAC. In addition, by improving drinking water quality within these communities, this project will reduce the need for residents to rely on other, more expensive water supplies such as bottled water.

Project Partners

Project partners for this project include: Poder Popular of the Eastern Coachella Valley, California Rural Legal Assistance Foundation, California Rural Legal Assistance, and the Environmental Justice Coalition on Water. These entities have collaborated on Arsenic sampling and local outreach and organizing. The groups have worked with Rural Community Assistance Corporation (RCAC) on a survey of Arsenic water quality issues and have worked with and the Coachella Valley Water District to connect some areas to water and sewer service.

Project Abstract

The proposed STAT Project is based on a pilot program implemented at San Antonio del Desierto (a mobile home park) in the Eastern Coachella Valley. During this pilot project, Pueblo Unido CDC (PUCDC) developed an engineering design for short-term arsenic treatment (STAT), which will be replicated for the *Short-Term Arsenic Treatment Project*, and at other impacted sites throughout Coachella Valley. The design layouts from the pilot project included designs for a point-of-entry reverse osmosis water treatment system and installation of point-of-use reverse osmosis water treatment systems. This project will serve communities that currently obtain their water from private wells.

Pueblo Unido CDC will be coordinating the development and implementation of this program in association with its existing Agricultural Worker Housing Rehabilitation Program (AWHRP). AWHRP provides technical assistance and training to farmworker and low-income families to improve the existing infrastructure and bring the Polanco parks up to Riverside Code compliance. The scope of the work includes engineering redesign, redevelopment of domestic water distribution, and installation of electrical system. Additionally, the program has training and education component that consists of helping farmworker families understand the proper monitoring of the quality of the water and functioning of decentralized wastewater systems. The design status is 90% complete.

Linkages and Synergies between Projects

Not applicable.

Existing Data and Studies

This project type, scope, and focus are identified in the following plans and studies:

- Rural Community Assistance Corporation. January 21, 2010. Drinking Water Assessment Final Report: San Antonio del Desierto Mobile Home Park.
- Rural Community Assistance Corporation. March 2010. *Coachella Valley Water Systems Assessments.*

Project Timing and Phasing

This project is a multi-component project. The pilot for this project was completed at the San Antonio del Desierto mobile home park. In addition to the project discussed within this work plan, other phases of this project could potentially occur in other locations throughout the Coachella Valley.

Project Map

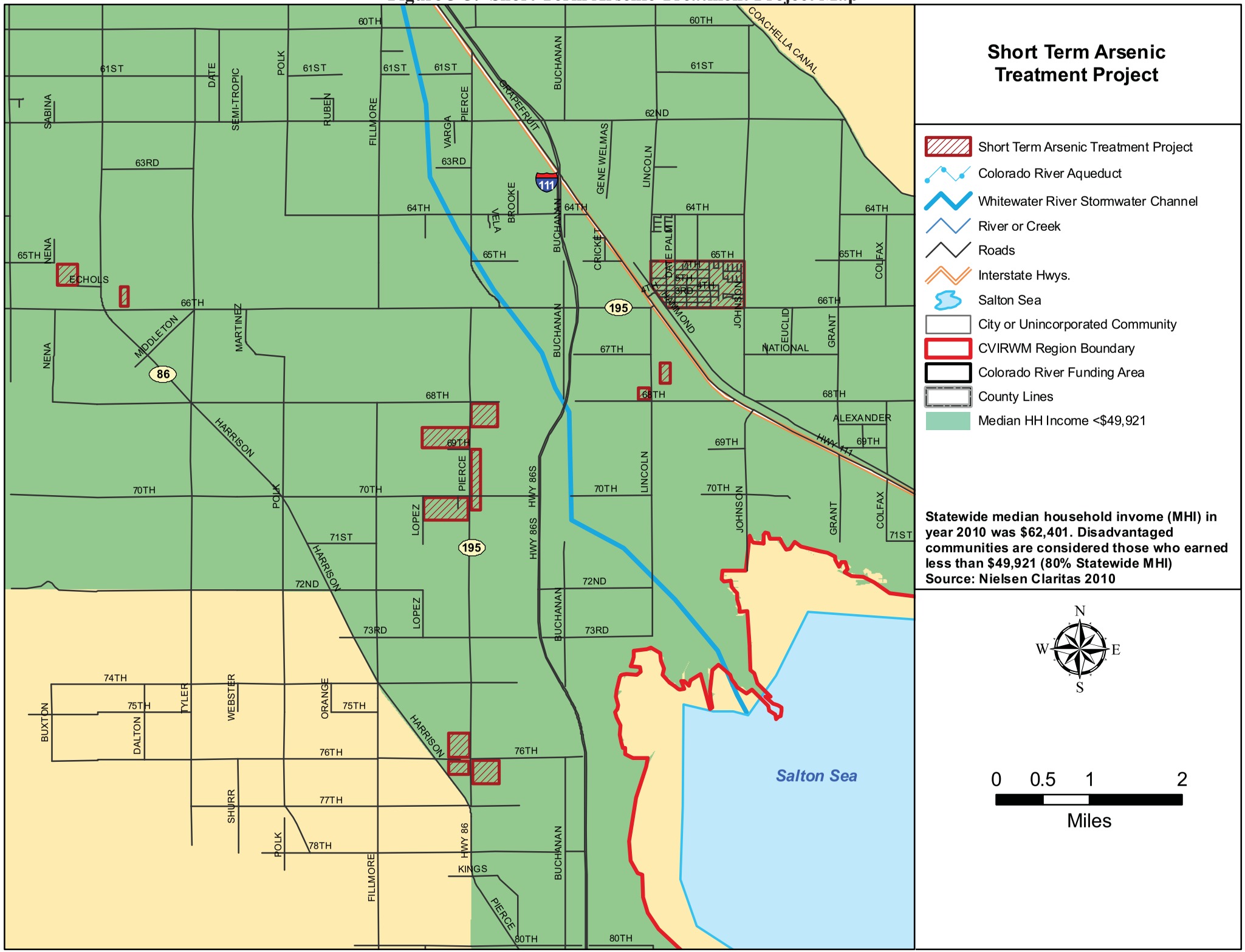
Figure 3-5 provides a project site map for the *Short-Term Arsenic Treatment Project*, showing the project boundary, surface waters, groundwater basins, a DAC layer, proposed monitoring will occur at the project locations.

II. Proposed Tasks

Grant Administration

CVWD will be responsible for administration and processing of the Implementation Grant contract, including tasks associated with compiling and submitting project invoices, quarterly reports, and completion reports for DWR.

Figure 3-5: Short Term Arsenic Treatment Project Map



A. Direct Project Administration Costs

Task 1: Project Administration - This project will involve project administration before and after the Implementation Grant Agreement is formalized (June 1, 2011). Ongoing project administration will carryover from the pilot project that was administered at San Antonio del Desierto. Pueblo Unido has employed a Project Manager for 120 hours to date for project administration efforts. This effort has involved coordination with partner agencies, including providing point-of-entry and point-of-use technical specifications to Coachella Valley Water District, and provided water quality results with the Riverside County Environmental Health Department to monitor system performance.

Future project administration activity will continue to involve a Project Manager from Pueblo Unido (500 hours) to continue to coordinate with CVWD, produce invoices and reports, and fulfill all other necessary administrative tasks associated with the project.

Labor Category	Level of effort	Status
BEFORE June 1, 2011		
Project Manager	120 hours administered for project pilot at San Antonio del Desierto	Ongoing
AFTER June 1, 2011		
Project Manager	240 hours	Ongoing

Task 2: Labor Compliance Program - Not applicable. Construction associated with this project will not involve significant ground disturbing activities, or any other construction activities that would necessitate a Labor Compliance Program.

Task 3: Reporting - All reporting for this project will occur after the Implementation Grant Agreement is formalized (after June 1, 2011). In order to assess progress and accomplishments of the project, the following submittals will be completed by each indicated date.

Submittals	Date	Status
AFTER June 1, 2011		
Project Assessment and Evaluation Plan (PAEP)	December 1, 2011	Not started
Quarterly Reports and Invoices	Quarterly based on start date	Not started
Project Completion Report	Upon Completion	Not started

B. Land Purchase Easement

A land purchase easement is not required for implementation of this project.

C. Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation - This task involves preparation of all studies that were completed before initiation of the Grant Agreement (before June 1, 2011) to assess and evaluate the project.

- The *San Antonio del Desierto Pilot Program Initial Report* will be finalized in January 2011. This informal report will provide information regarding the installation of short-term arsenic treatment (STAT) systems at San Antonio del Desierto mobile home park, which was a pilot program for this project. This study formed the basis of the design that will be used for implementation of the *Short-Term Arsenic Treatment Project*, as well as information needed for design of future implementation at other project sites.

Between June 1, 2011 and April 25, 2011, the following water testing assessments will take place, prior to construction, in order to assess and evaluate the project:

- Water testing will take place in individual mobile home parks within the project area. This testing will include pre-design sampling and testing prior to installation of individual point-of-entry systems. There will be further operational testing of each system during installation and early operations to ensure that the systems are functioning properly. There will also be testing for point-of-use systems before and after installation, which will also sample to ensure that the systems are functioning properly.

Task 5: Final Design - Prior to initiation of the formal grant agreement, before June 1, 2011, PUCDC will conduct preliminary assessments that will aide in final design (refer to Task 4). In addition, by March 22, 2011 PUCDC will produce a final design report. This informal report will provide recommendations regarding the final design for the project. Information for the report will be produced by in-house engineers and systems designers from the company that manufactures the reverse osmosis systems utilized by PUCDC. The design report will contain the basic design components for installation of the reverse osmosis systems, and will be the basis design plans for future anticipated point of entry installations.

After initiation of the formal grant agreement, after June 1, 2011, further design will be required to solidify design of the project. This design will be completed by PUCDC in conjunction with engineers and systems designers from the company that manufactures reverse osmosis systems. Formal submittals from these engineers will be sent to the Riverside County Department of Environmental Health for permitting purposes by June 29, 2011.

Design Submittals	Date	Status
BEFORE June 1, 2011		
Engineering Design	March 2011	Underway
AFTER June 1, 2011		
Final Design	June 2011	Not Started

Task 6: Environmental Documentation - Environmental documentation for this project is not required as it will not be of the size, scale, or impact as to trigger CEQA, NEPA, or other environmental regulations.

Task 7: Permitting - Permitting for this project will occur before and after initiation of the grant agreement (June 1, 2011). On April 26, 2010, PUCDC obtained a treatment permit (#BEL100387) from Riverside County Department of Environmental Health to install reverse osmosis water treatment systems for the San Antonio del Desierto pilot project.

Future permits (after June 1, 2011) will also be required prior to project construction. These permits include a permit from the Riverside Department of Environmental Health for installation of the reverse osmosis water treatment systems for this project. The project will also require permits from the Riverside County Building Department to conduct onsite construction. These permits are expected to be approved by August 27, 2011.

Permit	Approval Date	Status
BEFORE June 1, 2011		
County of Riverside Environmental Health Department Treatment Permit (Permit #BEL100387)	April 2010	Approved
AFTER June 1, 2011		
County of Riverside Environmental Health Department Treatment Permit	August 2011	Underway
Riverside County Building Department Onsite Construction Permit	August 2011	Underway

D. Construction/Implementation

Task 8: Construction Contracting (BEFORE June 1, 2011) - All construction contracting will occur after initiation of the Grant Agreement. Construction contracting will be based on experience from the San Antonio del Desierto pilot project. During the pilot project PUCDC obtained bids to retain a general contractor and subcontractor for required onsite work at San Antonio del Desierto. Because PUCDC has already been through a construction bidding process, they do not anticipate the need to re-bid this part of the *Short-Term Arsenic Treatment Project.* As such, the only deliverables that will take place for construction contracting include a notice to proceed that is anticipated to take place in July of 2011.

Construction Submittals	Date	Status
AFTER June 1, 2011		
Notice to Proceed	July 2011	Not started

Task 9: Construction - All construction for this project will take place after initiation of the formal grant agreement (after June 1, 2011).

Building Materials and/or Construction Standards

The building materials used in construction (concrete and rebar) will be selected based on experience from the San Antonio del Desierto pilot project. As such, selection will be based on a 19'x26'x6' foundation to set the water storage tank and reverse osmosis water system equipment. In addition, PUCDC will work with the manufacturer of the reverse osmosis systems to complete construction engineering plans for the reverse osmosis system installations. These plans will include scale drawings and descriptions for permitting and construction along with operations and maintenance specifications. All construction will conform to standards set forth by the State Department of Public Health, Riverside County Environmental Health, and Riverside County Building Department.

Construction Tasks

Construction tasks will include Mobilization and Site Preparation, Project Construction, and Performance Testing and Demobilization. These subtasks are described in detail below:

- ***Subtask 9.1 Mobilization and Site Preparation***. Mobilization and site preparation will include excavation and compaction for concrete slab, laying a water extension line, and installing electrical supply.
- ***Subtask 9.2 Project Construction***. Project construction will include the following:
  - Installation of 280 point-of-use treatment systems;

- Construction of three 19'x26' concrete slab foundations for a 3,200 gallon water storage tank;
- Construction of a shed structure for three point-of-entry 1,500 gallon reverse osmosis water treatment system;
- Construction of two 19'x26' concrete slab foundations for a 15,000 gallon water storage tank; and
- Construction of a shed structure for a point-of-entry 15,000 gallon reverse osmosis water treatment system.

- ***Subtask 9.3 Performance Testing and Demobilization***. After construction, water testing will take place to evaluate the results of the point-of-use and point-of-entry reverse osmosis systems. Sampling and analysis will occur on a periodic basis (either daily, weekly, or monthly) for the first year following installation to ensure performance and troubleshoot issues when necessary. It is anticipated that approximately 10% of the point-of-use systems will be tested to verify performance on the year following installation. These monitoring efforts will be set forth by permits from the County of Riverside Department of Environmental Health, and PUCDC will be responsible for ensuring compliance with all relevant permits. As such, all water quality data from treated water will be sent to the Riverside Department of Environmental Health for review.

E. Environmental Compliance/Mitigation/Enhancement

Task 10: Environmental Compliance/Mitigation/Enhancement - This project will not trigger requirements of CEQA, NEPA, or other environmental regulations and will therefore not require environmental compliance, mitigation, or enhancement.

F. Construction Administration

Task 11: Construction Administration - This task involves administration, coordination, and review of the construction contract and all other related construction tasks, and will occur before and after initiation of the formal grant agreement. After initiation of the grant agreement, a project manager will be needed to coordinate with contractors, complete invoicing and billing, and other construction administration tasks as required. These efforts are estimated to be approximately 476 hours.

Labor Category	Level of effort	Status
AFTER June 1, 2011		
Project Manager	476 hours	Not Started

Groundwater Quality Protection Program – Desert Hot Springs

I. Introduction

Project Sponsor

The project sponsor for the *Groundwater Quality Protection Program – Desert Hot Springs* is the Mission Springs Water District (MSWD).

Project Need

The Coachella Valley IRWM region lies within Region 7 (Colorado River Basin), which is governed by the California Regional Water Quality Control Board (RWQCB). In 2005 the RWQCB issued the Water Quality Control Plan (WQCP) for the Colorado River Basin, outlining water quality objectives for the region and putting forth an Implementation Program that would assist in achieving those objectives. The

WQCP notes Septic System Impacts to Groundwater Basins as a Regional Board Issue, and specifically states that septic systems within Region 7 have the potential to have a negative impact on groundwater. In addition, the WQCP notes that there are certain identified communities with high densities of septic systems or failing septic systems, which potentially pose a threat to the Mission Creek and Desert Hot Springs aquifers.

The MSWD Urban Water Management Plan notes that the Desert Hot Springs Subbasin is a hot-water basin, containing hot mineral water with temperatures exceeding 100 degrees Fahrenheit. This water serves as the economic basis of Desert Hot Springs, because it draws visitors to the City's numerous spa resorts and hotels.

Therefore, protecting the groundwater quality within the Desert Hot Springs aquifer will not only protect the local water supply, but will also protect hot mineral water that is the economic basis of the community's spa industry. In addition, because Desert Hot Springs qualifies as a disadvantaged community (DAC), this project will also protect residents of a DAC from significant costs that would result if treatment of the potable water supply were necessary due to contamination of groundwater supplies.

Project Purpose

The purpose of the *Groundwater Quality Protection Program - Desert Hot Springs* is to (1) extend the MSWD's municipal wastewater collection system to Sub-area D1 in Assessment District 12, (2) eliminate the need for on-site septic systems in the project area, and (3) comply with State law and an MSWD ordinance that require customers to connect to the wastewater collection system once it is available to their property.

Project Objectives:

The *Groundwater Quality Protection Program - Desert Hot Springs* includes the following project objectives:

- Expand the wastewater collection system in Assessment District 12 Sub Area D1, which will connect 238 parcels to the MSWD system
- Abate potential water quality threats associated with 181 on-site septic systems
- Protect both the drinking water supply to Desert Hot Springs and the hot mineral water that is the basis of the spa economy for the City of Desert Hot Springs and the Coachella Valley
- Reduce the septic tank density in Assessment District 12 Sub Area D1 to at or near the density recommended by the RWQCB

Table 3-6 provides an overview of the Coachella Valley IRWM Plan Objectives that are expected to be indirectly (○) or directly (●) achieved through implementation of the *Groundwater Quality Protection Program - Desert Hot Springs*.

Table 3-6: Contribution to IRWM Plan Objectives

Proposal Projects	Contribution to IRWM Plan Objectives												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Groundwater Quality Protection Program - Desert Hot Springs	-	-	-	○	●	-	-	-	○	-	-	●	○

● = directly related; ○ = indirectly related

This project contributes to the IRWM Plan objectives in the following ways:

- ***D: Maximize local supply opportunities.*** This project indirectly maximizes local supplies by capturing septic effluent for possible future recycled uses.
- ***E: Protect groundwater quality and improve where feasible.*** This project protects potable groundwater sources from contamination due to failing septic systems and a dense concentration of properly functioning septic systems. In addition, this project protects hot mineral water from contamination by failing septic systems, thus preserving the primary industry of the local economy of a DAC.
- ***I: Optimize conjunctive use of available water resources.*** This project will help to coordinate and integrate water resource management by providing additional wastewater supplies to MSWD, thereby providing opportunity for future recycled water supplies within the region.
- ***L: Address water and sanitation needs of DACs.*** This project directly addresses water and sanitation needs of DACs by providing for expansion of the municipal wastewater collection system and providing means for connection to the wastewater collection system for a disadvantaged community.
- ***M: Maintain affordability of water.*** This project indirectly helps maintain the affordability of water by reducing and preventing contamination of the local groundwater supply. A contaminated potable water supply would require costly treatment, and therefore, the project helps maintain the current water supply at affordable levels.

Project Partners

Mission Springs Water District provides water and wastewater infrastructure to the City of Desert Hot Springs, and as such, coordinates land use planning efforts with the City. The City of Desert Hot Springs is supportive of the Missions Springs Water District's efforts to convert septic tanks to sewers, including attending joint meetings of the two governing boards where the need and status of the program were discussed. In conjunction with the sewer project, the City of Desert Hot Springs coordinates additional land use improvements such as curbs, gutters, and street paving.

Project Abstract

Portions of the City of Desert Hot Springs have septic tank densities that are 2.3 to 2.8 times higher than the density recommended by the Regional Water Quality Control Board. As such, these dense septic systems potentially threaten the water quality of the local groundwater supply. These dense septic systems also potentially threaten the local economy, which is highly dependent on hot mineral water to support the spa industry.

As a response, Assessment District 12 was approved by voters in 2004, providing approximately $28 million of matching funds that expires in 2014. This money was used to fund engineering design of a wastewater collection system that will abate approximately 6,000 on-site septic systems. Design of 10 sub-areas that make up the Assessment District is complete, and funds are now needed for construction. The project area, Sub-area D1, consists of 183 septic systems that will be converted to sewers. Environmental work for the *Groundwater Quality Protection Program - Desert Hot Springs* was completed in 1998 and recertified in 2007, design work was completed in 2010, and construction is currently ready to bid. As such, to date this project is at 100% completion of design.

Linkages and Synergies between Projects

Not applicable.

Existing Data and Studies

This project type, scope, and focus are identified in the following plans and studies:

- June 1997 – Albert A. Webb and Associates, Sewer Improvements Project, Project Report. This report contains the following appendices:
  - June 17, 1996 – USGS Report, Transport of Contaminants from Wastewater Disposal Systems Near Mission Creek Subbasin
  - September 12, 1996- Michigan Technical University, Groundwater Study
- November 2004 – Psomas, Desert Hot Springs Water Recycling Appraisal Study: Integrated Resource Plan - Phase I
- March 2007, Psomas, Water Recycling Feasibility Study
- November 2007, URS, Wastewater System Comprehensive Master Plan

Project Timing and Phasing

This project is a multi-phased project. Design of Sub-area D1 allows for streets and/or parcels to be added or removed to meet the amount of funding available. However, $1 million is the minimum amount of funding required for mobilization. The project will be bid at two levels of effort to closely match the project scope with the amount of grant funding available.

Project Map

Figure 3-6 provides a project site map for the *Groundwater Quality Protection Program - Desert Hot Springs*, showing the boundary of the project, surface waters, groundwater basins, DACs within the project area, and any proposed monitoring locations.

II. Proposed Tasks

Grant Administration

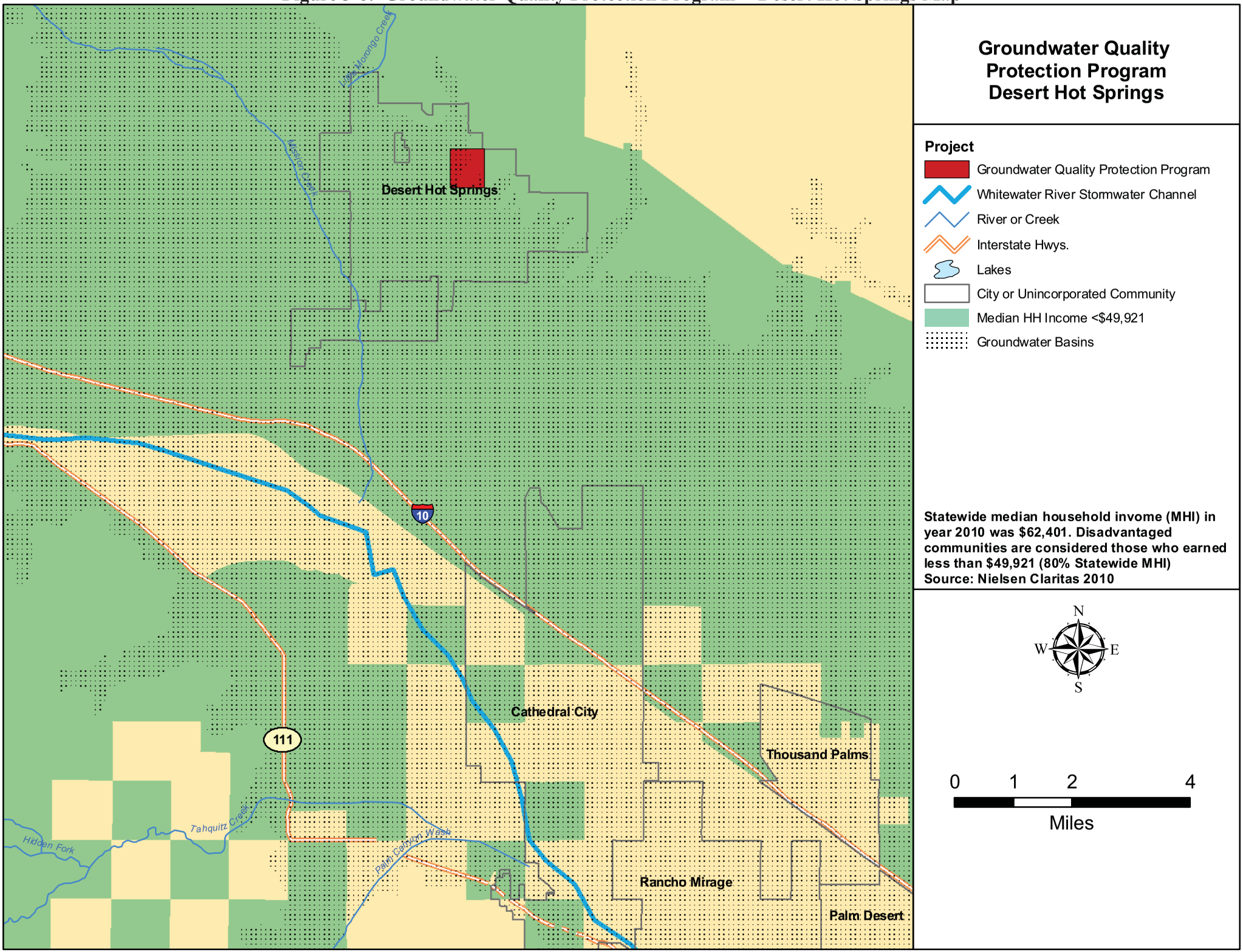
CVWD will be responsible for administration and processing of the Implementation Grant contract, including tasks associated with compiling and submitting project invoices, quarterly reports, and completion reports for DWR.

A. Direct Project Administration

Task 1: Project Administration - This project will involve project administration before and after the Implementation Grant Agreement is formalized (June 1, 2011). Ongoing project administration for this project will involve coordinating with the lead agency (CVWD) and the project consultant. Project administration also includes the staff time that was necessary to receive approval for the project from the MSWD Board of Directors on December 20, 2010. MSWD has employed a Director of Engineering Projects (40 hours) and a Senior Project Manager (80 hours) to date for project administration.

Future project administration (after June 1, 2011) will continue to involve coordination between the lead agency (CVWD) and the project consultant. Deliverables that will be completed include completing project administration invoices and records, and completing project reporting.

Figure 3-6: Groundwater Quality Protection Program -- Desert Hot Springs Map



Labor Category	Level of effort	Status
BEFORE June 1, 2011		
Director of Engineering Projects	40 hours	Ongoing
Senior Project Manager	80 hours	Ongoing
AFTER June 1, 2011		
Director of Engineering Projects	80 hours	Not Started
Senior Project Manager	40 hours	Not Started

Task 2: Labor Compliance Program - MSWD will contract with a consultant to complete a Labor Compliance Program (LCP) no later than March 2011, so all work for this task will be completed by June 1, 2011. MSWD will solicit bids in January 2011, and will award a contract in February 2011. The program will be completed and submitted to the California Department of Industrial Relations no later than March 2011. After this time, MSWD will have begun a district- and State-approved LCP, and will continue to complete annual reports in compliance with relevant state and local laws. Implementation of the LCP will continue as part of the construction project and end with construction, which is estimated to occur on December 1, 2012.

Task 3: Reporting - All reporting for this project will occur after the Implementation Grant Agreement is formalized (after June 1, 2011). To assess progress and accomplishments of the project, the following submittals will be completed by each indicated date.

Project Administration Submittals	Date	Status
Project Assessment and Evaluation Plan (PAEP)	December 1, 2011	Not started
Quarterly Progress Reports and Invoices	Quarterly, dependent on start date	Not started
Project Completion Report	Upon completion of project	Not started

B. Land Purchase Easement

A land purchase easement is not required for implementation of this project.

C. Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation - Not applicable.

Task 5: Final Design - As of June 1, 2011 the project design will be complete. Completion of final design occurred January 29, 2010. The design schedule for the project is as follows:

Design Submittals	Date	Status
BEFORE June 1, 2011		
60% Design	March 11, 2009	Complete
90% (pre-final) Design	November 22, 2009	Complete
100% (Final) Design	January 29, 2010	Complete

Task 6: Environmental Documentation - All environmental documentation for this project will be complete prior to initiation of the grant agreement (June 1, 2011).

The project has been analyzed in an Initial Study/Mitigated Negative Declaration document that was completed and finalized in 1999. The document was later recertified in 2007. This document was later amended with a CEQA Addendum in November 2010 in order to add an additional area to the project area. This project also went through NEPA review that resulted in an Environmental Assessment and a Finding of No Significant Impact in December 2010. These documents will be formalized in January 2011 and February 2011, respectively.

The CEQA/NEPA environmental documentation outlined a Mitigation Monitoring and Reporting Plan (MMRP) that demonstrates mitigation measures required for CEQA compliance were completed in 1998. The MMRP will be in effect during the construction phase of this project.

Environmental Documentation	Date	Status
BEFORE June 1, 2011		
CEQA	February 1999	Complete
CEQA Recertification	May 2007	Complete
CEQA Addendum	January 2011	In Process
NEPA	February 2011	In Process

Task 7: Permitting - Currently, MSWD is ready to apply for a Stormwater Pollution Prevention Plan (SWPPP), a City Encroachment Permit, and a County Encroachment Permit. MSWD will apply for these permits in February 2011, and will obtain these permits by March 1, 2011.

Permit	Approval Date	Status
BEFORE June 1, 2011		
Stormwater Pollution Prevention Plan	March 1, 2011	In Process
City Encroachment Permit	March 1, 2011	In Process
County Encroachment Permit	March 1, 2011	In Process

D. Construction/Implementation

Task 8: Construction Contracting - All construction contracting for this project will occur after formalization of the Implementation Grant Agreement (after June 1, 2011). Construction contracting will include solicitation, which involves advertisement for bids, bid opening, bid evaluations, MSWD staff recommendations, and Board of Directors approval. Construction contracting will also include awarding the construction contract, which includes confirming the contractor's insurance requirements and bonds, and holding a preconstruction meeting.

In addition, separate construction contracts will be initiated with design engineers for construction management services, surveying and staking, and construction (soils) testing. A construction contract for archaeology/biology monitoring in accordance with CEQA will also be required. For each contract, MSWD staff must issue a Request for Proposals, evaluate submitted proposals, and issue recommendations. In addition, approval from MSWD Board of Directors will be required for all four separate contracts.

Construction Submittals	Date	Status
AFTER June 1, 2011		
Notice to Proceed	June 29, 2011	Not started
Construction Management Contract Approval	June 20, 2011	Not started
Surveying and Staking Contract Approval	June 20, 2011	Not started

Construction Testing Contract Approval	June 20, 2011	Not started
Archaeology and Biology Contract Approval	June 20, 2011	Not started

Task 9: Construction - All construction for this project will occur after formalization of the Implementation Grant Agreement (after June 1, 2011).

Building Materials and/or Computational Methods

Building material requirements are detailed in the 100% design plans and specifications and are further referenced in the ASTM, Green Book, and Mission Springs Water District Developer Handbook standards. All materials will be submitted by the contractor, evaluated according to the standards, and approved prior to construction (normally after NTP and before the pre-construction meeting)

Construction Standards, Health and Safety Standards, Laboratory Analysis, and/or Accepted Classification Methods

Construction for this project will conform to the specifications prepared for the project by a licensed engineer. These specifications include project-specific construction standards and also require the contractor to conform to applicable local, state, and federal laws. The specific codes that will be used for project implementation include: MSWD Developer/Contractors Guidelines Handbook, Project Plans and Specifications, ASTM Standards for materials and manufacturing, compliance with all state and local health and safety standards, California Occupational Safety and Health (Cal-OSHA) requirements, County of Riverside and/or Desert Hot Springs Noise Ordinance(s), South Coast Air Quality Management District Standards, and Colorado River Basin RWQCB Standards.

Construction Tasks

Construction tasks for this project will include Mobilization and Site Preparation, Project Construction, and Performance Testing and Demobilization. These subtasks are described in detail below:

- ***Subtask 9.1 Mobilization and Site Preparation*:** Mobilization and site preparation includes ordering of equipment, mobilizing contractor's equipment and construction material, contractor move-in, and preparation of staging areas.
- ***Subtask 9.2 Project Construction*:** Project construction includes installing 7,713 lineal feet of 8'' vitrified clay pipe (VCP) sewer, installing 7,846 lineal feet of 4'' VCP sewer laterals, and installing all appurtenances including but not limited to manholes, grading, and paving.
- ***Subtask 9.3 Performance Testing and Demobilization*:** Performance testing shall be per MSWD Developer/Contractors Guidelines Handbook and per the project plans and specifications. Inspection and testing are required by the project specifications. Contractor shall demobilize and return construction and staging areas to as reasonable as possible to original or improved conditions as a result of construction activities, including newly paved streets. This task will also include surveying and staking and soils testing activities. This task also includes the construction management for project inspection, completing plans and requests for information (RFI's), holding construction meetings, submittal review, responding to RFI's, and project inspection.

E. Environmental Compliance/Mitigation/Enhancement

Task 10: Environmental Compliance/Mitigation/Enhancement - Environmental compliance for this project will occur after initiation of the grant agreement (after June 1, 2011).

Environmental compliance will occur prior to construction of the project, on approximately June 29, 2011 and will conclude by January 27, 2012. Construction activities will be in compliance with the Biological and Archaeological directives listed within the MMRP. The MMRP addressed all issues possible in

extending sewer lines throughout the assessment district within which this project lays. Many of the sewer projects within the assessment district are already completed and none of the special conditions areas listed in the MMRP remain or apply at this time. However, the general project environmental directives for the possibility of archeological or paleontological discovery during any construction, and biological issues as applicable, are still in effect and will be implemented during the construction phase.

F. Construction Administration

Task 11: Construction Administration - This task involves administration, coordination, and review of the construction contracts and all other related construction tasks. After June 1, 2011, the project will require 120 hours of labor from an MSWD Engineer for project administration tasks including project reporting and managing consultants. A Construction Administration Consultant may also be retained to assist the District with these efforts.

Groundwater Quality Protection Program –Cathedral City

I. Introduction

Project Sponsor

The City of Cathedral City is the project sponsor for the *Groundwater Quality Protection Program – Cathedral City.*

Project Need

The Coachella Valley IRWM region lies within Region 7 (Colorado River Basin), which is governed by the California Regional Water Quality Control Board (RWQCB). In 2005, the RWQCB issued the Water Quality Control Plan (WQCP) for the Colorado River Basin, which outlines water quality objectives for the region and contains an Implementation Program that would assist in achieving those objectives. The WQCP notes Septic System Impacts to Groundwater Basins as a Regional Board Issue, and specifically states that septic systems within Region 7 have the potential to have a negative impact on groundwater. In addition, the WQCP notes that there are certain identified communities with high densities of septic systems, including communities in the Indio Hydrologic Subarea, within which lies Cathedral City. The RWQCB identifies conversion of septic systems to sewer systems in Cathedral City within the Implementation Program as a method of potentially achieving water quality needs in Region 7, thereby noting such projects to be high priority and of regional significance, and recommends that funding be allocated to eliminate the use of septic tanks.

Perez Road is a major commercial corridor within the City of Cathedral City that developed using septic tanks rather than sanitary sewers. It is necessary to install sewers to assist businesses experiencing failing septic systems. Project limits for sewer installation are on Perez Road from Date Palm Drive to Cathedral Canyon Drive and on Cathedral Canyon Drive from Perez Road to the Whitewater River. The installation of a sewer line is in accordance with Desert Water Agency's South Area Master Plan, from Date Palm Drive to East Palm Canyon including connection to the Desert Water Agency (DWA) booster pump station.

Septic tank disposal systems south of the Whitewater Channel in Cathedral City have been identified as a significant threat to public potable groundwater resources. This project will permanently remove these known pollution sources (septic tanks) and will sustain and improve local and regional water supply reliability.

Project Purpose

The purpose of the *Groundwater Quality Protection Program – Cathedral City* is to (1) eliminate septic tanks in Cathedral City (within the Indio Hydrologic Subarea) that threaten contamination of groundwater, (2) replace existing septic tanks with sanitary sewers for 132 individual businesses in the vicinity of Perez Road from Date Palm Drive to Cathedral Canyon Drive and on Cathedral Canyon Drive from Perez Road to the Whitewater River, (3) expand the Desert Water Agency (DWA) wastewater collection system to serve the proposed project area, and (4) connect the DWA wastewater collection system to a booster pump station.

Project Objectives

The *Groundwater Quality Protection Program – Cathedral City* includes the following project objectives:

- Implement a sewer connection project identified within the Desert Water Agency's South Area Master Plan
- Construct 4,314 feet of 15-inch sewer to provide sewer connections to an area with failing septic systems
- Convert septic to sewer systems to protect groundwater quality in accordance with the RWQCB's Water Quality Control Plan
- Contribute approximately 7 million gallons of wastewater per year to Coachella Valley Water District's wastewater supply, thereby indirectly increasing the local recycled water supply
- Increase groundwater protection in an area that borders tribal land
- Address sanitation needs relative to failing septic tank systems and protection of groundwater within a disadvantaged community (DAC)

Table 3-7 provides an overview of the Coachella Valley IRWM Plan objectives that are expected to be indirectly (○) or directly (●) achieved through implementation of the *Groundwater Quality Protection Program – Cathedral City.*

Table 3-7: Contribution to IRWM Plan Objectives

Proposal Projects	Contribution to IRWM Plan Objectives												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Groundwater Quality Protection Program – Cathedral City	-	-	-	○	●	-	-	-	○	-	●	●	○

● = directly related; ○ = indirectly related

This project contributes to the IRWM Plan objectives in the following ways:

- ***Objective D: Maximize local supply opportunities.*** This project will connect approximately 132 businesses to the Coachella Valley Water District (CVWD) wastewater collection system. Therefore, this project will indirectly contribute to maximizing local supply opportunities by increasing the amount of non-potable water supplies within the region.
- ***Objective E: Protect groundwater quality and improve, where feasible.*** By eliminating failing septic systems in an area with known groundwater quality issues, this project will protect and potentially improve groundwater quality by removing a contamination source.

- ***Objective I: Optimize conjunctive use of available water resources.*** This project will help to coordinate and integrate water resource management by providing additional wastewater supplies to CVWD, thereby indirectly increasing non-potable water supplies within the region.
- ***Objective K: Address water-related needs of local Native American culture.*** The project borders Agua Caliente tribal lands, which are affected by groundwater pollution in the Palm Springs Sub Area of the Indio Basin. Therefore, the project will address a tribal-identified water-related need by protecting and potentially improving groundwater.
- ***Objective L: Address water and sanitation needs of DACs.*** The project is located within a disadvantaged community (Cathedral City), and therefore will address water and sanitation needs of a DAC by removing failing septic systems and decreasing groundwater contamination.
- ***Objective M: Maintain affordability of water.*** This project indirectly helps maintain the affordability of water by reducing and preventing contamination of the local groundwater supply. A contaminated potable water supply would require costly well replacement, and therefore, the project helps maintain the current water supply at affordable levels.

Project Partners

The City of Cathedral City receives water service within the project area from the Desert Water Agency. Any wastewater produced by this project will be added into the Coachella Valley Water District wastewater supply.

Project Abstract

The RWQCB has identified water quality issues relating to failing and/or densely located septic systems within the Colorado River Basin, and has specifically noted that Cathedral City as an area that should convert septic tanks to sewer systems to improve water quality. This project will expand existing municipal sewers in order to eliminate septic tanks in the Indio Hydrologic Subarea that threaten contamination of groundwater supply. It will replace existing septic tanks with sanitary sewers for 132 individual businesses in the vicinity of Perez Road and on Cathedral Canyon Drive. It will expand the CVWD wastewater collection system and connect the project area to a booster pump station.

To date, this project is at 100% completion of design.

Linkages and Synergies between Projects

Not applicable.

Existing Data and Studies

This project, including specific site locations, is listed within the *1996 Cathedral City South Wastewater Facilities Plan.* The feasibility and technical assessments of this project are listed within Cathedral City's *Perez Road Vicinity Sewers Final Design Memorandum*, which collected data regarding sewage flow, pipe sizing, and materials requirements in order to establish design criteria for the project. The environmental feasibility of this project was determined based on a CEQA Categorical Exemption that was filed for the project on May 19, 2008.

Project Timing and Phasing

This project is a multi-phased project. This phase of the project will construct the interceptor sewer pipeline and connection laterals that will eliminate the need for an existing wastewater pumping station.

Future phases will construct collector sewers and additional connection laterals. This phase will allow 132 businesses, equivalent to 180 equivalent dwelling units (EDUs), to connect to the sewer system.

Project Map

Figure 3-7 provides a project site map for the *Groundwater Quality Protection Program -- Cathedral City*, showing the project boundary, surface waters, groundwater basins, DACs within the project vicinity, and any proposed monitoring locations.

II. Proposed Tasks

Grant Administration

CVWD will be responsible for administration and processing of the Implementation Grant contract, including tasks associated with compiling and submitting project invoices, quarterly reports, and completion reports for DWR.

A. Direct Project Administration Costs

Task 1: Project Administration - This project will involve project administration before and after the Implementation Grant Agreement is formalized (June 1, 2011). Past project administration for this project involved coordinating the various project elements with partner agencies. The City of Cathedral City has employed an Engineer (100 hours) and an Accountant (88 hours) as well as a Project Manager from a consultant firm (77.5 hours) to date for project administration efforts.

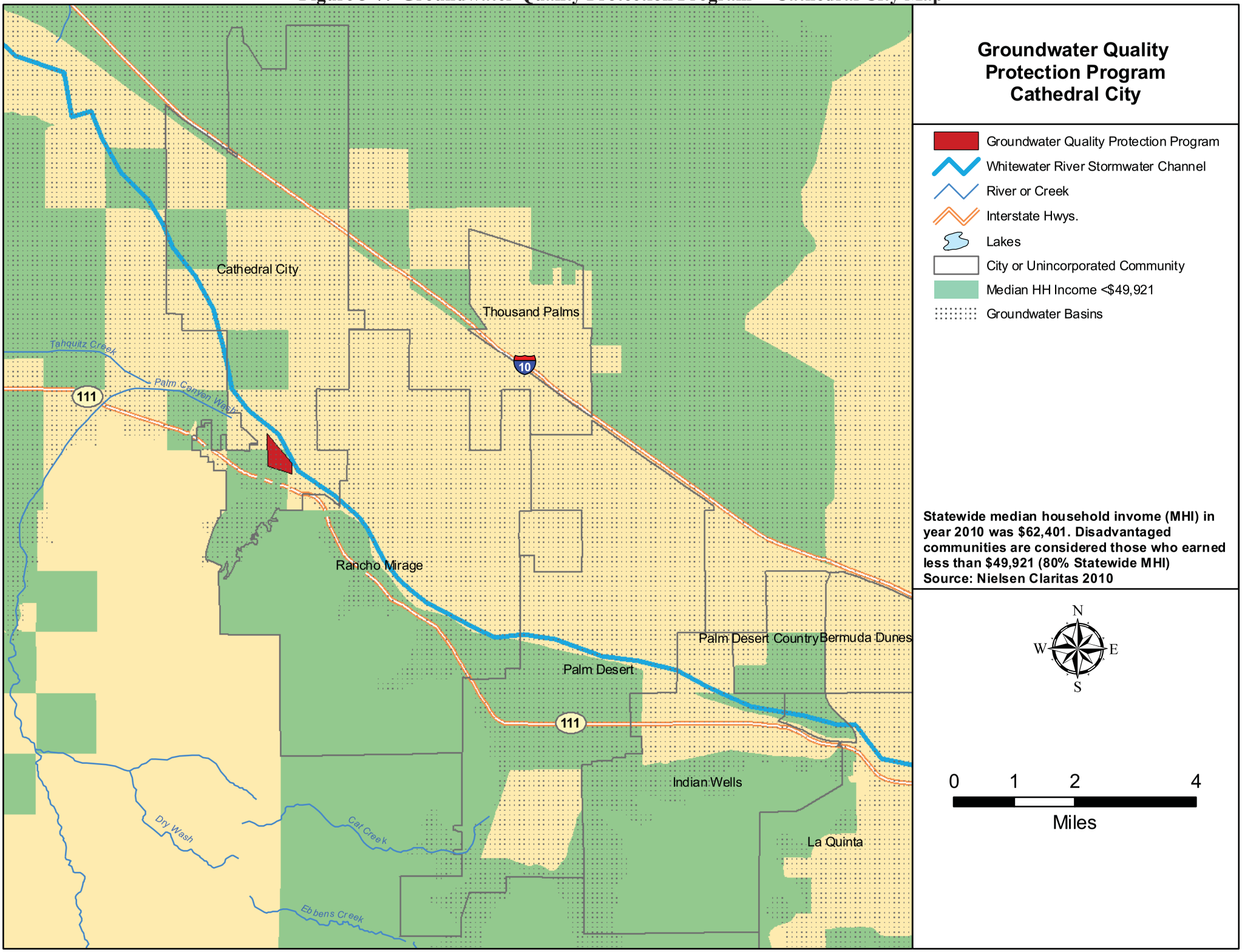
Future project administration (after June 1, 2011) will continue to involve coordination and administrative activities such as working with Desert Water Agency for project coordination, preparing reports, and completing labor compliance documentation.

Labor Category	Level of effort	Status
BEFORE June 1, 2011		
Cathedral City Engineer	100	Complete
Cathedral City Accountant	88	
Consultant Project Management	77.5	
AFTER June 1, 2011		
Cathedral City Administration	72	Ongoing

Task 2: Labor Compliance Program - A Labor Compliance Program (LCP) is not required for actions that will be taken prior to June 1, 2011 (for Administration of Design). The City of Cathedral City contracts with Alliant Consulting, (ID 2003.00328) for labor compliance and has previously implemented a LCP for other septic-to-sewer conversion projects. The City of Cathedral City will retain a consultant to manage the LCP after June 1, 2011 (during construction).

Task 3: Reporting - All reporting for the project will occur after the Implementation Grant Agreement is formalized (after June 1, 2011). To assess progress and accomplishments of the project, the following submittals will be completed by each indicated date.

Figure 3-7: Groundwater Quality Protection Program -- Cathedral City Map



Project Administration Submittals	Date	Status
AFTER June 1, 2011		
Project Assessment and Evaluation Plan (PAEP)	December 1, 2011	Not started
Quarterly Progress Reports and Invoices	Quarterly dependant on Start	Not started
Project Completion Report	Due upon completion of construction	Not started

B. Land Purchase Easement (if applicable)

Not applicable. The project will be constructed within an existing right-of-way.

C. Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation - Not applicable.

Task 5: Final Design - Final design for the project was completed in April 2010, so no design will be required after initiation of the Grant Agreement (June 1, 2011). The final design schedule for the project is shown in the table below.

Design Submittals	Date	Status
BEFORE June , 2011		
10% (conceptual) Design	December 2008	Complete
30% (concept) Design	April 2009	Complete
60% Design	August 2009	Complete
90% (pre-final) Design	December 2009	Complete
100% (Final) Design	April 2010	Complete

Task 6: Environmental Documentation - Not applicable. This project received a CEQA Categorical Exemption on May 19, 2008 because the project will be constructed in existing public right-of-ways and public easement areas, and there will be no expansion of the streets, water lines, drainage facilities, or capacity for the discharge of wastewater from this project.

Task 7: Permitting - All permitting for the project will be completed after initiation of the Grant Agreement. Prior to construction of the project, the City of Cathedral City will issue a City Encroachment Permit, to allow work to occur within the City's right-of-way in conformance with City of Cathedral City construction regulations.

Permit	Approval Date	Status
AFTER June 1, 2011		
City Encroachment Permit	November 10, 2011	Pending

D. Construction/Implementation

Task 8: Construction Contracting - All construction contracting for the project will occur after formalization of the Grant Agreement (after June 1, 2011). Construction contracting will include advertisement for bids, a pre-bid contractors meeting, evaluation of bids, award of contract, and pre-construction conference. Advertisement will be for a minimum of 30 days. The bid review and awarding of the contract by the City Council will take an additional three to four weeks.

Construction submittals include a project schedule and various submittal materials that the contractor will submit to the City of Cathedral City for approval throughout the construction process. In addition, the City of Cathedral City will submit a Notice to Proceed to the contractor by August 23, 2011.

Construction Submittals	Date	Status
AFTER June 1, 2011		
Project schedule and other contractor submittals	August 23, 2011	Pending
Notice to Proceed	August 23, 2011	Pending

Task 9: Construction - All construction for this project will occur after formalization of the Implementation Grant Agreement (after June 1, 2011).

Building Materials and /or Construction Standards

Pipes and appurtenances to be used in construction were selected and specified based on their compliance with Desert Water Agency's Standard Specifications. Design calculations were completed in accordance with current, local engineering standards, including pipe diameter and slope, service lateral size, trench backfill material and compaction requirements, and pavement patching and rehabilitation.

All construction will conform to the specifications prepared for the project by a licensed engineer. These specifications include project-specific construction standards and also require the contractor to conform to applicable local, state, and federal laws. The specific codes identified in preliminary analysis of the project include ASTM Standards for materials and manufacturing, Standard Specifications for Public Works Construction (Greenbook), compliance with all State and Local health and safety standards, Cal-OSHA (California Occupational Safety and Health) requirements, Cathedral City Noise Ordinance, South Coast Air Quality Management District Standards, Colorado River Basin Regional Water Quality Control Board Standards, and Desert Water Agency construction standards.

Construction Tasks

Construction tasks for this project will include Mobilization and Site Preparation, Project Construction, and Performance Testing and Demobilization. These subtasks are described in detail below:

- ***Subtask 9.1 Mobilization and Site Preparation:*** Mobilization and site preparation includes ordering of equipment, mobilizing contractor's equipment and construction material, and preparation of physical site.
- ***Subtask 9.2 Project Construction:*** Project construction includes compliance activities including measures for traffic control and public convenience and safety, and completion of dust control in compliance with the *Coachella Valley PM10 State Implementation Plan*. This subtask also involves construction activities including, excavating trenches, shoring, sheeting and bracing, constructing a 15'' sewer, constructing concrete manholes, boring and jacking a 15'' pipe in steel casing, constructing sewer laterals, backfilling and compaction, and re-paving the roadway. In addition, this task will involve performance testing, materials testing, and surveying.
- ***Subtask 9.3: Performance Testing and Demobilization:*** Performance testing and demobilization will include site inspection and trench backfill testing for compaction in accordance with ASTM D 2922 or ASTM D 1556, sewer pipe pressure testing in accordance with local water agency requirements for pressure testing, application of pre-approved mix designs for roadway resurfacing, and restoring the worksite to its preconstruction condition.

E. Environmental Compliance/Mitigation/Enhancement

Task 10: Environmental Compliance/Mitigation/Enhancement - The project received a CEQA Categorical Exemption in May, 2008 and as such, does not require environmental mitigation or enhancement requirements. This project does not require environmental review pursuant to NEPA.

During project construction, the contractor will comply with conditions of existing PM-10 permit conditions, existing NPDES stormwater permit conditions, and the Cathedral City Noise Ordinance.

F. Construction Administration

Task 11: Construction Administration - Construction administration for this project will not occur until after initiation of the Grant Agreement (June 1, 2011). This task will require labor from a Construction Administration Consultant, who will ensure that the project complies with materials and construction standards setforth by the local water agencies. The local water agencies will review contractor procedures and submittals as necessary. Deliverables for this task include contractor materials and methods submittals, contractor invoices, responding to contractor requests for information, monthly status reports, and scheduling updates.

Labor Category	Level of effort	Status
AFTER June , 2011		
Construction Administrator	Average 5% of construction cost	Not started

Attachment 4

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Budget

Attachment 4 consists of the following items:

- ✓ **Proposal Budget(s)**

This attachment provides a budget estimate for each work plan task of each project within this Implementation Grant Proposal.

The proposal budget provides detailed budget documentation to support each cost shown in the Summary Budget Table 8 (Table 4-1). Table 4-1 presents the proposed funding match for each project within the proposal, including documentation that demonstrates how the proposal will meet the minimum requirement of at least 25 percent of the total costs. Following Table 4-1 are detailed descriptions of individual project budgets; there may be several tasks and sub-tasks that are included in project budget descriptions. As shown in Attachment 12, the *Short Term Arsenic Treatment Program* has applied for a funding match waiver because this program has demonstrated that it will address a critical water quality issue for East Valley disadvantaged communities (DACs).

Total Proposal Cost Estimate

As described in Attachment 3, the *Coachella Valley IRWM Implementation Grant Proposal* involves implementation of four high priority projects to meet the region's water management needs. The total cost to implement this proposal is $6,992,375. Of this amount, $4,000,000 (~57%) is being requesting grant funding from the IRWM Grant Program and $2,992,375 (~43%) is provided as funding match by the local agencies.

Table 4-1: Summary Budget Table 8
Coachella Valley IRWM Implementation Grant Proposal

Budget Category		(a) Non-State Share* (Funding Match)	(b) Requested Grant Funding	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
GA	CVWD Grant Administration	$0	$100,000	$0	$100,000	
(a)	Direct Project Administration Costs	$130,142	$45,591	$0	$175,733	
(b)	Land Purchase/Easement	$0	$0	$0	$0	
(c)	Planning/Design/Engineering/ Environmental Documentation	$405,300	$18,000	$0	$423,300	
(d)	Construction/Implementation	$2,271,633	$3,604,975	$0	$5,876,608	
(e)	Environmental Compliance/ Mitigation/Enhancement	$5,000	$0	$0	$5,000	
(f)	Construction Administration	$12,000	$70,517	$0	$82,517	
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$42,700	$7,500	$0	$50,200	
(h)	Construction/Implementation Contingency	$125,600	$153,417	$0	$279,017	
(i)	**Grand Total**	**$2,992,375**	**$4,000,000**	**$0**	**$6,992,375**	
(j)	**Calculation of Funding Match %**	**$2,992,375**	**-**	**-**	**$6,992,375**	**43%**
**Sources of funding: Please refer to each of the individual budgets below for a full explanation of the various sources of non-state funding.*						

Detailed budgets for each of the projects included within this proposal, including a summary budget and supporting cost information are provided in the following sections.

Project 1: Regional Water Conservation Program

The *Regional Water Conservation Program* will involve tasks designed to bring water conservation to an accessible level and to a wide range of constituents throughout the Coachella Valley through outreach, water audits, and various other conservation programs. Funding for this program involves the following aspects of project implementation: grant administration, project administration, and construction/implementation.

The total cost associated with the *Regional Water Conservation Program* is $1,373,141. Of these total costs, $1,025,641 is being requested for grant funding through the IRWM Implementation Grant Program. The remaining $347,500 will be provided from the conservation budgets of the operating funds of the partner agencies. In total, this amount constitutes 25% of the total project cost, meaning that the non-State share of the total project cost (funding match) is 25% for this program. Table 4-2 below provides a more detailed break-down of the total project budget.

Table 4-2: Total Project Budget
Regional Water Conservation Program

Budget Category		(a) Non-State Share* (Funding Match)	(b) Requested Grant Funding	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
GA	CVWD Grant Administration	$0	$25,641	$0	$25,641	0%
(a)	Direct Project Administration Costs	$22,500	$0	$0	$22,500	100%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$0	$0	$0	$0	0%
(d)	Construction/Implementation	$325,000	$1,000,000	$0	$1,325,000	25%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$0	$0	$0	0%
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total**	**$347,500**	**$1,025,641**	**$0**	**$1,373,141**	**25%**

** Sources of funding: The non-state share funding match will be provided by the conservation budgets of the operating funds of the individual partner agencies.*

This Implementation Grant proposal is requesting funding for three project tasks identified within the *Regional Water Conservation Program* Work Plan (refer to Attachment 3).

Table 4-3: Cost Breakdown by Work Plan Task and Subtask
Regional Water Conservation Program

Row/Task	Category	Total
GA	CVWD Grant Administration	$25,641
Row (a)	Direct Project Administration Costs	$22,500
Task 1	*Project Administration*	*$10,125*
Task 3	*Reporting*	*$12,375*
Row (d)	Construction/Implementation	$1,325,000
Task 9	*Construction*	*$1,325,000*
Row (i)	**Grand Total**	**$1,373,141**

The sections below provide detailed descriptions of each of the row and task budgets (where applicable) shown in the summary table above. In addition, each section below describes how cost estimates for each of the tasks or rows were calculated.

GA Grant Administration

Each local project sponsor shall dedicate a portion of their grant funds to the Coachella Valley Water District (CVWD) for administration and processing of the Implementation Grant. The *Regional Water Conservation Program* will contribute $25,641 to this administration cost.

Row (a) Direct Project Administration Costs

The total direct project administration costs for the program are $22,500. Table 4-4 provides a detailed listing of all applicable costs.

Task 1: Project Administration - This includes the cost for all project administration efforts, including labor costs for a project administrator, accounting staff, and a conservation coordinator from each of the five partnering agencies for a total of $9,625. An additional $500 will be required for office supplies for grant administration tasks. These costs were determined based on existing conservation program administration efforts. The five partners currently engage in a variety of conservation activities, and administration of such programs was the basis for current and future cost determinations.

Task 2: Labor Compliance Program - Not applicable.

Task 3: Reporting - This includes the cost for preparing required reports and invoicing, for a total of $12,375. This is based on the costs associated with existing monitoring efforts including mapping, water use comparisons, and processing and consolidating data for formal planning documents.

Table 4-5: Row (a) Direct Project Administration Budget
Regional Water Conservation Program

Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
CVWD Conservation Coordinator	$75.00	20	$1,500	$1,500	$0
CVWD Accounting Staff	$60.00	20	$1,200	$1,200	$0
CVWD Project Administrator	$85.00	20	$1,700	$1,700	$0
CWA Conservation Coordinator	$75.00	20	$1,500	$1,500	$0
CWA Accounting Staff	$60.00	20	$1,200	$1,200	$0
CWA Project Administrator	$85.00	20	$1,700	$1,700	$0
DWA Conservation Coordinator	$75.00	20	$1,500	$1,500	$0
DWA Accounting Staff	$60.00	20	$1,200	$1,200	$0
DWA Project Administrator	$85.00	20	$1,700	$1,700	$0
IWA Conservation Coordinator	$75.00	20	$1,500	$1,500	$0
IWA Accounting Staff	$60.00	20	$1,200	$1,200	$0
IWA Project Administrator	$85.00	20	$1,700	$1,700	$0
MSWD Conservation Coordinator	$75.00	20	$1,500	$1,500	$0
MSWD Accounting Staff	$60.00	20	$1,200	$1,200	$0
MSWD Project Administrator	$85.00	20	$1,700	$1,700	$0
Office Supplies	Lump Sum		$500	$500	$500
		Total	**$22,500**	**$22,500**	**$0**

Row (b) Land Purchase/Easement

Not applicable.

Row (c) Planning/Design/Engineering/Environmental Documentation

This program will not incur costs associated with planning, design, engineering, or environmental documentation.

Task 4: Assessment and Evaluation - Not applicable.

Task 5: Final Design - Not applicable.

Task 6: Environmental Documentation - Not applicable.

Task 7: Permitting - Not applicable.

Row (d) Construction/Implementation

The Construction/Implementation costs for the program are estimated to be $1,325,000. Table 4-6 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 8: Construction Contracting - The partner agencies will implement necessary construction contracting tasks. However, those staff costs are not included within the proposed budget.

Task 9: Construction/Implementation - Construction costs for this program are divided between three categories: materials, equipment, and labor. These costs, which are summarized below, are necessary to complete Subtasks 9.1 through 9.9, as described within *Task 9: Construction/Implementation* of the Work Plan (refer to Attachment 3).

- **Materials:** Materials for the program include information (kits, etc.) that will be given to students as part of the Water Wise Program, and various workshop materials. In total, the materials costs for this program will be $202,000. This amount was calculated by using the current cost of Water Wise Program materials multiplied by the number of households that could potentially be reached.
- **Equipment:** Costs associated with this task include costs for sprinkler controls, sprinkler upgrades, and turf purchase. In total, the equipment costs for this program will be $490,000, which was calculated based on the cost of such equipment multiplied by the number of retrofits the agencies hope to achieve.
- **Labor:** Labor required to fulfill the construction/implementation task include the labor necessary to conduct outreach, water audits, a plan check of the Model Landscape Ordinance, landscape retrofits, and workshop presentations. The total labor costs for this program will be $633,000, which was calculated based on hourly rates of labor to conduct tasks associated with the conservation program.

Table 4-6: Row (d) Construction/Implementation Costs
Regional Water Conservation Program

Materials Used	Unit Costs ($)	Number of Units	Total ($)	Funding Match	Grant Request
Materials					
Water Wise Program Materials	Lump Sum		$200,000	$0	$200,000
Workshop Materials	Lump Sum		$2,000	$2,000	$0
		Subtotal	**$202,000**	**$2,000**	**$200,000**
Equipment Used	**Unit Costs ($)**	**Number of Units**	**Total ($)**	**Funding Match**	**Grant Request**
Equipment					
Sprinkler Controllers	$150	2,200	$330,000	$0	$330,000
Sprinkler Upgrades	$3	20,000	$60,000	$0	$60,000
Turf Purchase (square feet)	$1	100,000	$100,000	$0	$100,000
		Subtotal	**$490,000**	**$0**	**$490,000**
Discipline	**Hourly Wage ($/hr)**	**Number of Hours**	**Total ($)**	**Funding Match**	**Grant Request**
Labor					
Outreach and Education	$60	1,000	$60,000	$0	$60,000
Water Audits	$60	5,000	$300,000	$150,000	$150,000
Plan Check	$60	800	$48,000	$48,000	$0
Landscape Retrofits	$40	2,500	$100,000	$0	$100,000
Workshop Presentations	$60	300	$18,000	$18,000	$0
Conservation Coordinator(s)	$75	1,428	$107,000	$107,000	$0
		Subtotal	**$633,000**	**$323,000**	**$310,000**
		Total	**$1,325,000**	**$325,000**	**$1,000,000**

Row (e) Environmental Compliance/Mitigation/Enhancement

This program will not incur costs associated with implementing environmental mitigation or enhancement requirements.

Task 10: Environmental Compliance/Mitigation/Enhancement - Not applicable.

Row (f) Construction Administration

There are no construction administration costs included within this budget.

Task 11: Construction Administration - Not Applicable.

Row (g) Other Costs

No other costs will be required for implementation of this program.

Row (h) Construction/Implementation Contingency

No construction or implementation contingency costs will be required for implementation of this program.

Row (i) Grand Total

The Grand Total for the *Regional Water Conservation Program* ($1,373,141) was calculated as the sum of rows (GA) through (h) for each column.

Table 4-7: Row (i) Grand Total Costs
Regional Water Conservation Program

Row	Budget Category	Total Costs
GA	Grant Administration	$25,641
(a)	Direct Project Administration Costs	$22,500
(b)	Land Purchase/Easement	$0
(c)	Planning/Design/Engineering/ Environmental Documentation	$0
(d)	Construction/Implementation	$1,325,000
(e)	Environmental Compliance/ Mitigation/Enhancement	$0
(f)	Construction Administration	$0
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$0
(h)	Construction/Implementation Contingency	$0
(i)	**Grand Total**	**$1,373,141**

Project 2: Short Term Arsenic Treatment Project

This project will involve implementing five point-of-entry reverse osmosis water treatment systems and 280 point-of-use reverse osmosis water treatment systems to address arsenic-related water quality issues within portions of the East Valley. Funding for this project involves the following aspects of project implementation: grant administration, project administration, planning/design/engineering/environmental documentation, construction/implementation, construction administration, other costs, and construction/implementation contingency.

The total cost associated with the *Short-Term Arsenic Treatment Project* is $670,163. Of these total costs, $564,103 is being requested for grant funding through the IRWM Implementation Grant Program. The remaining $106,060 was/will be provided from the General Fund of Pueblo Unido Community Development Corporation (PUCDC). In total, this amount constitutes 16% of the total project cost, meaning that the non-State share of the total project cost (funding match) is 16% for this project. Because this project will not meet its 25% funding match requirement and will be serving disadvantaged communities (DACs), this project is requesting a funding waiver match (refer to Attachment 12). Table 4-8 below provides a more detailed break-down of the total project budget.

Table 4-8: Total Project Budget
Short-Term Arsenic Treatment Project

Budget Category		(a) Non-State Share* (Funding Match)	(b) Requested Grant Funding	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
GA	CVWD Grant Administration	$0	$14,103	$0	$14,103	0%
(a)	Direct Project Administration Costs	$75,000	$13,200	$0	$88,200	85%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$2,160	$18,000	$0	$20,160	11%
(d)	Construction/Implementation	$26,200	$438,800	$0	$465,000	6%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$26,200	$0	$26,200	0%
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$2,700	$7,500	$0	$10,200	26%
(h)	Construction/Implementation Contingency	$0	$46,300	$0	$46,300	0%
(i)	**Grand Total**	**$106,060**	**$564,103**	**$0**	**$670,163**	**16%**

** Sources of funding: General Fund of Pueblo Undio Community Development Corporation (PUCDC).*

This Implementation Grant Proposal is requesting funding for seven of the eleven project tasks identified within the *Short-Term Arsenic Treatment Project* Work Plan (refer to Attachment 3).

Table 4-9: Cost Breakdown by Work Plan Task and Subtask
Short-Term Arsenic Treatment Project

Row/Task	Category	Total
GA	CVWD Grant Administration	$14,103
Row (a)	Direct Project Administration Costs	$88,200
Task 1	*Project Administration*	*$56,200*
Task 3	*Reporting*	*$32,000*
Row (c)	Planning/Design/Engineering/Environmental Documentation	$20,160
Task 4	*Assessment and Evaluation*	*$5,500*
Task 5	*Final Design*	*$12,495*
Task 7	*Permitting*	*$2,165*
Row (d)	Construction/Implementation	$465,000
Task 9	*Construction*	*$465,000*
Row (f)	Construction Administration	$26,200
Task 11	*Construction Contracting*	*$26,200*
Row (g)	Other Costs	$10,200
Row (h)	Construction/Implementation Contingency	$46,300
Row (i)	**Grand Total**	**$670,163**

The sections below provide detailed descriptions of each of the row and task budgets (where applicable) shown in the summary table above. In addition, each description below describes how cost estimates for each of the tasks or rows were calculated.

Grant Administration (GA)

Local project sponsors shall dedicate a portion of their grant funds to the Coachella Valley Water District (CVWD) for administration and processing of the Implementation Grant. The *Short-Term Arsenic Treatment Project* will contribute $14,103 to this administration cost.

Row (a) Direct Project Administration Costs

The total direct project administration costs for the project are $88,200. Table 4-10 provides a detailed listing of all applicable costs.

Task 1: Project Administration - This includes the cost for all project administration efforts, including labor costs for a Project Manager and costs for equipment and supplies associated with project administration. These costs, which were estimated to be $56,200, were determined based on the project administration requirements associated with implementation of the pilot project at San Antonio del Desierto Mobile Home Park, and adjusted for efficiencies and applied to the additional project area installations that are part of this project.

Task 2: Labor Compliance Program - Not applicable.

Task 3: Reporting - This includes the cost for preparing the Project Assessment and Evaluation Plan, Quarterly Progress Reports and Invoices, and Project Completion Report.

These costs, which were estimated to be $32,000, were based on the anticipated effort required to prepare information for each point of entry and point of use installation, and summarize this information into a report for submittal to Coachella Valley Water District to be compiled for DWR.

Table 4-10: Row (a) Direct Project Administration Budget
Short-Term Arsenic Treatment Project

Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
Project Manager	$55	120	$6,600	$6,600	
Project Manager	$55	240	$13,200		$13,200
Equipment/Supplies	Lump Sum		$68,400	$68,400	
		Total	**$88,200**	**$75,000**	**$13,200**

Row (b) Land Purchase/Easement

Not applicable.

Row (c) Planning/Design/Engineering/Environmental Documentation

The total planning/design/engineering/environmental documentation costs for the project are $20,160. Table 4-11 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 4: Assessment and Evaluation - This task includes costs for completing water testing that will take place prior to construction in order to assess and evaluate the project. These costs are anticipated to be $5,500, which was calculated based on previous experience with water testing taken place during the pilot project.

Task 5: Final Design - This task includes the cost for finalizing design of the project. This cost was determined based on PUCDC's experience with similar projects, and were therefore estimated at approximately $12,500.

Task 6: Environmental Documentation - Not applicable.

Task 7: Permitting - PUCDC has applied for and received a treatment permit from the Riverside County Department of Environmental Health for the pilot project. PUCDC will also apply for an Environmental Health Permit and a Building Department Permit for implementation of the *Short-Term Arsenic Treatment Project*. Staff or other costs required to finalize this documentation are anticipated to be approximately $2,160 and were calculated based on prior experience submitting and receiving permits from the County of Riverside.

Table 4-11: Row (c) Planning/Design/Environmental Documentation Costs
Short-Term Arsenic Treatment Project

Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
Assessment and Evaluation					
Water Testing	$55	100	$5,500	-	$5,500
Final Design					
Engineering	$85	147	$12,500	-	$12,500
Permitting					
Engineering and Design	Lump Sum		$2,160	$2,160	-
		Total	**$20,160**	**$2,160**	**$18,000**

Row (d) Construction/Implementation

The Construction/Implementation costs for the project are estimated to be $465,000. Table 4-12 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 8: Construction Contracting - Construction contracting will occur as part of this project, however no funds were budgeted for this task.

Task 9: Construction - Construction costs for this project are necessary to complete subtasks 9.1 through 9.3, and produce other deliverables described within Task 9 (Construction) of the Work Plan (refer to Attachment 3).

The total construction cost estimate of $465,000 is based on construction costs incurred during the pilot study (at San Antonio del Desierto Mobile Home Park). PUCDC worked with the engineering team of the manufacturer who produces the reverse osmosis systems to develop and receive a cost estimate specific to this project.

- Construction costs for this project are divided between three categories: Materials, Equipment, and Labor. These costs are summarized below and in Table 4-12:
- Materials: Materials that will be required for construction of this project include four concrete slab foundations, four units of forming wood, and four units of rebar.
- Equipment: Anticipated equipment costs for the project includes costs for point of use treatment systems, 1,500 gallon reverse osmosis systems, 15,000 gallon reverse osmosis systems, and shed structures/access.

- Labor: Labor costs required for project construction include costs for a general contractor, masonry, an electrician, and a plumber.

Table 4-12: Row (d) Construction/Implementation Costs
Short-Term Arsenic Treatment Project

Materials					
Materials Used	**Unit Costs ($)**	**Number of Units**	**Total ($)**	**Funding Match**	**Grant Request**
26' x 19' Foundation (concrete slab)	$6,000	5	$24,000	$24,000	$0
Forming Wood	$150	4	$600	$600	$0
Rebar	$400	4	$1,600	$1,600	$0
		Subtotal	**$26,200**	**$26,200**	**$0**
Equipment Used	**Unit Costs ($)**	**Number of Units**	**Total ($)**	**Funding Match**	**Grant Request**
Point-of-Use Treatment System	$445	280	$124,600	$0	$124,600
1,500 gallon Reverse Osmosis System	$15,000	3	$45,000	$0	$45,000
15,000 gallon Reverse Osmosis System	$85,000	2	$170,000	$0	$170,000
Shed Structures and Fencing	$1,700	4	$6,800	$0	$6,800
		Subtotal	**$346,400**	**$0**	**$346,400**
Labor					
Discipline	**Hourly Wage ($)**	**Number of hours**	**Total ($)**	**Funding Match**	**Grant Request**
General Contractor	$65	800	$52,000	$0	$52,000
Masonry	$40	160	$6,480	$0	$6,480
Electrician	$60	160	$9,720	$0	$9,720
Plumber	$55	280	$15,400	$0	$15,400
General Labor	$55	160	$8,800	$0	$8,800
		Subtotal	**$92,400**	**$0**	**$92,400**
		Total Cost	**$465,000**	**$26,200**	**$438,800**

Row (e) Environmental Compliance/Mitigation/Enhancement

This project will not trigger requirements of CEQA, NEPA, or other environmental regulations and will therefore not require environmental compliance, mitigation, or enhancement.

Task 10: Environmental Compliance/Mitigation/Enhancement - Not applicable.

Row (f) Construction Administration

The Construction Administration costs for the project are estimated to be $26,200. This cost total is based on the following:

Task 11: Construction Administration - The project will require approximately 476 hours of construction administration to oversee a contractor to complete construction of the *Short-Term Arsenic*

Treatment Project. If these actions, taken on behalf of PUCDC, require more than $26,200, those funds will be allocated from PUCDC's general fund, or other funding sources.

Table 4-13: Row (f) Construction Administration Costs
Short-Term Arsenic Treatment Project

Labor Category	Hourly Wage ($)	Number of hours	Total ($)	Funding Match	Grant Request
Project Manager	$55	476	$26,200	$0	$26,200
		Total	**$26,200**	**$0**	**$26,200**

Row (g) Other Costs

Other costs for the project are $10,200. These costs include fees from the Environmental Health Department ($3,500), costs associated with a Certified Operator for monitoring efforts, and other costs that may be incurred based on previous experience with the pilot study ($2,700). The other costs incurred ($2,700) will be provided by the project proponent as matching funds.

Row (h) Construction/Implementation Contingency

Based on PUCDC's past experience with similar projects, approximately 10% of construction funds are generally required for unexpected expenses related to construction. As such, this project has budgeted $46,300 for construction/implementation contingency.

Row (i) Grand Total

The Grand Total for the *Short Term Arsenic Treatment Project* ($670,163) was calculated as the sum of rows (GA) through (h) for each column.

Table 4-14: Row (i) Grand Total Costs
Short-Term Arsenic Treatment Project

Row	Budget Category	Total Costs
GA	Grant Administration	$14,103
(a)	Direct Project Administration Costs	$88,200
(b)	Land Purchase/Easement	$0
(c)	Planning/Design/Engineering/ Environmental Documentation	$20,160
(d)	Construction/Implementation	$465,000
(e)	Environmental Compliance/ Mitigation/Enhancement	$0
(f)	Construction Administration	$26,200
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$10,200
(h)	Construction/Implementation Contingency	$46,300
(i)	**Grand Total**	**$670,163**

Project 3: Groundwater Quality Protection Program – Desert Hot Springs

This project will involve extending the Mission Springs Water District (MSWD) municipal wastewater collection system to a residential area, designated as Sub-area D-1, thereby eliminating the need for on-site septic systems in that area and reducing the potential for groundwater contamination from densely clustered and/or failing septic systems. Funding for this project involves the following aspects of project implementation: grant administration, project administration, planning/design/engineering/environmental documentation, construction/implementation, construction administration, other costs, and construction/implementation contingency.

The total cost associated with the *Groundwater Quality Protection Program – Desert Hot Springs* is $3,097,181. Of these total costs, $1,025,641 is being requested for grant funding through the IRWM Implementation Grant Program. The remaining $2,071,540 was/will be provided from the Assessment District No. 12 Bonds and District Capital Improvement Fund and a United States Army Corps of Engineers Planning Grant. In total, this amount constitutes 67% of the total project cost, meaning that the non-State share of the total project cost (funding match) is 67% for this project. Table 4-15 below provides a more detailed break-down of the total project budget.

Table 4-15: Total Project Budget
Groundwater Quality Protection Program – Desert Hot Springs

	Budget Category	(a) Non-State Share* (Funding Match)	(b) Requested Grant Funding	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
GA	CVWD Grant Administration	$0	$25,641	$0	$25,641	0%
(a)	Direct Project Administration Costs	$24,000	$0	$0	$24,000	100%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$58,140	$0	$0	$58,140	100%
(d)	Construction/Implementation	$1,806,800	$1,000,000	$0	$2,806,800	64%
(e)	Environmental Compliance/ Mitigation/Enhancement	$5,000	$0	$0	$5,000	100%
(f)	Construction Administration	$12,000	$0	$0	$12,000	100%
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$40,000	$0	$0	$40,000	100%
(h)	Construction/Implementation Contingency	$125,600	$0	$0	$125,600	100%
(i)	**Grand Total**	**$2,071,540**	**$1,025,641**	**$0**	**$3,097,181**	**67%**

**Sources of funding: Assessment District No. 12 Bonds and District Capital Improvement Fund. Design completed in conjunction with a UASCE planning grant that required a 25% cost share.*

This Implementation Grant Proposal budget allocates funding for six of the eleven project tasks identified within the *Groundwater Quality Protection Program – Desert Hot Springs* Work Plan (refer to Attachment 3).

Table 4-16: Cost Breakdown by Work Plan Task and Subtask
Groundwater Quality Protection Program – Desert Hot Springs

Row/Task	Category	Total
GA	CVWD Grant Administration	$25,641
Row (a)	Direct Project Administration Costs	$24,000
Task 1	*Project Administration*	*$19,200*
Task 2	*Labor Compliance Program*	*$800*
Task 3	*Reporting*	*$4,000*
Row (c)	Planning/Design/Engineering/Environmental Documentation	$58,140
Task 5	*Final Design*	*$58,140*
Row (d)	Construction/Implementation	$2,806,800
Task 9	*Construction*	*$2,806,800*
Row (e)	Environmental Compliance/Mitigation/Enhancement	$5,000
Row (f)	Construction Administration	$12,000
Task 11	*Construction Administration*	*$12,000*
Row (g)	Other Costs	$40,000
Row (h)	Construction/Implementation Contingency	$125,600
Row (i)	**Grand Total**	**$3,097,181**

The sections below provide detailed descriptions of each of the row and task budgets (where applicable) shown in the summary table above. In addition, each description below describes how cost estimates for each of the tasks or rows were calculated.

Grant Administration (GA)

Each local project sponsor shall dedicate a portion of their grant funds to the Coachella Valley Water District (CVWD) for administration and processing of the Implementation Grant. The *Groundwater Quality Protection Program – Desert Hot Springs* will contribute $25,641 to this administration cost.

Row (a) Direct Project Administration Costs

The total direct project administration costs for the project are $24,000. Table 4-17 provides a detailed listing of all applicable costs.

Task 1: Project Administration - This includes the cost for all project administration efforts, including labor costs for a Director of Engineering Projects and a Senior Project Manager. These costs were determined based on the estimated costs of 120 hours each for the Director of Engineering Projects and Senior Project Manager, for a total of 240 hours of labor. The 240 hours is allocated evenly between the two positions with 192 hours for project administration, and the remaining hours for Tasks 2 and 3 (described below).

Task 2: Labor Compliance Program - Mission Springs Water District will implement a labor compliance program (LCP) for the *Groundwater Quality Protection Program – Desert Hot Springs.* Staff costs required to implement the LCP include eight total hours, four hours from the Director of Engineering Projects, and four hours from the Senior Project Manager.

Task 3: Reporting - This includes the cost for preparing the Project Assessment and Evaluation Plan, Quarterly Progress Reports and Invoices, and Project Completion Report. This is based on the estimate

that 40 hours will be allocated to the administration of the DWR reports (collecting information and assembling reports).

Table 4-17: Row (a) Direct Project Administration Budget
Groundwater Quality Protection Program – Desert Hot Springs

Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
Director of Engineering Projects	$100	120	$12,000	$12,000	-
Senior Project Manager	$100	120	$12,000	$12,000	-
		Total	**$24,000**	**$24,000**	**$0**

Row (b) Land Purchase/Easement

Not applicable.

Row (c) Planning/Design/Engineering/Environmental Documentation

The total planning/design/engineering/environmental documentation cost for the project is $58,140 and is shown in Table 4-18. This cost total is based on the following:

Task 4: Assessment and Evaluation - Not applicable.

Task 5: Final Design - This task includes the cost for finalizing design of the project. This cost was determined based on design engineering efforts that have already been incurred by MSWD to finalize design of the project.

Task 6: Environmental Documentation - MSWD has completed environmental documentation for this project, however, staff or other costs required to finalize this documentation are not included within the proposed Budget.

Task 7: Permitting - MSWD is ready to apply for a Stormwater Pollution Prevention Plan (SWPPP), a City Encroachment Permit, and a County Encroachment Permit. However, staff or other costs required to finalize this documentation are not included within the proposed Budget.

Table 4-18: Row (c) Planning/Design/Environmental Documentation Costs
Groundwater Quality Protection Program – Desert Hot Springs

Stage	Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
100% Design Services	Engineering	Lump Sum		$58,140	$58,140	-
			Total	$58,140	$58,140	$0

Row (d) Construction/Implementation

The Construction/Implementation costs for the project are estimated to be $2,542,800. Table 4-19 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 8: Construction Contracting - MSWD will complete construction contracting for this project, however staff or other costs required to finalize actions for this task are not included within the proposed Budget.

Task 9: Construction - Construction costs for this project are necessary to complete subtasks 9.1 through 9.3,and produce other deliverables described within Task 9 (Construction) of the Work Plan (refer to Attachment 3).

The total construction cost estimate of $2,552,800 is based on a total estimate given by a licensed engineer. Of these costs, $1,000,000 is being requested as grant funding, and $1,542,800 will be matched by the Assessment District Number 12 Bonds and District Capital Improvement Fund. These cost estimates were based on the detailed engineer's estimate provided by an engineering firm. The grant funding and MSWD's match will cover costs for the construction of the sewer lines and laterals, including all manholes and appurtenances.

Table 4-19: Row (d) Construction/Implementation Costs
Groundwater Quality Protection Program – Desert Hot Springs

Description of Costs	Unit Costs ($)	Number of Units	Total ($)	Funding Match	Grant Request
Task 9.1					
Mobilization/ Demobilization	Lump Sum		$121,058	$121,058	$0
Task 9.2					
Project Construction	Lump Sum		$2,391,742	$1,391,742	$1,000,000
Task 9.3					
Survey and Staking	Lump Sum		$20,000	$20,000	$0
Soils Testing	Lump Sum		$10,000	$10,000	$0
Consultant CM	Lump Sum		$220,000	$220,000	$0
MSWD CM & Inspection	$100/hr./440		$44,000	$44,000	$0
		Total	**$2,806,800**	$1,806,800	$1,000,000

Row (e) Environmental Compliance/Mitigation/Enhancement

The Environmental Compliance/Mitigation/Enhancement costs for the project are $5,000, which will be paid for by the Assessment District Number 12 Bonds and District Capital Improvement Reserve Account. Table 4-20 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 10: Environmental Compliance/Mitigation/Enhancement - The environmental documentation (CEQA and NEPA) prepared for this project found that surveying by an archaeologist and a biologist may be necessary to mitigate potential impacts associated with the project. These surveying efforts will be accomplished as follows:

Table 4-20: Row (e) Environmental Compliance/Mitigation/Enhancement Costs
Groundwater Quality Protection Program – Desert Hot Springs

Discipline	Hourly Wage ($)	Number of hours	Total ($)	Funding Match	Grant Request
Archaeologist	$100	10	$1,000	$1,000	$0
Biologist	$100	40	$4,000	$4,000	$0
		Total	**$5,000**	**$5,000**	**$0**

Row (f) Construction Administration

The Construction Administration costs for the project are estimated to be $276,000. This cost total is based on the following:

Task 11: Construction Administration - The total costs for this task includes work anticipated from a MSWD Engineer, which will require about 120 hours of total labor. Additional efforts, including a construction management consultant, will be required under this task, but are not included in the budget. Such costs can typically be 10% of the total construction cost. These budgeted costs are summarized in Table 4-21 below.

Table 4-21: Row (f) Construction Administration Costs
Groundwater Quality Protection Program – Desert Hot Springs

Labor Category	Hourly Wage ($)	Number of hours	Total ($)	Funding Match	Grant Request
MSWD Engineer	$100	120	$12,000	$12,000	$0
		Total	**$12,000**	**$12,000**	**$0**

Row (g) Other Costs

Other costs for the project are $40,000. These costs include permitting associated with the SWPPP ($20,000) and encroachment permits ($10,000) as well as efforts associated with the Labor Compliance Program ($10,000). The SWPPP cost estimate is based on MSWD's discussions with engineering firms for cost estimates to comply with new stormwater permit requirements effective January 1, 2011. Encroachment permit costs are estimated based on similar projects recently completed by MSWD in the City of Desert Hot Springs. The Labor Compliance Program cost is approximately 0.5% of the project construction costs.

Row (h) Construction/Implementation Contingency

The Construction/Implementation Contingency costs for the *Groundwater Quality Protection Program – Desert Hot Springs* are estimated to be $125,600. This was estimated to be approximately 5% of the total construction cost of $2,542,800.

Row (i) Grand Total

The Grand Total for the *Groundwater Quality Protection Program – Desert Hot Springs* project ($3,097,181) was calculated as the sum of rows (GA) through (h) for each column.

Table 4-22: Row (i) Grand Total Costs
Groundwater Quality Protection Program – Desert Hot Springs

Row	Budget Category	Total Costs
GA	Grant Administration	$25,641
(a)	Direct Project Administration Costs	$24,000
(b)	Land Purchase/Easement	$0
(c)	Planning/Design/Engineering/ Environmental Documentation	$58,140
(d)	Construction/Implementation	$2,806,800
(e)	Environmental Compliance/ Mitigation/Enhancement	$5,000
(f)	Construction Administration	$12,000
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$40,000
(h)	Construction/Implementation Contingency	$125,600
(i)	**Grand Total**	**$3,097,181**

Project 4: Groundwater Quality Protection Program – Cathedral City

This project will involve removing failing and/or densely located septic tanks in the City of Cathedral City, expanding the Coachella Valley Water District (CVWD) wastewater collection system, and connecting the project area to a booster pump station in order to reduce groundwater contamination. Funding for this project involves the following aspects of project implementation: grant administration, project administration, planning/design/engineering/environmental documentation, construction/implementation, construction administration, and construction/implementation contingency.

The total cost associated with the *Groundwater Quality Protection Program—Cathedral City* is $1,851,611. Of these total costs, $1,384,615 is being requested for grant funding through the IRWM Implementation Grant Program. The remaining $467,275 was or will be provided by the City of Cathedral City's Redevelopment Agency (RDA) funds. In total, this amount constitutes 25% of the total project cost, meaning that the non-State share of the total project cost (funding match) is 25% for this project. Table 4-23 below provides a more detailed break-down of the total project budget.

Table 4-23: Total Project Budget
Groundwater Quality Protection Program—Cathedral City

		(a)	(b)	(c)	(d)	(e)
Budget Category		**Non-State Share* (Funding Match)**	**Requested Grant Funding**	**Other State Funds Being Used**	**Total**	**% Funding Match**
GA	CVWD Grant Administration	$0	$34,615	$0	$34,615	0%
(a)	Direct Project Administration Costs	$8,642	$32,391	$0	$41,033	21%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$345,000	$0	$0	$345,000	100%
(d)	Construction/Implementation	$113,633	$1,166,175	$0	$1,279,808	9%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$44,317	$0	$44,137	0%
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$0	$107,117	$0	$107,117	0%
(i)	**Grand Total**	**$467,275**	**$1,384,615**	**$0**	**$1,851,890**	**25%**

** Sources of funding: Cathedral City funded the studies and design services with City Redevelopment Agency (RDA) funds.*

This Implementation Grant Proposal is requesting funding for five of the eleven project tasks identified within the *Groundwater Quality Protection Program – Cathedral City* Work Plan (refer to Attachment 3).

Table 4-24: Cost Breakdown by Work Plan Task and Subtask
Groundwater Quality Protection Program—Cathedral City

Row/Task	Category	Total
GA	CVWD Grant Administration	$34,615
Row (a)	Direct Project Administration Costs	$41,033
Task 1	*Project Administration*	*$41,033*
Row (c)	Planning/Design/Engineering/Environmental Documentation	$345,000
Task 5	*Final Design*	*$345,000*
Row (d)	Construction/Implementation	$1,279,808
Task 8	*Construction Contracting*	*$113,633*
Task 9	*Construction*	*$1,166,175*
Row (f)	Construction Administration	$44,317
Task 11	*Construction Administration*	*$44,317*
Row (h)	Construction/Implementation Contingency	$107,117
Row (i)	**Grand Total**	**$1,851,611**

The sections below provide detailed descriptions of each of the row and task budgets (where applicable) shown in the summary table above. In addition, each description below describes how cost estimates for each of the tasks or rows were developed.

Grant Administration (GA)

Each local project sponsor shall dedicate a portion of their grant funds to CVWD for administration and processing of the Implementation Grant. The *Groundwater Quality Protection Program – Cathedral City* will contribute $34,615 to this administration cost.

Row (a) Direct Project Administration Costs

The total project administration cost for the project is estimated to be $41,033. This is approximately 3% of the project construction cost, and is within the range of previous administrative costs for similar projects incurred by the City of Cathedral City. Table 4-25 provides a detailed listing of all applicable costs.

Task 1: Project Administration - This includes the cost for all project administration efforts, including labor costs for an Engineer and an Accountant from Cathedral City, and consultants for Project Management. These costs were determined based on experience with similar projects completed by the City of Cathedral City. The City of Cathedral City has completed similar projects, and compiled a database of relevant costs. This database provided the basis for cost estimates associated with this project.

Task 2: Labor Compliance Program - The City of Cathedral City will implement a labor compliance program (LCP) for the *Groundwater Quality Protection Program – Cathedral City*. However, staff costs required to implement the LCP are not included within the proposed Budget.

Task 3: Reporting - The City of Cathedral City will complete a Project Assessment and Evaluation Plan, Quarterly Progress Reports and Invoices, and a Project Completion Report. However, staff costs required to complete this reporting are not included within the proposed budget.

Table 4-25: Row (a) Direct Project Administration Budget
Groundwater Quality Protection Program—Cathedral City

Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
Cathedral City Engineer	$124.84	100	$12,484	$1,248	$11,236
Cathedral City Accountant	$90.04	88	$7924	$1,981	$5,943
Consultant Project Management	$150.00	77.5	$11625	$3,600	$8,025
Cathedral City Administration	$125.00	72	$9,000	$1,813	$7,187
		Total	**$41,033**	**$8,642**	**$32,391**

Row (b) Land Purchase/Easement

Not applicable.

Row (c) Planning/Design/Engineering/Environmental Documentation

The total Planning/Design/Engineering/Environmental documentation costs for the project are $345,000 Table 4-26 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 4: Assessment and Evaluation - Not applicable.

Task 5: Final Design - This task includes the cost for finalizing design of the project. This cost has already been incurred by the project proponent, and was therefore determined based on actual costs.

Task 6: Environmental Documentation - Not applicable.

Task 7: Permitting - The City of Cathedral City will complete tasks associated with obtaining a City Encroachment Permit. However, staff costs required to complete permitting are not included within the proposed Budget.

Table 4-26: Row (c) Planning/Design/Environmental Documentation Costs
Groundwater Quality Protection Program—Cathedral City

Discipline	Hourly Wage ($/hr)	Number of Hours	Total	Funding Match	Grant Request
100% Design Services					
Civil/Sanitary Engineering	Lump Sum		$345,000	$345,000	-
		Total	**$345,000**	**$345,000**	**$0**

Row (d) Construction/Implementation

The Construction/Implementation costs for the project are estimated to be $1,279,808. Table 4-27 provides a detailed listing of all applicable costs. This cost total is based on the following:

Task 8: Construction Contracting - This task will include advertising and awarding the construction contract. The budget for this is estimated to be $113,633 based on prior experience by the City of Cathedral City.

Task 9: Construction - Construction costs for this project, which are summarized below, are necessary to complete subtasks 9.1 through 9.3, and produce other deliverables described within Task 9 (Construction) of the Work Plan (refer to Attachment 3). All of the cost estimates for the following subtasks are based on the bid schedule, final construction, and bid documents from similar projects within the City of Cathedral City. Updated costs will be provided by contractors during the bid solicitation process.

- ***Subtask 9.1 Mobilization and Site Preparation*:** Costs associated with this task are for mobilization, which is estimated to be $25,000.
- ***Subtask 9.2 Project Construction*:** Costs associated with this task are for traffic control, public convenience and safety, dust control, shoring sheeting and bracing, materials testing, surveying, and all construction costs. These total costs are estimated to be $1,071,175.
- ***Subtask 9.3 Performance Testing and Demobilization*:** Costs associated with this task include reconstructing the existing manhole base and site inspection and are estimated to be $70,000.

Table 4-27: Row (d) Construction/Implementation Costs
Groundwater Quality Protection Program—Cathedral City

Description of Costs	Unit Costs ($)	Number of Units	Total ($)	Funding Match	Grant Request
Task 8 Construction Contracting					
Construction Contracting	Lump Sum		$113,633	$113,633	$0
Subtask 9.1 Mobilization and Site Preparation					
Mobilization	Lump Sum		$25,000	$0	$25,000
Subtask 9.2 Project Construction					
Traffic Control, Public Convenience and Safety	Lump Sum		$15,000	$0	$15,000
Dust Control	Lump Sum		$4,000	$0	$4,000
Shoring, Sheeting, and Bracing	Lump Sum		$25,000	$0	$25,000
Construct 15" VCP Sewer Main 0-15' depth	$145	2307	$334,515	$0	$334,515
Construct 15" VCP Sewer Main over 15' depth	$205	1462	$299,710	$0	$299,710
Construct 6" VCP Sewer Lateral w/cleanout	$95	1500	$142,500	$0	$142,500
Construct Concrete Manhole 10'-15' depth	$4,350	12	$52,200	$0	$52,200
Construct Concrete Manhole over 15' depth	$5,000	9	$45,000	$0	$45,000
Construct 15'' VCP Sewer in 30'' jacked and bored steel casing	$850	145	$123,250	$0	$123,250
Materials Testing	Lump Sum		$18,000	$0	$18,000
Surveying	Lump Sum		$12,000	$0	$12,000
Subtask 9.3 Performance Testing and Demobilization					
Reconstruct Existing Manhole Base	Lump Sum		$5,000	$0	$5,000
Inspection	Lump Sum		$65,000	$0	$65,000
		Total	**$1,279,808**	**$113,633**	**$1,166,175**

Row (e) Environmental Compliance/Mitigation/Enhancement

This project received a CEQA Categorical Exemption in May, 2008 and therefore will not incur further costs associated with implementing environmental mitigation or enhancement requirements.

Task 10: Environmental Compliance/Mitigation/Enhancement - Not applicable.

Row (f) Construction Administration

The Construction Administration costs for the project are estimated to be $44,317. This cost total is based on the following:

Task 11: Construction Administration - Costs for this task are estimated to be $44,317, which will be allocated to a Construction Administration Consultant who will ensure that the project complies with Desert Water Agency materials and construction standards.

Table 4-28: Row (f) Construction Administration Costs
Groundwater Quality Protection Program—Cathedral City

Labor Category	Hourly Wage ($)	Number of hours	Total ($)	Funding Match	Grant Request
Construction Administration Consultant	Lump Sum		$44,317	$0	$44,317
		Total	**$44,317**	**$0**	**$44,317**

Row (g) Other Costs

No other costs will be required for implementation of this project.

Row (h) Construction/Implementation Contingency

The Construction/Implementation Contingency costs for the *Groundwater Quality Protection Program – Cathedral City* are estimated to be $107,117. This was estimated to be approximately 10% of the total construction cost of $1,166,175.

Row (i) Grand Total

The Grand Total for the project ($1,738,257) was calculated as the sum of rows (GA) through (h) for each column.

Table 4-29: Row (i) Grand Total Costs
Groundwater Quality Protection Program—Cathedral City

Row	Budget Category	Total Costs
GA	Grant Administration	$34,615
(a)	Direct Project Administration Costs	$41,033
(b)	Land Purchase/Easement	$0
(c)	Planning/Design/Engineering/ Environmental Documentation	$345,000
(d)	Construction/Implementation	$1,279,808
(e)	Environmental Compliance/ Mitigation/Enhancement	$0
(f)	Construction Administration	$44,317
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$0
(h)	Construction/Implementation Contingency	$107,117
(i)	**Grand Total**	**$1,851,890**

Attachment

5

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Schedule

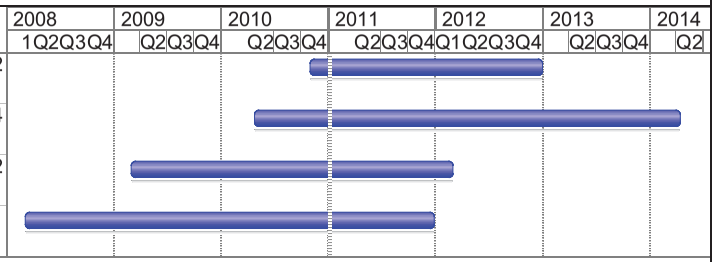
Attachment 5 consists of the following items:

- ✓ **Project Schedule(s)**
  This attachment provides a schedule for implementation of each project contained within this Implementation Grant Proposal, including the sequence and timing of each project.

The enclosed schedules provide start and end dates as well as milestones for each work plan task of each project within this proposal, consistent with the work plans (refer to Attachment 3) and budgets (refer to Attachment 4). The schedules also demonstrate any dependencies or predecessors by showing links between tasks. The assumed start date of the implementation grant is June 1, 2011, and each project has an assumed end date that is reasonable based on their individual work plan and budget.

Proposal Summary

ID	Task Name	Duration	Start	Finish
1	**Project 1: Regional Water Conservation Program**	566 days	Mon 11/1/10	Mon 12/31/12
2	**Project 2: Short Term Arsenic Treatment Project**	1036 days	Mon 4/26/10	Mon 4/14/14
3	**Project 3: Groundwater Quality Protection Program -- Desert Hot Springs**	784 days	Mon 3/2/09	Thu 3/1/12
4	**Project 4: Groundwater Quality Protection Program -- Cathedral City**	995 days	Thu 3/6/08	Wed 12/28/11

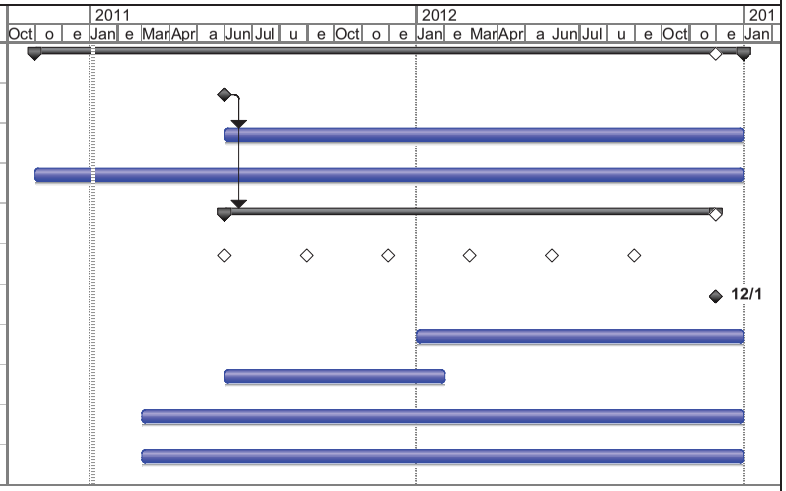


Project: Overall_Schedule_CV
Date: Wed 1/5/11

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Project 1: Regional Water Conservation Program

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Regional Water Conservation Program**	**566 days**	**Mon 11/1/10**	**Mon 12/31/12**	
2	Start of Grant Contract	1 day	Wed 6/1/11	Wed 6/1/11	
3	Grant Administration (assumes Project End Date of 12/31/12)	414 days	Wed 6/1/11	Mon 12/31/12	2FS-1 day
4	Tasks 1: Project Administration	566 days	Mon 11/1/10	Mon 12/31/12	
5	**Task 3: Reporting**	**393 days**	**Wed 6/1/11**	**Sat 12/1/12**	**2FS-1 day**
6	**Quarterly Grant Reporting & Invoicing & Deliverables**	**328 days**	**Wed 6/1/11**	**Sat 9/1/12**	**2FS-1 day**
13	Quarterly Grant Reporting & Invoicing & Deliverables 7	0 days	Sat 12/1/12	Sat 12/1/12	
14	Task 4: Assessment and Evaluation	261 days	Mon 1/2/12	Mon 12/31/12	
15	Task 8: Construction Contracting	176 days	Wed 6/1/11	Wed 2/1/12	
16	Task 9: Construction	480 days	Tue 3/1/11	Mon 12/31/12	
17	Task 11: Construction Admin	480 days	Tue 3/1/11	Mon 12/31/12	

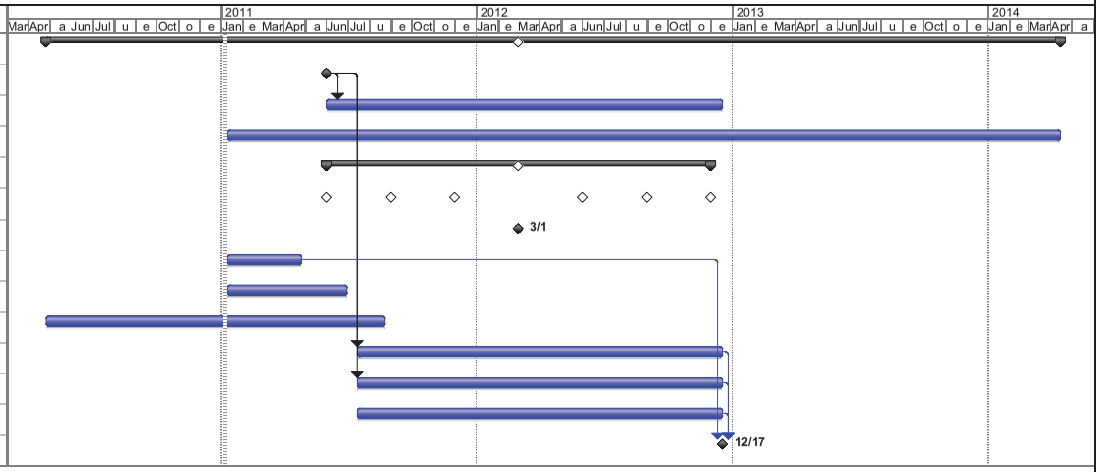


Project: CVIRWMP 84-1_Schedule Co
Date: Tue 1/4/11

Task — Progress — Summary — External Tasks — Deadline
Split — Milestone — Project Summary — External Milestone

Project 2: Short Term Arsenic Treatment Project

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Short-Term Arsenic Treatment Project**	**1036 days**	**Mon 4/26/10**	**Mon 4/14/14**	
2	Start of Grant Contract	1 day	Wed 6/1/11	Wed 6/1/11	
3	Grant Administration	404 days	Wed 6/1/11	Mon 12/17/12	2FS-1 day
4	Tasks 1: Project Administration	851 days	Mon 1/10/11	Mon 4/14/14	
5	**Task 3: Reporting**	**393 days**	**Wed 6/1/11**	**Sat 12/1/12**	
6	**Quarterly Grant Reporting & Invoicing & Deliverables**	**393 days**	**Wed 6/1/11**	**Sat 12/1/12**	**2FS-1 day**
13	Quarterly Grant Reporting & Invoicing & Deliverables 4	0 days	Thu 3/1/12	Thu 3/1/12	
14	Task 4: Assessment & Evaluation	76 days	Mon 1/10/11	Mon 4/25/11	
15	Task 5: Final Design	123 days	Mon 1/10/11	Wed 6/29/11	
16	Task 7: Permitting	346 days	Mon 4/26/10	Mon 8/22/11	
17	Task 8: Construction Contracting	372 days	Fri 7/15/11	Mon 12/17/12	2FS+4 wks
18	Task 9: Construction	372 days	Fri 7/15/11	Mon 12/17/12	2FS+4 wks
19	Task 11: Construction Administration	372 days	Fri 7/15/11	Mon 12/17/12	
20	Project Completion	0 days	Mon 12/17/12	Mon 12/17/12	17,18,19,14

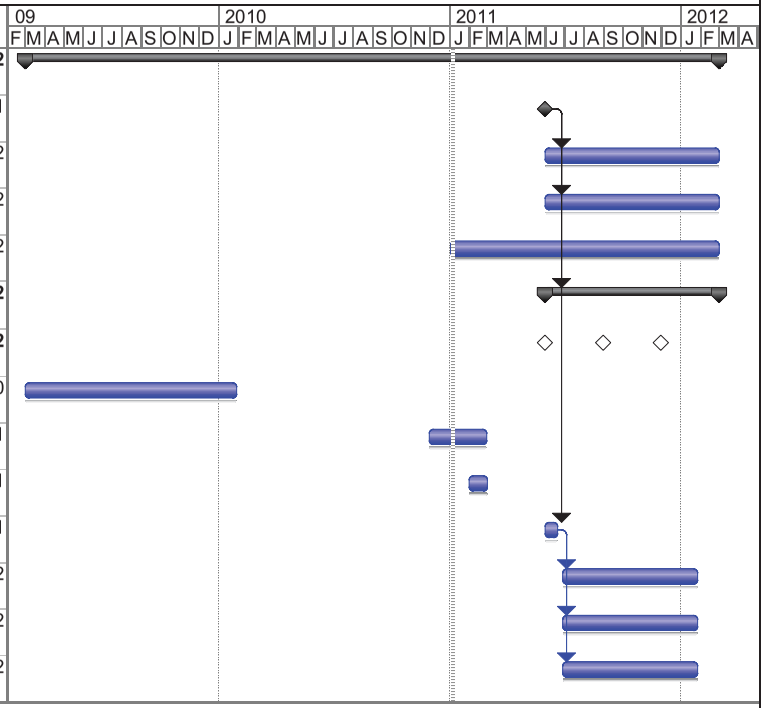


Project: CVIRWMP 84-1_Schedule Sh
Date: Wed 1/5/11

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Project 3: Groundwater Quality Protection Program -- Desert Hot Springs

ID	Task Name	Duration	Start	Finish
1	**Groundwater Quality Protection Program -- Desert Hot Springs**	**784 days**	**Mon 3/2/09**	**Thu 3/1/12**
2	Start of Grant Contract	1 day	Wed 6/1/11	Wed 6/1/11
3	Grant Administration	197 days	Wed 6/1/11	Thu 3/1/12
4	Tasks 1: Project Administration	197 days	Wed 6/1/11	Thu 3/1/12
5	Task 2: Labor Compliance Program	304 days	Mon 1/3/11	Thu 3/1/12
6	**Task 3: Reporting**	**197 days**	**Wed 6/1/11**	**Thu 3/1/12**
7	**Quarterly Grant Reporting & Invoicing & Deliverables**	**197 days**	**Wed 6/1/11**	**Thu 3/1/12**
12	Task 5: Final Design	240 days	Mon 3/2/09	Fri 1/29/10
13	Task 6: Environmental Documentation	65 days	Tue 11/30/10	Mon 2/28/11
14	Task 7: Permitting	21 days	Tue 2/1/11	Tue 3/1/11
15	Task 8: Construction Contracting	14 days	Wed 6/1/11	Mon 6/20/11
16	Task 9: Construction	153 days	Wed 6/29/11	Fri 1/27/12
17	Task 10: Environmental Compliance	153 days	Wed 6/29/11	Fri 1/27/12
18	Task 11: Construction Admin	153 days	Wed 6/29/11	Fri 1/27/12

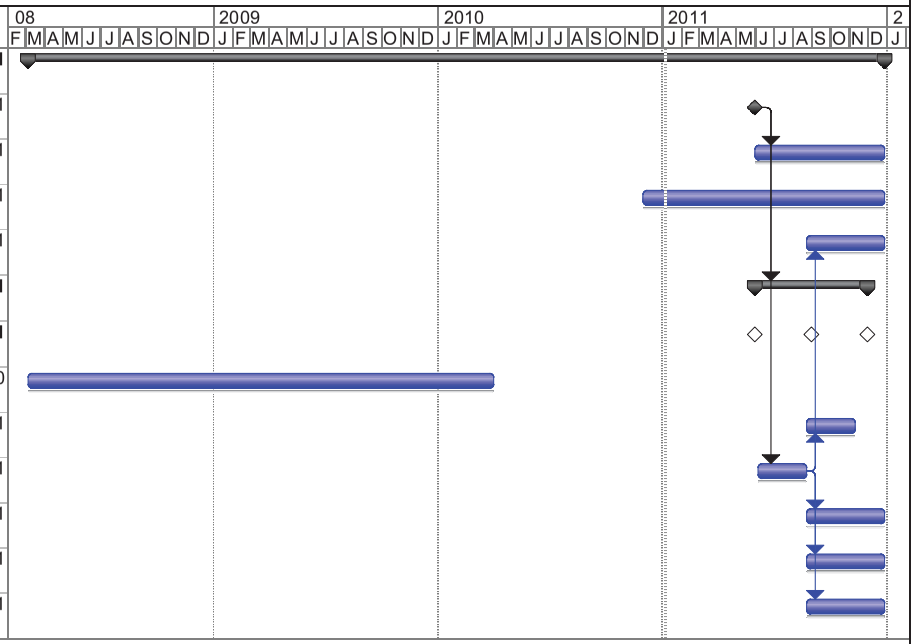


Project: CVIRWMP 84-1_Schedule Ca
Date: Wed 1/5/11

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Project 4: Groundwater Quality Protection Program -- Cathedral City

ID	Task Name	Duration	Start	Finish
1	**Groundwater Quality Protection Program -- Cathedral Cit**	**995 days**	**Thu 3/6/08**	**Wed 12/28/11**
2	Start of Grant Contract	1 day	Wed 6/1/11	Wed 6/1/11
3	Grant Administration	151 days	Wed 6/1/11	Wed 12/28/11
4	Tasks 1: Project Administration	281 days	Wed 12/1/10	Wed 12/28/11
5	Task 2: Labor Compliance Program	91 days	Wed 8/24/11	Wed 12/28/11
6	**Task 3: Reporting**	**131 days**	**Wed 6/1/11**	**Thu 12/1/11**
7	**Quarterly Grant Reporting & Invoicing & Deliver**	**131 days**	**Wed 6/1/11**	**Thu 12/1/11**
11	Task 5: Final Design	541 days	Thu 3/6/08	Thu 4/1/10
12	Task 7: Permitting	57 days	Wed 8/24/11	Thu 11/10/11
13	Task 8: Construction Contracting	57 days	Mon 6/6/11	Tue 8/23/11
14	Task 9: Construction	91 days	Wed 8/24/11	Wed 12/28/11
15	Task 10: Environmental Compliance	91 days	Wed 8/24/11	Wed 12/28/11
16	Task 11: Construction Admin	91 days	Wed 8/24/11	Wed 12/28/11



Project: CVIRWMP 84-1_Schedule Ca
Date: Wed 1/5/11

Task	Milestone	External Tasks	
Split	Summary	External Milestone	
Progress	Project Summary	Deadline	

Attachment 6

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Monitoring, Assessment, and Performance Measures

Attachment 6 consists of the following items:

- ✓ **Performance Measures**

  The purpose of this attachment is to describe the monitoring, assessment, and performance measures that will be used to evaluate each proposed project. These measures will ensure that this proposal meets its intended goals, achieves measurable outcomes, and provides value to the Region and the State of California.

For each project in this *Coachella Valley IRWM Implementation Grant Proposal*, specific performance measures and monitoring approaches have been developed to assess project performance on an ongoing basis. The purpose of this attachment is to provide a discussion of the monitoring system to be used to verify project performance with respect to the project benefits or objectives identified. For each proposed project, listed below, this attachment will identify data collection and analysis to be used.

This attachment will also discuss how monitoring data will be used to measure the performance in meeting the overall goals and objectives of the Coachella Valley IRWM Plan. Each project applicant has prepared a Project Performance Measures Table (included in this attachment) that includes the following:

- Project goals
- Desired outcomes
- Output indicators – measures to effectively track output
- Outcome indicators – measures to evaluate change that is a direct result of the work
- Measurement tools and methods
- Targets – measureable targets that are feasible to meet during the life of the project

Project 1: Regional Water Conservation Program

To determine the overall success of the *Regional Water Conservation Program*, each agency involved will submit quarterly progress reports to the CVRWMG to discuss the development and accomplishments of their project(s). Each agency will compile and share data with the CVRWMG for project monitoring purposes. Program goals will measure progress through their individual monitoring or assessment program described below.

Program Goals

Reduce urban water consumption: This program goal will be achieved by the successful implementation of a water conservation outreach program. The effectiveness of outreach efforts for this program will be assessed through the number of outreach activities organized and the number of attendees at the events.

Public surveys and questionnaires may also be another measurement tool that will assess the progress of outreach efforts.

Increase land use irrigation efficiency: The conservation program will conduct water audits and corresponding workshops to communicate recommendations regarding ways to increase water use efficiency to local constituents. Through these audits, agency staff or irrigation professionals evaluate irrigation systems for inefficiencies, which are then reported to the owner, property manager, landscaper, etc. Water audits will include flow monitoring, water use records, and visual observations. To measure progress, participating landscape irrigation sites will be audited allowing pre- and post retrofit water use records to be compared. Future water consumption at water audit sites will be compared to baseline measures set by pre-retrofit water use to estimate the amount of savings attained.

Improve water quality: Poor water quality has been linked to over-irrigation runoff. Reducing runoff in urban areas can reduce the deleterious impacts of the pollutants that runoff contains. To effectively measure runoff reductions visual observations will be employed. The data gathered for current conditions by each agency will then be compared to previous years' data to see if changes are reflected.

Reduce need for future imported water supplies: By reducing the demand on the groundwater basin, the Coachella Valley Region will decrease the need for future imported water sources. Monitoring to verify water demand decline in the basin will require understanding of the groundwater profile, water use records, and accounting for annual water use. Measuring progress will be achieved by monitoring water demand in terms of gallons per capita per day (GPCD) of urban water consumption on a five-year basis, as part of each agency's Urban Water Management Plan (UWMP) efforts.

Monitoring System

Water use will be monitored via existing agency accounting and meters and GPCD projections that are accounted for in each agency's UWMP. The data gathered by each agency for production can be compared to previous data to see if changes are reflected.

Table 6-1 summarizes the project monitoring for this project.

Table 6-1: Monitoring Summary
Regional Water Conservation Program

Monitoring Locations	Types of Analyses	Measuring Performances
Customer sites	Public surveys	Increase of quantifiable water conservation savings by 20x2020
Landscape irrigation sites	Customer pre-and post- retrofit water use records	Average water use reduction of 25 percent for residential retrofit site
Existing agency meters	Flow monitoring, water use records, customer meter data	GPCD in line with 20x2020 targets for each agency

Table 6-2 summarizes performance measures for this project.

Table 6-2: Performance Measures Table
Regional Water Conservation Program

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Reduce urban water consumption	Successful implementation of water conservation outreach campaign	Customers valley-wide are implementing water conservation measures No. of water conservation events (workshops, fair exhibits, etc) conducted	Change in attitude that water conservation is a priority and duty Market chain responds to demand for water-wise plants	Public surveys and questionnaires List of conservation events	Increase of quantifiable water conservation savings by 20 percent by 2020
Increase landscape irrigation efficiency	Reduced landscape irrigation demand at participating sites	50 percent of sites where audits were preformed have irrigation or landscape retrofits performed	Retrofitted sites reduce use by 25 percent	Customer pre- and post-retrofit water use records	Average water use reduction of 25 percent for residential retrofit site
Improve water quality	Reduced runoff due to over-irrigation	50 percent of implementation sites that have visible evidence of irrigation runoff	25% reduction in dry weather runoff	Visual observations	Reduction in observed dry weather runoff
Reduce need for future imported water supplies	By reducing demand on the groundwater basin, we can decrease our need for future imported water	Future need for imported water supply is concurrently reduced with decreased demand	Decrease future need for imported water in line with decreased demand	Water demand statistics (GPCD)	GPCD in line with 20x2020 targets for each agency

Project 2: Short-Term Arsenic Treatment (STAT) Project

The purpose of the *Short-Term Arsenic Treatment Project* is to (1) implement five point-of entry reverse osmosis water treatments systems, (2) implement 280 point-of-use reverse osmosis water treatment systems, (3) address arsenic-related water quality issues within the local drinking water supply, and (4) provide water that is reliable and of improved quality to disadvantaged communities consisting of farm worker families. To successfully achieve project purposes, monitoring programs will be implemented for each project goal to ensure that progress is being made. Below is a list of project goals and their corresponding monitoring methods:

Project Goals

Improve water quality: This project goal will directly address water quality issues within local drinking water supplies. The water quality measuring method that will be implemented to monitor the progress of water quality will be sampling and certified laboratory analysis of the samples. Samples will be taken and submitted for analysis at certified laboratories; pollutant concentrations will be analyzed and documentation of water quality will be reported. Improving water quality will be concluded from laboratory analysis.

DAC engagement: The project has made a goal to include DACs in the STAT project processes at the grass roots level. One task of the project is to install point of use (POU) device to mitigate arsenic-related water quality issues within DACs. Another similar task will provide gallons used measurement for point of entry (POE) systems. Both tasks will require DAC participation and engagement. To gauge the progress of DAC engagement, POU devices and gallons used for POE will be quantified.

Monitoring System

STAT baseline is untreated water. Water has been sampled throughout the East Valley and reflected in reports prepared by the Rural Community Assistance Corporation (RCAC). Water samples will be taken before installation and after treatment for 1 year and submitted for analysis at a certified laboratory. Additional baseline sampling will be done as part of ongoing IRWM efforts. The results will be compared to the MCL and to the level before treatment. STAT data will be compatible with SWAMP and Riverside County Health database formats.

Table 6-3 summarizes the project monitoring for this project.

Table 6-3: Monitoring Summary
Short-Term Arsenic Treatment Project

Monitoring Locations	Types of Analyses	Measuring Performances
Installation sites	Installations of POU or gallons used for POE	80% installation of POUs and 75% installed capacity of POEs
Sampling locations	Certified laboratory analysis	Less than 5% of samples above MCL

Table 6-4 summarizes the project monitoring for this project.

Table 6-4: Performance Measures Table
Short-Term Arsenic Treatment Project

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Improve Water Quality	Drinking water below MCL for project areas	Monitoring of treated water	Percent of samples below MCL	Certified Laboratory Analysis	Less than 5% of samples above MCL
DAC Engagement	More engaged DAC entities	Number of installations or services	Participation in Point of Entry or Point of use	Installations POU or Gallons used for POE	80% installation of POUs and 75% installed capacity of POEs

Project 3: Groundwater Quality Protection Program-Desert Hot Springs

The purpose of the *Groundwater Quality Protection Program-Desert Hot Springs* is to (1) extend the MSWD municipal wastewater collection system to Sub-area D1 in Assessment District 12, (2) eliminate the need for on-site septic systems in the project area, and (3) assist compliance with State law and an MSWD ordinance that require customers to connect to the wastewater collection system once it is available to their property. The project will expand wastewater collection systems, enhance water quality by protecting drinking water supply, and reduce septic tank density. Each project goal will be complimented by a monitoring or assessment program to quantify and verify overall project performance.

Project Goals

Maximize local supplies: Maximizing local water supplies can be achieved by capturing septic tank effluent for possible recycled use. Each septic tank abated can be counted as an increased source for recycled effluent therefore the act of tallying septic tanks would reflect local supply increases.

To effectively monitor if local supplies are being maximized the project will also implement a monthly flow reporting plan to reflect increases. Flow reports will gather influent flows to the Horton Wastewater Treatment Plant HWWTP (the source for future recycled water). The influent flows will reveal water supply increase from recycled water (from septic tank abatement). Monthly reports will also identify new sewer connections which will indicate local supply increases.

Protect potable groundwater: For the protection of the groundwater quality, annual potable water tests for nitrate will track the water quality main indicator from septic tank contamination, and the number of septic to sewer conversions also provides a basis for improved water quality potential. As mentioned above, a tally of all septic tanks in the area will be performed and will establish the baseline of septic tanks. Future accounting of the number of septic takes will effectively determine whether septic tank densities are being reduced which is associated with greater water quality.

The water quality data will demonstrate the success of diverting the septic tank effluent through the nitrate levels long term trends not showing an increase, resulting in protection of the groundwater quality, including the added benefit of maintaining the quality of the hot water basin as well, and protecting the #1 economic commerce of the DAC.

Proved expansion for wastewater collection and treatment systems: For the expansion of the collection and Wastewater Treatment Plant (WWTP) systems, influent flow records will provide the basis for evaluating the amount of potential recycled water use that might become available and when the HWWTP will need to be expanded. Also, monthly reports will also identify new sewer connections which will indicate expansion of wastewater collection and treatment systems.

Avoid costly treatment associated with contaminated water supply: Eliminating the potential for nitrate contamination in water supplies will help project proponents avoid costly mitigation measures. It is, therefore imperative that continual monitoring for nitrates in potable wells be implemented in order to achieve this project goal. As stated above, annual potable water tests for nitrate will track the water quality main indicator from septic tank contamination. Tests will ensure that nitrate levels remain below the MCL and costly treatments remain unnecessary. This monitoring system will reflect program progress with respect financial savings.

Monitoring System

For the recycled effluent #4 and the expansion of the collection and WWTP systems #12, a tally of all septic tanks abated and the HWWTP influent flow records will provide the basis for evaluating the amount of potential recycled water use that might become available and when the HWWTP will need to be expanded. For the protection of the groundwater #5 and avoiding treatment #13, annual potable water

tests for nitrate will track the water quality main indicator from septic tank contamination, and the number of septic to sewer conversions also provides a basis for improved water quality potential.

The data will support the success of diverting the septic tank effluent in two ways, one showing the diversion through increased flow to the HWWTP, that would then be available for recycled uses, and through the nitrate levels long term trends not showing an increase, resulting in protection of the groundwater quality, including the added benefit of maintaining the quality of the hot water basin as well, and protecting the #1 economic industry of the DAC.

Groundwater quality and recycled water use are goals of the Colorado River RWQCB Basin Plan. Specifically the Mission Creek and Desert Hot Springs sub basins are designated as areas for concern with regard to threat of contamination due to septic tank discharges overlying the basins (Basin Plan : Chapter 4-II.H. Implementation, Point Source Controls, Septic Systems - Mission Creek or Desert Hot Springs Aquifers). This is further supported by the CA Water Code Section 13281 detailing and addressing these same problems.

Table 6-5 summarizes the project monitoring for this project.

Table 6-5: Monitoring Summary
Groundwater Quality Protection Program-Desert Hot Springs

Monitoring Locations	Types of Analyses	Measuring Performances
Horton Wastewater Treatment Plant	Flow/Influent monitoring	Expansion of the HWWTP and the collection system, including; installation of 20,000 feet of sewer lines.
Horton Wastewater Treatment Plant	Record of recycled water deliveries	Build Tertiary component at HWWTP. Design and build recycled water delivery system. Increased flows to HWWTP of approx. 71,000 gpd. 295 new sewer connections from D1 area.
Potable wells overlying the Desert Hot Springs Subbasin	Water quality monitoring	Nitrate levels to remain below the MCL
Surrounding area	Septic tank tally	Abatements of septic tanks

Table 6-6 summarizes performance measures for this project.

Table 6-6: Performance Measures Table
Groundwater Quality Protection Program-Desert Hot Springs

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Maximizes local supplies by capturing septic tank effluent for possible recycled water use	Reduce septic tank discharges- improved water quality- recycled water use	Each septic tank abated can be counted as increased source for recycled effluent	Increasing flows to the HWWTP. Increase in sewer connections in the D1 project area	Influent flow to HWWTP provides the source for future recycled water purposes. Monthly flow reports will reflect increase; new sewer connections report will reflect increase.	Increased flows to HWWTP of approx. 71,000 gpd. 295 new sewer connections from D1 area.
Protects potable groundwater including hot water basin which will preserve the DAC's main economic engine	Reduce/eliminate septic discharge in the project area. Hot water supply for spa industry remains reliable and unaffected.	Monitor groundwater wells for nitrate.	No substantial or sustained long term trend in increase of nitrate levels in potable wells over the Desert Hot Springs hot water basin	Continued annual monitoring for nitrates in potable wells overlying the Desert Hot Springs Subbasin	Nitrate levels to remain below the MCL
Provides for expansion of the wastewater collection and treatment systems	New sewers and expanded WWTP facilities.	Increased flows at HWWTP. 20,000 feet of sewer mainlines and lateral are installed.	Increasing flows to the HWWTP will initiate expansion.	Influent flow increases. Increase in 12,000 feet of sewer mainline & 8,000 feet of sewer laterals in project area.	Expansion of the HWWTP and the collection system, including abatements of septic tanks; installation of 20,000 feet of sewer lines.
Avoid costly treatment associated with contaminated water supply	Eliminate the potential for nitrate removal systems to be installed at potable wells	Monitor groundwater wells for nitrate.	No substantial or sustained long term trend in increase of nitrate levels in potable wells over the Desert Hot Springs hot water basin	Continued annual monitoring for nitrates in potable wells overlying the Desert Hot Springs Subbasin	Nitrate levels to remain below the MCL

Project 4: Groundwater Quality Protection Program-Cathedral City

The purpose of the *Groundwater Quality Protection Program-Cathedral City* is to (1) eliminate septic tanks in Cathedral City (within the Indio Hydrologic Subarea) that threaten contamination of groundwater (2) replace existing septic tanks with sanitary sewers for 132 individual businesses in the vicinity of Perez Road from Date Palm Drive to Cathedral Canyon Drive and on Cathedral Canyon Drive from Perez Road to the Whitewater River (3) expand the Coachella Valley Water District (CVWD) wastewater collection system to serve the proposed project area, and (4) connect the CVWD wastewater collection system to a booster pump station. The project will protect groundwater quality, increase local recycled water supply, and implement a sewer connection project. Each project goal will be complimented by a monitoring or assessment program, as described below, to quantify and verify overall project progress.

Project Goals

Protect and improve groundwater quality: Improving and protecting groundwater quality will be achieved by eliminating septic tanks. Reduced septic tanks will remove contamination sources. To quantify groundwater quality improvements, CVWD or Desert Water Agency (DWA) will perform a groundwater quality monitoring program that will sample and test for various chemical contaminants of concern. This monitoring program will be ongoing to accurately provide information to evaluate the effectiveness of eliminating septic systems and its correlation to improved groundwater quality.

Address water and sanitation needs of disadvantaged communities (DACs): To address the water and sanitation needs of DACs, groundwater quality monitoring (described above) will determine this project goal's performance since DACs are scattered throughout the City of Cathedral City.

Another method that this project will use to measure project progress regarding water needs of the DACs will be to quantify the number of DAC dwelling units that are converted from septic to sanitary sewer systems.

Address water-related needs of local Native American culture: Similar tools used for DAC's needs will be employed for local Native American water-related needs such as water quality monitoring. The project will address a tribal-identified water-related need by protecting and potentially improving groundwater. Additionally, ongoing communications with local tribes will be documented and used as a measurement tool to assess this project goal's performance. Increased communications will ensure that local Native American water-related needs are being considered and managed.

Improved system reliability: This project will connect approximately 132 businesses to the CVWD wastewater collection system expanding and improving system reliability. Old, energy intensive wastewater pumping stations will no longer be needed in these business districts because the project will replace the old system with a gravity sewer system. Improved reliability will result from reduced dependence on transported energy sources. To measure system reliability, energy consumption measured in kW hours will be collected. A reduction in kW's consumed will indicate higher system reliability.

Increase quantity of reclaimed water: This project will help to coordinate and integrate water resource management by providing additional wastewater supplies to CVWD by connecting septic systems to sanitary sewer systems, thereby indirectly increasing the quantity of reclaimed water available in the region. To effectively measure an increase in reclaimed water, the project will employ methods that will quantify reclaimed water utilization.

Monitoring System

Desert Water Agency (DWA) has implemented an ongoing groundwater quality monitoring program that will be utilized for this project. This monitoring program will provide information to evaluate the effectiveness of converting septic systems to sanitary sewer and improvement to groundwater quality.

Reducing the potential public health hazards related to overflowing/malfunctioning septic tanks is also a primary goal.

In 2002, the Colorado River RWQCB-7 stated in its "Colorado River Basin Water Quality Control Plan and Watershed Management Initiative Chapter" that contamination of groundwater resources east of the Whitewater Channel due to the use of septic tanks is an issue of regional concern and violates CWC Section 13225. The RWQCB-7 identifies the protection of groundwater resources throughout the Cathedral City area to be of high priority and regional significance and recommends that funding be allocated to eliminate the use of septic tanks. DWA has shut down Well #19 due to high nitrate levels associated with septic tank leach lines. Once the septic systems are eliminated the nitrate levels will diminish allowing for the possibility of re-establishing Well #19.

Table 6-7 summarizes the project monitoring for this project.

Table 6-7: Monitoring Summary
Groundwater Quality Protection Program-Cathedral City

Monitoring Locations	Types of Analyses	Measuring Performances
Septic tank sites	Groundwater quality monitoring	Re-establish DWA well #19 as a potable water source.
Energy sources	Energy consumption	Ultimate removal of pumping station.
Treatment plant	Inflow monitoring	Quantity of reclaimed water utilized.

Table 6-8 summarizes performance measures for this project.

Table 6-8: Performance Measures Table
Groundwater Quality Protection Program-Cathedral City

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Water Quality	Protect and improve groundwater quality	Improve groundwater quality by eliminating failing septic tanks	Number of connections to sanitary sewer system. EDU's converted from septic system to sewer	Reduction in nitrate content of sub-basin groundwater	DWA groundwater quality monitoring program
Water Quality	Address water and sanitation needs of disadvantaged communities	Improve groundwater quality and eliminate potential public health problems by converting failing septic tanks to public sewer.	Number of connections to sanitary sewer system. EDU's converted from septic system to sewer	Reduction in nitrate content of sub-basin groundwater. Eliminate potential public health hazard.	Groundwater Quality: DWA groundwater quality monitoring program. Public Health: number of connections to sanitary sewer system.
Water Supply	Address water-related needs of local Native American culture	Improve groundwater quality by eliminating failing septic tanks	Number of connections to sanitary sewer system. EDU's converted from septic system to sewer	Support protection of culturally-significant resources on tribal lands	Address Native American needs through ongoing communication with local tribes
Power Cost Savings and Production	Improved system reliability	Reduce energy consumption by eliminating an existing wastewater pumping station.	Successful bypassing of flows from existing pumping station to gravity sewer system	Reduced power consumption and improved system reliability due to elimination of pumping station.	Energy consumption measured by kW hours. Maintenance costs measured by reduction in budget.
Use and re-use water more efficiently	Increase quantity of reclaimed water	Provide additional reclaimed water by connecting existing failing septic systems to sanitary sewer	Inflow to wastewater treatment plant	Quantity of reclaimed water utilized.	Quantity of reclaimed water utilized.

Attachment **7**

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Economic Analysis – Water Supply Costs and Benefits

Attachment 7 consists of the following item:

- ✓ **Water Supply Costs and Benefits**

  The body of this attachment provides an overview of the water supply costs and benefits of this proposed funding package, as well s the water supply benefits associated with each individual project.

- ✓ **Appendix 7-1**

  Appendix 7-1 contains detailed information and background regarding the qualitative and quantitative costs and water supply benefits of each individual project contained within this Implementation Grant Proposal.

This attachment contains estimations of the water supply-related costs and benefits of each project contained within this *Coachella Valley IRWM Implementation Grant Proposal*. Because several projects are being proposed with multiple benefits, Table 7-1 below contains a summary of the water supply costs and benefits for all projects.

Section 1 provides a summary of the regional water supply background in Coachella Valley.

Section 2 contains a narrative description of the expected costs that may be incurred to implement and operate each project, and to achieve benefits from each project. Appendix 7-1 also contains all costs associated with each project that are necessary to accomplish full implementation of each project and achievement of the stated benefits.

Section 3 contains a narrative description of the expected water supply benefits of each project. Where possible, each benefit was quantified and presented in physical or economic terms. In cases where quantitative analyses were not feasible, this attachment provides complimentary qualitative analyses. In addition, this attachment provides a description of economic factors that may affect or qualify the amount of economic benefits to be realized. This attachment also includes a discussion regarding uncertainties about the future that might affect the level of benefit received. Appendix 7-1 contains detailed information regarding the benefits anticipated to occur as a result of this proposal.

Table 7-1: Water Supply Costs and Benefits Summary

#	Project	Project Sponsor	Total Present Value Project Costs	Total Present Value Water Supply Benefits
1	Regional Water Conservation Program	Coachella Valley Water District	$1,188,352	$94,682,132
2	Short Term Arsenic Treatment Project	Pueblo Unido Community Development Corporation	$913,459	$743,030
3	Groundwater Quality Protection Program – Desert Hot Springs	Mission Springs Water District	$2,764,463	N/A
4	Groundwater Quality Protection Program – Cathedral City	City of Cathedral City	$1,760,282	N/A
TOTAL			**$6,626,556**	**$95,425,162**

1 Regional Water Supply Background

The Coachella Valley IRWM Region is chiefly the same boundary as the Whitewater River watershed boundary, also known as the Coachella Valley. The area is drained primarily by the Whitewater River that flows southward to the Salton Sea. The Coachella Valley is characterized by low precipitation and high summer daytime temperatures.

Water supply for the Coachella Valley is generally pumped from sub-basins of the Coachella Valley Groundwater Basin. Water is pumped from many wells around the region into each of the regional water purveyor's distribution systems. Each of the five water purveyors of the region – Coachella Valley Water District (CVWD), Coachella Water Authority (CWA), Desert Water Agency (DWA), Indio Water Authority (IWA), and Mission Springs Water District (MSWD) – operates its own water distribution system.

Groundwater is the largest source of water supply for the region. The Coachella Valley Groundwater Basin has an estimated storage capacity of 39 million acre-feet (AF) of water. Prior to 1949, groundwater levels steadily declined due to agricultural pumping. The Coachella branch of the All American Canal (Coachella Canal) was completed in 1949 and the first deliveries of Colorado River water to the Coachella Valley began in that year. As a result, groundwater pumping was significantly reduced from 1950 to the early 1980s, and water levels rose in the eastern Coachella Valley. However, since the 1980s, increased pumping has caused water levels in the eastern Coachella Valley to decline despite Colorado River imports. CVWD estimates the decrease in freshwater storage in the Coachella Valley Groundwater Basin for 1999 to be 137,000 AF, with a cumulative overdraft of nearly 4.8 million acre-feet between 1936 and 1999.[1]

Due to potentially significant consequences caused by groundwater overdraft, the region has developed imported water supplies to supplement and replenish groundwater supplies. CVWD and DWA obtain imported water supplies through two primary sources 1) State Water Project (SWP) supply via exchange with Metropolitan Water District of Southern California (MWD) for delivery through the Colorado River Aqueduct and 2) Colorado River supply via the Coachella Canal.

[1] CVWD. 2002. Coachella Valley Water Management Plan.

2 Total Costs of Proposed Projects

The following sections provide information about the total project costs associated with each proposed project within this *Coachella Valley IRWM Implementation Grant Proposal.* The summary of total project costs is based on Table 11 in DWR's Implementation Grant Proposal Solicitation Package (DWR 2010), inclusive of the project budget information contained in Attachment 4. Appendix 7-1 contains the complete Table 11 export for each proposed project.

Project 1: Regional Water Conservation Program

The total estimated cost for the *Regional Water Conservation Program* is $1,373,141, for a present value of $1,188,352. Capital costs would be expended between 2010 and 2012, with the largest capital cost in construction and implementation. There are no anticipated operations and maintenance costs for this program. Detailed cost information associated with the program, including present value calculations, is presented in Appendix 7-1.

Table 7-2: Total Project Cost
Regional Water Conservation Program

Phase	Cost
Regional Water Conservation Program Capital Costs	$1,373,141
Regional Water Conservation Program O&M Costs	N/A
Total after Discounting ($2009)	**$1,188,352**

Project 2: Short Term Arsenic Treatment Project

The total estimated costs for the *Short Term Arsenic Treatment Project* are $670,164 (capital) and $653,200 (O&M) for a net present value of $913,459. Capital costs would be expended between 2011 and 2012, while operations and maintenance costs will be expended from 2012 to 2031. Property owners and tenants will be responsible for operation and maintenance after the proposed project is in place. Training and education will be provided by the project proponent, Pueblo Unido CDC (PUCDC), to both property owners and tenants to learn necessary operations, maintenance, and replacement needs. Operations costs represent the costs incurred to retain a certified operator and conduct water quality tests for the point-of-entry systems. Maintenance costs represent costs necessary to purchase maintenance materials including chlorine and water softener for the point-of-entry systems. Replacement costs represent the costs required to purchase replacement filters, which are assumed to cost $35 each and require replacement on an annual basis for the point-of-use systems. Detailed cost information associated with the project, including present value calculations, is presented in Appendix 7-1.

Table 7-3: Total Project Cost
Short Term Arsenic Treatment Project

Phase	Total Cost
Short Term Arsenic Treatment Project Capital Costs	$670,164
Short Term Arsenic Treatment Project O&M Costs (20 yrs)	$653,200
Total After Discounting ($2009)	**$913,459**

Project 3: Groundwater Quality Protection Program - Desert Hot Springs

The total estimated costs for the *Groundwater Quality Protection Program - Desert Hot Springs* are $3,097,181 (capital) and $20,430 (O&M) for a net present value of $2,764,463. Capital costs would be expended between 2010 and 2012 and operations and maintenance costs for maintenance would be expended incrementally throughout the Project's lifetime. Years 2010 through 2015 of the project's lifetime would not require maintenance. Maintenance would be required starting in 2016 and thereafter every three to five years depending upon maintenance needs requirements of the particular section. These recurring maintenance costs are estimated to be $2,270. Lines that are in good shape would require maintenance every five years, and lines with greater cleaning needs would require maintenance in approximately three-year intervals. Detailed cost information associated with the project, including present value calculations, is presented in Appendix 7-1.

Table 7-4: Total Project Cost
Groundwater Quality Protection Program - Desert Hot Springs

Phase	Total Cost
Groundwater Quality Protection Program - Desert Hot Springs Capital Costs	$3,097,181
Groundwater Quality Protection Program - Desert Hot Springs O&M Costs (once every 5 years)	$20,430
Total after Discounting ($2009)	**$2,764,463**

Project 4: Groundwater Quality Protection Program-Cathedral City

The total estimated costs for the *Groundwater Quality Protection Program - Cathedral City* are $1,851,890 (capital) and $375,000 (O&M) for a present value of $1,760,282. Capital costs have been/would be expended between 2008 and 2012, while operations and maintenance costs will be expended from 2011 to 2060, with the largest capital cost in construction and implementation. The operation and maintenance costs are not anticipated to change with respect to 2009 dollars, but will last throughout the duration of the Project's lifetime. Detailed cost information associated with the Project, including present value calculations is presented in Appendix 7-1.

Table 7-5: Total Project Cost
Groundwater Quality Protection Program - Cathedral City

Phase	Total Cost
Groundwater Quality Protection Program - Cathedral City Capital Costs	$1,851,890
Groundwater Quality Protection Program - Cathedral City O&M Costs (50 years)	$375,000
Total after Discounting ($2009)	**$1,760,282**

3 Water Supply Benefits of Proposed Projects

The following sections provide information about the water supply benefits associated with each proposed project within this *Coachella Valley IRWM Implementation Grant Proposal.* The summary of total project costs is based on Tables 12-15 in DWR's Implementation Grant Proposal Solicitation Package (DWR 2010). Appendix 7-1 contains the complete Tables 12-15 exports for each proposed project.

The projects within this proposal are anticipated to result in significant water supply benefits to the region. Two projects specifically focus on water supply benefits (*Regional Water Conservation Program* and *Short Term Arsenic Treatment Project*). While these projects are anticipated to directly result in significant water supply benefits, the remaining projects would also have indirect or complementary benefits to the region's water supply.

Project 1: Regional Water Conservation Program

The water supply benefits anticipated from implementation of the *Regional Water Conservation Program* are summarized below in Table 7-6 and the water supply cost-benefit overview is summarized in Table 7-7. This program would result in both monetized and qualitative water supply benefits. Detailed cost and benefit information associated with the program, including present value calculations, are discussed in the following sections and additional details are provided in Appendix 7-1.

Table 7-6: Water Supply Benefits Summary
Regional Water Conservation Program

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits		
Avoided Water Supply Costs	Monetized	Local, Regional, and Statewide
Avoided Well Replacement Costs	Monetized	Local
Water Supply Reliability	Qualitative	Local, Regional, and Statewide

Table 7-7: Water Supply Benefit-Cost Overview
Regional Water Conservation Program

	Present Value ($2009)
Costs – Total Capital and O&M	$1,188,352
Monetizable Benefits	
Avoided Water Supply Costs	$94,235,574
Avoided Well Replacement Costs	$446,558
Total	**$94,682,132**
Qualitative Benefits	**Qualitative Indicator***
Water Supply Reliability	+

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If the *Regional Water Conservation Program* were not implemented, the Coachella Valley would continue to have similar water use demands as it currently has. In result, the Coachella Valley would continue to rely on imported water (as replenished groundwater) for water supply and would continue to incur costs associated with the imported water supply. Further, as growth and development continues, urban water consumption at current rates would contribute to increasing groundwater overdraft. For more

information regarding the without project baseline used to determine water quality and other benefits, please refer to Attachment 8.

Water Supply Benefits

This program would result in water supply benefits associated with avoided water supply costs and avoided well replacement costs. Detailed cost and benefit information associated with the program, including present value calculations, is presented in Appendix 7-1. A summary and discussion of these benefits are presented below.

Avoided Water Supply Costs

Water conservation anticipated as part of the program would reduce regional water demand, thereby reducing the Coachella Valley region's future dependence on imported water from the State Water Project (SWP). Reducing future dependence on imported water would potentially produce benefits associated with avoiding the costs of transporting, pumping, and recharging imported water into the groundwater basin.

In 1962 and 1963, respectively, DWA and CVWD entered into contracts with the State of California for 61,200 AFY of SWP water. To avoid the then-estimated $150 million cost of constructing an aqueduct to bring SWP water directly to the Valley, CVWD and DWA entered into an exchange agreement with MWD to exchange SWP water for Colorado River water. The exchange agreement allows for delivery of SWP water to replenish groundwater in the Whitewater River Sub-basin of the Upper Coachella Valley Groundwater Basin.

By the 1980s, groundwater demand in the East Valley had again exceeded supplies, resulting in significant groundwater level decreases in some parts of the East Valley. Because groundwater recharge in the East Valley is complicated by relatively impervious clay layers in the Valley floor, CVWD began looking for sites sufficiently far away from the main clay layer to allow groundwater recharge.

CVWD, DWA, and MWD executed an Advance Delivery Agreement in 1983 (updated in 2003), which allows MWD to store up to 600,000 acre feet of water in the Whitewater River Sub-basin. MWD assigned 11,900 acre feet of its annual Table A allocation to DWA and 88,100 acre feet of its annual Table A allocation to CVWD for a total of 100,000 acre feet (Table A is an entitlement schedule set forth by the SWP on an annual basis). CVWD and DWA executed the Mission Creek Groundwater Replenishment Agreement in April 2003, which also allows for storage of advanced deliveries from MWD.

CVWD and DWA now operate four recharge areas in the Coachella Valley IRWM region:

- *Whitewater Spreading Area* recharges Colorado River water and captures stormwater, with historical peak recharge of 288,000 acre-feet in 1986,
- *Mission Creek Spreading Facility* recharges Colorado River water and has a recharge capacity of 30,000 to 40,000 AFY,
- *Thomas E. Levy Recharge Facility* recharges water obtained from the Coachella Canal and has a recharge capacity of approximately 30,000 to 40,000 AFY, and
- *Martinez Canyon Pilot Recharge Project* recharges Coachella Canal water and currently has capacity of about 2,000 AFY.

SWP supplies vary annually due to weather and runoff variations, as well as regulatory limitations on exports from the Delta. Under current conditions, the SWP can only provide about 60 percent of the Table A allocation indicated in CVWD's and DWA's contracts. In the absence of state and federal actions in

the Bay Delta to increase SWP supplies, it is anticipated that long-term SWP reliability (deliveries) could decrease to 50 percent of the Table A allocations.[2]

Because current water supplies imported into the Valley are from purchased entitlements via the SWP, these costs were used to estimate the avoided costs of water supply purchases that would result from the *Regional Water Conservation Program*. These costs can vary and are currently estimated to be around $4,000 per AFY based on CVWD's draft Coachella Valley Water Management Plan (CVWMP) Update. With an estimated long-term reliability of only 50 percent, this means the actual unit cost of imported water supply is closer to $8,000 per AFY. When exchanged for MWD's Colorado River water, additional costs for conveying the water are also incurred and are estimated to be around $600 per AFY. The total discounted future value of avoided water supply costs are based on a unit value derived from the cost of importing, transporting, and recharging of imported water and was estimated at $1,166/AF (in 2009 dollars).

The overall conservation program in the Coachella Valley aims to reduce 70,000 AFY of water use through various conservation activities by 2020. If implemented, the *Regional Water Conservation Program* would help the region meet its overall conservation goals. CVWD's draft CVWMP Update indicates that the return on investment for water conservation programs in the Coachella Valley is approximately $200 per AF.[3] Given this cost per AF return on investment and the program's Construction/Implementation budget of $1,325,000, it is anticipated that a maximum of approximately 6,625AFY of water would be conserved under the program. It is anticipated that 50% of this total, or 3,433 AFY would be conserved in 2012. After implementation of the program and associated changes on consumption behavior, the total yearly amount of 6,625 AF of water savings would be expected annually between 2013 and 2032. Between 2032 and the final lifetime of the program (2060), water conservation would be anticipated to decline proportionally until water conservation resulting from this Work Plan effort ceases in 2060.

In total, after discounting, the total water supply benefits are estimated to be $94,235,574 over the lifetime of the program as shown in Table 7-8 below.

[2] CVWD. 2010. *Coachella Valley Water Management Plan Update – Draft Report*. Available at: http://www.cvwd.org/news/publicinfo/2010_12_02_CVWMP_Update_Draft.pdf

[3] CVWD. 2010. *Coachella Valley Water Management Plan Update – Draft Report.* Available at: http://www.cvwd.org/news/publicinfo/2010_12_02_CVWMP_Update_Draft.pdf

Table 7-8: Avoided Water Supply Costs
Regional Water Conservation Program

Year	Water Savings (AF)	Unit Cost (per AF)	Years	Total Cost
2012	3,313	$1,166	1	$3,863,502
2013-2032	6,625	$1,166	20	$154,540,063
2033	6,388	$1,166	1	$7,451,039
2034	6,152	$1,166	1	$7,175,074
2035	5,915	$1,166	1	$6,899,110
2036	5,679	$1,166	1	$6,623,146
2037	5,442	$1,166	1	$6,347,181
2038	5,205	$1,166	1	$6,071,217
2039	4,969	$1,166	1	$5,795,252
2040	4,732	$1,166	1	$5,519,288
2041	4,496	$1,166	1	$5,243,324
2042	4,259	$1,166	1	$4,967,359
2043	4,022	$1,166	1	$4,691,395
2044	3,786	$1,166	1	$4,415,430
2045	3,549	$1,166	1	$4,139,466
2046	3,313	$1,166	1	$3,863,502
2047	3,076	$1,166	1	$3,587,537
2048	2,839	$1,166	1	$3,311,573
2049	2,603	$1,166	1	$3,035,608
2050	2,366	$1,166	1	$2,759,644
2051	2,129	$1,166	1	$2,483,680
2052	1,893	$1,166	1	$2,207,715
2053	1,656	$1,166	1	$1,931,751
2054	1,420	$1,166	1	$1,655,786
2055	1,183	$1,166	1	$1,379,822
2056	946	$1,166	1	$1,103,858
2057	710	$1,166	1	$827,893
2058	473	$1,166	1	$551,929
2059	237	$1,166	1	$275,964
2060	(0)	$1,166	1	$0
Total Avoided Water Supply Costs after Discounting				**$94,235,574**

Note: For further information regarding how these numbers were calculated, please refer to Appendix 7-1, Table 12 Annual Water Supply Benefits.

Avoided Well Replacement Costs

By reducing future regional water demand, the conservation program would reduce the need for future groundwater pumping in the region, and would therefore potentially reduce the need for replacing existing groundwater wells. This would result in a benefit associated with avoiding costs associated with groundwater well installation.

Well replacement involves the costs associated with land, drilling, and operating/maintaining/expanding pumping plant facilities that are already in place. Based on previous agency experience, well replacement costs average approximately $1,000,000 per well and typical wells have a pumping capacity of 2,000

gallons per minute (gpm). During periods of maximum conservation, replacement of approximately 2.1 wells could potentially be avoided. Amortizing the total $1,000,000 cost at 4 percent over a thirty-year period, this equates to an annual savings of approximately $38,112 or $5.53 per acre-foot per year.

Utilizing the same water savings described above in the Avoided Water Supply Costs analysis, the program would have various avoided well replacement costs based on the average annual water savings. In total, the avoided well replacement costs after discounting are estimated to be $464,801 over the lifetime of the program as shown in Table 7-9 below.

Table 7-9: Avoided Well Replacement Costs
Regional Water Conservation Program

Year	Water Savings (AF)	Well Replacement Costs ($ per AFY)	Years	Total Cost
2012	3,313	$5.53	1	$18,308
2013-2032	6,625	$5.53	20	$732,325
2033	6,388	$5.53	1	$35,309
2034	6,152	$5.53	1	$34,001
2035	5,915	$5.53	1	$32,693
2036	5,679	$5.53	1	$31,385
2037	5,442	$5.53	1	$30,078
2038	5,205	$5.53	1	$28,770
2039	4,969	$5.53	1	$27,462
2040	4,732	$5.53	1	$26,154
2041	4,496	$5.53	1	$24,847
2042	4,259	$5.53	1	$23,539
2043	4,022	$5.53	1	$22,231
2044	3,786	$5.53	1	$20,924
2045	3,549	$5.53	1	$19,616
2046	3,313	$5.53	1	$18,308
2047	3,076	$5.53	1	$17,000
2048	2,839	$5.53	1	$15,693
2049	2,603	$5.53	1	$14,385
2050	2,366	$5.53	1	$13,077
2051	2,129	$5.53	1	$11,770
2052	1,893	$5.53	1	$10,462
2053	1,656	$5.53	1	$9,154
2054	1,420	$5.53	1	$7,846
2055	1,183	$5.53	1	$6,539
2056	946	$5.53	1	$5,231
2057	710	$5.53	1	$3,923
2058	473	$5.53	1	$2,615
2059	237	$5.53	1	$1,308
2060	(0)	$5.53	1	$0
Total Avoided Well Replacement Costs after Discounting				**$446,558**

Note: For further information regarding how these numbers were calculated, please refer to Appendix 7.1, Table 14 Annual Other Water Supply Benefits.

Water Supply Reliability

The reliability of a water supply refers to the ability to meet water demands on a consistent basis, even in times of drought or other constraints on source water availability. The *Regional Water Conservation Program* provides for imported water supply reliability through decreasing local water demands.

Although interest in water supply reliability is increasing, only a few studies have directly attempted to quantify its value. The results from these studies do indicate that residential and industrial (i.e., urban) customers seem to value supply reliability quite highly. Studies have shown municipal water users throughout California are willing to pay a certain amount of money to avoid water shortages and reduce water scarcity.[4] Due to the complexity of this issue and the scarcity of monetized information, these water supply benefits were not monetized.

Distribution of Project Benefits and Identification of Beneficiaries

The *Regional Water Conservation Program* would result in regional water conservation efforts, which would reduce future water demand within the Coachella Valley region and potentially reduce the future demand for imported water supplies. Due to the expense incurred to purchase imported water supplies, this program would lower future water costs to local agencies, and these cost savings would potentially be passed through to local water users in the future. In addition, by decreasing future imported water demand, this program would have a regional benefit by increasing the future water supplies available to all MWD customers. Finally, reducing imported water demands could potentially reduce future water exports, which would mitigate declining ecosystem conditions in the Bay-Delta to the benefit of all California residents. A summary of project beneficiaries is shown below in Table 7-10.

Table 7-10: Water Supply Beneficiaries Summary
Regional Water Conservation Program

Local	Regional	Statewide
Local water purveyors and water ratepayers	MWD customers	Bay-Delta ecosystem

Project Benefits Timeline Description

This program would provide water supply benefits beginning in 2012 and continuing through the program lifetime (2060).

Potential Adverse Effects from the Project

Any potential short-term impacts associated with program construction/implementation will be mitigated through the CEQA compliance process. However, no such impacts are expected. No long-term adverse effects are expected as a result of the proposed program.

Uncertainty of Benefits

Uncertainties relating to the water supply benefits of the program associated with avoided imported water costs and water supply reliability are summarized below in Table 7-11.

[4] Jenkins, Lund, and Howitt (2001) use programming methods to measure the per capita value of urban water scarcity by Detailed Analysis Unit (DAU) throughout California at projected population levels in the year 2020. Scarcity values are measured as lost consumer surplus resulting from changes in quantity of water available for a given willingness-to-pay schedule and depend heavily on the estimated price elasticity of demand for urban water supplies.

Table 7-11: Omissions, Biases, and Uncertainties and their Effect on the Project
Regional Water Conservation Program

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided Water Supply Costs		
Water Rate Forecast (MWD)	+/-	Margin of error implicit in forecasting.
Climate	+	The projections also are driven by "normal year" expectations, whereas dry year conditions will add additional cost pressures (and may move some of the imported water to higher cost Tier 2 levels).
Regulatory / Legal	+	Regulatory/ legal issues combine to make it more likely than not that the future availability of MWD-provided imported waters will be increasingly constrained, and that costs will escalate at rates higher than experienced in the recent past.
Increased Water Demands	+	Other SWP users may increase their demand and may result in higher rates (holding supply constant).
Avoided Well Replacement Costs		
Avoided Well Replacement	-	The probability of new wells being constructed and/or replaced without the project is unknown.
Water Supply Reliability		
Water Supply Reliability	+	The monetized value of added reliability is not included in the benefit-cost comparison. If we had added the present value benefit of improved water supply reliability in the overall benefit-cost analysis, it would increase net benefits.

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 2: Short Term Arsenic Treatment Project

The water supply benefits that are anticipated to result from implementation of the *Short Term Arsenic Treatment Project are* summarized below in Table 7-12 and the water supply cost-benefit overview is summarized in Table 7-13. This project would result in monetized water supply benefits and would also result in quantitative and qualitative water quality and other benefits (refer to Attachment 8). Detailed cost and benefit information associated with the project, including present value calculations, is provided in Appendix 7-1.

Table 7-12: Water Supply Benefits Summary
Short Term Arsenic Treatment Project

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits		
Avoided Bottled Water Purchases	Monetized	Local

Table 7-13: Water Supply Benefit-Cost Overview
Short Term Arsenic Treatment Project

	Present Value ($2009)
Costs – Total Capital and O&M	**$913,459**
Monetizable Benefits	
Avoided Bottled Water Purchases	**$743,030**
Qualitative Benefits	**Qualitative Indicator***
N/A	N/A

The "Without Project" Baseline

If this project were not implemented, there would be continued and potential further negative impacts associated with arsenic contamination in the drinking water supplies of various disadvantaged communities (DACs) within Eastern Coachella Valley. In addition, without this project, benefits associated with avoided water costs, reduced arsenic levels, human health benefits, and avoided fuel purchases would not be realized.

Water Supply Benefits

The *Short Term Arsenic Treatment Project* would provide water supply benefits associated with avoided water costs. A summary and discussion of these benefits are presented below.

Avoided Bottled Water Purchases

This project would include installation of point-of-entry and point-of use reverse osmosis systems in various pockets of disadvantaged communities within Eastern Coachella Valley. This project is a replication and extension of an existing pilot project that occurred at the St. Anthony of the Desert Mobile Home Park.

Arsenic contamination in isolated pockets of drinking water supplies in the Eastern Coachella Valley may cause local residents to avoid drinking tap water and instead purchase alternative water supplies such as bottled water. Through water quality testing and analysis, the St. Anthony of the Desert pilot project was demonstrated to be effective in removing arsenic from drinking water supplies.

The *Short Term Arsenic Treatment Project* proposes installing five point-of-entry reverse osmosis water treatment systems and 280 point-of-use reverse osmosis water treatment systems. Based on information from the pilot project, it is assumed that these reverse osmosis systems would be effective in addressing arsenic-related water quality concerns. Therefore, this project would potentially provide benefits associated with avoided water costs by eliminating or reducing the amount of bottled water purchased by local residents within the project area each year.

It is assumed that the average use of bottled water is 1.2 gallons per household per day, and there are 95 households that would be impacted by the project. It is assumed that the project would avoid the need for water purchases in all 95 homes and would, therefore, reduce bottled water purchases by 114 gallons per day, or 41,610 gallons per year. For this analysis, the average price for bottled water is assumed to be $1.50 to $2.00 per gallon.

After discounting, the project would result in $743,030 of total avoided water supply costs over the lifetime of the project (from 2012 to 2031).

Table 7-14: Avoided Bottled Water Purchases
Short Term Arsenic Treatment Project

	Total Annual Avoided Water Supply Purchases (gallons)	Average Cost of Bottled Water (per gallon)	Total Annual Avoided Costs (gallons per year)	Years	Total Avoided Costs
Avoided Water Supply Costs	114	$1.75	41,610	20	$1,456,350
Total Avoided Bottled Water Purchases after Discounting					**$743,030**

Distribution of Project Benefits and Identification of Beneficiaries

Table 7-15 summarizes the anticipated beneficiaries of water supply benefits that would be provided by the Project. The water supply benefits would be anticipated on a local level to local residents using groundwater that would be treated by the project.

Table 7-15: Project Beneficiaries Summary
Short Term Arsenic Treatment Project

Local	Regional	Statewide
Local residents	*Not Applicable*	*Not Applicable*

Project Benefits Timeline Description

This project would provide water supply benefits beginning in 2012 and continuing through 2031.

Potential Adverse Effects from the Project

Any potential short-term impacts associated with project construction will be mitigated through the environmental review and permitting process. No long-term adverse effects are expected as a result of the proposed project.

Uncertainty of Benefits

There are no uncertainties regarding the water supply benefits associated with avoided costs of bottled water purchases.

Table 7-16: Omissions, Biases, and Uncertainties and their Effect on the Project
Short Term Arsenic Treatment Project

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided Bottled Water Purchases	+/-	The actual usage of installed systems and the subsequent reduction in bottled water purchases are estimated.

* Magnitude of effect on net benefits

+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 3: Groundwater Quality Protection Program-Desert Hot Springs

The water supply benefits that are anticipated to result from implementation of the *Groundwater Quality Protection Program – Desert Hot Springs* are summarized below in Table 7-17 and the water supply cost-benefit overview is summarized in Table 7-18. This project would not result in any direct monetized water supply benefits, but it would also result in some qualitative benefits. The project would also result in both monetized and physically quantitative water quality and other benefits (refer to Attachment 8). Detailed cost and benefit information associated with the project, including present value calculations, is provided in Appendix 7-1.

Table 7-17: Water Supply Benefits Summary
Groundwater Quality Protection Program - Desert Hot Springs

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits		
Contributions to Recycled Water Supplies	Qualitative	Local, Regional, and Statewide

Table 7-18: Water Supply Benefit-Cost Overview
Groundwater Quality Protection Program - Desert Hot Springs

	Present Value ($2009)
Costs – Total Capital and O&M	**$2,764,463**
Monetizable Benefits	*Not Applicable*
Qualitative Benefits	**Qualitative Indicator***
Contributions to Recycled Water Supplies	+

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If this project were not implemented, there would be continued and potential further negative impacts associated with failing and/or densely located septic systems within the project area. For more information regarding the without project baseline as it relates to water quality and other expected benefits, refer to Attachment 8.

Water Supply Benefits

This project would not result in direct water supply benefits. However, increased sewage discharges would contribute more wastewater flows, which could result in future potential recycled water supplies if the Mission Spring Water District were to implement a recycled water program. The District has looked into implementing a recycled water program. However, implementation of such a project is at least three years out. There is no current timeline for such a project, so this benefit is not currently quantifiable.

Contributions to Recycled Water Supplies

Completion of the entire *Groundwater Quality Protection Program – Desert Hot Springs* would result in an estimated 6,000 AFY of potential recycled water for future reuse by Coachella Valley agencies. However, additional treatment and construction of a recycled water conveyance system would be needed to implement such a system.

Distribution of Project Benefits and Identification of Beneficiaries

Table 7-19 summarizes the potential future beneficiaries of water supply benefits that would be provided by the project if a recycled water program were subsequently initiated. These potential future water supplies would directly benefit the local water agency, Mission Springs Water District. In addition, by decreasing future potable water demand, this program would have a regional benefit by increasing the future water supplies available to other regional customers. Finally, reducing imported water demands could potentially reduce future water exports, which would mitigate declining ecosystem conditions in the Bay-Delta to the benefit of all California residents.

Table 7-19: Project Beneficiaries Summary
Groundwater Quality Protection Program - Desert Hot Springs

Local	Regional	Statewide
Local residents	Coachella Valley	Bay-Delta ecosystem

Project Benefits Timeline Description

As stated above, there is not current timeline for the implementation of a recycled water project that would utilize the increase wastewater flows from this project.

Potential Adverse Effects from the Project

Any potential short-term impacts associated with program construction/implementation will be mitigated through the CEQA compliance process. No long-term adverse effects are expected as a result of the proposed program.

Uncertainty of Benefits

Uncertainties relating to the water supply benefits of the program are summarized below in Table 7-20.

Table 7-20: Omissions, Biases, and Uncertainties and their Effect on the Project
Groundwater Quality Protection Program - Desert Hot Springs

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Contributions to Recycled Water Supplies		
Timing of Recycled Water Project	+/-	As no recycled water project is currently planned, the benefits to water supply for this project are uncertain at this time.

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 4: Groundwater Quality Protection Program - Cathedral City

The water supply benefits that are anticipated to result from implementation of the *Groundwater Quality Protection Program – Cathedral* are summarized below in Table 7-21 and the water supply cost-benefit overview is summarized in Table 7-22. This project would not result in any direct monetized water supply benefits, but it would also result in some qualitative benefits. The project would also result in both monetized and physically quantitative water quality and other benefits (refer to Attachment 8). Detailed cost and benefit information associated with the project, including present value calculations, is provided in Appendix 7-1.

Table 7-21: Water Supply Benefits Summary
Groundwater Quality Protection Program – Cathedral City

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits		
Contributions to Recycled Water Supplies	Physically Quantified	Local, Regional, and Statewide

Table 7-22: Water Supply Benefit-Cost Overview
Groundwater Quality Protection Program – Cathedral City

	Present Value ($2009)
Costs – Total Capital and O&M	**$1,760,282**
Monetizable Benefits	*Not Applicable*
Qualitative Benefits	**Qualitative Indicator***
Protecting beneficial uses	+

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If this project were not implemented, there would be continued and potential further negative impacts associated with failing and/or densely located septic systems within the project area. For more information regarding the without project baseline as it relates to water quality and other expected benefits, refer to Attachment 8. In addition, the Desert Water Agency would have to continue to pay for operations and maintenance of a wastewater pumping station that would no longer be necessary if this Project were implemented.

Water Supply Benefits

This project would not result in direct water supply benefits. However, increased sewage discharges would contribute more wastewater flows, which would result additional future recycled water supplies to the Coachella Valley Water District's (CVWD) wastewater treatment plant. Such flows could be used for irrigation in lieu of potable groundwater supplies. Thus, the project would help to conserve potable groundwater supplies and reducing future imported groundwater replenishment needs.

Contributions to Recycled Water Supplies

Completion of the entire *Groundwater Quality Protection Program – Cathedral City* would result in an estimated annual flow of 7,000,000 gallons of wastewater will be generated because of this project and could be utilized by CVWD to irrigate additional golf course in the region with recycled water in lieu of potable water sources. The effort or cost required for CVWD to utilize these additional flows is unknown, and therefore, this benefit has not been monetized.

Distribution of Project Benefits and Identification of Beneficiaries

Table 7-23 summarizes the potential future beneficiaries of water supply benefits that would be provided by the Project if the additional recycled water supplies were utilized by the CVWD. These potential future water supplies would directly benefit the local water agency, CVWD. In addition, by decreasing future potable water demand, this program would have a regional benefit by increasing the future water supplies available to other regional customers. Finally, reducing imported water demands could potentially reduce future water exports, which would mitigate declining ecosystem conditions in the Bay-Delta to the benefit of all California residents.

Table 7-23: Project Beneficiaries Summary
Groundwater Quality Protection Program – Cathedral City

Local	Regional	Statewide
Local residents	Coachella Valley	Bay-Delta ecosystem

Project Benefits Timeline Description

This project could provide recycled water supply benefits by 2012 or as soon as the septic to sewer conversions are initiated. However, it is not known if or when the CVWD would be able to utilize such additional recycled water supplies.

Potential Adverse Effects from the Project

Any potential short-term impacts associated with program construction/implementation will be mitigated through the CEQA compliance process. No long-term adverse effects are expected as a result of the proposed program.

Uncertainty of Benefits

Uncertainties relating to the water supply benefits of the program are summarized below in Table 7-24.

Table 7-24: Omissions, Biases, and Uncertainties and their Effect on the Project
Groundwater Quality Protection Program – Cathedral City

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Contributions to Recycled Water Supplies		
Ability to utilize additional recycled water supplies	+/-	CVWD would likely be able to utilize some of the additional recycle supplies during peak use periods. However, potential infrastructure improvements may be required to fully utilize the entire wastewater flows that will be generated from this project. Any such necessary effort to implement this additional recycled water usage is not known.

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Appendix 7-1: Economic Analysis Tables

✓ Project 1: Regional Water Conservation Program

Table 11 – Annual Cost of Project ..... Attached
Table 12 – Annual Water Supply Benefits ..... Attached
Table 13 – Annual Costs of Avoided Projects ..... Not Applicable
Table 14 – Annual Other Water Supply Benefits ..... Attached
Table 15 – Total Water Supply Benefits ..... Attached

✓ Project 2: Short Term Arsenic Treatment Project

Table 11 – Annual Cost of Project ..... Attached
Table 12 – Annual Water Supply Benefits ..... Attached
Table 13 – Annual Costs of Avoided Projects ..... Not Applicable
Table 14 – Annual Other Water Supply Benefits ..... Not Applicable
Table 15 – Total Water Supply Benefits ..... Attached

✓ Project 3: Groundwater Quality Protection Program –Desert Hot Springs

Table 11 – Annual Cost of Project ..... Attached
Table 12 – Annual Water Supply Benefits ..... Not Applicable
Table 13 – Annual Costs of Avoided Projects ..... Not Applicable
Table 14 – Annual Other Water Supply Benefits ..... Not Applicable
Table 15 – Total Water Supply Benefits ..... Not Applicable

✓ Project 4: Groundwater Quality Protection Program –Cathedral City

Table 11 – Annual Cost of Project ..... Attached
Table 12 – Annual Water Supply Benefits ..... Not Applicable
Table 13 – Annual Costs of Avoided Projects ..... Not Applicable
Table 14 – Annual Other Water Supply Benefits ..... Not Applicable
Table 15 – Total Water Supply Benefits ..... Not Applicable

Table 11 - Annual Cost of Project
(All costs should be in 2009 dollars)
Project 1: Regional Water Conservation Program

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost from Table 7 (row (i), column (d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a)+…+(f)	Discount Factor	Discounted Costs (g) x (h)
2009	$0	$0	$0	$0	$0	$0	$0	1.00	$0
2010	$7,500	$0	$0	$0	$0	$0	$7,500	0.94	$7,073
2011	$682,821	$0	$0	$0	$0	$0	$682,821	0.89	$607,710
2012	$682,821	$0	$0	$0	$0	$0	$682,821	0.84	$573,569
2013	$0	$0	$0	$0	$0	$0	$0	0.79	$0
2014	$0	$0	$0	$0	$0	$0	$0	0.75	$0
2015	$0	$0	$0	$0	$0	$0	$0	0.71	$0
2016	$0	$0	$0	$0	$0	$0	$0	0.67	$0
2017	$0	$0	$0	$0	$0	$0	$0	0.63	$0
2018	$0	$0	$0	$0	$0	$0	$0	0.59	$0
2019	$0	$0	$0	$0	$0	$0	$0	0.56	$0
2020	$0	$0	$0	$0	$0	$0	$0	0.53	$0
2021	$0	$0	$0	$0	$0	$0	$0	0.50	$0
2022	$0	$0	$0	$0	$0	$0	$0	0.47	$0
2023	$0	$0	$0	$0	$0	$0	$0	0.44	$0
2024	$0	$0	$0	$0	$0	$0	$0	0.42	$0
2025	$0	$0	$0	$0	$0	$0	$0	0.39	$0
2026	$0	$0	$0	$0	$0	$0	$0	0.37	$0
2027	$0	$0	$0	$0	$0	$0	$0	0.35	$0
2028	$0	$0	$0	$0	$0	$0	$0	0.33	$0
2029	$0	$0	$0	$0	$0	$0	$0	0.31	$0
2030	$0	$0	$0	$0	$0	$0	$0	0.29	$0
2031	$0	$0	$0	$0	$0	$0	$0	0.28	$0
2032	$0	$0	$0	$0	$0	$0	$0	0.26	$0
2033	$0	$0	$0	$0	$0	$0	$0	0.25	$0
2034	$0	$0	$0	$0	$0	$0	$0	0.23	$0
2035	$0	$0	$0	$0	$0	$0	$0	0.22	$0
2036	$0	$0	$0	$0	$0	$0	$0	0.21	$0
2037	$0	$0	$0	$0	$0	$0	$0	0.20	$0
2038	$0	$0	$0	$0	$0	$0	$0	0.19	$0
2039	$0	$0	$0	$0	$0	$0	$0	0.17	$0
2040	$0	$0	$0	$0	$0	$0	$0	0.16	$0
2041	$0	$0	$0	$0	$0	$0	$0	0.16	$0
2042	$0	$0	$0	$0	$0	$0	$0	0.15	$0
2043	$0	$0	$0	$0	$0	$0	$0	0.14	$0
2044	$0	$0	$0	$0	$0	$0	$0	0.13	$0
2045	$0	$0	$0	$0	$0	$0	$0	0.12	$0
2046	$0	$0	$0	$0	$0	$0	$0	0.12	$0
2047	$0	$0	$0	$0	$0	$0	$0	0.11	$0
2048	$0	$0	$0	$0	$0	$0	$0	0.10	$0
2049	$0	$0	$0	$0	$0	$0	$0	0.10	$0
2050	$0	$0	$0	$0	$0	$0	$0	0.09	$0
2051	$0	$0	$0	$0	$0	$0	$0	0.09	$0
2052	$0	$0	$0	$0	$0	$0	$0	0.08	$0
2053	$0	$0	$0	$0	$0	$0	$0	0.08	$0
2054	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2055	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2056	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2057	$0	$0	$0	$0	$0	$0	$0	0.06	$0
2058	$0	$0	$0	$0	$0	$0	$0	0.06	$0
2059	$0	$0	$0	$0	$0	$0	$0	0.05	$0
2060	$0	$0	$0	$0	$0	$0	$0	0.05	$0
Project Life	Total Present Value of Discounted Costs (Sum of Column (i)) Transfer to Table 20, Column (c), Exhibit F: Proposal Costs and Benefit Summaries								**$1,188,352**

Comments: *Administration and operation costs from 2009-10 facility bidget scaled by factor of 0.35 to represent new portion of facility (excluding electricity and water which are addressed in WQ & other benefits sheet) plus additional annual maintenance cost of $5,000 to maintain retrofit areas. Life of project estimated to be 50 years.*

Coachella Valley Integrated Regional Water Management
Implementation Grant Proposal
Appendix 7-1

Table 12 - Annual Water Supply Benefits (2009 dollars)
Project 1: Regional Water Conservation Program

	(b) Type of Benefit: Avoided cost of imported water					*(b) Type of Benefit:*					*(b) Type of Benefit:*					*Discounting Calculations for Economic Benefits*		
	(C) Measure of Benefit [Unit]: Acre Feet per year					*(C) Measure of Benefit [Unit]:*					*(C) Measure of Benefit [Unit]:*							
(a) Year	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(h) Total Annual Benefits ($)	(i) Discount Value	(j) Discounted Benefits [h x i]
2009			0	$1,166	$0			0		$0			0		$0	**$0**	**1.000**	**$0**
2010			0	$1,166	$0			0		$0			0		$0	**$0**	**0.943**	**$0**
2011			0	$1,166	$0			0		$0			0		$0	**$0**	**0.890**	**$0**
2012	-3,313	0	3,313	$1,166	$3,863,502			0		$0			0		$0	**$3,863,502**	**0.840**	**$3,245,341**
2013	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.792**	**$6,119,786**
2014	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.747**	**$5,772,071**
2015	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.705**	**$5,447,537**
2016	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.665**	**$5,138,457**
2017	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.627**	**$4,844,831**
2018	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.592**	**$4,574,386**
2019	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.558**	**$4,311,668**
2020	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.527**	**$4,072,131**
2021	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.497**	**$3,840,321**
2022	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.469**	**$3,623,964**
2023	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.442**	**$3,415,335**
2024	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.417**	**$3,222,160**
2025	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.390**	**$3,013,531**
2026	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.371**	**$2,866,718**
2027	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.350**	**$2,704,451**
2028	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.331**	**$2,557,638**
2029	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.312**	**$2,410,825**
2030	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.294**	**$2,271,739**
2031	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.278**	**$2,148,107**
2032	-6,625	0	6,625	$1,166	$7,727,003			0		$0			0		$0	**$7,727,003**	**0.262**	**$2,024,475**
2033	-6,388	0	6,388	$1,166	$7,451,039			0		$0			0		$0	**$7,451,039**	**0.247**	**$1,840,407**
2034	-6,152	0	6,152	$1,166	$7,175,074			0		$0			0		$0	**$7,175,074**	**0.233**	**$1,671,792**
2035	-5,915	0	5,915	$1,166	$6,899,110			0		$0			0		$0	**$6,899,110**	**0.220**	**$1,517,804**
2036	-5,679	0	5,679	$1,166	$6,623,146			0		$0			0		$0	**$6,623,146**	**0.207**	**$1,370,991**
2037	-5,442	0	5,442	$1,166	$6,347,181			0		$0			0		$0	**$6,347,181**	**0.196**	**$1,244,048**
2038	-5,205	0	5,205	$1,166	$6,071,217			0		$0			0		$0	**$6,071,217**	**0.185**	**$1,123,175**
2039	-4,969	0	4,969	$1,166	$5,795,252			0		$0			0		$0	**$5,795,252**	**0.174**	**$1,008,374**
2040	-4,732	0	4,732	$1,166	$5,519,288			0		$0			0		$0	**$5,519,288**	**0.164**	**$905,163**
2041	-4,496	0	4,496	$1,166	$5,243,324			0		$0			0		$0	**$5,243,324**	**0.155**	**$812,715**
2042	-4,259	0	4,259	$1,166	$4,967,359			0		$0			0		$0	**$4,967,359**	**0.146**	**$725,234**
2043	-4,022	0	4,022	$1,166	$4,691,395			0		$0			0		$0	**$4,691,395**	**0.138**	**$647,412**
2044	-3,786	0	3,786	$1,166	$4,415,430			0		$0			0		$0	**$4,415,430**	**0.130**	**$574,006**
2045	-3,549	0	3,549	$1,166	$4,139,466			0		$0			0		$0	**$4,139,466**	**0.123**	**$509,154**
2046	-3,313	0	3,313	$1,166	$3,863,502			0		$0			0		$0	**$3,863,502**	**0.116**	**$448,166**
2047	-3,076	0	3,076	$1,166	$3,587,537			0		$0			0		$0	**$3,587,537**	**0.109**	**$391,042**
2048	-2,839	0	2,839	$1,166	$3,311,573			0		$0			0		$0	**$3,311,573**	**0.103**	**$341,092**
2049	-2,603	0	2,603	$1,166	$3,035,608			0		$0			0		$0	**$3,035,608**	**0.097**	**$294,454**
2050	-2,366	0	2,366	$1,166	$2,759,644			0		$0			0		$0	**$2,759,644**	**0.092**	**$253,887**
2051	-2,129	0	2,129	$1,166	$2,483,680			0		$0			0		$0	**$2,483,680**	**0.087**	**$216,080**
2052	-1,893	0	1,893	$1,166	$2,207,715			0		$0			0		$0	**$2,207,715**	**0.082**	**$181,033**
2053	-1,656	0	1,656	$1,166	$1,931,751			0		$0			0		$0	**$1,931,751**	**0.077**	**$148,745**
2054	-1,420	0	1,420	$1,166	$1,655,786			0		$0			0		$0	**$1,655,786**	**0.073**	**$120,872**
2055	-1,183	0	1,183	$1,166	$1,379,822			0		$0			0		$0	**$1,379,822**	**0.069**	**$95,208**
2056	-946	0	946	$1,166	$1,103,858			0		$0			0		$0	**$1,103,858**	**0.065**	**$71,751**
2057	-710	0	710	$1,166	$827,893			0		$0			0		$0	**$827,893**	**0.061**	**$50,501**
2058	-473	0	473	$1,166	$551,929			0		$0			0		$0	**$551,929**	**0.058**	**$32,012**
2059	-237	0	237	$1,166	$275,964			0		$0			0		$0	**$275,964**	**0.054**	**$14,982**
2060	0	0	0	$1,166	$0			0		$0			0		$0	**$0**	**0.051**	**$0**
																Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):		$94,235,574
																Project Allocation:		100.0%
																Total Present Value of Discounted Benefits (Monetized Benefits):		**$94,235,574**

Comments: The overall conservation program in the Coachella Valley aims to reduce 70,000 AFY of water use through various conservation activities by 2020. If implemented, the Regional Water Conservation Program would help the region meet its overall conservation goals. CVWD's draft CVWMP Update indicates that the return on investment for water conservation programs in the Coachella Valley is approximately $200 per AF. Given this cost per AF return on investment and the program's Construction/Implementation budget of $1,325,000, it is anticipated that a maximum of approximately 6,625AFY of water would be conserved under the program. It is anticipated that 50% of this total, or 3,433 AFY would be conserved in 2012. After implementation of the program and associated changes on consumption behavior, the total yearly amount of 6,625 AF of water savings would be expected annually between 2013 and 2032. Between 2032 and the final lifetime of the program (2060), water conservation would be anticipated to decline proportionally until water conservation resulting from this Work Plan effort ceases in 2060.

Table 14 - Annual Other Water Supply Benefits (2009 dollars)
Project 1: Regional Water Conservation Program

	(b) Type of Benefit: Avoided Water Infrastructure Costs	*(b) Type of Benefit:*	*(b) Type of Benefit:*	*Discounting Calculations for Economic Benefits*		
	(C) Description of Benefit: Well Replacement	*(C) Description of Benefit:*	*(C) Description of Benefit:*			
(a) Year	(d) Annual Benefit ($)	(d) Annual Benefit ($)	(d) Annual Benefit ($)	(d) Total Annual Benefits ($)	(i) Discount Value	(j) Discounted Benefits [h x i]
2009	$0			$0	1.000	$0
2010	$0			$0	0.943	$0
2011	$0			$0	0.890	$0
2012	$18,308			$18,308	0.840	$15,379
2013	$36,616			$36,616	0.792	$29,000
2014	$36,616			$36,616	0.747	$27,352
2015	$36,616			$36,616	0.705	$25,814
2016	$36,616			$36,616	0.665	$24,350
2017	$36,616			$36,616	0.627	$22,958
2018	$36,616			$36,616	0.592	$21,677
2019	$36,616			$36,616	0.558	$20,432
2020	$36,616			$36,616	0.527	$19,297
2021	$36,616			$36,616	0.497	$18,198
2022	$36,616			$36,616	0.469	$17,173
2023	$36,616			$36,616	0.442	$16,184
2024	$36,616			$36,616	0.417	$15,269
2025	$36,616			$36,616	0.390	$14,280
2026	$36,616			$36,616	0.371	$13,585
2027	$36,616			$36,616	0.350	$12,816
2028	$36,616			$36,616	0.331	$12,120
2029	$36,616			$36,616	0.312	$11,424
2030	$36,616			$36,616	0.294	$10,765
2031	$36,616			$36,616	0.278	$10,179
2032	$36,616			$36,616	0.262	$9,593
2033	$35,309			$35,309	0.247	$8,721
2034	$34,001			$34,001	0.233	$7,922
2035	$32,693			$32,693	0.220	$7,192
2036	$31,385			$31,385	0.207	$6,497
2037	$30,078			$30,078	0.196	$5,895
2038	$28,770			$28,770	0.185	$5,322
2039	$27,462			$27,462	0.174	$4,778
2040	$26,154			$26,154	0.164	$4,289
2041	$24,847			$24,847	0.155	$3,851
2042	$23,539			$23,539	0.146	$3,437
2043	$22,231			$22,231	0.138	$3,068
2044	$20,924			$20,924	0.130	$2,720
2045	$19,616			$19,616	0.123	$2,413
2046	$18,308			$18,308	0.116	$2,124
2047	$17,000			$17,000	0.109	$1,853
2048	$15,693			$15,693	0.103	$1,616
2049	$14,385			$14,385	0.097	$1,395
2050	$13,077			$13,077	0.092	$1,203
2051	$11,770			$11,770	0.087	$1,024
2052	$10,462			$10,462	0.082	$858
2053	$9,154			$9,154	0.077	$705
2054	$7,846			$7,846	0.073	$573
2055	$6,539			$6,539	0.069	$451
2056	$5,231			$5,231	0.065	$340
2057	$3,923			$3,923	0.061	$239
2058	$2,615			$2,615	0.058	$152
2059	$1,308			$1,308	0.054	$71
2060	$0			$0	0.051	$0
				Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):		$446,558
				Project Allocation:		100.0%
				Total Present Value of Discounted Benefits (Monetized Benefits):		**$446,558**

Comments: Well replacement involves the costs associated with land, drilling, and operating/maintaining/expanding pumping plant facilities that are already in place. Based on previous agency experience, well replacement costs average approximately $1,000,000 per well and typical wells have a pumping capacity of 2,000 gallons per minute (gpm). During periods of maximum conservation, replacement of approximately 2.1 wells could potentially be avoided. Amortizing the total $1,000,000 cost at 4 percent over a thirty-year period, this equates to an annual savings of approximately $38,112 or $5.53 per acre foot per year.

Table 15 - Total Water Supply Benefits (2009 dollars) Project 1: Regional Water Conservation Program			
(a) Total Discounted Water Supply Benefits	**(b) Total Discounted Avoided Project Costs**	**(c) Other Discounted Water Supply Benefits**	**(d) Total Value of Discounted Benefits [a + c] or [b + c]**
$94,235,574	$0	$446,558	**$94,682,132**
Comments:			

Table 11 - Annual Cost of Project
(All costs should be in 2009 dollars)
Project 2: Short Term Arsenic Treatment Project

	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Year	Grand Total Cost from Table 7 (row (i), column (d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a)+…+(f)	Discount Factor	Discounted Costs (g) x (h)
2009	$0	$0	$0	$0	$0	$0	$0	1.00	$0
2010	$0	$0	$0	$0	$0	$0	$0	0.94	$0
2011	$345,162	$0	$0	$0	$0	$0	$345,162	0.89	$307,194
2012	$325,002	$0	$17,360	$2,500	$12,800	$0	$357,662	0.84	$300,436
2013	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.79	$25,867
2014	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.75	$24,397
2015	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.71	$23,025
2016	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.67	$21,719
2017	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.63	$20,478
2018	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.59	$19,335
2019	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.56	$18,224
2020	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.53	$17,212
2021	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.50	$16,232
2022	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.47	$15,318
2023	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.44	$14,436
2024	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.42	$13,619
2025	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.39	$12,737
2026	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.37	$12,117
2027	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.35	$11,431
2028	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.33	$10,810
2029	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.31	$10,190
2030	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.29	$9,602
2031	$0	$0	$17,360	$2,500	$12,800	$0	$32,660	0.28	$9,079
2032	$0	$0	$0	$0	$0	$0	$0	0.26	$0
2033	$0	$0	$0	$0	$0	$0	$0	0.25	$0
2034	$0	$0	$0	$0	$0	$0	$0	0.23	$0
2035	$0	$0	$0	$0	$0	$0	$0	0.22	$0
2036	$0	$0	$0	$0	$0	$0	$0	0.21	$0
2037	$0	$0	$0	$0	$0	$0	$0	0.20	$0
2038	$0	$0	$0	$0	$0	$0	$0	0.19	$0
2039	$0	$0	$0	$0	$0	$0	$0	0.17	$0
2040	$0	$0	$0	$0	$0	$0	$0	0.16	$0
2041	$0	$0	$0	$0	$0	$0	$0	0.16	$0
2042	$0	$0	$0	$0	$0	$0	$0	0.15	$0
2043	$0	$0	$0	$0	$0	$0	$0	0.14	$0
2044	$0	$0	$0	$0	$0	$0	$0	0.13	$0
2045	$0	$0	$0	$0	$0	$0	$0	0.12	$0
2046	$0	$0	$0	$0	$0	$0	$0	0.12	$0
2047	$0	$0	$0	$0	$0	$0	$0	0.11	$0
2048	$0	$0	$0	$0	$0	$0	$0	0.10	$0
2049	$0	$0	$0	$0	$0	$0	$0	0.10	$0
2050	$0	$0	$0	$0	$0	$0	$0	0.09	$0
2051	$0	$0	$0	$0	$0	$0	$0	0.09	$0
2052	$0	$0	$0	$0	$0	$0	$0	0.08	$0
2053	$0	$0	$0	$0	$0	$0	$0	0.08	$0
2054	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2055	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2056	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2057	$0	$0	$0	$0	$0	$0	$0	0.06	$0
2058	$0	$0	$0	$0	$0	$0	$0	0.06	$0
2059	$0	$0	$0	$0	$0	$0	$0	0.05	$0
2060	$0	$0	$0	$0	$0	$0	$0	0.05	$0
Project Life	Total Present Value of Discounted Costs (Sum of Column (i))								
	Transfer to Table 20, Column (c), Exhibit F: Proposal Costs and Benefit Summaries								**$913,459**

Comments: *Property owners and tenants will be responsible for operation and maintenance after the proposed point-of-entry and point-of-use Reverse Osmosis water system is in placed. Training and education wil be provided by Pueblo Unido CDC to both property owners and tenants to operate, maintain and replacement. Operation cost in the amount $17,360 include the cost of retaining a certified operator, water lab test costs(point-of-entry). Maintenance cost of $2,500 include chlorine, and water softener(point-of-entry). Replacement cost of $12,800 include the replacement of filters ($35 each, once a year) for the point-of-use Reverse Osmosis water treatment system. O&M costs would last over the system lifetime (or 20 years).*

Table 12 - Annual Water Supply Benefits (2009 dollars)
Project: Short Term Arsenic Treatment Project

	(b) Type of Benefit: Avoided cost of bottled water					*(b) Type of Benefit:*					*(b) Type of Benefit:*					*Discounting Calculations for Economic Benefits*		
	(C) Measure of Benefit [Unit]: Gallons per year					*(C) Measure of Benefit [Unit]:*					*(C) Measure of Benefit [Unit]:*							
(a) Year	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(h) Total Annual Benefits ($)	(i) Discount Value	(j) Discounted Benefits [h x i]
2009			0		$0			0		$0			0		$0	**$0**	**1.000**	**$0**
2010			0		$0			0		$0			0		$0	**$0**	**0.943**	**$0**
2011			0		$0			0		$0			0		$0	**$0**	**0.890**	**$0**
2012	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.840**	**$61,167**
2013	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.792**	**$57,671**
2014	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.747**	**$54,395**
2015	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.705**	**$51,336**
2016	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.665**	**$48,424**
2017	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.627**	**$45,657**
2018	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.592**	**$43,108**
2019	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.558**	**$40,632**
2020	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.527**	**$38,375**
2021	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.497**	**$36,190**
2022	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.469**	**$34,151**
2023	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.442**	**$32,185**
2024	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.417**	**$30,365**
2025	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.390**	**$28,399**
2026	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.371**	**$27,015**
2027	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.350**	**$25,486**
2028	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.331**	**$24,103**
2029	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.312**	**$22,719**
2030	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.294**	**$21,408**
2031	-41,610	0	41,610	$1.75	$72,818			0		$0			0		$0	**$72,818**	**0.278**	**$20,243**
2032					$0			0		$0			0		$0	**$0**	**0.262**	**$0**
2033					$0			0		$0			0		$0	**$0**	**0.247**	**$0**
2034					$0			0		$0			0		$0	**$0**	**0.233**	**$0**
2035					$0			0		$0			0		$0	**$0**	**0.220**	**$0**
2036					$0			0		$0			0		$0	**$0**	**0.207**	**$0**
2037					$0			0		$0			0		$0	**$0**	**0.196**	**$0**
2038					$0			0		$0			0		$0	**$0**	**0.185**	**$0**
2039					$0			0		$0			0		$0	**$0**	**0.174**	**$0**
2040					$0			0		$0			0		$0	**$0**	**0.164**	**$0**
2041					$0			0		$0			0		$0	**$0**	**0.155**	**$0**
2042					$0			0		$0			0		$0	**$0**	**0.146**	**$0**
2043					$0			0		$0			0		$0	**$0**	**0.138**	**$0**
2044					$0			0		$0			0		$0	**$0**	**0.130**	**$0**
2045					$0			0		$0			0		$0	**$0**	**0.123**	**$0**
2046					$0			0		$0			0		$0	**$0**	**0.116**	**$0**
2047					$0			0		$0			0		$0	**$0**	**0.109**	**$0**
2048					$0			0		$0			0		$0	**$0**	**0.103**	**$0**
2049					$0			0		$0			0		$0	**$0**	**0.097**	**$0**
2050					$0			0		$0			0		$0	**$0**	**0.092**	**$0**
2051					$0			0		$0			0		$0	**$0**	**0.087**	**$0**
2052					$0			0		$0			0		$0	**$0**	**0.082**	**$0**
2053					$0			0		$0			0		$0	**$0**	**0.077**	**$0**
2054					$0			0		$0			0		$0	**$0**	**0.073**	**$0**
2055					$0			0		$0			0		$0	**$0**	**0.069**	**$0**
2056					$0			0		$0			0		$0	**$0**	**0.065**	**$0**
2057					$0			0		$0			0		$0	**$0**	**0.061**	**$0**
2058					$0			0		$0			0		$0	**$0**	**0.058**	**$0**
2059					$0			0		$0			0		$0	**$0**	**0.054**	**$0**
2060					$0			0		$0			0		$0	**$0**	**0.051**	**$0**
																Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):		$743,030
																Project Allocation:		100.0%
																Total Present Value of Discounted Benefits (Monetized Benefits):		**$743,030**

Narrative desciption on benefits: *The Proposed introduction of Point-of-Entry and Point of Use System is a replication of an existing pilot project at St. Anthony of the Desert that has demostrated good performance in removing Arsenic from underground water offering reliable drinking water. This alternative substantially reduces cost of buying bottled water. It is assumed that average use of drinking water is 1.2 gallons per household per day, there are 95 households, and average price is $1.0-$2.00 per gallon. Gas prices are an additional cost that is not quantified. Current gas prices are $3,00 per gallon and a typical round trip to get water averages 3 miles.*

Narrative desciption on benefits:

Narrative desciption on benefits:

Comments:

Table 15 - Total Water Supply Benefits (2009 dollars) Project 2: Short Term Arsenic Treatment Project			
(a) Total Discounted Water Supply Benefits	**(b) Total Discounted Avoided Project Costs**	**(c) Other Discounted Water Supply Benefits**	**(d) Total Value of Discounted Benefits [a + c] or [b + c]**
$743,030	$0	$0	**$743,030**
Comments:			

Table 11 - Annual Cost of Project
(All costs should be in 2009 dollars)
Project: Groundwater Quality Protection Program - Desert Hot Springs

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost from Table 7 (row (i), column (d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a)+…+(f)	Discount Factor	Discounted Costs (g) x (h)
2008	$0	$0	$0	$0	$0	$0	$0	1.01	$0
2009	$0	$0	$0	$0	$0	$0	$0	1.00	$0
2010	$1,023,847	$0	$0	$0	$0	$0	$1,023,847	0.94	$965,487
2011	$1,036,667	$0	$0	$0	$0	$0	$1,036,667	0.89	$922,634
2012	$1,036,667	$0	$0	$0	$0	$0	$1,036,667	0.84	$870,800
2013	$0	$0	$0	$0	$0	$0	$0	0.79	$0
2014	$0	$0	$0	$0	$0	$0	$0	0.75	$0
2015	$0	$0	$0	$0	$0	$0	$0	0.71	$0
2016	$0	$0	$0	$2,270	$0	$0	$2,270	0.67	$1,510
2017	$0	$0	$0	$0	$0	$0	$0	0.63	$0
2018	$0	$0	$0	$0	$0	$0	$0	0.59	$0
2019	$0	$0	$0	$0	$0	$0	$0	0.56	$0
2020	$0	$0	$0	$0	$0	$0	$0	0.53	$0
2021	$0	$0	$0	$2,270	$0	$0	$2,270	0.50	$1,128
2022	$0	$0	$0	$0	$0	$0	$0	0.47	$0
2023	$0	$0	$0	$0	$0	$0	$0	0.44	$0
2024	$0	$0	$0	$0	$0	$0	$0	0.42	$0
2025	$0	$0	$0	$0	$0	$0	$0	0.39	$0
2026	$0	$0	$0	$2,270	$0	$0	$2,270	0.37	$842
2027	$0	$0	$0	$0	$0	$0	$0	0.35	$0
2028	$0	$0	$0	$0	$0	$0	$0	0.33	$0
2029	$0	$0	$0	$0	$0	$0	$0	0.31	$0
2030	$0	$0	$0	$0	$0	$0	$0	0.29	$0
2031	$0	$0	$0	$2,270	$0	$0	$2,270	0.28	$631
2032	$0	$0	$0	$0	$0	$0	$0	0.26	$0
2033	$0	$0	$0	$0	$0	$0	$0	0.25	$0
2034	$0	$0	$0	$0	$0	$0	$0	0.23	$0
2035	$0	$0	$0	$0	$0	$0	$0	0.22	$0
2036	$0	$0	$0	$2,270	$0	$0	$2,270	0.21	$470
2037	$0	$0	$0	$0	$0	$0	$0	0.20	$0
2038	$0	$0	$0	$0	$0	$0	$0	0.19	$0
2039	$0	$0	$0	$0	$0	$0	$0	0.17	$0
2040	$0	$0	$0	$0	$0	$0	$0	0.16	$0
2041	$0	$0	$0	$2,270	$0	$0	$2,270	0.16	$352
2042	$0	$0	$0	$0	$0	$0	$0	0.15	$0
2043	$0	$0	$0	$0	$0	$0	$0	0.14	$0
2044	$0	$0	$0	$0	$0	$0	$0	0.13	$0
2045	$0	$0	$0	$0	$0	$0	$0	0.12	$0
2046	$0	$0	$0	$2,270	$0	$0	$2,270	0.12	$263
2047	$0	$0	$0	$0	$0	$0	$0	0.11	$0
2048	$0	$0	$0	$0	$0	$0	$0	0.10	$0
2049	$0	$0	$0	$0	$0	$0	$0	0.10	$0
2050	$0	$0	$0	$0	$0	$0	$0	0.09	$0
2051	$0	$0	$0	$2,270	$0	$0	$2,270	0.09	$197
2052	$0	$0	$0	$0	$0	$0	$0	0.08	$0
2053	$0	$0	$0	$0	$0	$0	$0	0.08	$0
2054	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2055	$0	$0	$0	$0	$0	$0	$0	0.07	$0
2056	$0	$0	$0	$2,270	$0	$0	$2,270	0.07	$148
2057	$0	$0	$0	$0	$0	$0	$0	0.06	$0
2058	$0	$0	$0	$0	$0	$0	$0	0.06	$0
2059	$0	$0	$0	$0	$0	$0	$0	0.05	$0
2060	$0	$0	$0	$0	$0	$0	$0	0.05	$0
Project Life	Total Present Value of Discounted Costs (Sum of Column (i))								
	Transfer to Table 20, Column (c), Exhibit F: Proposal Costs and Benefit Summaries								**$2,764,463**

Comments: *Years 1-5 no maintenance is performed on new sewer lines (not needed base on historical evidence). Starting in year 6 and thereafter every 3 to5 years depending upon maintenance needs requirements of the particular section with lines in good shape being done every 5 years and those with greater need for cleaning more after, adjust between 1 and 3 year intervals. This project is expected to be cleaned and inspected every 5 years, with the first effort being completed in 2016 and every 5 years thereafter through the useful life of this asset, which is estimated at 100 years before replacement. 7500' of sewer main @ 3000' cleaned on average per day or 2.5 days effort (20 hours) of 2 men x$79.50/hour x 20 hours = $1,590.00 plus vehicle costs (1) jet truck @ $205.41/day x 2.5 days = $513.53, and (1) collection maintenance truck @$65.96/day x 2.5 days = $164.90 for a grand total of $2,268.43 every 5 years (future cost unadjusted for inflation). Note: labor and equipment costs are per November 2010 MSWD rates. Labor cost includes all direct labor hours plus benefits and G & A. Administration costs allocated to this effort are minimal when compared to the overall collection system administration effort, and are not included as such.*

Table 11 - Annual Cost of Project
(All costs should be in 2009 dollars)
Project 4: Groundwater Quality Protection Program - Cathedral City

	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Year	Grand Total Cost from Table 7 (row (i), column (d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a)+…+(f)	Discount Factor	Discounted Costs (g) x (h)
2008	$114,658	$0	$0	$0	$0	$0	$114,658	1.01	$115,805
2009	$114,658	$0	$0	$0	$0	$0	$114,658	1.00	$114,658
2010	$135,175	$0	$0	$0	$0	$0	$135,175	0.94	$127,470
2011	$828,405	$800	$1,800	$2,500	$2,400	$0	$835,905	0.89	$743,956
2012	$658,994	$800	$1,800	$2,500	$2,400	$0	$666,494	0.84	$559,855
2013	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.79	$5,940
2014	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.75	$5,603
2015	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.71	$5,288
2016	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.67	$4,988
2017	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.63	$4,703
2018	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.59	$4,440
2019	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.56	$4,185
2020	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.53	$3,953
2021	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.50	$3,728
2022	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.47	$3,518
2023	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.44	$3,315
2024	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.42	$3,128
2025	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.39	$2,925
2026	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.37	$2,783
2027	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.35	$2,625
2028	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.33	$2,483
2029	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.31	$2,340
2030	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.29	$2,205
2031	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.28	$2,085
2032	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.26	$1,965
2033	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.25	$1,853
2034	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.23	$1,748
2035	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.22	$1,650
2036	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.21	$1,553
2037	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.20	$1,470
2038	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.19	$1,388
2039	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.17	$1,305
2040	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.16	$1,230
2041	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.16	$1,163
2042	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.15	$1,095
2043	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.14	$1,035
2044	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.13	$975
2045	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.12	$923
2046	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.12	$870
2047	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.11	$818
2048	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.10	$773
2049	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.10	$728
2050	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.09	$690
2051	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.09	$653
2052	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.08	$615
2053	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.08	$578
2054	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.07	$548
2055	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.07	$518
2056	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.07	$488
2057	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.06	$458
2058	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.06	$435
2059	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.05	$407
2060	$0	$800	$1,800	$2,500	$2,400	$0	$7,500	0.05	$384
Project Life									
								Total Present Value of Discounted Costs (Sum of Column (i))	
								Transfer to Table 20, Column (c), Exhibit F: Proposal Costs and Benefit Summaries	**$1,760,282**

Comments: *Capital costs will be expended from 2008 through 2012. O&M costs will not change in respect to 2009 dollars over the life of the project.*

Attachment 8

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Water Quality and Other Expected Benefits

Attachment 8 consists of the following items:

- ✓ **Water Quality and Other Expected Benefits**

  The body of this attachment provides an overview of the water quality and other expected benefits of this proposed funding package, as well as the benefits associated with each individual project.

- ✓ **Appendix 8-1**

  Appendix 8-1 of this attachment contains information regarding the qualitative and quantitative non-water supply benefits of each individual project contained within this Implementation Grant Proposal.

This attachment provides information regarding benefits that may be derived from projects within this *Coachella Valley IRWM Implementation Grant Proposal*, which extend beyond the water supply benefits described in Attachment 7. Table 8-1 below contains a summary of the costs and benefits for all projects.

Section 1 provides a summary of the regional water quality background of Coachella Valley.

Section 2 contains a narrative description of the expected water quality and other benefits of each project. Where possible, each benefit was quantified and presented in physical or economic terms. In cases where quantitative analyses were not feasible, this attachment provides complimentary qualitative analyses. In addition, this attachment provides a description of economic factors that may affect or qualify the amount of economic benefits to be realized. This attachment also includes a discussion regarding uncertainties about the future that might affect the level of benefit received. Appendix 8-1 contains detailed information regarding the benefits anticipated to occur as a result of this proposal.

Table 8-1: Water Quality and Other Costs and Benefits Summary

#	Project	Project Sponsor	Total Present Value Project Costs	Total Present Value Water Quality and Other Benefits
1	Regional Water Conservation Program	Coachella Valley Water District	$1,188,352	$6,544,473
2	Short Term Arsenic Treatment Project	Pueblo Unido Community Development Corporation	$913,459	N/A
3	Groundwater Quality Protection Program – Desert Hot Springs	Mission Springs Water District	$2,764,463	$75,208,333
4	Groundwater Quality Protection Program – Cathedral City	City of Cathedral City	$1,760,282	$861,593
		TOTAL	**$6,626,556**	**$82,614,399**

1 Regional Water Quality Background

Groundwater supply from the Coachella Valley Groundwater Basin is generally of high quality. In addition, disinfection is regularly provided as a precautionary measure before distribution for potable uses. However, groundwater quality issues have arisen in isolated areas throughout the Valley. Naturally occurring substances such as uranium, arsenic, and fluoride have been detected, and are likely due to natural geologic conditions. Further, some localized areas have also seen elevated nitrate levels. Representatives of DAC and tribal organizations report that groundwater supplies for some mobile home park communities within the East Valley have arsenic concentrations that exceed the MCL of 10 ppm.

2 Water Quality and Other Benefits of Proposed Projects

The following sections provide information about the water quality and other benefits associated with each proposed project within this *Coachella Valley IRWM Implementation Grant Proposal*. The summary of total project costs is based on Table 16 in DWR's Implementation Grant Proposal Solicitation Package (DWR 2010). Appendix 8-1 contains the complete Table 16 exports for each proposed project.

The projects within this proposal are anticipated to result in significant water quality and other benefits to the region. Three projects specifically focus on water quality benefits (*Short Term Arsenic Treatment Project, Groundwater Quality Protection Program –Desert Hot Springs, and Groundwater Quality Protection Program – Cathedral City.)* While these projects are anticipated to directly result in significant water quality benefits, the remaining project would also have indirect or complementary benefits to the region's water quality.

Project 1: Regional Water Conservation Program

The water quality and other benefits that are anticipated to result from implementation of the *Regional Water Conservation Program* are summarized below in Table 8-2 and the cost-benefit overview is presented in Table 8-3. This program would result in monetized water quality benefits as well as qualitative water quality and other benefits. Detailed cost and benefit information associated with the program, including present value calculations, are provided in Appendix 8-1.

Table 8-2: Water Quality and Other Benefits Summary
Regional Water Conservation Program

Type of Benefit	Assessment Level	Beneficiaries
Water Quality and Other Benefits		
Avoided Wastewater Treatment Costs	Monetized	Local
Water Quality Improvements Related to Beneficial Uses	Physically Quantified	Local and Regional
Ecosystem Improvements	Qualitative	Local, Regional, and Statewide
Power Cost Savings	Physically Quantified	Local, Regional, and Statewide

Table 8-3: Water Quality and Other Benefit-Cost Overview
Regional Water Conservation Program

	Present Value ($2009)
Costs – Total Capital and O&M	**$1,188,352**
Monetizable Benefits	
Avoided Wastewater Treatment Costs	**$6,544,473**
Qualitative Benefits	**Qualitative Indicator***
Water Quality Improvements to Beneficial Uses	+
Ecosystem Improvements	+
Power Cost Savings	+

Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If the *Regional Water Conservation Program* were not implemented, the Coachella Valley would continue to have similar water use demands as it currently has. In result, the Coachella Valley would continue to generate current levels of wastewater flow and associated need for wastewater treatment. Further, as growth and development continue, urban water consumption at current rates would contribute to increasing groundwater overdraft and associated groundwater quality degradation. For more information regarding the without project baseline used to determine water supply benefits, please refer to Attachment 7.

Water Quality and Other Benefits

The *Regional Water Conservation Program* would result in several water quality and other benefits. Detailed cost and benefit information associated with the program, including present value calculations, is provided in Appendix 8-1. A summary and discussion of these benefits are presented below.

Avoided Wastewater Treatment Costs

The *Regional Water Conservation Program*, by reducing water use, would also reduce the need for wastewater treatment. The volume of wastewater anticipated to no longer need treatment at a local wastewater treatment plant is based on the quantity of water conservation generated by the program. It is estimated that approximately 30 percent of water used is for indoor purposes that create wastewater treatment needs. As such, 30 percent of the water that is saved due to water conservation would not be subject to wastewater treatment. Based on recent operational and maintenance data, CVWD estimated that wastewater treatment costs are approximately $270/AF, and that cost is expected to stay relatively constant over time. As such, the total avoided wastewater treatment costs associated with the program are estimated to be $6,544,473 over the 49 year lifetime of the program (from 2012 to 2060). Table 8-4 provided a summary of these avoided wastewater treatment costs.

Table 8-4: Avoided Wastewater Treatment Costs
Regional Water Conservation Program

Year	Annual Water Savings from Conservation (AFY)	Wastewater Savings (65% of Conservation Savings) (AFY)	Unit Cost (per AF)	Years	Total Cost
2012	3,133	994	$270	1	$268,313
2013-2032	6,625	1,988	$270	20	$10,732,500
2033	6,388	1,917	$270	1	$517,460
2034	6,152	1,846	$270	1	$498,295
2035	5,915	1,775	$270	1	$479,129
2036	5,679	1,704	$270	1	$459,964
2037	5,442	1,633	$270	1	$440,799
2038	5,205	1,562	$270	1	$421,634
2039	4,969	1,491	$270	1	$402,469
2040	4,732	1,420	$270	1	$383,304
2041	4,496	1,349	$270	1	$364,138
2042	4,259	1,278	$270	1	$344,973
2043	4,022	1,207	$270	1	$325,808
2044	3,786	1,136	$270	1	$306,643
2045	3,549	1,065	$270	1	$287,478
2046	3,313	994	$270	1	$268,313
2047	3,076	923	$270	1	$249,147
2048	2,839	852	$270	1	$229,982
2049	2,603	781	$270	1	$210,817
2050	2,366	710	$270	1	$191,652
2051	2,129	639	$270	1	$172,487
2052	1,893	568	$270	1	$153,321
2053	1,656	497	$270	1	$134,156
2054	1,420	426	$270	1	$114,991
2055	1,183	355	$270	1	$95,826
2056	946	284	$270	1	$76,661
2057	710	213	$270	1	$57,496
2058	473	142	$270	1	$38,330
2059	237	71	$270	1	$19,165
2060	0	0	$270	1	$0
Total Avoided Wastewater Costs after Discounting				**$6,544,473**	

Note: For further information regarding how these numbers were calculated, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits.

Water Quality Improvements to Beneficial Uses

The *Regional Water Conservation Program* would also reduce agricultural and urban irrigation, and therefore potentially reduce surface runoff. Runoff in agricultural and urban areas can potentially contain chemical fertilizers, pesticides, and bacteria that can have a deleterious impact on the water-related local environment. Therefore, this program would potentially provide water quality improvements to beneficial uses associated with the water-related local environment. Based on previous experience from the agencies

participating in the *Regional Water Conservation Program,* it is estimated that this conservation program would potentially reduce runoff by 5 percent. This benefit has not been monetized.

Ecosystem Improvements

The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) addresses issues regarding water needs for habitat preservation within the Coachella Valley. Specifically, this plan mentions that groundwater draw-down can potentially impact the ability of certain plants to hold and release sand, thereby resulting in erosion and habitat degradation. This program would reduce water demand, and would therefore potentially prevent groundwater draw-down throughout the Coachella Valley. As a result, this program could potentially help to preserve the habitat of species identified in the CVMSHCP. This benefit has not been quantified and/or monetized.

Power Cost Savings

As detailed in Attachment 7, water conservation anticipated as part of the program would future reduce regional water demand, thereby reducing the Coachella Valley region's future dependence on imported water from the Metropolitan Water District of Southern California (MWD). Reducing future dependence on imported water would potentially produce energy consumptive activities such as transporting, pumping, and treating imported or ground water supplies. Based on previous experience from the agencies participating in the *Regional Water Conservation Program,* it is estimated that this conservation program would potentially reduce power costs by 5 percent annually. This benefit has not been monetized.

Distribution of Project Benefits and Identification of Beneficiaries

Table 8-5 summarizes the anticipated beneficiaries of water quality and other benefits that would be provided by this program. A reduction in wastewater treatment costs could result in lower wastewater rates for local ratepayers. Power cost savings would benefit local electricity ratepayers and reduce regional and statewide demand for power resources. Water quality and ecosystem improvements would benefit society as a whole, including local, regional, and statewide residents.

Table 8-5: Water Quality and Other Benefits Beneficiaries Summary
Regional Water Conservation Program

Local	Regional	Statewide
Local residents, including wastewater and electricity rate payers	Regional residents	Statewide residents

Project Benefits Timeline Description

All water quality and other benefits expected as a result of implementation of the *Regional Water Conservation Program* would occur over the 49 year lifetime of the program (from 2012 to 2060).

Potential Adverse Effects from the Project

No short-term or long-term adverse effects are expected as a result of this program.

Uncertainty of Benefits

Uncertainties relating to the water quality and other benefits of the program are summarized below in Table 8-6.

Table 8-6: Omissions, Biases, and Uncertainties and their Effect on the Project
Regional Water Conservation Program

Benefit or Cost Category	Likely Impact on Net Benefits	Comment
Avoided Wastewater Treatment Costs	-	The proportion of conserved water assumed to result in wastewater flows is assumed at 65%; however, the proportion of water supply used for outdoor irrigation varies by agency and may impact the avoided cost projections.
Water Quality Improvements to Beneficial Uses	+/-	Not monetized.
Ecosystem Improvements	+/-	Not monetized.
Power Cost Savings	+/-	Not monetized.

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 2: Short Term Arsenic Treatment Program

The water quality and other benefits that are anticipated to result from implementation of the *Short Term Arsenic Treatment Project* are summarized below in Table 8-7 and the cost-benefit overview is summarized in Table 8-8. This project would result in physically quantified water quality benefits and qualitative other benefits. Detailed cost and benefit information associated with the Project, including present value calculations, is provided in Appendix 8-1.

Table 8-7: Water Quality and Other Benefits Summary
Short Term Arsenic Treatment Project

Type of Benefit	Assessment Level	Beneficiaries
Water Quality and Other Benefits		
Water Quality Improvements (Reduced Arsenic Levels)	Physical Quantification	Local
Human Health Benefits	Qualitative	Local
Avoided Fuel Purchases	Qualitative	Local

Table 8-8: Short Term Arsenic Treatment Project Benefit-Cost Overview
Short Term Arsenic Treatment Project

	Present Value ($2009)
Costs – Total Capital and O&M	**$913,459**
Monetizable Benefits	
N/A	N/A
Qualitative Benefits	**Qualitative Indicator***
Water Quality Improvements (Reduced Arsenic Levels)	+
Human Health Benefits	+
Avoided Fuel Purchases	+

* Magnitude of effect on net benefits
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If this project were not implemented, there would be continued and potential further negative impacts associated with arsenic contamination in the drinking water supplies of various DACs within Eastern Coachella Valley. In addition, without this project, benefits associated with avoided water costs, reduced arsenic levels, human health benefits, and avoided fuel purchases would not be realized.

Water Quality and Other Benefits

The proposed Project would provide several water quality and other benefits. A summary and discussion of these benefits are presented below.

Reduced Arsenic Levels

This project would include installation of point-of-entry and point-of use reverse osmosis systems to address arsenic-related water quality issues in various pockets of disadvantaged communities within Eastern Coachella Valley. This project is a replication and extension of an existing pilot project that occurred at the St. Anthony of the Desert Mobile Home Park. Through water quality testing and analysis, the St. Anthony of the Desert pilot project was demonstrated to be effective in removing arsenic from drinking water supplies

Arsenic levels in some wells within the project area have been reported as 16 to 50 parts per billion (ppb). Information from the St. Anthony of the Desert pilot project suggests that with the project, projected arsenic levels after implementation would be reduced to less than 10 ppb. Benefits associated with reducing arsenic levels would accrue from 2012 to 2031. However, these benefits have not been monetized.

Human Health Benefits

The U.S. Environmental Protection Agency (EPA) has developed cost estimates for health effects in association with their reduction in the maximum containment level (MCL) standard for arsenic. According to the EPA, dropping their MCL standard for arsenic from 50 to 10 µg/L will protect approximately 13 million Americans that are served by community water systems (CWSs) and Non-Transient Non-Community Water Systems (NTNCWSs). The EPA also notes that reducing arsenic standards from 50 to 10 µg/L will prevent approximately 19 to 31 cases of bladder cancer and 5 to 8 deaths due to bladder cancer per year. In addition, the EPA estimates that this reduction in the standard will prevent approximately 19 to 25 cases of lung cancer and 16 to 22 deaths due to lung cancer per year. In addition to these quantified benefits, there are substantial non-quantified benefits associated with reducing arsenic MCL standards, including reducing the incidences of non-cancerous effects summarized above.[1]

According to the EPA, the annual monetized benefits associated with reducing the MCL standard for arsenic from 50 to 10 µg/L range from $140 to $198 million. These estimates reflect the upper and lower bound of the risk range addressed by this MCL standard change, as well as the drinking water consumption distributions that were used in the analysis of this project. This benefit, as it relates to the project, has not been quantified or monetized.

Avoided Fuel Purchases

As described in Attachment 7, this project would provide benefits associated with avoided costs of bottled water purchases. This benefit would be associated with avoided fuel purchases, because by reducing and/or eliminating the need for bottled water purchases travel needs required to purchase and transfer bottled

[1] http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/regulations_techfactsheet.cfm
http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/regulations_factsheet.cfm

water would also be reduced and/or eliminated. Therefore, the project would reduce costs associated with fuel purchases.

Current gas costs average $3.00 per gallon. The geographical location of bottled water supplies varies, but is estimated to be approximately three miles for residents within the project area. Costs associated with fuel purchases can be very costly for disadvantaged communities, and therefore can substantially increase their water supply costs. While this benefit may be substantial, it was not quantified or monetized.

Distribution of Project Benefits and Identification of Beneficiaries

Table 8-9 summarizes the anticipated beneficiaries of water quality and other benefits that would be provided by the Project. The water quality and other benefits would be anticipated on a local level to local residents using groundwater treated by the project.

Table 8-9: Project Beneficiaries Summary
Short Term Arsenic Treatment Project

Local	Regional	Statewide
Local residents	*Not Applicable*	*Not Applicable*

Project Benefits Timeline Description

Benefits associated with reducing arsenic levels would accrue from 2012 to 2031. Other benefits have not been quantified or monetized and therefore, do not have associated project benefits timelines.

Uncertainty of Benefits

As demonstrated in Table 8-10 below, uncertainties relating to water quality and other benefits are associated with the fact that these benefits were not monetized.

Table 8-10: Omissions, Biases, and Uncertainties and their Effect on the Project
Short Term Arsenic Treatment Project

Benefit or Cost Category	Likely Impact on Net Benefits	Comment
Reduced arsenic levels	+	Not monetized.
Human health benefits	++	There are substantial non-quantified health benefits associated with reduced arsenic levels.
Avoided fuel purchases	+	Not monetized.

* Magnitude of effect on net benefits
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 3: Groundwater Quality Protection Program - Desert Hot Springs

The water quality and other benefits that are anticipated to result from implementation of the *Groundwater Quality Protection Program – Desert Hot Springs* are summarized below in Table 8-11 and the cost-benefit overview is presented in Table 8-12. This program would result in monetized water quality and other benefits, as well as physically quantitative water quality benefits. Detailed cost and benefit information associated with the program, including present value calculations, are in Appendix 8-1.

Table 8-11: Water Quality and Other Benefits Summary
Groundwater Quality Protection Program - Desert Hot Springs

Type of Benefit	Assessment Level	Beneficiaries
Water Quality		
Avoided costs to septic tank owners	Monetized	Local
Avoided well treatment costs	Monetized	Local and regional
Water quality improvements that protect beneficial uses	Physical Quantification	Local and Regional
Other Benefits		
Avoided loss of hotel revenues	Monetized	Local and regional
Avoided loss of tax revenue	Monetized	Local and regional

Table 8-12: Water Quality and Other Benefit-Cost Overview
Groundwater Quality Protection Program - Desert Hot Springs

	Present Value ($2009)
Costs – Total Capital and O&M	**$2,764,463**
Monetizable Benefits	
Avoided costs to septic tank owners	$1,156,398
Avoided well treatment costs	$5,816,287
Avoided loss of hotel revenues	$60,924,686
Avoided loss of hotel tax revenue	$7,310,962
Total	**$75,208,333**
Qualitative Benefits	**Qualitative Indicator***
Protecting beneficial uses	+

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If this project were not implemented, there would be continued and potential further negative impacts associated with failing and/or densely located septic systems within the project area. In total, the project area contains ten production wells with an average production capacity of 10,000 AFY. To date, two of these wells have already been contaminated with nitrate, and their annual production is approximately 2,900 AFY. Without this project, the nitrate contamination from the septic tanks would spread to the other wells in the sub-basin and over time, could potentially migrate downstream to the entire Coachella Valley since the Desert Hot Springs Sub-Basin sits higher in elevation to and drains into the other larger sub-basins.

Water Quality & Other Benefits

The proposed project would provide several water quality and other benefits. These benefits are described in detail below and are summarized in Table 8-11.

Avoided Costs to Septic Tank Owners

The *Groundwater Quality Protection Program – Desert Hot Springs*, by replacing septic systems with sewer connections, would eliminate costs to septic tank owners associated with operations, maintenance, and replacement costs of septic tanks. The proposed project area (Sub-area D-1) is included as part of a larger project area, Assessment District 12 (AD-12). Of the 6,000 septic tanks in Area AD-12, Sub-area D-

1 will constitute 183 septic tanks that would be converted over to sewer systems and subject to the following avoided costs.

Information from MSWD shows that for 183 septic systems, the annualized maintenance costs are estimated to be $500 for pumping every three to five years, with an average maintenance cost of $125 per year. In addition, MSWD data demonstrates that replacement costs average $10,000 over a 25-year period, or approximately $400 per year. In total the annualized costs to each septic tank owner is the summation of annual maintenance costs ($125) and annual replacement costs ($400) for a total of $525 per year. This project would replace 183 septic tanks, therefore resulting in an annualized avoided cost of $96,075 per year ($525 x 183).

In addition to the avoided costs, however, the project would also result in costs to septic tank owners associated with a one-time abatement cost for customers to connect to the wastewater collection system. Please note that these costs would be required, because mandates from the Colorado River RWQCB and MSWD require that customers connect to wastewater collection systems once they are available to their property. This one-time abatement cost would be $5,000, but would be annualized over the same time period as the avoided costs noted above (50 years) for an annual total of $100 per year. This project would replace 183 septic tanks, therefore resulting in an annualized cost of $18,300 per year ($100 x 183).

In sum, annualized avoided costs to septic tank owners would be $96,075 per year (for avoided O&M) minus $18,300 per year (for abatement), for a total of $77,775 per year. It is anticipated that these annual benefits would begin in 2011 and end in 2060. After discounting, this total benefit is estimated to be $1,156,398 over the lifetime of the project as shown in Table 8-13.

Table 8-13: Avoided Costs to Septic Tank Owners
Groundwater Quality Protection Program - Desert Hot Springs

	Annual Cost per Unit	Number of Units	Years	Total Cost
Avoided Maintenance Costs	$125	183	50	$1,143,750
Avoided Replacement Costs	$400	183	50	$3,660,000
Subtotal Avoided Costs to Septic Tank Owners				**$5,073,750**
Abatement Costs	$100	183	50	$915,000
Subtotal Retained Costs to Septic Tank Owners				**$915,000**
Total Avoided Costs to Septic Tank Owners (Delta)				**$4,158,750**
Total Avoided Costs to Septic Tank Owners after Discounting				**$1,156,398**

Note: For further information regarding how these costs were reached, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits

Avoided Well Treatment Costs

The *Groundwater Quality Protection Program – Desert Hot Springs*, by eliminating a nitrate source within the project area, would potentially reduce or eliminate the need to conduct well treatment for nitrate removal. This project attribute would generate an economic benefit associated with avoided well treatment costs.

MSWD has two wells within its service area that are already contaminated with nitrates. The cost assessments below represent figures from an independent consultant who calculated the costs necessary to treat those two contaminated wells. This information demonstrates that materials and labor costs associated with well treatment would be $288,000 per year for materials and $40,000 per year for labor, for a total of $328,000 per year for O&M costs. These estimates also indicate that there is an annual depreciation/replacement cost of $42,900 per year, which is associated with the initial capital cost of $857,000. These depreciation/replacement costs were assumed to occur over a 20-year period. In total,

well treatment costs were calculated to be $370,900 per year ($328,000 + $42,900). All of the aforementioned costs were assumed for an individual well with a capacity of 2,900 AFY. Therefore, the total economic benefit associated with well treatment costs would be $127.90 per AF ($370,900 per year/2,900/AFY).

The consultant estimates were based on well treatment costs that would be necessary to address contamination in two MSWD wells with a combined 3,500 gpm capacity and a total annual production of 2,900 AFY in 2009. In total, MSWD has ten production wells in the Desert Hot Springs Sub-basin (within the project area), including the two that have previously been contaminated. Together, these ten wells have an average annual capacity of 10,000 AFY.

This project is not proposing to treat the two contaminated wells, rather to protect the remaining eight from becoming contaminated. Therefore, this benefit analysis assumes that without the project, the remaining eight wells (7,100 AFY) would eventually become contaminated. Avoided costs for treatment of these eight wells would not likely occur immediately or simultaneously. Therefore, as part of this analysis, it was assumed that only two wells would be contaminated every five years, starting in 2016. These avoided well treatment costs only apply to the eight remaining wells in the Desert Hot Springs Sub-basin and do not account for the potential contamination and treatment that could be required if the contamination continued down gradient to the larger sub-basins in the East Valley.

After discounting, and assuming that the aforementioned benefits accrue from 2011 to 2060, the total benefits associated with well treatment costs would be $5,816,287 over the lifetime of the project as shown in Table 8-14.

Table 8-14: Avoided Well Treatment Costs
Groundwater Quality Protection Program - Desert Hot Springs

	Annual Reduction (AF)	Unit Value ($/AF)	Years	Total Cost
Avoided Well Treatment Costs	7,100	$128	50	$32,231,980
Total Avoided Well Treatment Costs after Discounting				**$5,816,287**

Note: For further information regarding how these costs were reached, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits

Water Quality Improvements that Protect Beneficial Uses

Effluent from septic tanks is known to contain relatively high concentrations of nitrite, nitrate, and ammonia nitrogen, which can leach into the local groundwater, thereby causing increased nitrate concentrations in groundwater. This project would protect the local groundwater from septic tank effluent leaching, thus protecting the beneficial use of drinking water within and adjacent to the project area.

For purposes of this analysis, it was assumed that average production for all ten MSWD wells in the Desert Hot Springs Subbasin is 10,000 AFY. Two wells within this subbasin are already contaminated with nitrates, and together they produce 2,900 AFY. This project intends to protect the remaining 7,100 AFY of uncontaminated well water within the project area, thereby protecting 7,100 AFY of a beneficial use. This benefit has not been monetized.

Avoided Loss of Hotel Revenue

The Desert Hot Springs Sub-basin, within which the project lies, contains natural hot springs. The Desert Hot Springs community contains an estimated 22 businesses that are marketed for spa and other services associated with the natural hot springs. If the Desert Hot Springs Sub-basin and the associated hot springs were to become contaminated, the tourism-related business of the Desert Hot Springs community would be substantially impacted.

Therefore, the *Groundwater Quality Protection Program – Desert Hot Springs* would provide economic benefits relating to avoided loss of hotel revenue for the natural hot springs-related tourist industry within the project area. The calculation for estimated lost revenue is based on the Transit Occupancy Tax (TOT) and sales tax revenues for the City of Desert Hot Springs Annual Financial Report from 2009. This report shows that hotel revenue in Desert Hot Springs included $983,416 for TOT revenue in 2009 from a 12% hotel tax, which represents tax collected on hotel revenue of $8,195,133 in 2009. It is assumed that contamination of the natural hot springs would reduce hotel occupancy by 50%. A 50% reduction in hotel occupancy would result in an annual loss of $4,097,567 in hotel revenue.

In total, by preventing contamination within the Desert Hot Springs Subbasin, this project would result in $60,924,686 of total discounted benefits associated with avoiding hotel revenue losses over the fifty-year lifetime of the project as Table 8-15.

Table 8-15: Avoided Loss of Hotel Revenue
Groundwater Quality Protection Program - Desert Hot Springs

	Current Annual Hotel Revenue (2009)	Annual Loss in Hotel Revenue without Project (50%)	Years	Total Cost
Avoided Loss of Hotel Revenue	$8,195,133	$4,097,567	50	$204,878,333
Total Avoided Loss of Hotel Revenues after Discounting				**$60,924,686**

Note: For further information regarding how these costs were reached, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits

Avoided Loss of Hotel Tax Revenue

As described above, the *Groundwater Quality Protection Program – Desert Hot Springs* would prevent annual losses in hotel revenue in Desert Hot Springs by preventing contamination in the Desert Hot Springs Sub-basin. Avoided losses of hotel tax revenues are directly related to hotel revenue estimates.

It is assumed that without the project there would be an annual loss of $4,097,567 in hotel revenues. The Desert Hot Springs Transit Occupancy Tax (TOT) is 12%, which applies to hotel revenues. Without the project, the TOT would reduce proportionately to the hotel revenue losses, such that the total TOT would be reduced by 12% of $4,097,567or $491,708 per year.

In total, by preventing contamination within the Desert Hot Springs Sub-basin, this project would result in $7,310,962 of total benefits associated with avoiding hotel tax revenue losses over the fifty-year lifetime of the project as shown in Table 8-16.

Table 8-16: Avoided Loss of Hotel Tax Revenue
Groundwater Quality Protection Program - Desert Hot Springs

	Annual Loss in Hotel Revenue without Project	Associated Loss in Hotel Tax Revenue (12%)	Years	Total Cost
Avoided Loss of Hotel Tax Revenue	$4,097,567	$491,708	50	$24,585,400
Total Avoided Loss of Hotel Tax Revenue after Discounting				**$7,310,962**

Note: For further information regarding how these costs were reached, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits

Distribution of Project Benefits and Identification of Beneficiaries

Table 8-17 summarizes the anticipated beneficiaries of water quality and other benefits that would be provided by the project. The water quality and other benefits would be anticipated on a local level to local residents, hotel business owners, and municipalities, as well as on a regional and statewide level to any visitors to the region.

Table 8-17: Project Beneficiaries Summary
Groundwater Quality Protection Program - Desert Hot Springs

Local	Regional	Statewide
Local residents, hotel business owners, and municipalities	Visitors to region	Visitors to region

Project Benefits Timeline Description

This project would provide water quality and other expected benefits beginning in 2011 and continuing in excess of the 50-year Project lifetime.

Potential Adverse Effects from the Project

Any potential short-term impacts associated with project construction will be mitigated through the CEQA compliance process. No long-term adverse effects are expected as a result of the proposed project.

Uncertainty of Benefits

Table 8-18 below demonstrates uncertainties associated with benefits that would be provided by the project. As demonstrated within the table, there are uncertainties related to protecting beneficial uses because they were not monetized. There are also uncertainties related to avoided losses of hotel revenue and hotel tax revenue due to the assumptions that went into these benefit calculations.

Table 8-18: Omissions, Biases, and Uncertainties and their Effect on the Project
Groundwater Quality Protection Program - Desert Hot Springs

Benefit or Cost Category	Likely Impact on Net Benefits	Comment
Protecting beneficial uses	+	Not monetized. Without the project, contamination has the potential to migrate downstream to the entire Coachella Valley since the aquifer sits higher in elevation to and drains into the other larger Whitewater basin.
Avoided loss of hotel revenue	+/-	The assumption of a 75 percent reduction in hotel occupancy due to contaminated water is an estimate. The actual rate could be higher or lower.
Avoided loss of tax revenue	+/-	The assumption of a 75 percent reduction in hotel occupancy due to contaminated water is an estimate. The actual rate could be higher or lower. Additional tax revenue would be lost from decreased food, energy, and retail sales.

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 4: Groundwater Quality Protection Program-Cathedral City

The water quality and other benefits that are anticipated to result from implementation of the *Groundwater Quality Protection Program – Cathedral City* are summarized below in Table 8-19 and the cost-benefit overview is presented in Table 8-20. This program would result in monetized and qualitative water quality benefits. Detailed cost and benefit information associated with the program, including present value calculations, are provided in Appendix 8-1.

Table 8-19: Water Quality and Other Benefits Summary
Groundwater Quality Protection Program - Cathedral City

Type of Benefit	Assessment Level	Beneficiaries
Water Quality		
Protecting beneficial uses	Qualitative	Local and regional
Avoided wastewater pumping station O&M costs	Monetized	Local
Avoided replacement costs of municipal wells	Qualitative	Local
Avoided replacement and O&M costs to septic tank owners	Monetized	Local

Table 8-20: Water Quality and Other Benefit-Cost Overview
Groundwater Quality Protection Program - Cathedral City

	Present Value ($2009)
Costs – Total Capital and O&M	**$1,760,282**
Monetizable Benefits	
Avoided wastewater pumping station O&M costs	$77,399
Avoided costs to septic tank owners	$784,194
Total	**$861,593**
Qualitative Benefits	**Qualitative Indicator***
Protecting beneficial uses	+
Avoided replacement costs of municipal wells	+

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

The "Without Project" Baseline

If this project were not implemented, there would be continued and potential further negative impacts associated with failing and/or densely located septic systems within the project area. In addition, DWA would have to continue to pay for O&M of a wastewater pumping station that would no longer be necessary if this project were implemented.

Water Quality and Other Benefits

The proposed project would provide several water quality and other benefits. These benefits are described in detail below.

Protection of Beneficial Uses

Effluent from septic tanks is known to contain relatively high concentrations of nitrate, and ammonia nitrogen, which can leach into the local groundwater, thereby causing increased nitrate concentrations in groundwater. DWA previously removed a groundwater well (Well 19) within the project area from domestic water production due to high nitrate concentrations.

This project would protect the local groundwater from further septic tank effluent leaching, thus protecting the beneficial use of drinking water within and adjacent to the Project area. This benefit has not been quantified and/or monetized.

Avoided Wastewater Pumping Station O&M Costs

Currently, DWA operates a wastewater pumping station within the project area, which would no longer be necessary if this project were implemented. Therefore, this project would result in a monetized benefit that represents the cost of operating and maintaining the pumping station that would be eliminated by construction of this project.

It is estimated that the annual operations and maintenance costs of the pumping station are $5,537. Therefore, the monetized project benefit would include these operations and maintenance costs over the 49-year lifetime of the project. After discounting, these total benefits, which would begin in 2012 and end in 2060, are estimated to be $77,399 in 2009 dollars.

Table 8-21: Avoided Wastewater Pumping Station O&M Costs
Groundwater Quality Protection Program - Cathedral City

	Annual O&M Costs	Years	Total Cost
Wastewater Pump Station Costs	$5,537	49	$271,313
Total Avoided Wastewater Pump Station Costs with Discounting			**$77,399**

Note: For further information regarding how these costs were reached, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits

Avoided Replacement Costs of Municipal Wells

Effluent from septic tanks is known to contain relatively high concentrations of nitrate, and ammonia nitrogen, which can leach into the local groundwater, thereby causing increased nitrate concentrations in groundwater. DWA previously removed a groundwater well (Well 19) within the project area from domestic water production due to high nitrate concentrations. It is estimated that the cost to replace this well was $1,000,000. In addition, there are no alternate water supplies available in the project area as groundwater is the primary source of drinking water.

If the *Groundwater Quality Protection Program – Cathedral City* were not implemented, other municipal wells may become contaminated and require replacement, which would further threaten the only local water supply source. Benefits associated with avoiding the replacement costs of municipal wells would occur throughout the 49-year lifetime of the project (from 2012 to 2060); however, it is unknown at this time when or how many additional municipal wells would be impacted. These benefits have not been monetized or quantified.

Avoided Costs to Septic Tank Owners

The *Groundwater Quality Protection Program – Cathedral City*, by replacing septic systems with sewer connections, would reduce costs to septic tank owners associated with operations, maintenance, and replacement costs of septic tanks. Economic information regarding costs to septic tank owners was based on estimates from MSWD, and specifically from information regarding the *Groundwater Quality Protection Program – Desert Hot Springs* within this proposal.

The *Groundwater Quality Protection Program – Cathedral City* is anticipated to replace 132 septic tanks with sewer connections. Information from MSWD shows that for typical septic systems, the annualized maintenance costs are $500 for pumping every three to five years, with an average maintenance cost of $125 per year. In addition, the Desert Hot Springs project demonstrates that replacement costs average $10,000 over a 25-year period, or approximately $400 per year. In total the annualized costs to each septic

tank owner is the summation of annual maintenance costs ($125) and annual replacement costs ($400) for a total of $525 per year. This project would replace 132 septic tanks, therefore resulting in an annualized avoided cost of $69,300 per year ($525 x 132).

In addition to the avoided costs, however, the project would also potentially result in costs to septic tank owners associated with a one-time abatement cost for customers to connect to the wastewater collection system. Please note that these costs would be required with or without the project, because mandates from the Colorado River RWQCB require that customers connect to wastewater collection systems once they are available to their property. This one-time abatement cost would be $5,000, but would be annualized over the same time period as the avoided costs noted above (49 years) for an annual total of $100 per year. This project would replace 132 septic tanks, therefore resulting in an annualized cost of $13,200 per year ($100 x 132).

In sum, annualized avoided costs to septic tank owners would be $69,300 per year (for avoided O&M) minus $13,200 per year (for abatement), for a total of $56,100 per year. It is anticipated that these annual benefits would begin in 2012 and end in 2060. After discounting, this total benefit is estimated to be $784,194 over the lifetime of the project.

Table 8-22: Avoided Costs to Septic Tank Owners
Groundwater Quality Protection Program - Cathedral City

	Annual Cost per Unit	Number of Units	Years	Total Cost
Avoided Maintenance Costs	$125	132	49	$808,500
Avoided Replacement Costs	$400	132	49	$2,587,200
Subtotal Avoided Costs to Septic Tank Owners				**$3,395,700**
Abatement Costs	$100	132	49	$646,800
Subtotal Retained Costs to Septic Tank Owners				**$646,800**
Total Avoided Costs to Septic Tank Owners (Delta)				**$2,748,900**
Total Avoided Costs to Septic Tank Owners with Discounting				**$784,194**

Note: For further information regarding how these costs were reached, please refer to Appendix 8-1, Table 16 Water Quality and Other Expected Benefits

Distribution of Project Benefits and Identification of Beneficiaries

Table 8-23 summarizes the anticipated beneficiaries of water quality benefits that would be provided by the Project. The water quality benefits would be anticipated on a local level to local residents and groundwater pumpers who utilize groundwater within the Project area.

Table 8-23: Project Beneficiaries Summary
Groundwater Quality Protection Program - Cathedral City

Local	Regional	Statewide
Local residents, hotel business owners, and municipalities	Visitors to region	Visitors to region

Project Benefits Timeline Description

This Project would provide water quality and other expected benefits beginning in 2012 and continuing in excess of the 50-year project lifetime.

Potential Adverse Effects from the Project

No short-term or long-term adverse effects are expected as a result of the proposed project.

Uncertainty of Benefits

Projected savings provided by protecting beneficial uses (drinking water) were not monetized, and therefore the actual monetizable benefit is unknown. However, without the project, nitrate contamination would potentially spread and contaminate the groundwater aquifer within and outside the immediate Project area, providing an even greater benefit than assumed within this analysis. The benefits associated with avoiding replacement costs of municipal wells are also uncertain, because these avoided costs were not monetized. Unknown values for this avoided cost include the number of municipal wells that would be impacted, the annual water production of those wells, and the actual cost to replace each contaminated well. Table 8-24 summarizes the uncertainties associated with these benefits that would be provided by the project.

Table 8-24: Omissions, Biases, and Uncertainties and their Effect on the Project
Groundwater Quality Protection Program - Cathedral City

Benefit or Cost Category	Likely Impact on Net Benefits	Comment
Protecting beneficial uses	+	Not monetized. Without the Project, nitrates from septic discharges have the potential to contaminate the aquifer within and outside the immediate Project area.
Avoided replacement costs of municipal wells	++	Not monetized. The number of municipal wells that could potentially be impacted is unknown. The annual water production of municipal wells is also not known. The actual cost to replace each contaminated well could be higher or lower than the estimate.

* Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Appendix 8-1: Economic Analysis Tables

- ✓ **Project 1: Regional Water Conservation Program**

  Table 16 – Water Quality and Other Expected Benefits.....Attached

- ✓ **Project 2: Short Term Arsenic Treatment Project**

  Table 16 – Water Quality and Other Expected Benefits.....Not Applicable

- ✓ **Project 3: Groundwater Quality Protection Program –Desert Hot Springs**

  Table 16 – Water Quality and Other Expected Benefits.....Attached

- ✓ . **Project 4: Groundwater Quality Protection Program –Cathedral City**

  Table 16 – Water Quality and Other Expected Benefits.....Attached

Coachella Valley Integrated Regional Water Management
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Table 16 - Water Quality and Other Expected Benefits (2009 dollars)
Project 1: Regional Water Conservation Program

	(b) Type of Benefit: Avoided wastewater treatment					*(b) Type of Benefit: Water quality improvements related to protecting, restoring or enhancing beneficial uses*					*(b) Type of Benefit: Ecosystem improvements (preservation of habitat of species identified in MSHCP)*					*(b) Type of Benefit: Power Savings*					*Discounting Calculations for Economic Benefits*		
	(C) Measure of Benefit [Unit]: Acre feet					*(C) Measure of Benefit [Unit]: Reduction in runoff (%) [not monetized]*					*(C) Measure of Benefit [Unit]: [Qualitative]*					*(C) Measure of Benefit [Unit]: Reduction in power consumption %) [not monetized]*							
(a) Year	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(h) Total Annual Benefits ($)	(i) Discount Value	(j) Discounted Benefits [h x i]
2009	0.00	0.00	0.00	$270	$0			0		$0			0		$0			0		$0	$0	1.000	$0
2010	0.00	0.00	0.00	$270	$0			0		$0			0		$0			0		$0	$0	0.943	$0
2011	0.00	0.00	0.00	$270	$0			0		$0			0		$0			0		$0	$0	0.890	$0
2012	-993.75	0.00	993.75	$270	$268,313	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$268,313	0.840	$225,383
2013	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.792	$425,007
2014	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.747	$400,859
2015	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.705	$378,321
2016	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.665	$356,856
2017	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.627	$336,464
2018	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.592	$317,682
2019	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.558	$299,437
2020	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.527	$282,801
2021	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.497	$266,703
2022	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.469	$251,677
2023	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.442	$237,188
2024	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.417	$223,773
2025	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.390	$209,284
2026	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.371	$199,088
2027	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.350	$187,819
2028	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.331	$177,623
2029	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.312	$167,427
2030	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.294	$157,768
2031	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.278	$149,182
2032	-1,987.50	0.00	1,987.50	$270	$536,625	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$536,625	0.262	$140,596
2033	-1,916.52	0.00	1,916.52	$270	$517,460	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$517,460	0.247	$127,813
2034	-1,845.54	0.00	1,845.54	$270	$498,295	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$498,295	0.233	$116,103
2035	-1,774.55	0.00	1,774.55	$270	$479,129	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$479,129	0.220	$105,408
2036	-1,703.57	0.00	1,703.57	$270	$459,964	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$459,964	0.207	$95,213
2037	-1,632.59	0.00	1,632.59	$270	$440,799	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$440,799	0.196	$86,397
2038	-1,561.61	0.00	1,561.61	$270	$421,634	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$421,634	0.185	$78,002
2039	-1,490.63	0.00	1,490.63	$270	$402,469	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$402,469	0.174	$70,030
2040	-1,419.64	0.00	1,419.64	$270	$383,304	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$383,304	0.164	$62,862
2041	-1,348.66	0.00	1,348.66	$270	$364,138	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$364,138	0.155	$56,441
2042	-1,277.68	0.00	1,277.68	$270	$344,973	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$344,973	0.146	$50,366
2043	-1,206.70	0.00	1,206.70	$270	$325,808	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$325,808	0.138	$44,962
2044	-1,135.71	0.00	1,135.71	$270	$306,643	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$306,643	0.130	$39,864
2045	-1,064.73	0.00	1,064.73	$270	$287,478	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$287,478	0.123	$35,360
2046	-993.75	0.00	993.75	$270	$268,313	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$268,313	0.116	$31,124
2047	-922.77	0.00	922.77	$270	$249,147	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$249,147	0.109	$27,157
2048	-851.79	0.00	851.79	$270	$229,982	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$229,982	0.103	$23,688
2049	-780.80	0.00	780.80	$270	$210,817	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$210,817	0.097	$20,449
2050	-709.82	0.00	709.82	$270	$191,652	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$191,652	0.092	$17,632
2051	-638.84	0.00	638.84	$270	$172,487	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$172,487	0.087	$15,006
2052	-567.86	0.00	567.86	$270	$153,321	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$153,321	0.082	$12,572
2053	-496.88	0.00	496.88	$270	$134,156	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$134,156	0.077	$10,330
2054	-425.89	0.00	425.89	$270	$114,991	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$114,991	0.073	$8,394
2055	-354.91	0.00	354.91	$270	$95,826	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$95,826	0.069	$6,612
2056	-283.93	0.00	283.93	$270	$76,661	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$76,661	0.065	$4,983
2057	-212.95	0.00	212.95	$270	$57,496	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$57,496	0.061	$3,507
2058	-141.96	0.00	141.96	$270	$38,330	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$38,330	0.058	$2,223
2059	-70.98	0.00	70.98	$270	$19,165	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$19,165	0.054	$1,040
2060	0.00	0.00	0.00	$270	$0	100%	95%	-5%		$0			0		$0	100%	95%	-5%		$0	$0	0.051	$0
																					Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):		$6,544,473
																					Project Allocation:		100.0%
																					Total Present Value of Discounted Benefits (Monetized Benefits):		**$6,544,473**

Comments: It is estimated that approximately 30 percent of water usage is for indoor use and would create wastewater requiring treatment. Based on recent operational and maintenance data, CVWD estimated that wastewater treatment costs are approximately $270/AF, and that cost is expected to stay relatively constant over time. As such, the total avoided wastewater treatment costs associated with the program are estimated to be $6,544,473 over the 49-year lifetime of the program (from 2012 to 2060). Table 8-4 provided a summary of these avoided wastewater treatment costs.

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Table 16 - Water Quality and Other Expected Benefits (2009 dollars)
Project 3: Groundwater Quality Protection Program - Desert Hot Springs

	(b) Type of Benefit: Avoided replacement and O&M costs to septic tank owners					(b) Type of Benefit: Avoided well treatment for nitrate contamination					(b) Type of Benefit: Protecting, restoring, enhancing benefical uses in the Project Area					(b) Type of Benefit: Avoided loss of hotel revenue					(b) Type of Benefit: Protection of transient occupancy tax revenue							
	(C) Measure of Benefit [Unit]: Annual costs ($)					(C) Measure of Benefit [Unit]: Acre feet per year					(C) Measure of Benefit [Unit]: Acre feet per year [not monetized]					(C) Measure of Benefit [Unit]: Annual revenue ($)					(C) Measure of Benefit [Unit]: Hotel room revenue ($)					Discounting Calculations for Economic Benefits		
(a) Year	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(h) Total Annual Benefits ($)	(i) Discount Value	(j) Discounted Benefits [h x i]
2009																				$0					$0	$0	1.000	$0
2010																				$0					$0	$0	0.943	$0
2011	-1	0	1	$77,775	$77,775	0	0	0	$128	$0	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,667,050	0.890	$4,153,674
2012	-1	0	1	$77,775	$77,775	0	0	0	$128	$0	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,667,050	0.840	$3,920,322
2013	-1	0	1	$77,775	$77,775	0	0	0	$128	$0	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,667,050	0.792	$3,696,303
2014	-1	0	1	$77,775	$77,775	0	0	0	$128	$0	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,667,050	0.747	$3,486,286
2015	-1	0	1	$77,775	$77,775	0	0	0	$128	$0	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,667,050	0.705	$3,290,270
2016	-1	0	1	$77,775	$77,775	-1,775	0	1,775	$128	$226,986	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,894,035	0.665	$3,254,534
2017	-1	0	1	$77,775	$77,775	-1,775	0	1,775	$128	$226,986	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,894,035	0.627	$3,068,560
2018	-1	0	1	$77,775	$77,775	-1,775	0	1,775	$128	$226,986	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,894,035	0.592	$2,897,269
2019	-1	0	1	$77,775	$77,775	-1,775	0	1,775	$128	$226,986	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,894,035	0.558	$2,730,872
2020	-1	0	1	$77,775	$77,775	-2,367	0	2,367	$128	$302,648	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,969,697	0.527	$2,619,031
2021	-1	0	1	$77,775	$77,775	-2,367	0	2,367	$128	$302,648	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,969,697	0.497	$2,469,940
2022	-1	0	1	$77,775	$77,775	-2,367	0	2,367	$128	$302,648	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,969,697	0.469	$2,330,788
2023	-1	0	1	$77,775	$77,775	-2,367	0	2,367	$128	$302,648	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,969,697	0.442	$2,196,606
2024	-1	0	1	$77,775	$77,775	-2,367	0	2,367	$128	$302,648	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,969,697	0.417	$2,072,364
2025	-1	0	1	$77,775	$77,775	-2,367	0	2,367	$128	$302,648	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$4,969,697	0.390	$1,938,182
2026	-1	0	1	$77,775	$77,775	-3,550	0	3,550	$128	$453,972	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,121,021	0.371	$1,899,899
2027	-1	0	1	$77,775	$77,775	-3,550	0	3,550	$128	$453,972	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,121,021	0.350	$1,792,357
2028	-1	0	1	$77,775	$77,775	-3,550	0	3,550	$128	$453,972	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,121,021	0.331	$1,695,058
2029	-1	0	1	$77,775	$77,775	-3,550	0	3,550	$128	$453,972	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,121,021	0.312	$1,597,759
2030	-1	0	1	$77,775	$77,775	-3,550	0	3,550	$128	$453,972	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,121,021	0.294	$1,505,580
2031	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.278	$1,549,848
2032	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.262	$1,460,648
2033	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.247	$1,377,023
2034	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.233	$1,298,973
2035	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.220	$1,226,498
2036	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.207	$1,154,024
2037	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.196	$1,092,699
2038	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.185	$1,031,374
2039	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.174	$970,049
2040	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.164	$914,299
2041	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.155	$864,124
2042	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.146	$813,949
2043	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.138	$769,349
2044	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.130	$724,749
2045	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.123	$685,724
2046	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.116	$646,699
2047	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.109	$607,674
2048	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.103	$574,224
2049	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.097	$540,774
2050	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.092	$512,899
2051	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.087	$485,024
2052	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.082	$457,149
2053	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.077	$429,274
2054	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.073	$406,974
2055	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.069	$384,675
2056	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.065	$362,375
2057	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.061	$340,075
2058	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.058	$323,350
2059	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.054	$302,657
2060	-1	0	1	$77,775	$77,775	-7,100	0	7,100	$128	$907,943	0	7,100	7,100		$0	-1	0	1	$4,097,567	$4,097,567	4,097,567	8,195,133	4,097,567	12%	$491,708	$5,574,993	0.051	$285,526
																											Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):	$75,208,333
																											Project Allocation:	100.0%
																											Total Present Value of Discounted Benefits (Monetized Benefits):	**$75,208,333**

Narrative description of benefit: *Area D-1 (the proposed project area) is included in and part of our phased project for sewers know as AD-12. Of the 6000 septic tanks in AD-12 , Area D-1 will constitute 183 septic tanks that will be converted over to sewer, and equivalent to the following avoided costs.*
Approximately 183 septic systems with annualized maintenance costs of $200 ($500 pumping every 3 to 5 years or 500/4 = $200/yr.) and replacement costs of $400/yr. ($10,000 avg. cost over 25 yr.s) or 200 + 400 = $600/yr. x 183 customers = $109,800/yr vs. a one-time abatement cost annualized over the comparable period at (avg. $5,000 over the same 25 yr. period = $200/yr.) $200 x 183 customers or $36,600/yr. Avoided costs are 109,800 – 36,600 = $73,200/yr
.

Narrative description of benefit: *The basis for the$371,000 is as follows:*
$328,000 O & M costs from the AECOM Scenario for Materials and Labor annually (288k/yr. Mat + 40K/yr. Labor)
+ $42,900 (annual depreciation/replacement cost of the estimated initial capital cost of $857,000 over 20 yrs.)
= $371,000 rounded up
per unit cost of treatment is $371,000/Yr/2900 AFY = $127.93/AF*
*This is the cost for 2 district wells equivalent to the AECOM 3500 gpm scenario with annual production for two wells in 2009 of *2900 AFY, not 219 AFY as previously shown.*
(MSWD 2009 production data - Well 22 @ 1600 gpm and 1100 AFY + Well 29 @ 1700 gpm and 1800 AFY or 3300 gpm collectively @ 2900 AFY production).
The District has ten production wells in the MCSB. If all wells (similar to wells 22 & 29) were affected the per well costs of 2 wells at 371,000 or 185,500 per well is multiplied by all wells (10) the resulting annual cost is $1.9M (185,500 x 10 = 1,855,000).

Narrative description of benefit: *If the entire basin (1.4MAF) is affected the costs for treatment will be substantial & this aquifer feeds into the Whitewater basin with potential to spread the contamination to the entire Coachella Valley.*

Narrative description of benefit: *$983,416 TOT from 2009 divided by 12% Hotel Tax =$8,195,133 Hotel Revenue divided by $140/day avg. hotel room cost= 58,537 days x double occupancy = 117,073 days minus 50% for ntirate contamination = 58,536.5 days or an impact difference of 58,536.5 days eqivalent to $4.1 M annually in lost revenue to hotels .*

Narrative description of benefit: *20% of the current visitor TOT and community sales tax revenues projected to be lost through reduced tourism= - $197K/yr. If the hot water basin is contaminated, the DAC's # 1 community economic engine will be damaged. 22 businesses in Desert Hot Springs are directly marketed for their Hot Mineral Water.*

Comments: *Sources of information: MSWD 2005 UWMP. AECOM Nitrate Treatment Scenario. 2009 City of Desert Hot Springs Financial Statement (TOT $983,416 + sales tax $5,386,302 combined = $6,369,718 or $6.4 million)*

Coachella Valley Integrated Regional Water Management
Implementation Grant Proposal
Appendix 8-1

Table 16 - Water Quality and Other Expected Benefits (2009 dollars)
Project 4: Groundwater Quality Protection Program - Cathedral City

	(b) Type of Benefit: Improvements related to protecting, restoring or enhancing beneficial uses					*(b) Type of Benefit: Avoided wastewater pumping station O&M costs*					*(b) Type of Benefit: Avoided replacement costs of city wells*					*(b) Type of Benefit: Avoided O&M and replacement costs to septic tank owners*					*Discounting Calculations for Economic Benefits*		
	(C) Measure of Benefit [Unit]: [Qualitative]					*(C) Measure of Benefit [Unit]: Annual cost ($)*					*(C) Measure of Benefit [Unit]: [Qualitative]*					*(C) Measure of Benefit [Unit]: Annual costs ($)*							
(a) Year	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(d) Without Project	(e) With Project	(f) Change Resulting from Project [e - d]	(g) Unit $ Value	(h) Annual $ Value [f x g]	(h) Total Annual Benefits ($)	(i) Discount Value	(j) Discounted Benefits [h x i]
2009			0		$0			0		$0				$1,000,000	$0						**$0**	**1.000**	**$0**
2010			0		$0			0		$0				$1,000,000	$0						**$0**	**0.943**	**$0**
2011			0		$0			0		$0				$1,000,000	$0						**$0**	**0.890**	**$0**
2012			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.840**	**$51,775**
2013			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.792**	**$48,817**
2014			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.747**	**$46,043**
2015			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.705**	**$43,454**
2016			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.665**	**$40,989**
2017			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.627**	**$38,646**
2018			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.592**	**$36,489**
2019			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.558**	**$34,393**
2020			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.527**	**$32,483**
2021			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.497**	**$30,634**
2022			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.469**	**$28,908**
2023			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.442**	**$27,244**
2024			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.417**	**$25,703**
2025			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.390**	**$24,038**
2026			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.371**	**$22,867**
2027			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.350**	**$21,573**
2028			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.331**	**$20,402**
2029			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.312**	**$19,231**
2030			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.294**	**$18,121**
2031			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.278**	**$17,135**
2032			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.262**	**$16,149**
2033			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.247**	**$15,224**
2034			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.233**	**$14,361**
2035			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.220**	**$13,560**
2036			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.207**	**$12,759**
2037			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.196**	**$12,081**
2038			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.185**	**$11,403**
2039			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.174**	**$10,725**
2040			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.164**	**$10,108**
2041			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.155**	**$9,554**
2042			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.146**	**$8,999**
2043			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.138**	**$8,506**
2044			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.130**	**$8,013**
2045			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.123**	**$7,581**
2046			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.116**	**$7,150**
2047			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.109**	**$6,718**
2048			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.103**	**$6,349**
2049			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.097**	**$5,979**
2050			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.092**	**$5,671**
2051			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.087**	**$5,362**
2052			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.082**	**$5,054**
2053			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.077**	**$4,746**
2054			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.073**	**$4,500**
2055			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.069**	**$4,253**
2056			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.065**	**$4,006**
2057			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.061**	**$3,760**
2058			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.058**	**$3,575**
2059			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.054**	**$3,346**
2060			0		$0	-1	0	1	$5,537	$5,537	0	0	0	$1,000,000	$0	-1	0	1	$56,100	$56,100	**$61,637**	**0.051**	**$3,157**

Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):	$861,593
Project Allocation:	100.0%
Total Present Value of Discounted Benefits (Monetized Benefits):	**$861,593**

Narrative description of benefits: *Septic tank effluent contains relatively high concentrations of nitrite/nitrate and ammonia nitrogen. These leach into the groundwater resulting in increased nitrate concentrations in groundwater. Desert Water Agency removed Well 19 from domestic water production due to high nitrate concentrations.*

Narrative description of benefits: *Value of benefit represents the cost of operating and maintaining the pumping station that will be eliminated by construction of this project.*

Narrative description of benefits: *Septic tank effluent contains relatively high concentrations of nitrite/nitrate and ammonia nitrogen. These leach into the groundwater resulting in increased nitrate concentrations in groundwater. Desert Water Agency removed Well 19 from domestic water production due to high nitrate concentrations..*

Narrative description of benefits: *Elimination of septic tanks is a priority for the Colorado River Regional Water Quality control Board.*

Comments:

Attachment

9

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Economic Analysis – Flood Damage Reduction Costs and Benefits

This attachment is not necessary for inclusion in the *Coachella Valley IRWM Implementation Grant Proposal* because this proposal does not contain implementation projects with projected flood damage reduction benefits. Through the region's project solicitation and selection process, the CVRWMG and Planning Partners determined that water supply reliability and water quality protection were priorities for the region and, therefore, selected implementation projects that emphasized those benefits (please refer to Attachments 7 and 8).

Appendix 9-1: Economic Analysis Tables

✓ **Project 1: Regional Water Conservation Program**

Table 17 – Annual Cost of Project..... Not Applicable
Table 18 – Flood Event Damage ..... Not Applicable
Table 19 – Present Value of Expected Annual Damage Benefits..... Not Applicable

✓ **Project 2: Short Term Arsenic Treatment Project**

Table 17 – Annual Cost of Project..... Not Applicable
Table 18 – Flood Event Damage ..... Not Applicable
Table 19 – Present Value of Expected Annual Damage Benefits..... Not Applicable

✓ **Project 3: Groundwater Quality Protection Program –Desert Hot Springs**

Table 17 – Annual Cost of Project..... Not Applicable
Table 18 – Flood Event Damage ..... Not Applicable
Table 19 – Present Value of Expected Annual Damage Benefits..... Not Applicable

✓ . **Project 4: Groundwater Quality Protection Program –Cathedral City**

Table 17 – Annual Cost of Project..... Not Applicable
Table 18 – Flood Event Damage ..... Not Applicable
Table 19 – Present Value of Expected Annual Damage Benefits..... Not Applicable

Attachment 10

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Cost and Benefits Summary

Attachment 10 consists of the following item:

- ✓ **Cost and Benefits Summary**

  This attachment contains a summary of the costs and benefits associated with each project listed within this Implementation Grant Proposal.

This attachment contains a summary and the estimated costs and benefits of each project listed within this *Coachella Valley IRWM Implementation Grant Proposal* by providing a summary of the cost benefit information from Attachments 7, 8, and 9. Because several projects are being proposed with multiple benefits, this attachment summarizes the costs and benefits for all projects in this grant application.

Project-Level Summary

Tables 10-1 through 10-8 provide summaries of the anticipated water supply, water quality, flood damage, and other benefits for each project. These benefits include monetized, physically quantified, and qualitative benefits as discussed in Attachments 7, 8, and 9.

Project 1: Regional Water Conservation Program

Tables 10-1 and 10-2 provide summaries of the benefits and costs associated with the *Regional Water Conservation Program*.

Table 10-1: *Regional Water Conservation Program* Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits (see Attachment 7)		
Avoided Water Supply Costs	Monetized	Local, Regional, and Statewide
Avoided Well Replacement Costs	Monetized	Local
Water Supply Reliability	Qualitative	Local, Regional, and Statewide
Water Quality (see Attachment 8)		
Avoided Wastewater Treatment Costs	Monetized	Local
Water Quality Improvements Related to Beneficial Uses	Physically Quantified	Local and Regional
Ecosystem Improvements	Qualitative	Local, Regional, and Statewide
Power Cost Savings	Physically Quantified	Local, Regional, and Statewide
Flood Damage Reduction Benefits (see Attachment 9)		
Not Applicable	*Not Applicable*	*Not Applicable*

Table 10-2: *Regional Water Conservation Program* Benefit-Cost Overview

Benefit-Cost	Present Value ($2009)
Costs – Total Capital and O&M	**$1,188,352**
Monetizable Benefits	
Avoided Water Supply Costs	$94,235,574
Avoided Well Replacement Costs	$446,558
Avoided Wastewater Treatment Costs	$6,544,473
Total Benefits	**$101,226,605**
Qualitative Benefits	**Qualitative Indicator***
Improved Water Supply Reliability	+
Water Quality Improvements to Beneficial Uses	+
Ecosystem Improvements	+
Power Cost Savings	+

*Magnitude of effect on net benefits

+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 2: Short Term Arsenic Treatment Project

Tables 10-3 and 10-4 provide summaries of the benefits and costs associated with the *Short Term Arsenic Treatment Project*.

Table 10-3: *Short Term Arsenic Treatment Project* Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits (see Attachment 7)		
Avoided Bottled Water Purchases	Monetized	Local
Water Quality and Other Benefits (see Attachment 8)		
Water Quality Improvements (Reduced Arsenic Levels)	Physical Quantification	Local
Human Health Benefits	Qualitative	Local
Avoided Fuel Purchases	Qualitative	Local
Flood Damage Reduction Benefits (see Attachment 9)		
Not Applicable	*Not Applicable*	*Not Applicable*

Table 10-4: *Short Term Arsenic Treatment Project* Benefit-Cost Overview

Benefit-Cost	Present Value ($2009)
Costs – Total Capital and O&M	**$913,459**
Monetizable Benefits	
Avoided Bottled Water Purchases	$743,030
Total Benefits	**$743,030**
Qualitative Benefits	**Qualitative Indicator***
Water Quality Improvements (Reduced Arsenic Levels)	+
Human Health Benefits	+
Avoided Fuel Purchases	+

* Magnitude of effect on net benefits

+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 3: Groundwater Quality Protection Program–Desert Hot Springs

Tables 10-5 and 10-6 provide summaries of the benefits and costs associated with the *Groundwater Quality Protection Program–Desert Hot Springs*.

Table 10-5: *Groundwater Quality Protection Program–Desert Hot Springs* Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits (see Attachment 7)		
Contributions to Recycled Water Supplies	Qualitative	Local, Regional, and Statewide
Water Quality and Other Benefits (see Attachment 8)		
Avoided costs to septic tank owners	Monetized	Local
Avoided well treatment costs	Monetized	Local and regional
Water quality improvements that protect beneficial uses	Physical Quantification	Local and regional
Avoided loss of hotel revenues	Monetized	Local and regional
Avoided loss of tax revenue	Monetized	Local and regional
Flood Damage Reduction Benefits (see Attachment 9)		
Not Applicable	*Not Applicable*	*Not Applicable*

Table 10-6: *Groundwater Quality Protection Program–Desert Hot Springs* Benefit-Cost Overview

Benefit-Cost	Present Value ($2009)
Costs – Total Capital and O&M	**$2,764,463**
Monetizable Benefits	
Avoided costs to septic tank owners	$1,156,398
Avoided well treatment costs	$5,816,287
Avoided loss of hotel revenues	$60,924,686
Avoided loss of hotel tax revenue	$7,310,962
Total Benefits	**$75,208,333**
Qualitative Benefits	**Qualitative Indicator***
Contributions to Recycled Water Supplies	+
Protecting beneficial uses	+

*Magnitude of effect on net benefits:
+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Project 4: Groundwater Quality Protection Program–Cathedral City

Tables 10-7 and 10-8 provide summaries of the benefits and costs associated with the *Groundwater Quality Protection Program–Cathedral City*.

Table 10-7: *Groundwater Quality Protection Program–Cathedral City* Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Water Supply Benefits (see Attachment 7)		
Protecting beneficial uses	*Not Applicable*	*Not Applicable*
Water Quality (see Attachment 8)		
Protecting beneficial uses	Qualitative	Local and regional
Avoided wastewater pumping station O&M costs	Monetized	Local
Avoided replacement costs of municipal wells	Qualitative	Local
Avoided replacement and O&M costs to septic tank owners	Monetized	Local
Flood Damage Reduction Benefits (see Attachment 9)		
Not Applicable	*Not Applicable*	*Not Applicable*

Table 10-8: *Groundwater Quality Protection Program–Cathedral City* Benefit-Cost Overview

	Present Value ($2009)
Costs – Total Capital and O&M	**$1,760,282**
Monetizable Benefits	
Avoided Wastewater Pumping Station O&M costs	$77,399
Avoided Costs to Septic Tank Owners	$784,194
Total Benefits	**$861,593**
Qualitative Benefits	**Qualitative Indicator***
Protecting Beneficial Uses	+
Avoided Replacement Costs of Municipal Wells	+

*Magnitude of effect on net benefits

+/- (negligible or unknown); + (moderate positive); ++ (significant positive); - (moderate negative); -- (significant negative)

Proposal Summary

Table 10-9 provides a summary monetized benefits and costs for each project contained within this *Coachella Valley IRWM Implementation Grant Proposal*. The overall benefit/cost ratio for the proposal is 26.9.

Table 10-9: Costs and Benefits Summary

Project		Agency/Project Sponsor	Total Present Value Project Costs	Total Present Value Project Benefits				Benefit/ Cost Ratio
				Water Supply	Water Quality and Other	Flood Damage Reduction	Total	
(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Regional Water Conservation Program	Coachella Valley Water District	$1,188,352	$94,682,132	$6,544,473	$0	$101,226,605	85.2
2	Short Term Arsenic Treatment Project	Pueblo Unido Community Development Corporation	$913,459	$743,030	$0	$0	$743,030	0.8
3	Groundwater Quality Protection Program – Desert Hot Springs	Mission Springs Water District	$2,764,463	$0	$75,208,333	$0	$75,208,333	27.2
4	Groundwater Quality Protection Program – Cathedral City	City of Cathedral City	$1,760,282	$0	$861,593	$0	$861,593	0.5
	TOTAL		**$6,626,556**	**$95,425,162**	**$82,614,399**	**$0**	**$178,039,561**	**26.9**

Attachment 11

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Program Preferences

Attachment 11 consists of the following item:

- ✓ **Program Preferences**

  This attachment contains information regarding how this *Coachella Valley IRWM Implementation Grant Proposal* assists the Coachella Valley region in meeting the Program Preferences set by PRC §75026.(b) and CWC §10544.

This attachment identifies the specific Program Preferences that the proposal will meet; describes the certainty that the Proposal will meet the Program Preferences; and details the breadth and magnitude to which the Program Preferences will be met.

Program Preferences, Certainty, and Breadth/Magnitude

The Program Preferences described in Section II.F of the Propositions 84 & IE IRWM Guidelines are those set forth in PRC §75026.(b) and CWC §10544. These preferences are:

- Include regional projects or programs;
- Effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; the Regional Water Quality Control Board (RWQCB) region or subdivision; or other region or sub-region specifically identified by DWR;
- Effectively resolve significant water-related conflicts within or between regions;
- Contribute to attainment of one or more of the objectives of the CALFED Bay-Delta Program;
- Address critical water supply or water quality needs of disadvantaged communities within the region;
- Effectively integrate water management with land use planning;
- For eligible SWFM funding, projects which: a) are not receiving State funding for flood control or flood prevention projects pursuant to PRC §5096.824 or §75034 or b) provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of instream erosion and sedimentation, and groundwater recharge; and
- Address Statewide priorities.

Each of the projects included within this Proposal are ready to proceed, and were listed as projects within Appendix B of the Final Coachella Valley IRWM Plan. These projects were selected by the Planning Partners and the CVRWMG in accordance with the project prioritization process described in Chapter 7 of the Coachella Valley Integrated Regional Water Management Plan. As a result of the thorough analysis that was performed on these projects through the selection process and with respect to monitoring, assessment, and performance measures (refer to Attachment 6), it is fully certain that each of the projects included in this Proposal will provide the benefits described below.

The package of projects included in this proposal addresses nearly all of the aforementioned Program Preferences on a local, regional, or statewide scale. These terms, used to define the breadth and magnitude to which each project addresses Program Preferences, are defined as follows:

- *Local*: Project benefits are focused locally within the project area.
- *Regional*: Project benefits extend throughout the Coachella Valley Water Management Region (Region).
- *Statewide*: Project benefits are widespread and will benefit not only the Region but other areas throughout California.

Table 11.1 below shows the Program Preferences that will be addressed by each of the projects within this Proposal, and demonstrates the magnitude and breadth to which each Program Preference will be addressed. Note that none of the projects listed within this Proposal are eligible for Stormwater Flood Management (SWFM) Grant Programs at this time, and as such, none of the projects were evaluated with respect to SWFM-specific Program Preferences.

Table 11.1: Proposed Projects and Program Preferences

	Program Preferences						
Proposed Projects	**Include Regional Projects or Programs**	**Integrate Water Management Programs and Projects**	**Resolve Significant Water-Related Conflicts**	**Contribute to Attainment of CALFED Bay-Delta Program Objectives**	**Address Critical Water Supply or Water Quality Needs of DACs**	**Integrate Water Management with Land Use Planning**	**Address Statewide Priorities**
Regional Water Conservation Program	✓	✓	✓	✓	✓		✓
Short Term Arsenic Treatment Project		✓	✓		✓		✓
Groundwater Quality Protection Program – Desert Hot Springs		✓	✓		✓		✓
Groundwater Quality Protection Program – Cathedral City		✓	✓		✓		✓
Degree of Certainty Preference will be Addressed	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**N/A**	**HIGH**
Magnitude and Breadth to Which Preference will be Addressed	**Region**	**Region**	**Region**	**State**	**Local**	**N/A**	**Region**

Relation to the Implementation Grant Proposal

The following sections demonstrate how this Implementation Grant Proposal will assist in meeting each of the Program Preferences listed within Section II.F of the Propositions 84 & 1E IRWM Guidelines, as summarized within Table 11.1 above.

Program Preference: Include Regional Projects or Programs

Regional Water Conservation Program

This program consists of a compilation of conservation projects from all five of the water purveyors that constitute the CVRWMG, which will span throughout the entire Coachella IRWM Region. As such, this

program is considered regional pursuant to CWC §10544, and it is fully certain that this project will adhere to this Program Preference on a regional level.

Program Preference: Effectively Integrate Water Management Programs and Projects within the Coachella Valley IRWM Region

All of the projects included within this proposal would address the Program Preference of effectively integrating water management programs and projects within a hydrologic region specifically identified by DWR (the Coachella Valley Water Management Region). The Coachella Valley Region was specifically identified by DWR as part of a Region Acceptance Process that was submitted in April 2009.

Because this proposal has been found to be consistent with the Coachella Valley IRWM Plan (refer to Attachment 1), this proposal will effectively carry out the goals of the Plan, which includes coordinating and integrating water resource management (IRWM Goal 4) within the Region. In addition, each project included in this Proposal would meet at least one of the regionally-established objective (refer to Attachment 1). Each objective was established upon reviewing the various goals, issues, and needs that currently exist within the Region. The consistency evaluation carried out in Attachment 1 shows that together, the four projects listed within this Proposal will either directly or indirectly address ten of the thirteen IRWM Plan Objectives (Refer to Table 1.3 within Attachment 1).

Because the proposal will be consistent with the Coachella Valley IRWM Plan by fulfilling IRWM Goal 4 and ten of the thirteen Plan Objectives, it is fully certain that all four projects will adhere to this Program Preference throughout the Region (on a regional level). The following sections provide an in-depth explanation of why each of the projects listed within this Proposal will effectively integrate water management programs and projects within the Region.

Regional Water Conservation Program

The *Regional Water Conservation Program* is designed to bring water conservation activities to an accessible level to a wide range of constituents throughout the Coachella Valley Region. The CVRWMG agencies have created an umbrella conservation program that allows the region to address conservation needs through an efficient collaborative and united process, but still allows each agency the flexibility to address the specific needs of the communities they serve. The regional and collaborative aspects of this program ensure that each of the CVRWMG agencies will effectively integrate their conservation programs and projects within the Region.

Short Term Arsenic Treatment Project

This project will address both arsenic-related water quality issues and address water-related needs of DACs by providing cost-effective and reliable ways to remove high levels of arsenic from drinking water supplies for farm worker families in the East Valley. This project was based on a pilot project conducted by the project proponent within a single East Valley mobile home park (San Antonio del Desierto), and was designed to potentially be applied to isolated communities throughout the region that have arsenic-related water quality concerns. As such, the design of this project is connected to another project (San Antonio del Desierto), and has the potential to integrate further with other water management programs and projects that address DACs and/or arsenic-related water quality issues throughout the Coachella Valley Region.

Groundwater Quality Protection Program - Desert Hot Springs

This project would reduce the threat that densely located and/or failing septic systems pose to groundwater quality within the Desert Hot Springs aquifer, which is located within the Desert Hot Springs Sub-Basin. The Desert Hot Springs Sub-Basin is an expansive sub-basin which sustains a local economy of hot water users. Due to its size, groundwater quality within this sub-basin could potentially impact drinking water supplies provided by MSWD. By reducing threats to groundwater quality within

the Desert Hot Springs Sub-basin, this program effectively integrates water management projects within the Coachella Valley.

Groundwater Quality Protection Program - Cathedral City

This project will help to coordinate and integrate water resource management by protecting groundwater quality used by Coachella Valley Water District (CVWD) and providing additional wastewater supplies to CVWD for reclamation, thereby indirectly increasing non-potable water supplies within the region. The project site and the areas that it will benefit are within the Coachella Valley.

Program Preference: Effectively Resolve Significant Water-Related Conflicts within or between Regions

The Coachella Valley IRWM Plan provides an overview of the significant water-related conflicts within the Region. This section states that, "major water-related conflicts have generally revolved around groundwater recharge and pumping activities and associated assessments." Groundwater issues were likely identified as the major source of water-related conflicts within the Region, because groundwater constitutes the Region's primary urban water supply source. Due to the importance of groundwater within the Region, groundwater quality and supply availability are critically important to the entire Region, and therefore constitute the primary source of water-related conflicts. Each of the projects listed within this Proposal aims at improving groundwater supply, quality, and groundwater-related drinking water quality within the Region, and therefore each project will aim to help resolve this significant water-related conflict within the Region.

In addition, the IRWM Plan Objectives were established as a result of an open and transparent stakeholder process, where all CVRWMG members, Planning Partners entities, DAC and Tribal Issues Groups entities, and other stakeholders were invited to voice their significant issues and conflicts within the Region. Together, the four projects will address ten of the thirteen IRWM Plan Objectives, and will therefore effectively resolve significant water-related conflicts addressed by a comprehensive stakeholder group within the Region.

Regional Water Conservation Program

This project will address groundwater overdraft by reducing groundwater demand through implementation of conservation programs throughout the Region. Reducing groundwater demand may reduce the need to increase recharge and pumping activities in the future, thereby resolving significant water-related conflicts regarding groundwater recharge and pumping activities. In addition, this conservation program is regionally-based, and promotes collaboration between the five regional water purveyors. This type of collaboration will also potentially reduce conflicts by heightening relationships between regional agencies. Due to the comprehensive and issue-based nature of this program, it is fully certain that this program will address the Program Preference of effectively resolving significant water-related conflicts within or between regions.

Short Term Arsenic Treatment Project

The need for dependable arsenic removal systems was listed within the Coachella Valley IRWM Plan as a key groundwater quality issue in the East Valley. In addition, arsenic contamination and the inability of certain DACs to afford other sources of drinking water (i.e. hauled water) were listed as specific DAC-related issues within the Plan. This project will directly address all of the aforementioned issues by installing point-of-use and point of entry systems in DACs in the East Valley where arsenic is of greatest concern. This program helps resolve conflicts over municipal service in areas not in the path of development that have inadequate water quality for existing residents. Therefore, due to the direct connection between this project and issues identified as key issues within the IRWM Plan, it is fully certain that this program will address the Program Preference of effectively resolving significant water-related conflicts within or between regions.

Groundwater Quality Protection Program - Desert Hot Springs and Cathedral City

Individual domestic septic tanks were identified in the issues sections of the Coachella Valley IRWM Plan. The issues identified with respect to individual domestic septic tanks include potential nitrate percolation from failing systems, and lack of sewer infrastructure to serve DAC communities. The program directly addresses both of the aforementioned issues, by replacing septic tanks with sewer connections in area of Desert Hot Springs and Cathedral City that have known groundwater quality issues and contain neighborhoods that qualify as DACs. As such, it is fully certain that this program will address the Program Preference of effectively resolving significant water-related conflicts within or between regions. In addition, the Cathedral City project would help resolve issues relating to local water supply availability by contributing wastewater to the CVWD wastewater collection system and therefore increasing the amount of wastewater available for reuse.

Program Preference: Contribute to Attainment of One or More of the Objectives of the CALFED Bay-Delta Program

The CALFED Bay-Delta Program has the following four objectives: Water Quality, Water Supply, Ecosystem Restoration, and Levee Integrity (http://calwater.ca.gov/).

- *Water Quality*: the objective of this program is to invest in projects that improve the state's water quality from source to tap.
- *Water Supply*: this objective is comprised of five critical elements: conveyance, storage, environmental water account, water use efficiency and water transfer. Together and in partnership with local and regional agencies, this program allows for the increase of water supplies and more efficient and flexible use of water resources.
- *Ecosystem Restoration*: this objective aims at restoring and protecting habitats, ecosystem functions, and native species.
- *Levee Integrity*: the objective of this program is to protect water supplies needed for ecosystems, cities, industry, and farms by reducing the threat of levee failures that would lead to seawater intrusion.

As described below, the four projects contained within this Proposal will meet two of the four objectives: water quality and water supply.

Regional Water Conservation Program

This program will meet the Water Supply objective of the CALFED Bay-Delta Program. This program will increase water use efficiency throughout the Coachella Valley Region, thereby potentially reducing future increased demands for water supplies from the Bay-Delta. In addition, this program will allow for more efficient use of water resources within the Coachella Valley, which is an additional goal of the water supply objective of the CALFED Bay-Delta Program. Due to the conservation-oriented nature of this program, the Region's current reliance on Bay-Delta water, and the degree to which this project was analyzed, it is fully certain that this project will provide water supply benefits as described within the CALFED Bay-Delta Program. Due to the connection between the Coachella Valley and imported water from the Bay-Delta, this program will provide water supply benefits at a statewide level.

Program Preference: Address Critical Water Supply or Water Quality Needs of Disadvantaged Communities within the Region

Critical water supply or water quality needs of DACs within the Region were addressed through the development of the Coachella Valley IRWM Plan. While developing the Plan, the CVRWMG and Planning Partners formed a DAC Issues Group that was created to address specific water-related needs of DACs within the Region. The IRWM Plan identifies the specific water-related needs of DACs as water affordability, the need for connections to municipal sewer and water systems, poor groundwater quality,

and flooding hazards. This Proposal addresses four of the five topics above (all but flooding). The projects within this Proposal that address critical water supply and/or water quality needs of DACs within the region are discussed below.

Regional Water Conservation Program

There are pockets of disadvantaged communities throughout the entire Coachella Valley. As such, this regional program will reach out conservation efforts to DACs. In addition, water conservation is the most cost-effective means of increasing the local water supply, so it addresses water needs of DACs by maintaining the affordability of water. The program addresses critical water quality of DACs by reducing overdraft which, is known to have a deteriorating effect on groundwater quality. Therefore, this project will protect groundwater quality by reducing a potential threat to groundwater quality.

Short Term Arsenic Treatment Project

This project directly addresses critical water supply and quality issues of DACs by providing point-of-use drinking water systems to DACs within the East Valley that have reported arsenic levels that exceed MCLs within their drinking water supplies. DACs benefitted by this project may also be located within the Torres Martinez Desert Cahuilla Indians reservation (on tribal lands). The project will secure water supply by improving the quality of existing DAC drinking water supplies, and reducing the need for DAC residents to purchase expensive alternative water supplies such as hauled water. This project will address water quality issues of DACS by reducing arsenic levels in drinking water supplies.

Groundwater Quality Protection Program – Desert Hot Springs and Cathedral City

The Groundwater Quality Protection Program directly addresses water quality and sanitation needs of DACs by providing for expansion of the municipal sewer system. This program addresses sanitation needs relative to failing and/or densely located septic tank systems and therefore protects groundwater quality by eliminating the potential for septic tank effluent to reach the groundwater supply. This program also addresses critical water supply needs of DACs by protecting potable groundwater sources from contamination. By eliminating septic tanks, this program will protect and improve groundwater quality in Desert Hot Springs and Cathedral City, which both contain pockets of DACs.

Program Preference: Effectively Integrate Water Management with Land Use Planning

None of the projects listed within this proposal integrate water management with land use planning.

Program Preference: Address Statewide Priorities

This proposal will either directly or indirectly address every Statewide priority with the exception of priority four, practice integrated flood management. Table 11.3 below demonstrates which Statewide priorities are addressed by each of the projects or programs included within this proposal, and to what degree (either directly or indirectly). Each project submitted as part of the Coachella Valley IRWM Plan was evaluated for its consistency with Statewide priorities as part of the plan development process. As such, based on the level of analysis for each project with respect to meeting Statewide priorities, it is fully certain that each of these projects, and therefore the Proposal will achieve the Statewide priorities. Due to the regional emphasis of this proposal, the benefits that will occur from meeting Statewide priorities are expected to occur at a regional level (throughout the Coachella Valley).

Table 11.3: Proposed Projects and Programs with Statewide Priorities

Proposed Projects/Programs	Drought Preparedness	Use and Reuse Water More Efficiently	Climate Change Response Actions	Expand Environmental Stewardship	Practice Integrated Flood Management	Protect Surface/Groundwater Quality	Improve Tribal Water/Natural Resources	Ensure Equitable Distribution of Benefits
Regional Water Conservation Program	○	●	○			○	●	●
Short Term Arsenic Treatment Project			●				●	●
Groundwater Quality Protection Program - Desert Hot Springs		○		○		●		
Groundwater Quality Protection Program - Cathedral City		○		○		●		

○ indirectly related; ● directly related

Regional Water Conservation Program

The statewide priorities achieved by the *Regional Water Conservation Program* are described in detail below.

- *Drought Preparedness*: This program will result in education, outreach, and management that will promote water use efficiency, and reduce regional water demand. Reducing water demand will indirectly prevent future droughts from occurring by making the Region better prepared for situations in which water supply availability is lower than average.
- *Use and Reuse Water More Efficiently*: This program will educate community members on water efficiency and opportunities for reuse in order to achieve statewide priorities.
- *Climate Change Response Actions*: This project may indirectly address key climate change issues by managing groundwater levels to reduce overdraft and therefore reduce groundwater in the Coachella Valley. Reduced demand could cut energy consumption related to water systems and water use, thereby decreasing greenhouse gas (GHG) emissions. This program will certainly contain projects that will adapt to climate change effects through water use efficiency. Projects will address issues of overdraft in groundwater basins and will work toward sustainable use and supply.
- *Protect Surface/Groundwater Quality*: This program will also reduce overdraft, which is known to have a deteriorating effect on groundwater quality therefore protecting groundwater quality and supplies.
- *Improve Tribal Water/Natural Resources*: This program will promote water use efficiency and reduce water demand on a regional level. Reducing water demand will potentially reduce future groundwater overdraft, which will directly improve tribal water and natural resources.
- *Ensure Equitable Distribution of Benefits*: Water conservation is the most cost-effective means of increasing the local water supply and maintaining the affordability of water for all citizens in the region. Therefore, this statewide priority will be achieved through reasonable price benefits for all citizens.

Short Term Arsenic Treatment Project

The statewide priorities achieved by the *Short Term Arsenic Treatment Project* are described in detail below.

- *Climate Change Response Actions*: The project will directly address climate change issues by utilizing low energy demand devices for the local treatment of groundwater. These low energy demand devices will use significantly less energy than conventional pumping water devices, effectively reducing GHG emissions by offsetting the need to implement more energy consumptive conventional pumping devices.
- *Ensure Equitable Distribution of Benefits*: By increasing drinking water quality within DACs in the East Valley, this project will reduce the need for residents to rely on other, more expensive water supplies such as hauled water; making water distribution benefits more equitable.
- *Improve Tribal Water/Natural Resources*: The project is located within DACs and potentially tribal lands, and will therefore address water and sanitation needs of tribal waters and natural resources.

Groundwater Quality Protection Project – Desert Hot Springs

The statewide priorities achieved by the *Groundwater Quality Protection Program-Desert Hot Springs* are described in detail below.

- *Use and Reuse Water More Efficiently*: By converting septic tanks to sewer systems, this program will potentially increase the amount of wastewater supplies available for future reuse. Therefore, this project will potentially increase water reuse by diverting wastewater from septic tanks to water reclamation facilities.
- *Expand Environmental Stewardship*: This project will abate potential water quality threats associated with septic systems, thereby indirectly enhancing the watershed ecosystems by preventing potential contamination.
- *Protect Surface/Groundwater Quality*: By eliminating failing or densely located septic systems in an area with known groundwater quality issues, this project will protect and potentially improve groundwater quality by removing a known contamination source.

Groundwater Quality Protection Project – Cathedral City

The statewide priorities achieved by the *Groundwater Quality Protection Program-Cathedral City* are described in detail below.

- *Use and Reuse Water More Efficiently*: By converting septic tanks to sewer systems and connecting the project area to a CVWD wastewater collection system, this program will potentially increase the amount of wastewater supplies available for reuse. Therefore, this project will increase water reuse by diverting wastewater from septic tanks to water reclamation facilities.
- *Expand Environmental Stewardship*: This project will indirectly expand environmental stewardship by removing failing or densely located septic tanks that pose a threat to watershed ecosystems. This project will help improve water and flood management ecosystems by reducing water quality threats.
- *Protect Surface/Groundwater Quality*: By eliminating failing septic systems in an area with known groundwater quality issues, this project will protect and improve groundwater quality by removing a contamination source.

Attachment 12

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Disadvantaged Community Assistance

Attachment 12 consists of the following items:

- ✓ **Funding Match Waiver**

  This *Coachella Valley IRWM Implementation Grant Proposal* is requesting a funding match waiver for the Short-Tern Arsenic Treatment Project.

- ✓ **Documentation of Presence and Needs of DACs**

  Local DACs are defined and mapped using U.S. Census 2000 and Nielsen Claritas 2010 data. Critical water supply and water quality needs identified by local DAC representatives are summarized.

- ✓ **Description of Proposed Projects and Targeted Benefits to DACs**

  The targeted benefits to local DACs from the proposed project(s) are described.

- ✓ **Documentation of DAC Representation and Participation**

  The specific actions undertaken by the CVRWMG to engage DAC representatives are described. DAC representatives participate in the Coachella Valley IRWM program as Planning Partners and in development and submittal of the proposed projects contained herein.

- ✓ **Letters of Support**

  Letter of support from DAC representatives for the *STAT Project* is included in Appendix 12-1.

This attachment documents information regarding the Short-Term Arsenic Treatment (STAT) project, which addresses a critical water quality need in an East Valley disadvantaged community (DAC). This attachment addresses the funding match waiver, documents the presence and needs of DACs, describes the proposed project and targeted benefits to DACs, and documents DAC representation and participation in the Coachella Valley IRWM program.

Funding Match Waiver

The STAT project, submitted by Pueblo Unido, CDC, is applying for a funding match waiver. Pueblo Unido will provide $106,060 in funding match (16%) through in-kind services from Pueblo Unido and funds from St. Anthony Ownership.

Presence and Needs of the DAC

The Coachella Valley has a wide range of DACs from different demographics, including migrant and seasonal farm workers, very low-income families, urban residents, and low-income seniors. Water management issues that have been identified to date by DAC representatives include arsenic contamination in drinking water supplies, sanitation needs to protect groundwater, health, and safety and, in general, affordability and accessibility of water.

A DAC is identified as a community with an average MHI of less than 80 percent of the stateside MHI. MHI's were estimated through 2000 U.S. Census Bureau data for Coachella Valley census tracts and with 2010 Nielsen Claritas data for census block groups. Census tracts are small, relatively permanent geographic entities within counties delineated by a committee of local data users. Mapping at the Census tract scale is only available using 2000 Census data; the 2010 Nielsen Claritas data was also analyzed to give more current and detailed information regarding the MHI of incorporated cities and unincorporated communities within the Region. According to 2000 Census data, statewide MHI in year 2000 was $47,493 and DACs are considered those who earned less than $37,994.

According to the 2010 Nielsen Update Demographics model, the Statewide MHI for 2010 was $62,401, and DACs are therefore communities with an MHI less than $49,921. MHI's for the region were estimated through 2000 U.S. Census Bureau data for Coachella Valley census tracts and with 2010 Nielsen Claritas data for census block groups. Census tracts are small, relatively permanent geographic entities within counties delineated by a committee of local data users. Mapping at the Census tract scale is only available using 2000 Census data; the 2010 Nielsen Claritas data was also analyzed to give more current and detailed information regarding the MHI of incorporated cities and unincorporated communities within the Region. Using this information, all nine cities in the Coachella Valley contain pockets of communities that would qualify as DACs. In addition, this dataset shows that the unincorporated communities of Desert Edge, North Shore, Mecca, Oasis, Sky Valley, Thermal, Thousand Palms, and Vista Santa Rosa also qualify as DACs. Figure 12-1 shows DACs at the census block group-level using the 2010 Nielsen Claritas data.

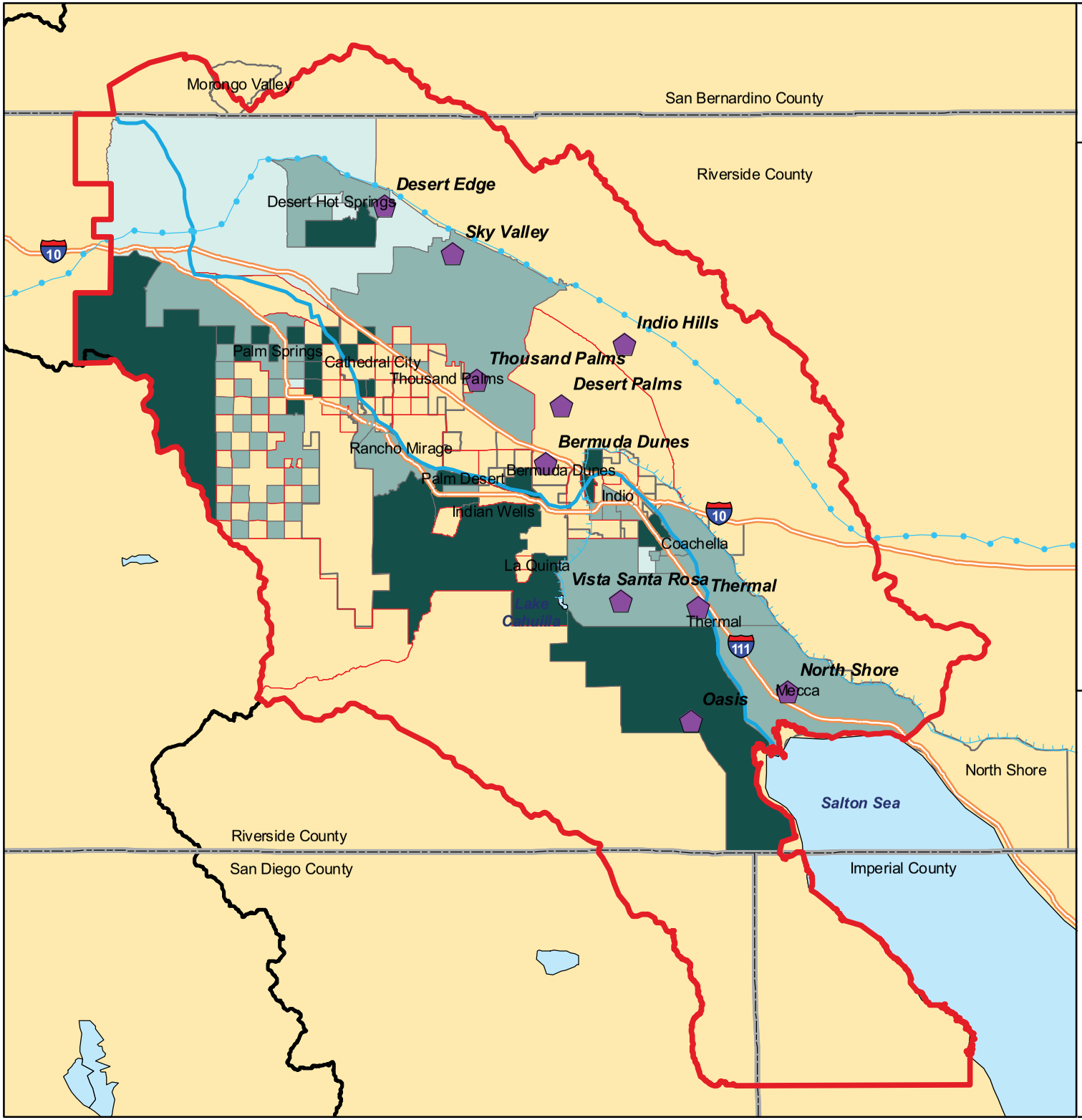
Many communities within the East Valley are dependent on on-site drinking water wells that are reported as having elevated arsenic levels. Moreover, these communities pay relatively high rates for their groundwater supply, and in many instances must travel long distances to purchase alternative bottled water. Lack of transportation creates an additional barrier to purchase of bottled water. Some DAC areas within the Coachella Valley contain remote or difficult to serve areas that are not within the path of development or close to municipal services for water and wastewater service. These communities have special difficulties in affordability of water-related services.

The STAT project is comprised of several DAC pockets within the East Valley, as shown in Figure 12-2. These DACs are predominantly made up of farm workers living in mobile home parks. These DACs receive their drinking water from wells that have consistently tested high in arsenic, a known carcinogen. The water quality, aside from the arsenic is good. The DACs are currently in need of reliable quality drinking water for the residents of the area.

Proposed Project and Targeted Benefits to the DAC

The STAT project proposes point-of-entry and point-of-use reverse osmosis (RO) treatment to deliver the community with reliable quality drinking water. The project would consist of the construction and implementation of five point-of-entry RO systems and 280 point-of-use RO systems installed under the kitchen sinks of a participant's mobile home. Studies have shown the RO can be up to 95 percent effective in the removal of arsenic from water. Additionally, the STAT project includes a comprehensive outreach and training program to ensure public awareness and education. The STAT will require ongoing monitoring to ensure proper operation of the systems. Each mobile home park will have its own water quality monitoring program and will sustain its own operational budget and maintenance. The benefit to the DAC is a reliable source of drinking water for their community and education and job training in water management operations. The DACs that will benefit from this project may lie within the Torres Martinez Desert Cahuilla Indian reservation.

No environmental justice issues or substantial environmental impacts (beyond minimal temporary construction-related impacts) are anticipated to result from the STAT project.



Disadvantaged Communities (Claritas Data)

Figure 12-1

- Community Councils
- Colorado River Aqueduct
- Coachella and All American Canals
- Whitewater River Stormwater Channel
- Interstate Hwys.
- Lakes
- City or Unincorporated Community
- Coachella Valley IRWM Region
- Colorado River Funding Area
- County Lines

Median Household Income (2010)

- $0 - $30,000
- $30,000 - $40,000
- $40,000 - $49,921
- >$49,921

Statewide median household invome (MHI) in year 2010 was $62,401. Disadvantaged communities are considered those who earned less than $49,921 (80% Statewide MHI)
Source: Nielsen Claritas 2010

N
W E
S

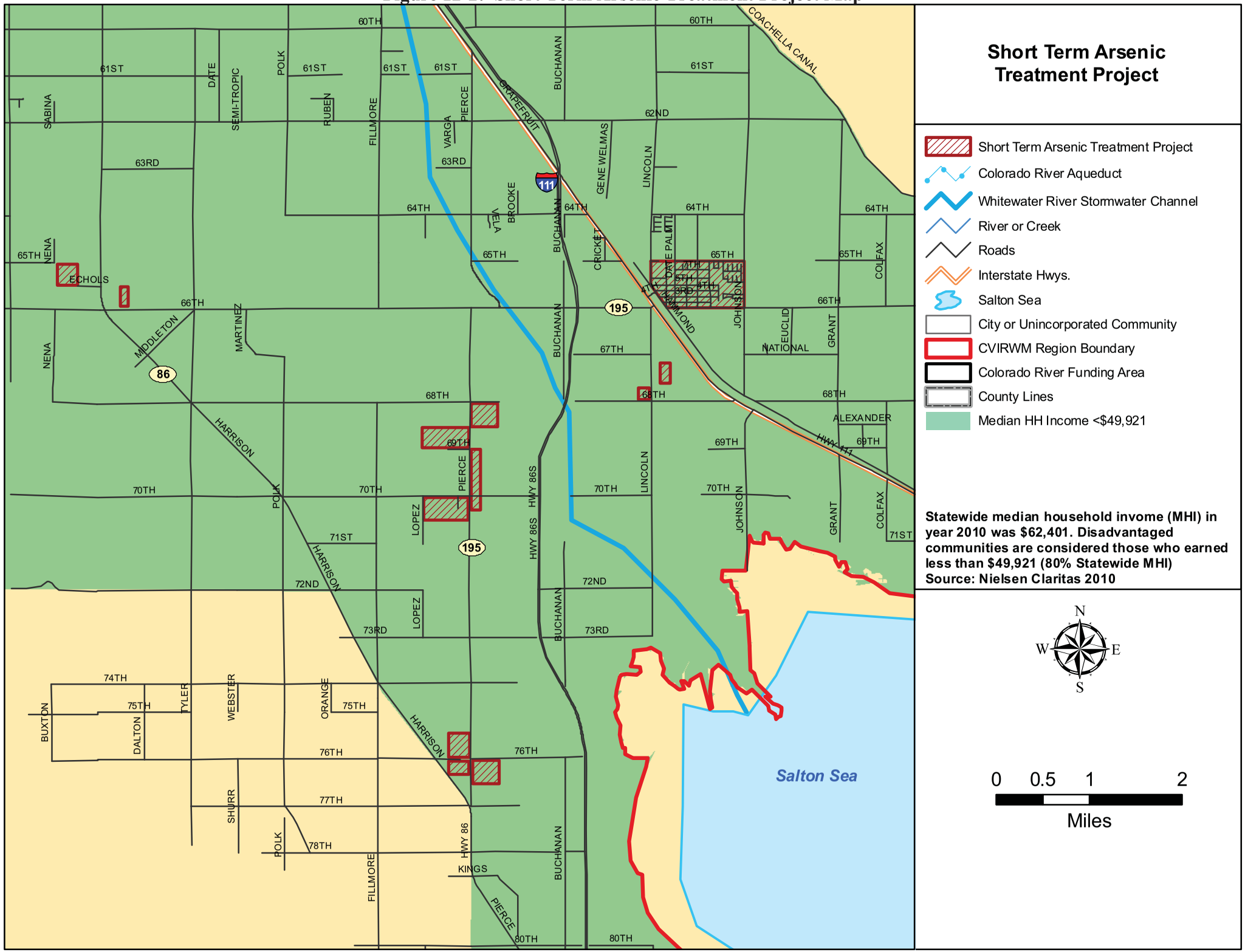
0 2.5 5 10

Miles

COACHELLA VALLEY IRWMP

File Name: Att12_Fig 12-1_DACs.mxd
File Location: L:\Projects GIS\0264-001_CoachellaIRWMP\mxds\
Date Updated: December 2010
Made By: EMC
Department: RMC Water & Environment

Figure 12-2: Short Term Arsenic Treatment Project Map



DAC Representation and Participation

The goal of DAC outreach is to identify and obtain input from groups that may be otherwise unable or deterred from participating in the IRWM planning and implementation efforts due to financial and other constraints. Through targeted outreach, the CVRWMG seeks to learn more about the major water-related concerns facing these groups such that long-term implementation of the IRWM Plan is responsive to those needs. This effort builds upon the work conducted by the Disadvantaged Community Planning Group, established in 2007 to track the progress of DAC programs under Proposition 84.

Typical communities targeted as part of the DAC and environmental justice (EJ) outreach are groups that have historically been disproportionately impacted with respect to the development, implementation, or enforcement of environmental laws, regulations, and policies due to race, culture, or income. The following is a list of outreach activities employed to engage DACs within the region:

DAC/EJ Outreach Meetings

During development of the 2010 Coachella Valley IRWM Plan, the CVRWMG hosted three meetings with DAC/EJ members (described below) to better understand their critical water supply and water quality needs and to identify potential solutions. Initial meetings focused on bringing any groups that were not involved in the earlier efforts up to speed and informing all groups about recent activities and opportunities. Subsequent meetings expanded the methods of outreach in DAC/EJ communities, updated those groups which may not be able to attend or participate in broader Planning Partners meetings, and developed IRWM planning efforts to meet the needs of each community.

Meetings may be held at times convenient for DAC/EJ representatives (recognizing that this may include evenings and/or weekends) and in different geographic locations within the Region. Meeting preparation included public meeting notices and invitations, development and distribution of presentations, meeting handouts and minutes, and coordination of speakers/presenters.

DAC Issues Group

DAC needs and issues were identified as special and different than other groups at the initiation of IRWM planning efforts. The DAC Issues Group held their first meeting in May 2010, with two subsequent meetings in July and September 2010. Table 12-1 indicates the principal participants who were represented in meetings. The meetings were facilitated and technical assistance provided by the CVRWMG.

Table 12-1: DAC Issues Group Participants

Name	Organization
Anna Lisa Vargas*	Poder Popular
Betty Leehan	Desert Edge Community Council
Cindy Nance*	Desert Edge Community Council
Debbie Davis*	Environmental Justice Coalition for Water
Ed Houser	Desert Edge Community Council
Elanor Dullen	Desert Edge Community Council
Jeff Hays*	Desert Alliance for Community Empowerment
Jennifer Clary	Clean Water Action
Jennifer Hernandez	California Rural Legal Assistance Foundation
Jose Huerta	Poder Popular
Laurel Firestone	Community Water Center
Martha Guzman Aceves	California Rural Legal Assistance Foundation
Megan Beaman Carlson*	California Rural Legal Assistance Foundation
Miriam Torres*	Environmental Justice Coalition for Water
Rita Sonnenberg	Desert Edge Community Council
Sergio Carranza*	Pueblo Unido CDC
Yvonna Cazares*	Environmental Justice Coalition for Water

*These DAC Issues Group participants are also Planning Partners.

Several DAC representatives were also invited to the Planning Partners to support Plan development. DAC Issues Group meetings will continue to be held as needed to assist the DACs in project development and Plan implementation.

A brief discussion of the results of the DACs Issues Group meetings are as follows:

- **May 2010 Meeting.** The group received an overview of the state's IRWM program, upcoming Prop 84 funding opportunities and the activities considered relevant to IRWM planning. They were also updated on water-related issues identified to date, including water supply, water quality, wastewater, and flooding, through a review of local water management plans and studies. These issues include the arsenic issues in the East Valley groundwater supply. The group was also provided with as summary of the proposed stakeholder and public outreach strategy, including the DAC Outreach Demonstration Program proposal that had been submitted to DWR for additional funding.
- **July 2010 Meeting.** The group was provided an update on the IRWP program and the Prop 84 funding opportunities. The call for projects timeline was reviewed and the importance of submittal emphasized. Support was raised for a project addressing critical drinking water needs in East Valley, particularly the arsenic contamination issue. Recommendations were made that a couple members of the DACs Issues Group attend the Planning Partners group meetings as DAC representatives—the group agreed. Finally, an updated was given on the DAC Outreach Demonstration Program and the goals of the program presented.
- **September 2010 Meeting.** An updated was given on the IRWM program schedule, including the DAC Outreach Demonstration Program, which was still undergoing review by DWR's legal team. The group received an overview of the ranked Prop 84's project list. The STAT project was discussed specifically with Pueblo Unido explaining the details of the project to the group.

Notices and Newsletters

CVRWMG staff worked with community leaders to identify appropriate methods for notifying members of DAC/EJ communities of the current state of the Valley's water-related resources, the IRWM program, and solutions being generated to address their needs. These methods included techniques such as notices at community gathering sites, multi-lingual newsletters, mailings, phone surveys, door-to-door surveys, and public meetings within the communities. The focus of these efforts was to identify the critical needs of the targeted communities. Once identified, these critical needs were translated into long-term targets for the IRWM Plan. In addition, one-on-one communication between representatives from DACs and the CVRWMG were used to encourage participation in IRWM public meetings.

CVRWMG Coordination

Several CVRWMG partner(s) were identified as the liaison with DAC/EJ organizations, so it is clear how coordination and communication would occur. Additionally, several DAC representatives were also invited to the Planning Partners to support Plan development and project selection.

DAC Outreach Demonstration Program

The CVRWMG identified the opportunity for more comprehensive efforts relating to DAC outreach and submitted a DAC Outreach Demonstration Program proposal to DWR for potential funding. If funding is approved, the following additional goals will be achieved as part of the DAC Outreach effort:

- Development of a DAC Community Planning Group to represent one of the Issues Groups;
- At least five (5) DAC Workshops addressing specific community needs;
- Coordination with Community Leaders;
- Flood Control Mapping in DAC Areas;
- Preparation of a DAC IRWM Plan Element;
- DAC Outreach Demonstration Project White Paper.

Correspondence

Several DAC or EJ communities had direct connection with a CVRWMG partner and consultants. Communication was conducted mainly via telephone and email; however, office and field site visits were also arranged as needed. Through one-on-one communication, the CVRWMG encouraged participation by DAC representatives in IRWM public meetings.

Letters of Support

The following letters of support were submitted by agencies and organizations representing DACs in the Coachella Valley region.

- California Rural Legal Assistance Migrant Farmworker Project, Coachella Regional Office (dated November 16, 2010)

CALIFORNIA RURAL LEGAL ASSISTANCE, INC.

MIGRANT FARMWORKER PROJECT, Coachella Regional Office

LSC

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Coachella, CA 92236
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José R. Padilla
Executive Director
Luis C. Jaramillo
Deputy Director
Ralph Santiago Abascal
General Counsel
(1934-1997)

William G. Hoerger
Ilene J. Jacobs
Michael Meuter
Cynthia Rice
Directors of Litigation, Advocacy, and Training

OTHER REGIONAL OFFICES

Arvin	(661) 854-5993
Delano	(805) 725-4350
El Centro	(760) 353-0220
Fresno	(559) 441-8721
Gilroy	(831) 847-1408
Madera	(209) 674-5671
Marysville	(530) 742-5191
Modesto	(209) 577-3811
Monterey	(831) 375-0505
Oceanside	(760) 966-0511
Oxnard (Migrant)	(805) 486-1068
Oxnard (Basic)	(805) 483-8083
Paso Robles	(805) 239-3708
Salinas	(831) 757-5221
San Luis Obispo	(805) 544-7997
Santa Barbara	(805) 963-5981
Santa Cruz	(831) 458-1089
Santa Maria	(805) 922-4563
Santa Rosa	(707) 528-9941
Stockton	(209) 946-0605
Watsonville	(831) 724-2253

November 16, 2010

Coachella Valley Regional Water Management Group
C/O Patti Reyes, Coachella Valley Water District
85-995 Avenue 52
P.O. Box 1058
Coachella, CA 92236

RE: Support for Eastern Coachella Valley Short-Term Arsenic Treatment Program/Project

Dear Ms. Reyes and Water Management Group Representatives:

California Rural Legal Assistance, Inc. ("CRLA") is a non-profit legal services corporation providing free legal assistance to many low-income Coachella Valley residents as well as rural low-income Californians around the state. We have extensive historical roots in Coachella Valley's farmworker and mobilehome communities (which are largely one and the same) and have advocated on a very broad array of issues facing them. As you know, we are also a member of the DAC group and Planning Partners teams for the Coachella Valley IRWMP. The purpose of this letter is to extend our support for the Eastern Coachella Valley Short-Term Arsenic Treatment Program/Project proposed by Pueblo Unido Community Development Corporation through the Coachella Valley Integrated Regional Water Management Plan.

Thousands of low-income and largely farmworker families live in mobilehome parks throughout the eastern Coachella Valley. The great majority of those mobilehome parks were constructed without proper infrastructure and do not meet other building standards. In those parks, water is frequently provided by means of a private on-site well, which is owned and operated by the mobilehome park's owners. In many regions, the water flowing from those private wells is contaminated with naturally-occurring arsenic. Many or most East Valley park owners do not have the traditional business resources one would expect to see in the context of a residential housing development and are not able to invest in the tools necessary to provide clean potable water to their residents.

The practical result of this scenario is a severe shortage of potable drinking water for East Valley residents, all of whom are low-income, and most of whom are farmworkers. For this reason, the Short-Term Arsenic Treatment Project proposed by Pueblo Unido Community Development Corporation is an absolutely imperative step toward the provision of potable water to Coachella Valley residents. It is without reservation that CRLA supports this proposal.

Sincerely,

Megan Beaman Carlson

Attachment

13

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

AB 1420 and Water Meter Compliance

Attachment 13 consists of the following items:

- ✓ **AB 1420 Self Certification Forms**

  CVWD and MSWD are both urban water suppliers that would receive grant funding, and have therefore completed and submitted AB 1420 Self-Certification Tables 1 and 2.

- ✓ **Water Meter Compliance Forms**

  CVWD and MSWD are both urban water suppliers that would receive grant funding, and have therefore completed and submitted the Water Meter Compliance forms.

As defined in the *IRWM Grant Program Guidelines*, all urban water suppliers must provided the required documentation of compliance with AB 1420 (CWC §10631.5) and water meter implementation (CWC §525 *et seq*.).

AB 1420 Self Certification Forms

AB 1420 conditions the receipt of IRWM grant funds on implementation of demand management measures in compliance with CWC §10631. There are two urban water suppliers included in this grant proposal which must also comply with AB 1420 requirements: CVWD and MSWD. CVWD submitted AB 1420 self certification forms to DWR with the recent *Coachella Valley IRWM Planning Grant Proposal.* DWR has responded with a confirmation letter that CVWD is incompliance with AB 1420 and is eligible for state grants and loans (Appendix 13-1).

One original hard copy of the AB 1420 Self Certification form for MSWD was submitted in a separate envelope, and an electronic version of this form is available in Appendix 13-2.

Water Meter Compliance Forms

CWC §529.5 requires urban water suppliers applying for IRWM grant funds to demonstrate that they meet the State's water meter requirements. There are two urban water suppliers included in this grant proposal which must also comply with Water Meter requirements: CVWD and MSWD. DWR has responded with a confirmation letter that CVWD is incompliance with water meter compliance regulations and is eligible for state grants and loans (Appendix 13-1).

One original hard copy of the AB Water Meter Compliance form for MSWD was submitted in a separate envelope, and an electronic version of this form is available as Appendix 13-2.

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

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

File: 0541.65
0644.105.1

c/n/c SRobbins
JBarrett
PReyes

November 9, 2010

Mr. Steve Robbins
General Manager-Chief Engineer
Coachella Valley Water District
Post Office Box 1058
85-995 Avenue 52
Coachella, California 92236

Dear Mr. Robbins:

The Department of Water Resources (DWR) has reviewed the Coachella Valley Water District 's (CVWD) Self-Certification Statement – Table 1 dated September 20, 2010, regarding implementation of the Urban Best Management Practices (BMPs).

The purpose of DWR's review is to determine eligibility of CVWD to receive water management grant or loan funds. DWR has followed the *Draft AB 1420 Compliance Requirements* dated June 1, 2009. For detailed information, please visit http://www.water.ca.gov/wateruseefficiency/finance/.

Based on DWR's review of the information in Table 1, CVWD has and is currently implementing the BMPs consistent with AB 1420 and, therefore, is eligible to receive water management grant or loan funds.

DWR reserves the right to request additional information and documentation, including reports from CVWD to substantiate the accuracy of the information provided in Table 1. DWR may reverse or modify its eligibility determination and notify you and the funding agency if inaccuracies are found in the supporting documentation or in Table 1.

If you have any questions, please contact me at (916) 651-7025 or Jodi Evans at (916) 651-7026.

Sincerely,

Fethi BenJemaa
Ag Water Use Efficiency Section Chief

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: Department of Water Resources

Funding Program name: Prop 84 Implementation Grant

Applicant (Agency name): Mission Springs Water District

Project Title (as shown on application form): Groundwater Quality Protection Project - Mission Springs Water District

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.

Arden Wallum
Name of Authorized Representative (Please print)

Signature

General Manager
Title

12/27/2010
Date

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 Statement Table 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, the Funding 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__ Arden Wallum General Manager 27-Dec-10

Application Date:

Proposal Identification Number: Coachella Valley CUWCC Member? Yes/No: NO

Has Urban Water Supplier submitted a 2005 Urban Water Management Plan? Yes/No: Yes Is the UWM Plan Deemed Complete by DWR? Yes/No: Yes

Applicant Name: Mission Springs Water District

Project Title:

Applicant's Contact Information: Name: Marilyn McKay Phone: 760/329-5169 E-mail: MMcKay@MSWD.org

Participants:

Retailer (List Below)	*Wholesaler (List Below)*
Mission Springs Water District	

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			✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes			
	✓	BMP 2 Residential Plumbing Retrofit	Yes			✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes			
✓	✓	BMP 3 System Water Audits, Leak Detection	Yes			✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes			
✓	✓	BMP 3 Leak Repairs	Yes			✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	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 4 Metering with Commodity Rates for All New connections		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
	✓	BMP 4 Retrofit of Existing Connections		N/A					N/A									All metered	Yes
	✓	BMP 5 Large Landscape Conservation Programs and Incentives		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
	✓	BMP 6 High-Efficiency Washing Machine Rebate Programs		Exempt							✓	✓						Alternate compliance will be documented in 2010 UWMP Update	No
✓	✓	BMP 7 Public Information		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
✓	✓	BMP 8 School Education		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
	✓	BMP 9 Conservation programs for Commercial, Industrial, and Institutional (CII) Accounts		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
✓		BMP 10 Wholesale Agency Assistance Programs		N/A										✓				Not applicable	
	✓	BMP 11 Conservation Pricing		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
✓	✓	BMP 12 Conservation Coordinator		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
	✓	BMP 13 Water Waste Prohibitions		Yes					✓									Reported in 2005 UWMP and will be updated in 2010 UWMP Update	Yes
	✓	BMP 14 Residential ULFT Replacement Programs		Exempt							✓	✓						Alternate compliance will be documented in 2010 UWMP Update	No

***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.

Attachment

14

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Consent Form

Attachment 14 is not applicable to the *Coachella Valley IRWM Implementation Grant Proposal*, because the Coachella Valley IRWM Plan was not adopted on or before September 30, 2008. The Coachella Valley IRWM Plan, adopted by all five CVRWMG partners and several project sponsors in December 2010, is included in Appendix 1-4 (refer to Attachment 1).

Attachment 15

Coachella Valley Integrated Regional Water Management Implementation Grant Proposal

Reduce Delta Water Dependence

Attachment 15 consists of the following items:

- ✓ **Summary of IRWM Plan Relating to Reducing Delta Water Dependence**

  This attachment contains information describing how the Coachella Valley IRWM Plan will reduce future additional dependence on the Sacramento-San Joaquin Delta (Delta) for water supply.

- ✓ **Assurances that IRWM Plan Update Will Continue Reducing Delta Water Dependence**

  The CVRWMG is committed to implementation and revision of the IRWM Plan in ways that continue to reduce dependence on the Sacramento-San Joaquin Delta.

This attachment summarizes the portions of the Coachella Valley IRWM Plan that address reduced dependence on future additional supplies from the Sacramento-San Joaquin Delta and documents relevant Plan excerpts to support this summary.

Summary of IRWM Plan Relating to Reducing Delta Water Dependence

The Coachella Valley IRWM Plan addresses reduced water supply dependence on the Sacramento-San Joaquin Delta water in four areas:

1) IRWM Plan Objectives (Chapter 4);
2) considering desalination as a means to increase local water supply (Chapter 6);
3) adapting resource management strategies to climate change (Chapter 6); and
4) IRWM Plan regional priority of addressing reduced supply reliability (Chapter 7).

Each of these four areas is described below with Plan excerpts provided for support and documentation.

IRWM Plan Objectives Relating to Reducing Delta Water Dependence

The IRWM Plan Objectives function as a means to accomplish the five regional IRWM Plan goals. Subsequently, projects to be included in the IRWM Plan were evaluated based on their ability to comply with and achieve the objectives and goals set out by the Plan. The Plan contains four objectives that explicitly relate to reducing dependence on the Sacramento-San Joaquin Delta for water supply—Objectives 1, 3, 4 and 9—as listed in *Chapter 4: Objectives*.

Chapter 4: Objectives, Section 4.1.1 Determining Objectives (page 4-3 to 4-5)

Objective 1: Provide reliable water supply for residential and commercial, agricultural community, and tourism needs.

The focus of this objective is to meet the requirements of Goal 1 (optimize local water supply reliability). The Valley's 448,000 residents and $576M agricultural economy are both dependant on a reliable water supply. Additionally, regional growth forecasts project that water demands within the region are expected to increase despite conservation efforts (see Figure 3-1 in *Chapter 3 Issues*

and Needs, Section 3.1 Demand). Adequate water supplies must be identified for all sectors of the Valley economy, including residential and commercial, agricultural, and tourism needs. Emphasizing local solutions that increase reliability would potentially reduce future additional demand for imported water supply from the Sacramento-San Joaquin Delta by encouraging development of other, more reliable sources of water.

Objective 3: Secure reliable imported water supply, including restoring/improving reliability of State Water Project supply and securing other imported water supplies.

The focus of this objective is to meet the requirements of Goal 1 (optimize local water supply reliability). As documented in the *California Water Plan 2009 Update* (DWR 2009), water allocation, environmental, and hydrologic constraints present significant challenges to the sustainability of historic State Water Project and Colorado River supplies, particularly during long-term droughts. In order to serve projected growth while limiting groundwater overdraft, new or expanded imported water supplies must be secured for the Coachella Valley. This objective aims at securing reliable (non-SWP) imported water supplies and/or encouraging the Region to engage in water transfers that would potentially reduce Sacramento-San Joaquin Delta dependence. For example, collaboration with coastal water purveyors could potentially provide a new source of ocean desalinated water and reduce the region's future dependence on SWP supplies.

Objective 4: Maximize local supply opportunities, including water conservation, water recycling and source substitution, and capture and infiltration of runoff.

The focus of this objective is to meet the requirements of Goal 1 (optimize local water supply reliability). Diversification of regional water portfolios is a key element of this IRWM Plan. Water conservation (reducing water demand and use) is the Valley's most cost effective option and is therefore a central component of the region's diversification program. In order to meet the State's 20x2020 Water Conservation Plan (February 2010) goals for the Colorado River Funding Area…all five local water purveyors are implementing water conservation measures. The CVRWMG agencies are also focusing on expansion of recycled water systems, source substitution, desalination of agricultural drain water, and stormwater capture and reuse. Maximizing local supply opportunities is the primary climate change adaptation strategy being employed by the CVRWMG. Source substitution will also help the CVRWMG mitigate potential climate change by reducing energy consumption, especially the energy embedded in water use, and ultimately reduce GHG emissions. Increasing local supply opportunities would also potentially reduce the need for future additional imported water supply from the Sacramento-San Joaquin Delta.

Objective 9: Optimize conjunctive use of available water resources.

The focus of this objective is to meet the requirements of Goal 4 (coordinate and integrate water resource management). Conjunctive use involves closer coordination between imported surface water supply and other supply sources, including groundwater, recycled water, stormwater, and flood flows. Optimizing conjunctive use will contribute to meeting future water demands, while combating challenges associated with supply unreliability and/or climate change. Optimizing conjunctive use will also contribute to possible climate change adaptation by more efficiently managing water supply and, therefore, reducing associated energy use and GHG emissions. In addition, by improving efficiency through conjunctive use, the Region could potentially reduce future additional demand for imported water from the Sacramento- San Joaquin Delta.

Desalination as a Means to Reduce Delta Water Dependence

Chapter 6: Resource Management Strategies of the IRWM Plan provides a comprehensive range of resource management strategies considered to achieve the goals and objectives of the IRWM Plan, and provides examples of how the Region is currently implementing these strategies. One of the strategies used to increase local water supply to the region is desalination. Desalination would provide a reliable, long-term local water supply, thus reducing dependence on imported supplies, including those from the Sacramento-San Joaquin Delta.

Chapter 6: Resource Management Strategies, Section 6.4.3 Increase Water Supply (page 6-14)

Desalination

Desalination has been identified as a potential solution for increasing water supplies and reducing groundwater overdraft for the Coachella Valley IRWM region. However, desalination requires complicated technologies and is a high energy consuming technology. Desalination offers many potential benefits including: increases water supply and reliability during drought periods, reduced dependency on imported supplies by developing a local supply source, protection of public health, and facilitates more recycling and reuse, given the lower salinity of the source.

Several recommendations identified by the *California Water Plan Update 2009* to facilitate desalination strategies include:

- Desalination projects should be given the same funding opportunities as other water supply and reliability projects,
- Ensure most economical and environmentally appropriate desalination technology is utilized,
- Project sponsors need to ensure planning of desalination projects is a collaborative process that engages key stakeholders, the general public, and permitting agencies.

Coachella Valley Efforts

Desalination strategies being considered by the Coachella Valley IRWM region are listed below.

- **CVWD Desalination Pilot Project**. CVWD recently received a grant from DWR's Proposition 50 Water Desalination Proposal. The proposal requested funds for a pilot desalination project to compare reverse osmosis with solar still "dewvaporation" of agricultural drainage runoff within the Coachella Valley. CVWD will receive $596,000 from the program and will match the same for a total pilot project cost of approximately $1.2 million. The plan is to have 11,000 AFY of agriculture drain water be desalted.

Adapting Resource Management Strategies to Climate Change and Reduce Delta Water Dependence

Climate change in California could potentially present uncertainties relating to the availability of Sacramento-San Joaquin Delta water supply for Southern California (including the Coachella Valley). As a result, the Region is looking to implement management practices that would reduce dependence on Delta water supply, also presented in *Chapter 6: Resource Management Strategies.*

Chapter 6: Resource Management Strategies, Section 6.5: Adapting Resource Management Strategies to Climate Change (page 6-34)

Adapting Resource Management Strategies to Climate Change

The variability of location, timing, amount, and form of precipitation in California, suggested as a result of climate change, could present some uncertainty to the availability of future SWP's delivery capabilities and future SWP deliveries. DWR has determined that the Sierra snowmelt is shrinking and that melting is occurring earlier, shifting runoff from the spring further into the winter and causing winter flooding. Changes in precipitation pattern and quantity throughout the Southwest may also impact potential water supply availability from the Colorado River. Concerns about climate uncertainty have resulted in the need to adapt existing flood management and water supply systems in response to changing conditions.

The *2009 SWP Delivery Reliability Report* (DWR 2009) is intended to help local agencies, cities, and counties that use SWP water to develop adequate and affordable water supplies for their communities now and in the future. The information provided in this report can be used by local agencies in preparing or amending their water management plans and identifying the new facilities or programs that may be necessary to meet future water demands. A new feature of the *2009 SWP Delivery Reliability Report* is the estimation of possible reduction of SWP delivery reliability due to future climate changes and sea level rises. As vulnerability tools and assessments are developed, additional adaptation strategies will be identified to address the potential region-specific impacts of climate change.

Achievable "no regret" management practices for tackling climate change concerns that Coachella Valley can employ include:

- continued investment in local water conservation;
- diversification of local water supply portfolio;
- practicing integrated flood management;
- increasing conjunctive use of available water supplies;
- protecting and restoring water-related ecosystems;
- increasing water reuse and recycling;
- monitoring local and regional activities;
- tracking related legislation;
- investigating water supply/energy relationships and coordinating with larger water utilities; and
- following the State's required adaptation strategies and legislation.

In order to further address these predictions, the region may attempt to incorporate some of the strategies outlined in the *2009 California Climate Adaption Strategy Handbook* (CNRA 2009). The document summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats.

The *2009 California Climate Adaption Strategy Handbook* defines climate change adaptation as adjustments to the natural or human systems due to actual or expected climate changes in an effort to minimize harm or take advantage of beneficial opportunities (CNRA 2009), while climate change mitigation aims at directly reducing the sources of climate change, such as GHGs. To effectively address the impacts of climate change, both climate change adaptation and mitigation strategies should complement each other.

RMS that are implemented to manage water resources can also address climate change adaptation and/or mitigation. Table 6-3 was extracted from the *California Water Plan Update 2009*; it categorizes resource management strategies and identifies GHG reduction opportunities associated with each RMS.

Finally, project-level CEQA analysis will include detailed climate change analysis, including generation and mitigation of GHG emissions. In preparing project-level GHG emissions analysis, project proponents should estimate GHG emissions from the project; establish significance criteria; identify those project components that may support carbon sequestration; and, if applicable, explain how the project may help in adapting to potential effects of climate change. Further, DWR will be a responsible agency for such project-level CEQA analysis, and project proponents shall follow the guidelines established by DWR with respect to project-level GHG analysis.

Water Conservation to Reduce Delta Water Dependence

The CVRWMG understands the issues affecting future supply reliability from the Delta, thus they are strongly encouraging water conservation and source substitution to reduce Delta water dependence, as emphasized in the Regional Priorities section of *Chapter 7: Project Evaluation and Prioritization*.

Chapter 7: Project Evaluation and Prioritization, Section 7.1 Regional Priorities (page 7-2)

Priority 6: Address Reduced Reliability

Developing a better understanding of the State's SWP priorities and issues affecting reliability will help the Region coordinate its efforts and resources towards improving future supply reliability. In the meantime, the CVRWMG is committed to encouraging water conservation and source substitution projects to reduce demand on the imported water supply. For example, the CVRWMG recognizes the importance of expanding the region's recycled water systems to offset potable water demand. With this emphasis on water conservation and recycling, the CVRWMG will implement DWR's Statewide Priority "Drought Preparedness" within the Valley. The Region's *Proposition 84-Round 1 Implementation Grant Proposal* includes a regional water conservation program to address the potential for reduced reliability and to achieve compliance with the State's 20x2020 Plan.

Assurances that IRWM Plan Update Will Continue Reducing Delta Water Dependence

The CVRWMG is committed to updating the Plan within two years of execution of the Implementation Grant Agreement (estimated June 1, 2011) if the grant is funded. The update will refine all requirements of the IRWM Plan Standards contained within the 2010 IRWM Grant Program Guidelines (refer to Attachment 14). Revisions and updates to the IRWM Plan are expected as part of the IRWM planning process, as described within *Chapter 5: Stakeholder Involvement*. As such, the CVRWMG anticipates updating the Coachella Valley IRWM Plan by June 1, 2013. The Coachella Valley, due to its current dependence on the Sacramento-San Joaquin Delta for water supply, has a vested interest in reducing future water demand, increasing local water supply, and increasing other reliable (non-Delta) water supply sources for future water use. Due to an increasing importance of these issues involving water supply availability and reliability in the Delta, the IRWM Plan update will include an increased emphasis on helping to reduce Coachella Valley's future additional dependence on the Sacramento-San Joaquin Delta for water supply.