Upper Santa Clara River
Integrated Regional Water Management Plan

Proposition 84 Round 2
Implementation Grant Application

March 2013

Prepared by:
Kennedy/Jenks Consultants
Engineers & Scientists

Authorizing Documentation

Attached (Att1_IG2_Eligible_2 of 5) is the resolution adopted on February 27, 2013 by the Castaic Lake Water Agency Board of Directors authorizing the General Manager, or designee, to submit a Proposition 84 Round 2 Integrated Regional Water Management (IRWM) Implementation Grant proposal with the California Department of Water Resources.

Eligible Applicant Documentation

1. *Is the applicant a local public agency as defined in Appendix B of the 2012 Guidelines? Please explain.*

Yes. The applicant for the Integrated Regional Water Management Implementation Grant is the Castaic Lake Water Agency (CLWA). CLWA is a public agency, as defined in Appendix B of the Guidelines, which is defined as any city, county, city and county, special district, joint powers authority, or other political subdivision of the State, a public utility as defined in Sections 216 of the Public Utilities Code, or a mutual water company as defined in Section 2725 of the Public Utilities Code (California Water Code § Section 10535). The CLWA is a public agency formed and established by the California State Legislature in 1962 for the principal purpose of providing imported Northern California water for use within and adjacent to the Santa Clarita Valley (refer CWC Appendix § Section 103).

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

Applicant was formed and is authorized to operate pursuant to California Water Code Appendix, Chapter 103 adopted in 1962.

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

Yes. The CLWA has the legal authority to enter into a grant agreement as cited in the February 27, 2013 resolution, which is attached (Att1_IG2_Eligible_2 of 5). The resolution authorizes the CLWA to file an application for a Round 2 Proposition 84 IRWM Implementation Grant, designates the CLWA as the authorized representative to file the application with the California Department of Water Resources and authorizes CLWA to execute an agreement with the State of California for an IRWM Implementation Grant.

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

CLWA may enter into an agreement with an outside entity to assist with grant administration functions. Such an agreement would be prepared upon award of the Proposition 84 funds to ensure performance of the proposal and the tracking of funds. Should CLWA enter into a grant agreement with the State, the scope of work contained herein will become a requirement and will be submitted along with other items required by the grant contract.

Also, per the IRWM Plan 2012 Guidelines, a Regional Water Management Group (RWMP) is defined as a *group in which three or more local agencies, at least two of which have statutory authority over water supply or water management,… participate by means of a joint powers agreement, Memorandum of Understanding (MOU), or other written agreement, as appropriate, that is approved by the governing bodies of those local agencies.* The members of the RWMG include all the proponents applying for funds within this grant application and include: (1) Castaic Lake Water Agency, (2) Santa Clarita Water Division of Castaic Lake Water Agency, (3) Newhall County Water District, (4) Santa Clarita Valley Sanitation District of Los Angeles County, and (5) City of Santa Clarita.

Groundwater Compliance

The projects being proposed in this grant application will enhance the reliability of existing supplies within the Santa Clarita Valley by reducing water demand and increasing water supply and improves water quality. None of the projects proposed in this application will have a direct impact on the underlying groundwater within the basin.

However, because they will enhance the overall reliability of the region's local supplies, an indirect benefit of reduced reliance on the resource will be demonstrated. Table 1-1 shows the potential indirect impact these projects may have to the underlying groundwater.

CLWA prepared a groundwater management plan in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area.

The general contents of CLWA's groundwater management plan (GWMP) were outlined in 2002, and a detailed plan was drafted and adopted in 2003. A copy of the GWMP is provided as (Att1_IG2_Eligible_3of5).

TABLE 1-1: GWMP COMPLIANCE

Proposal Projects	Potential Groundwater Impact (positive or negative and justification)
Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)	Positive, project reduces demand, thereby decreasing the SCV's dependence on groundwater, allowing for better conjunctive use of the groundwater basin.
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)	Positive, project reduces demand, thereby decreasing the SCV's dependence on groundwater, allowing for better conjunctive use of the groundwater basin.
Foothill Feeder Connection (CLWA-8)	Positive, project creates flexibility in conveying water supply, decreasing dependence on groundwater.
Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)	Positive, project improves the water quality of potable water and ultimately reclaimed water effluent discharged to groundwater.
Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)	Positive, project improves the water quality of reclaimed water effluent discharged to groundwater.
Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1)	Positive, project increases reliability of groundwater resource by protecting the recharge area, replacing high water use non-native plants with natives and improves the water quality.

Progress on Meeting Current IRWM Plan Standards

The USCR IRWM Plan is in the process of being updated and completion is anticipated no later than late 2013. The following is a demonstration of how the USCR IRWM Region will adopt an IRWM Plan that meets the IRWM Plan Standards contained in Appendix C of the 2012 Guidelines, based on Table 1 of the IRWM Grant Program Proposal Solicitation Package for Round 2.

The following subsections identify, by Proposition 84 Standard, a status update as to where the IRWM Plan stands in terms of compliance with each of the sixteen separate standards and indicates where more work is necessary or where modification of the IRWM Plan is desired.

Governance

Will the governance structure need to be altered in the Updated IRWM Plan in order to ensure that balanced access and opportunity for participation in the IRWM effort is provided?

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013).

Update

The RWMG governance structure is based on an intention to ensure balanced representation across the IRWM Plan's three main regional objectives (i.e., water supply, water quality, and resources stewardship), as well as geographic diversity across the Region. The RWMG has the participation of at least three public agencies, two of which have statutory authority over water management. The members of the RWMG are Castaic Lake Water Agency, Santa Clarita Water Division of Castaic Lake Water Agency, Los Angeles County Flood Control District, Newhall County Water District, Santa Clarita Valley Sanitation District of Los Angeles County, City of Santa Clarita, Valencia Water Company, and the San Gabriel and Lower Los Angeles San Gabriel Rivers and Mountains Conservancy. The RWMG's governance structure involves cooperation from the public, stakeholders, project proponents, and RWMG members. In general, the RWMG monitors IRWM Plan requirements/developments, and makes administrative decisions (including managing the grant application/administration process, paying for consultant(s), and preparing stakeholder agendas/meeting materials). Broader decisions that are needed (such as nominating RWMG members, making any required changes to the Plan necessary to meet funding guidelines, and updating the IRWM Plan) are brought to the stakeholders, and a decision is sought through a collaborative process, with stakeholders voting on the decision if needed. Through the IRWM Plan process, entities have built working relationships that guide ongoing IRWM Plan planning and implementation. Additionally, the governance structure for the Upper Santa Clara River IRWM Plan is designed to encourage regional participation and to accept project proposals on an ongoing basis.

Regional Description

Has the regional description changed significantly from the current IRWM Plan?

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). A draft of the revised region description was provided to the stakeholders for review and comment on January 7, 2013.

Update

The IRWM Plan discusses the general impacts of climate change in its description of regional water resources and focuses on potential impacts of climate change on the reliability of supply from the State Water Project (SWP). Using Planning Grant funds received from Round 1, the region description has been updated to further identify the potential vulnerabilities to water resources from projected climate change. Climate change scenarios have been defined consistent with the 2011 Draft DWR SWP Reliability Report. Vulnerable watershed characteristics have been defined and include hydrology, watershed landscape, water supply and demand, groundwater recharge, ecosystem, and other characteristics such as weather, changes in the amount, intensity, timing, quality, and variability of runoff and recharge; and effects of sea level rise (on imported water supply by DWR). The region description has also been updated to include an assessment and ranking of these vulnerabilities.

Objectives

Will your objectives change from those in the current IRWM Plan? If so, how?

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Meetings to solicit Stakeholder review and revision of the objectives have taken place. A draft of the revised objectives chapter was provided to the stakeholders for review and comment on February 28, 2013.

Update

The objectives in the IRWM Plan have been reviewed, revised, and updated by the Stakeholders. The IRWM Plan objectives were reviewed in the context of climate change with regard to potential for changes in the amount, intensity, timing, quality and variability of runoff and recharge in addition to the need to consider the effects of sea level rise on water supply conditions and to identify suitable adaptation measures.

Resource Management Strategies

Will the updated IRWM Plan consider the resource management strategies from the California Water Plan, Update 2009?

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Meetings to solicit Stakeholder review and revision of the resource management strategies have taken place. A draft of the revised resource management strategies chapter was provided to the stakeholders for review and comment on February 28, 2013.

Update

The adopted IRWM Plan currently evaluates the 24 water management strategies contained within the California Water Plan. Since the release of the 2009 Update of the California Water Plan, the following strategies have been added: Forest Management, Land Use Planning and Management (formerly Urban Land Use Management), and Improve Flood Management. The stakeholders considered these additional strategies at an IRWM Plan Stakeholder meeting in January (2012) and evaluated them for applicability to the Region.

Additionally, the IRWM Plan must identify and implement "No-Regrets" Adaptation Strategies to the general effects of climate change, such as meadow and forest restoration, flood plain protection, and water use efficiency. The Climate Change Technical Study has identified the "No-Regrets" Adaptation Strategies that will be most effective and appropriate for this Region.

Integration

Will the Updated IRWM Plan allow, encourage, and actively pursue integration in both the planning process and project formulation and implementation?

Status

Standard is met with existing plan language.

Update

The IRWM Plan has a successful framework to ensure collaboration between entities and integration of projects so as to achieve multiple benefits. The IRWM Plan meets the new standard and the update that is currently underway will continue to use this successful format for integration.

Impacts and Benefits

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Based on the project schedule, a draft of the impacts and benefits chapter will be provided to the stakeholders in late March 2013.

Update

The IRWM Plan meets the majority of the new standard. However, the discussion is currently being updated to include the discussion of impacts and benefits between regions, as well as those directly affecting disadvantaged communities (DACs), Environmental Justice related concerns, and Native American tribal

communities, and including the benefits of environmental stewardship in order to meet the standard completely.

Plan Performance and Monitoring

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Based on the project schedule, a draft of the plan performance and monitoring chapter will be provided to the stakeholders in late March 2013.

Update

The plan performance and monitoring discussion contained within the IRWM Plan meets the majority of the standard but is currently being updated to provide a discussion of policies and procedures that promote adaptive management with respect to the effects of climate change. The Stakeholders and RWMG have devoted monthly meetings to the discussion of updating existing data, IRWM Plan objectives, regional priorities, and statewide priorities for relevance and these are being modified as needed to ensure the overall IRWM Plan reflects regional changing needs. Additionally, potential projects have been reviewed and evaluated as part of the Update to ensure that the current plan objectives will be met and the resulting Plan Projects offer the greatest benefit possible. This ongoing review and update allow the plan to undergo "adaptive management", e.g., allows the IRWM Plan to evolve to changing conditions, and incorporate new data (e.g., climate change vulnerabilities).

Data Management

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Based on the project schedule, a draft of the data management chapter will be provided to the stakeholders in late March 2013.Data obtained for the Upper Santa Clara River Salt and Nutrient Management Plan, Recycled Water Master Plan Update, and Update of the Santa Clarita Valley Water Use Efficiency Strategic Plan will be used to address data deficiencies identified in the Plan.

Update

Using Planning Grant funds received from Round 1, the IRWM Plan is currently being updated with a Data Management System that will help track and document the progress of IRWM Plan implementation and for storing and disseminating data from monitoring efforts. A discussion of how findings or "lessons learned" from project-specific monitoring efforts will be included to improve the RWMG's ability to implement future projects in the IRWM Plan.

Finance

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Based on the project schedule, a draft of the finance chapter will be provided to the stakeholders in late March 2013.

Update

The IRWM Plan meets most of the new finance standard. However, the discussion is currently being updated to add an explanation of how operation and maintenance (O&M) costs for projects that implement the IRWM Plan would be covered and the certainty of O&M funding in order to meet the standard completely.

Technical Analysis

Have any data gaps been identified and how will the Updated IRWM plan help fill the gaps?

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). Based on the project schedule, a draft of the technical analysis will be provided to the stakeholders in late March 2013.

Update

The IRWM Plan meets most of the technical analysis standard. The IRWM Plan includes a detailed listing and categorization of the documents used to develop the baseline information and technical analyzes for the development of the IRWM Plan. Updating of the IRWM Plan includes a review of these documents and updating if necessary as well as identifying new relevant technical documents that should be reviewed to support the IRWM Plan. Given the new standards, the expanded scope of the technical analysis, and review of current planning documents, an updated report on deficiencies, priority for filling the gaps, and plan to address them are part of the current update process.

Relation to Local Water Planning

Will changes to the existing IRWM Plan be needed in order to improve coordination with local water use planning efforts?

Status

Standard is met with existing plan language.

Update

The IRWM Plan currently meets this standard. However, in order for the Plan to meet the requirements of the climate change standard, the IRWM Plan is being updated to consider and incorporate the water management issues and climate change adaptation and mitigation strategies from local planning documents.

Relation to Local Land Use Planning

Will changes to the existing IRWM Plan be needed in order to improve coordination with local land use planning efforts?

Status

Standard is met with existing plan language.

Update

The IRWM Plan currently meets this standard. However, in order for the Plan to meet the requirements of the climate change standard, the IRWM Plan is being updated to include a discussion of the region's demonstrated information sharing and collaboration with regional land planning efforts being undertaken in order to manage multiple water demands throughout the state, to adapt to water management systems to climate change, and potentially offset climate change impacts to water supply in California.

Stakeholder Involvement

Will changes or improvements to the stakeholder involvement process be needed to ensure effective stakeholder participation?

Status

Standard is met with existing plan language.

Update

The IRWM Plan currently meets this standard. The IRWM Plan was developed and continues to operate via a broad public process focused on outreach through meetings, community events, direct emails, mailings, and face to face interaction to maintain Stakeholder involvement. Stakeholders, including DACs, were and continue to be able to directly interact with the IRWM Plan by adding projects to the list of Candidate Projects for implementation of the IRWM Plan, assisting in development and updating of the resource management strategies and objectives through consensus based interactive stakeholder meetings. To date, nine Stakeholder meetings and eight Regional Water Management Group meetings have been held, focused on the IRWM Plan Update.

Coordination

Has the RWMG identified a need for changes/improvements to the ongoing coordination efforts?

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013).

Update

The Plan update is benefiting from ongoing coordination with other adjacent planning regions including: the joint Climate Change Workshop that was sponsored between the Watershed Coalition of Ventura County (WCVC), USCR, and Santa Barbara County IRWM Plan Regions, the Watershed Awareness Month of May (2012) activities in which a number of IRWM Plan projects were highlighted within the watershed also co-sponsored by the USCR and WCVC IRWM Plan Regions, Joint meetings of the USCR and WCVC Lower Santa Clara River IRWM Plan groups, and the participation by both the WCVC and USCR IRWM Plan members in each other's regular Stakeholder meetings to ensure that the entire watershed is protected and managed appropriately.

Climate Change

Will the Updated IRWM Plan contain:

- *A climate change vulnerability assessment of the IRWM region that is at least equivalent to the qualitative check list assessment in the Climate Change Handbook for Regional Water Planning (Handbook)?*
- *A list of prioritized vulnerabilities derived from the vulnerability assessment and the IRWM's decision making process?*
- *A plan, program, or methodology for further data gathering/analyzing of the prioritized vulnerabilities?*

Status

Standard will be met with plan language being revised or amended with Planning Grant Round 1 funds. Revised plan anticipated (late 2013). A Climate Change Technical Study has been completed as part of the update. A draft of the Climate Change Technical Study was provided to the stakeholders for review and comment on February 28, 2013.

Update

Using Planning Grant funds received from Round 1, the RWMG has commissioned a Climate Change Technical Study that will identify vulnerability of the Region to climate change, evaluate potential climate change impacts, identify and evaluate potential adaptation strategies, and will made recommendations as to how to collect and utilize greenhouse gas emissions data within the IRWM Plan framework. The study will then be used to update the IRWM Plan so that it will meet the requirements of the climate change standard.

Eligibility for implementation grant funding is being established using an IRWM Plan adopted prior to September 30, 2008. The USCR IRWM RWMG, which is comprised of eight members: Castaic Lake Water Agency, City of Santa Clarita, Los Angeles County Flood Control District, Newhall County Water District, Santa Clarita Valley Sanitation District of Los Angeles County, Santa Clarita Water Division of Castaic Lake Water Agency and Valencia Water Company and the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) each adopted the IRWM Plan, and the group collectively adopted the IRWM Plan.

As shown in Table 1-2, the 2008 USCR IRWM Plan was adopted by each RWMG member, and the group collectively adopted the IRWM Plan; the dates of each adoption are identified below.

TABLE 1-2: REGIONAL WATER MANAGEMENT GROUP DATE OF ADOPTION OF THE 2008 UPPER SANTA CLARA RIVER IRWM PLAN

Regional Water Management Group	Date Of Adoption
Castaic Lake Water Agency Governing Board	July 9, 2008
City of Santa Clarita City Council	July 15, 2008
Los Angeles County Department of Public Works Governing Board	August 5, 2008
Newhall County Water District Governing Board	July 10, 2008
Santa Clarita Water Division Governing Board	July 9, 2008
Santa Clarita Valley Sanitation District of Los Angeles County Governing Board	July 24, 2008
Valencia Water Company Governing Board of Directors	July 11, 2008
Rivers and Mountains Conservancy Governing Board	June 23, 2008

RWMG formally adopted the Upper Santa Clara River Integrated Regional Water Management Plan on July 30, 2008, at a public meeting held in Santa Clarita, California.

Project Consistency with an Adopted IRWM Plan

Each project being proposed in this grant application is consistent with the USCR IRWM Plan; all six projects have been added to the IRWM Plan after adoption, but in accordance with the procedures in the adopted Plan and fully vetted by the Stakeholder group. Documentation from the Stakeholder group and RWMG supporting the inclusion of all six projects, which was held on December 18, 2012, is provided as Att1_IG2_Eligible_4 of 5.

Table 1-3 demonstrates how each project in the proposal meets the objectives established in the adopted USCR IRWM Plan.

Project Proponents Intention to Adopt Updated USCR IRWM Plan Consistency with an Adopted IRWM Plan

The existing USCR IRWM Plan was adopted in July 2008 and represents the long-term efforts and collaboration of multiple agencies in the Upper Santa Clara River Watershed. In October 2011, the agencies that make up the RWMG of the USCR IRWM Plan, executed a memorandum of understanding to guide the update of the USCR IRWM Plan to meet the standards contained in the *2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines*. To this end, the RWMG and other stakeholders have been meeting since November 2011 to revise the USCR IRWM Plan.

All project proponents of this grant Proposal are members of the USCR IRWM Plan RWMG. These include the following agencies:

1. Castaic Lake Water Agency

2. Santa Clarita Water Division of Castaic Lake Water Agency
3. Newhall County Water District
4. Santa Clarita Valley Sanitation District of Los Angeles County
5. City of Santa Clarita

As evidenced by the project proponents' participation in the RWMG and participation in the IRWM Plan revision, all of the project proponents intend to adopt the USCR IRWM Plan Update, once it is complete in late 2013. Once revisions are complete and the public has had the opportunity to review the plan, each proponent/agency will make a recommendation to its Board of Director's/Approving Council to adopt the Plan. Documentation of each project proponent's Letter of Intention to Adopt the Updated USCR IRWM Plan is provided as Att1_IG2_Eligible_5 of 5.

TABLE 1-3: CONSISTENCY WITH THE 2008 ADOPTED USCR IRWM PLAN

IRWM Plan Objective	PROPOSAL PROJECTS					
	Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)	Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)	Foothill Feeder Connection (CLWA-8)	Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)	Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)	USCR Arundo/Tamarisk Removal Project (SCARP) Implementation (SC-1)
Integrate Water and Watershed Related Planning Efforts	♦	♦	♦	♦	♦	♦
Facilitate Regional Cooperation	♦	♦	♦	♦	♦	♦
Reduce Water Demand	♦	♦			♦	♦
Improve Operational Flexibility	♦	♦	♦			
Increase Water Supply	♦	♦				♦
Improve Water Quality	♦	♦		♦	♦	♦
Promote Resource Stewardship	♦	♦			♦	♦

Appendices to Attachment 1

AUTHORIZING RESOLUTION

SANTA CLARA RIVER VALLEY GROUNDWATER BASIN, EAST SUB-BASIN GWMP (ALSO PROVIDED ON CD)

DOCUMENTATION FROM THE STAKEHOLDER GROUP AND RWMG SUPPORTING THE INCLUSION OF ALL SIX PROJECTS ON DECEMBER 18, 2012

DOCUMENTATION OF EACH PROJECT PROPONENT'S LETTER OF INTENTION TO ADOPT THE UPDATED USCR IRWM PLAN

RESOLUTION NO. 2899

RESOLUTION OF THE BOARD OF DIRECTORS OF THE CASTAIC LAKE WATER AGENCY GRANTING THE GENERAL MANAGER THE AUTHORITY TO APPLY FOR A PROPOSITION 84 INTEGRATED REGIONAL WATER MANAGEMENT ROUND TWO IMPLEMENTATION GRANT AND TO EXECUTE A GRANT AGREEMENT WITH THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

WHEREAS, the Castaic Lake Water Agency, City of Santa Clarita, Los Angeles County Flood Control District, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, Newhall County Water District, Santa Clarita Valley Sanitation District of Los Angeles County, CLWA Santa Clarita Water Division and Valencia Water Company have established a Regional Water Management Group in accordance with the *Integrated Regional Water Management Planning Act* of *2002;* and

WHEREAS, the State of California provides grant funds for the integrated regional water management pursuant to the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84); and

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

WHEREAS, the Department of Water Resources requires the grant applicant to designate, by resolution, an authorized representative for filing the grant application and executing the Grant Agreement; and

WHEREAS, the Castaic Lake Water Agency was authorized, designated and requested by the Regional Water Management Group of the Upper Santa Clara River Watershed Integrated Regional Water Management Plan to prepare and apply on its behalf for an Implementation Grant under Proposition 84 Round Two Grant; and

WHEREAS, the stakeholders of the Upper Santa Clara River Watershed Integrated Regional Water Management Plan have identified a suite of projects to be included in an Implementation Grant Application; and

WHEREAS, the Newhall County Water District, the Santa Clarita Valley Sanitation District of Los Angeles County, the Santa Clarita Water Division, the City of Santa Clarita and CLWA all have projects in the suite of projects; and

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors, the governing body of the Castaic Lake Water Agency, resolves and orders as follows:

1) The General Manager is authorized and directed to file an application with the Department of Water Resources to obtain an Integrated Regional Water Management Implementation Grant pursuant to the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resource Code [PRC] Section 75001 et seq.).

2) The General Manager is authorized and directed to enter into and execute an agreement with the Department of Water Resources to receive a grant for the Upper

Santa Clara River Integrated Regional Water Management Plan Implementation Projects and is hereby authorized and directed to prepare the necessary data, conduct investigations and file such applications as necessary to enter into and execute the grant agreement.

ADOPTED at a Regular Meeting of the Board of Directors of the Castaic Lake Water Agency held on February 27, 2013.

President

I, the undersigned, hereby certify: That I am the duly appointed and acting Secretary of the Castaic Lake Water Agency, and that at a regular meeting of the Board of Directors of said Agency held on February 27, 2013, the foregoing Resolution No. 2899 was duly and regularly adopted by said Board, and that said resolution has not been rescinded or amended since the date of its adoption, and that it is now in full force and effect.

DATED: February 27, 2013

Secretary

UPPER SANTA CLARA RIVER
Integrated Regional Water Management

Stakeholder Meeting
Tuesday, December 18, 2012, 2:00 pm – 4:00 pm
Newhall County Water District Headquarters
23780 North Pine Street, Newhall, CA 91321

Meeting Objectives:

- Consultant Progress & Funding Updates
- Present Project Prioritization & Round 2 Implementation Grant Proposal

MINUTES

2:00 **Welcome**

Lauren Everett, Castaic Lake Water Agency (CLWA)

2:05 **Consultant Progress Updates**

A. IRWMP Update and Climate Change Technical Study

Meredith presented an update on the IRWMP progress and CC Technical Study. Draft chapters of Sections 1 and 2 will be made available to the Stakeholders in early January. Sections will be posted on the USCR website.

B. Salt and Nutrient Management Plan

Lauren presented an update on the SNMP. Chapters 1-5, 7 were distributed to the RWMG on 12/4, requested comments necessitating immediate attention by 12/21. Will distribute these chapters to SNMP Task Force first week of January.

Dates for all comments: ALL other comments should be ready for discussion at the January 24th SNMP Task Force meeting (1-3PM), followed by the RWMG meeting. Formal comments to be submitted in writing by January 31st.

2:15 **General Updates**

Lauren provided the updates for planning grant round 1 and 2, and implementation grant round 1 and 2 below.

C. Planning Grant R1 & R2

R1: 5th Progress Report and Invoice will be due in January. R2: Received notification of final award from DWR that we received the $733,750 planning grant. Now maxed the $1M from the planning grant program.

D. Implementation Grant R1 & R2

R1: 2nd Progress Report and Invoice will be due in January. Draft materials are due to Dudek's online grant admin portal January 3rd. Project proponents can contact me for information or questions about what they should be submitting in terms of their updates. This should cover the period of Oct 1-Dec 31, 2012.

R2: What we will be covering today. Application is due March 29th. There is $31M available for our funding region. In order to access these funds you have to have a project that is within an existing IRWMP plan, vetted through the stakeholder process

meeting the IRWMP Guidelines; meeting the goals and objectives we have determined to be of importance to our region; being ranked and prioritieized.

2:25 **Present Project Prioritization/Ranking**

Meredith presented the list of prioritized projects to the stakeholder group and explained how they were ranked, what the criteria were, and how the RWMG evaluated the projects. She then asked the stakeholders if they agreed with the project ranking process and overall project list.

The Stakeholders agreed during the meeting with the project prioritization and affirmed that the list could be adopted into the IRWM Update.

2:55 **Present R2 Implementation Grant Projects**

Lauren discussed the roles and responsibilities of the RWMG in order for effective IRWMP Planning as described within the MOU. These responsibilities include identifying and pursuing funding opportunities, and based on results of the project prioritization process and Stakeholder input, RWMG makes a final decision on the project suite to be submitted for funding to any funding agencies preparing grant applications, and hiring of consultants to prepare grant applications.

Lauren shared with the stakeholder group the list of 6 projects the RWMG identified from the list of prioritized projects that were selected for the Round 2 Implementation Grant application. Stakeholders agreed with the chosen projects.

3:35 **Implementation Grant Application – Cost Share Allocation**

Lauren discussed with those entities that have projects selected for the Round 2 Implementation Grant application how they would share in paying for the consultant fees to prepare the application. It was decided that each entity would pay the minimum fee to prepare the economic analysis for their project, and the Sanitation District and CLWA would split the remaining costs of the application between themselves.

4:00 **VIII. Close**

UPPER SANTA CLARA RIVER

Integrated Regional Water Management

Stakeholder Meeting
Tuesday, December 18, 2012, 2:00 pm – 4:00 pm
Newhall County Water District Headquarters
23780 North Pine Street, Newhall, CA 91321

Meeting Objectives:

- Consultant Progress & Funding Updates
- Present Project Prioritization & Round 2 Implementation Grant Proposal

AGENDA

2:00	**I.**	**Welcome** *Lauren Everett, Castaic Lake Water Agency (CLWA)*
2:05	**II.**	**Consultant Progress Updates** A. IRWMP Update and Climate Change Technical Study B. Salt and Nutrient Management Plan *Meredith Clement, Kennedy/Jenks (KJ), Lauren Everett, CLWA*
2:15	**III.**	**General Updates** A. Planning Grant R1 & R2 B. Implementation Grant R1 & R2 *Lauren Everett, CLWA*
2:25	**IV.**	**Present Project Prioritization / Ranking** *Meredith Clement, KJ*
2:55	**V.**	**Present R2 Implementation Grant Projects** *Lauren Everett, CLWA*
3:35	**VI.**	**Implementation Grant Application – Cost Share Allocation** *Lauren Everett, CLWA*
4:00	**VIII.**	**Close**

March 4, 2013

California Department of Water Resources
Division of Integrated Regional Water Management
1416 9th Street, Room 338
Sacramento, CA 95814

Subject: Castaic Lake Water Agency, Participation in Integrated Regional Water Management Plan (IRWM Plan) Update and Intent to Adopt Updated Upper Santa Clara IRWMP

The existing Upper Santa Clara IRWM Plan was adopted in July 2008 and represents the long-term efforts and collaboration of multiple agencies in the Upper Santa Clara River Watershed. In October 2011, the agencies that make up the Regional Water Management Group (RWMG) of the Upper Santa Clara River IRWM Plan, executed a memorandum of understanding to guide the update of the Upper Santa Clara River IRWM Plan to meet the standards contained in the *2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines*. To this end the RWMG and other stakeholders have been meeting since November 2011 to revise the Upper Santa Clara IRWM Plan.

Castaic Lake Water Agency (Agency) is a member of the Upper Santa Clara River IRWM Plan RWMG. The Agency is also a project proponent within this Proposal. As evidenced by the Agency's participation in the RWMG and participation in the IRWM Plan Update, the Agency intends to adopt the Upper Santa Clara IRWMP Update. Once revisions are complete and the public has had the opportunity to review the plan, the Water Resources and Outreach Committee of the Agency will review staff's recommendation that the Agency Board of Directors adopt the plan.

We appreciate your consideration of this Proposal and look forward to the opportunity to work with DWR.

Sincerely,

Castaic Lake Water Agency

Dirk Marks
Water Resources Manager

SANTA CLARITA WATER, A DIVISION OF CASTAIC LAKE WATER AGENCY

SCWD

22722 SOLEDAD CANYON ROAD • SANTA CLARITA, CALIFORNIA 91350 • (661) 259-2737
MAILING ADDRESS: P.O. BOX 903 • SANTA CLARITA, CALIFORNIA 91380-9003

February 15, 2013

California Department of Water Resources
Division of Integrated Regional Water Management
1416 9th Street, Room 338
Sacramento, CA 95814

Subject: Santa Clarita Water Division, Participation in Integrated Regional Water Management Plan (IRWMP) Update and Intent to Adopt Updated Upper Santa Clara IRWMP

The existing Upper Santa Clara IRWMP was adopted in July 2008 and represents the long-term efforts and collaboration of multiple agencies in the Upper Santa Clara River Watershed. In October 2011, the agencies that make up the Regional Water Management Group of the Upper Santa Clara River IRWMP, executed a memorandum of understanding to guide the update of the Upper Santa Clara River IRWMP to meet the standards contained in the *2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines.* To this end, the Regional Water Management Group and other stakeholders have been meeting since November 2011 to revise the Upper Santa Clara IRWMP.

Santa Clarita Water Division is a member of the Upper Santa Clara River IRWMP Regional Water Management Group. Santa Clarita Water Division is also a project proponent within this Proposal. As evidenced by Santa Clarita Water Division's participation in the Regional Water Management Group and participation in the IRWMP revision, Santa Clarita Water Division intends to adopt the Upper Santa Clara IRWMP Update. Once revisions are complete and the public has had the opportunity to review the plan, staff of Santa Clarita Water Division will make a recommendation to the Castaic Lake Water Agency Board of Directors to adopt the plan.

We appreciate your consideration of this Proposal and look forward to the opportunity to work with DWR.

Sincerely,

Santa Clarita Water Division

Julian Lee, P.E.
Principle Engineer

NEWHALL COUNTY WATER DISTRICT
23780 North Pine Street • P.O. Box 220970 • Santa Clarita, CA 91322-0970
(661) 259-3610 Phone • (661) 259-9673 Fax • email: mail@ncwd.org

February 13, 2013

California Department of Water Resources
Division of Integrated Regional Water Management
1416 9th Street, Room 338
Sacramento, CA 95814

Regarding: Newhall County Water District (NCWD) Participation in Integrated Regional Water Management Plan (IRWMP) Update and Intent to Adopt Updated Upper Santa Clara IRWMP

The existing Upper Santa Clara IRWMP was adopted in July 2008 and represents the long-term efforts and collaboration of multiple agencies in the Upper Santa Clara River Watershed. In October 2011, the agencies that make up the Regional Water Management Group of the Upper Santa Clara River IRWMP, executed a memorandum of understanding to guide the update of the Upper Santa Clara River IRWMP to meet the standards contained in the 2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines. To this end the Regional Water Management Group and other stakeholders have been meeting since November 2011 to revise the Upper Santa Clara IRWMP.

NCWD is a member of the Upper Santa Clara River IRWMP Regional Water Management Group. NCWD is also a project proponent within this Proposal. As evidenced by NCWD's participation in the Regional Water Management Group and participation in the IRWMP revision, NCWD intends to adopt the Upper Santa Clara IRWMP Update. Once revisions are complete and the public has had the opportunity to review the plan, staff of NCWD will make a recommendation to the NCWD's Board of Directors to adopt the plan.

We appreciate your consideration of this Proposal and look forward to the opportunity to work with DWR.

Sincerely,

NEWHALL COUNTY WATER DISTRICT

Steve Cole
General Manager

WATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

GRACE ROBINSON CHAN
Chief Engineer and General Manager

March 19, 2013

Zaffar Eusuff
California Department of Water Resources
Division of Integrated Regional Water Management
Financial Assistance Branch
Post Office Box 942836
Sacramento, CA 94236-0001

Dear Mr. Eusuff:

Intent to Adopt Upper Santa Clara River IRWMP
Upper Santa Clara River IRWMP Proposition 84, Round 2 Implementation Grant Application

Our agency is applying for Proposition 84 Round 2 Implementation Grant funding for the Automatic Water Softener Rebate and Public Outreach Program, which will be included in a suite of projects submitted in the Upper Santa Clara River IRWM Region's application.

Per the November 2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines, which require that proponents of projects included in an IRWM Implementation proposal adopt the IRWM Plan, we are providing this letter stating our intent to take an agenda item to our Board of Directors by December 31, 2013 to consider approval of a resolution to adopt the updated Upper Santa Clara River IRWMP.

Thank you for your consideration of our project. If you have any questions, please contact Sharon Green at (562) 908-4288 x2503.

Very truly yours,

Grace Robinson Chan

Philip L. Friess

Philip L. Friess
Department Head, Technical Services

Doc #2509077

City of
SANTA CLARITA

23920 Valencia Boulevard • Suite 300 • Santa Clarita, California 91355-2196
Phone: (661) 259-2489 • FAX: (661) 259-8125
www.santa-clarita.com

March 20, 2013

Zaffar Eusuff
Supervising Engineer
California Department of Water Resources
Division of Integrated Regional Water Management
1416 9th Street, Room 338
Sacramento, CA 95814

Dear Mr. Eusuff:

Subject: City of Santa Clarita, Participation in Integrated Regional Water Management Plan Update and Intent to Adopt Updated Upper Santa Clara IRWMP

The existing Upper Santa Clara Integrated Regional Water Management Plan (IRWMP) was adopted by the City of Santa Clarita (City) on July 8, 2008, and represents the long-term efforts and collaboration of multiple agencies in the Upper Santa Clara River Watershed. In October 2011, agencies that make up the Regional Water Management Group of the Upper Santa Clara River IRWMP, approved an updated memorandum of understanding to guide the update to meet the standards contained in the *2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines*. To this end, the Regional Water Management Group and other stakeholders have been meeting since November 2011 to revise the Upper Santa Clara IRWMP.

The City is a member of the Upper Santa Clara River IRWMP Regional Water Management Group and is a project proponent within this proposal. As demonstrated by our participation in the Regional Water Management Group and participation in the IRWMP revision, the City intends to agendize the Upper Santa Clara IRWMP update for City Council consideration. Once revisions are complete and the public has had the opportunity to review the plan, City staff will make a recommendation to the City Council to adopt the plan.

We appreciate your consideration of this proposal and look forward to the opportunity to work with the California Department of Water Resources.

Sincerely,

Kenneth W. Striplin
City Manager

KS:HM:eg
S:\ENVSRVCS\IRWMP\Implementation Grant Round 2 Application\Draft Santa Clarita Letter Intent to Adopt Updated Plan.docx

Documentation of Plan Adoption

Because the Final Upper Santa Clara River (USCR) Integrated Regional Water Management (IRWM) Plan (2008) was formally adopted before September 30, 2008, the Plan is not being submitted with this application in Attachment 1.

The Regional Water Management Group (RWMG) formally adopted the USCR IRWM Plan on July 30, 2008. Each RWMG entity documents formal adoption of the USCR IRWM Plan by signing a resolution officially accepting the Plan. A copy of each signed resolution documenting formal adoption of the Final Plan is provided as attachment Att2_IG2_Adopt_2of2.

As shown in Table 2-1, the 2008 USCR IRWM Plan was adopted by each RWMG member, and the group collectively adopted the IRWM Plan; the dates of each adoption are identified below.

TABLE 2-1: REGIONAL WATER MANAGEMENT GROUP DATE OF ADOPTION OF THE 2008 UPPER SANTA CLARA RIVER IRWM PLAN

Regional Water Management Group	Date of Adoption
Castaic Lake Water Agency Governing Board	July 9, 2008
City of Santa Clarita City Council	July 15, 2008
Los Angeles County Department of Public Works Governing Board	August 5, 2008
Newhall County Water District Governing Board	July 10, 2008
Santa Clarita Water Division Governing Board	July 9, 2008
Santa Clarita Valley Sanitation District of Los Angeles County Governing Board	July 24, 2008
Valencia Water Company Governing Board of Directors	July 11, 2008
Rivers and Mountains Conservancy (ex-officio member of the RWMG) Governing Board	June 23, 2008

RWMG formally adopted the USCR IRWM Plan on July 30, 2008, at a public meeting held in Santa Clarita, California.

Project Proponents Intention to Adopt Updated USCR IRWM Plan Consistency With An Adopted IRWM Plan

The existing USCR IRWM Plan was adopted in July 2008 and represents the long-term efforts and collaboration of multiple agencies in the Upper Santa Clara River Watershed. In October 2011, the agencies that make up the RWMG of the USCR IRWM Plan, executed a memorandum of understanding to guide the update of the USCR IRWM Plan to meet the standards contained in the *2012 Integrated Regional Water Management Proposition 84 and 1E Guidelines*. To this end the RWMG and other stakeholders have been meeting since November 2011 to revise the USCR IRWM Plan.

All project proponents of this grant Proposal are members of the USCR IRWM Plan RWMG. These include the following agencies:

1. Castaic Lake Water Agency
2. Santa Clarita Water Division of Castaic Lake Water Agency
3. Newhall County Water District
4. Santa Clarita Valley Sanitation District of Los Angeles County
5. City of Santa Clarita

As evidenced by the project proponents' participation in the RWMG and participation in the IRWM Plan revision, all of the project proponents intend to adopt the USCR IRWM Plan Update, once it is complete in late 2013. Once revisions are complete and the public has had the opportunity to review the plan, each proponent/agency will make a recommendation to its Board of Director's/Approving Council to adopt the Plan. Documentation of each project proponent's Letter of Intention to Adopt the Updated USCR IRWM Plan is provided as Att1_IG2_Eligible_5 of 5.

Appendices to Attachment 2

USCR IRWMP Adoption Resolutions from Regional water management group

Authorizing Resolutions

RESOLUTION NO. 08-78

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA CLARITA, CALIFORNIA, ADOPTING THE INTEGRATED REGIONAL WATER MANAGEMENT PLAN (IRWMP)

WHEREAS, the City of Santa Clarita has the responsibility for water quality under the Clean Water Act through the National Pollutant Discharge Elimination System Permit, Total Maximum Daily Loads; and

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

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

WHEREAS, on or about March 2007, Castaic Lake Water Agency (CLWA), Newhall County Water District, Santa Clarita Valley Sanitation District of Los Angeles County, City of Santa Clarita, Los Angeles County Flood Control District, Santa Clarita Water Division (SCWD) of the Castaic Lake Water Agency, and the Valencia Water Company formed a Regional Water Management Group pursuant to a Memorandum of Understanding, entered into by said parties, to address the resource stewardship, water supply, quality, and quantity issues in their region; and

WHEREAS, the Upper Santa Clara River Integrated Regional Water Management Group, of which the City of Santa Clarita is a member, has developed a proposed Integrated Regional Water Management Plan for the Upper Santa Clara River, and pursuant thereto, published notice of the group's intention to adopt such a plan in accordance with the requirements of the Act; and

WHEREAS, the proposed Upper Santa Clara River Integrated Regional Water Management Plan was developed through a comprehensive stakeholder process; and

WHEREAS, the Upper Santa Clara River Integrated Regional Water Management Plan is not "project" within the meaning of the California Environmental Quality Act (CEQA) because the plan is not likely to cause any significant physical change to the environment, given that it is simply a planning tool. But even if the plan is a project subject to CEQA review, it is exempt from CEQA review pursuant to, inter alia, Section 15262 and Section 15306 of the State CEQA Guidelines. It is exempt under Section 15262 because it involves a conceptual plan associated with feasibility and planning studies for possible future actions. Further, it is exempt under Section 15306 because it involves basic data collection, and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource.

NOW, THEREFORE, the City Council of the City of Santa Clarita does hereby resolve, determine, and order as follows:

SECTION 1. The City Council approve the Integrated Regional Water Management Plan on behalf of the City of Santa Clarita.

SECTION 2. The City Manager or his designee are hereby authorized to take any and all actions necessary to apply, either separately or collectively with other members of the Upper Santa Clara River Integrated Regional Water Management Group, for grants under Proposition 84 to compensate the members of the Upper Santa Clara River Integrated Regional Water Management Group for the costs and expenses incurred in preparation of the Integrated Regional Water Management Plan, its update, or for the funding of the implementation of the programs under the Integrated Regional Water Management Plan.

SECTION 3. The City Clerk shall certify to the adoption of this Resolution.

PASSED, APPROVED AND ADOPTED this 8th day of July, 2008.

MAYOR

ATTEST:

for CITY CLERK

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.
CITY OF SANTA CLARITA)

I, Sharon L. Dawson, MMC, City Clerk of the City of Santa Clarita, do hereby certify that the foregoing Resolution was duly adopted by the City Council of the City of Santa Clarita at a regular meeting thereof, held on the 8th day of July, 2008, by the following vote:

AYES: COUNCILMEMBERS: Weste, Ender, Ferry, McLean, Kellar

NOES: COUNCILMEMBERS: None

ABSENT: COUNCILMEMBERS: None

Susan Capelle
for CITY CLERK

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.
CITY OF SANTA CLARITA)

CERTIFICATION OF
CITY COUNCIL RESOLUTION

I, Sharon L. Dawson, City Clerk of the City of Santa Clarita, do hereby certify that this is a true and correct copy of the original Resolution No. 08-78, adopted by the City Council of the City of Santa Clarita, California on July 8, 2008, which is now on file in my office.

Witness my hand and seal of the City of Santa Clarita, California, this 15 day of July, 2008

Sharon L. Dawson, MMC
City Clerk

By Susan Caputo
Susan Caputo
Deputy City Clerk

CLWA RESOLUTION NO. 2596

A RESOLUTION OF THE BOARD OF DIRECTORS ADOPTING THE UPPER SANTA CLARA RIVER INTEGRATED REGIONAL WATER MANAGEMENT PLAN, AUTHORIZING STAFF TO APPROVE THE PLAN ON BEHALF OF THE AGENCY AND THE CASTAIC LAKE WATER AGENCY SANTA CLARITA WATER DIVISION AND TO APPLY FOR GRANTS

WHEREAS, the Castaic Lake Water Agency ("CLWA") was formed and established by the California State Legislature in 1962 for the principal purpose of providing imported Northern California water for use within and adjacent to the Santa Clarita Valley; and

WHEREAS, CLWA has adopted the following mission statement: "A public agency providing reliable, quality water at a reasonable cost to the Santa Clarita Valley"; and

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

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

WHEREAS, on or about March 2007, CLWA, Newhall County Water District, Santa Clarita Valley Sanitation District of Los Angeles County, City of Santa Clarita, Los Angeles County Flood Control District, Santa Clarita Water Division of the Castaic Lake Water Agency and the Valencia Water Company formed a Regional Water Management Group pursuant to a Memorandum of Understanding entered into by said parties to address the water supply, quality and quantity issues in their region; and

WHEREAS, the Regional Water Management Group, of which CLWA and the SCWD are members, has developed a proposed Integrated Regional Water Management Plan for the Upper Santa Clara River, and pursuant thereto published notice of the group's intention to adopt such a plan in accordance with the requirements of the Act; and

WHEREAS, the proposed Upper Santa Clara River Integrated Regional Water Management Plan was developed through a comprehensive stakeholder process; and

WHEREAS, CLWA, separately or in concert with other members of the Regional Water Management Group, is willing to apply for grant funding available to such local agencies under Proposition 84, as passed and adopted by the California electorate in 2004; such funding to be available to help pay for the cost of developing and implementing Regional Water Management Plans.

NOW THEREFORE, the Upper Santa Clara River Integrated Regional Water Management Plan is determined to be exempt from the California Environmental Quality Act pursuant to Sections 15262 and 15306 of the State CEQA Guidelines since it involves only a conceptual plan associated with feasibility and planning studies for possible future actions, as well as basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource; and

BE IT FURTHER RESOLVED by this Board of Directors of the Castaic Lake Water Agency that it adopts the Upper Santa Clara River Integrated Regional Water Management Plan (prepared by Kennedy/Jenks Consultants, dated June 2008 and on file with the Agency) and resolves and orders as follows:

A. **Actions.** The General Manager or his designee is authorized to take any and all actions necessary to approve the Upper Santa Clara River Integrated Regional Water Management Plan by CLWA's and CLWA Santa Clarita Water Division's representatives on the Integrated Regional Water Management Plan Regional Water Management Group.

Staff is hereby authorized to take any and all actions necessary to apply for grants under Proposition 84 or other grants for the preparation of the Integrated Regional Water Management Plan, its update, or for the funding of the implementation programs in the Integrated Regional Water Management Plan.

President

ATTEST:

Board Secretary

I, the undersigned, hereby certify: That I am the duly appointed and acting Secretary of the Castaic Lake Water Agency, and that at a regular meeting of the Board of Directors of said Agency held on Wednesday, July 9, 2008, the foregoing Resolution No. 2596 was duly and regularly adopted by said Board, and that said resolution has not been rescinded or amended since the date of its adoption, and that it is now in full force and effect.

DATED: July 9, 2008

April Jacobs, Secretary

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

DEAN D. EFSTATHIOU, Acting Director

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

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

IN REPLY PLEASE
REFER TO FILE: WM-6

July 29, 2008

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

34 AUG 05 2008

SACHI A. HAMA
EXECUTIVE OFFICER

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

Dear Supervisors:

ADOPT THE UPPER SANTA CLARA RIVER INTEGRATED REGIONAL WATER MANAGEMENT PLAN (SUPERVISORIAL DISTRICT 5) (3 VOTES)

SUBJECT

This action is to authorize adoption of the Upper Santa Clara River Integrated Regional Water Management Plan in accordance with Section 10541 of the California Water Code.

IT IS RECOMMENDED THAT YOUR BOARD ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT:

1. Find that the proposed action is exempt from the provisions of the California Environmental Quality Act for the reasons cited in this letter.

2. Authorize the Acting Chief Engineer of the Los Angeles County Flood Control District or his designee to take the necessary action to adopt the Upper Santa Clara River Integrated Regional Water Management Plan in accordance with Section 10541 of the California Water Code.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of these recommended actions is to adopt the Upper Santa Clara River Integrated Regional Water Management Plan (IRWMP). This Upper Santa Clara River IRWMP was prepared under a joint effort between six public agencies, including the Los Angeles County Flood Control District (LACFCD). These agencies have executed a Memorandum of Understanding to form the Santa Clara River Watershed Regional Water Management Group in accordance with State guidelines to address regional water supply needs, protect and improve water quality, provide flood management, and protect the environment. The Upper Santa Clara River IRWMP will guide regional efforts to meet these objectives and improve local entities' competitiveness for State and Federal grant funds.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provision of Organizational Effectiveness (Goal 3) and Fiscal Responsibility (Goal 4) by utilizing a collaborative effort to implement projects and by actively seeking grant funds to augment the County's funding sources.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund.

The Upper Santa Clara River IRWMP is an advisory document and, upon its adoption, will have no funding obligation on the LACFCD.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The Integrated Regional Water Management Planning Act of 2002, as codified in California Water Code Section 10530 through Section 10546, provides the framework for preparation and adoption of IRWMPs in the State. California Water Code Section 10541(c) requires publication of a Notice of Intention to adopt an IRWMP in accordance with Government Code Section 6066 if three or more participants in the group propose to adopt an IRWMP. Additionally, California Water Code Section 10541(d) requires a determination to adopt an IRWMP after holding a public hearing.

On May 1, 2007, your Board authorized the LACFCD to enter into a Memorandum of Understanding with the City of Santa Clarita, Castaic Lake Water Agency, Santa Clarita Water Division, Santa Clarita Valley Sanitation District, Newhall County

Water District, and Valencia Water Company to form the Upper Santa Clara River Watershed Regional Water Management Group.

The Regional Water Management Group worked collaboratively with local stakeholders in the development and the preparation of the Upper Santa Clara River IRWMP in accordance with State guidelines to address regional water supply needs, protect and improve water quality, provide flood management, protect the environment, and establish a data management system to monitor the progress of these objectives. The Upper Santa Clara River IRWMP was completed on May 30, 2008, and a public hearing regarding the Upper Santa Clara River IRWMP adoption was held on July 1, 2008. The Regional Water Management Group conducted the hearing, which was held at Hart Hall located at 24151 North San Fernando Road, Newhall, California.

Adoption of the Upper Santa Clara River IRWMP will guide regional efforts to meet long-term water resource needs and will improve local entities' competitiveness for State and Federal grant funds, including implementation grant funding under Proposition 84 and Proposition 1E. It will encourage a regional approach to water resource management by establishing collaborative watershed-based efforts. It will also establish a framework to secure and administer future funding for water resource-related projects.

ENVIRONMENTAL DOCUMENTATION

Adoption of the Upper Santa Clara River IRWMP is statutorily exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15262 of the CEQA Guidelines and Section 307.B.(7) of the Environmental Reporting Procedures and Guidelines adopted by your Board on November 17, 1987. This exemption provides for feasibility or planning studies for possible future actions, which have not been approved, adopted, or funded.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no adverse impact on current County services or projects as a result of this action.

Adoption of the Upper Santa Clara River IRWMP will encourage interagency cooperation to address water issues identified within the plan on a regional level. Projects included within the adopted Upper Santa Clara River IRWMP will be more competitive for State funding.

CONCLUSION

Please return three adopted copies of this letter to the Department of Public Works, Watershed Management Division.

Respectfully submitted,

DEAN D. EFSTATHIOU
Acting Director of Public Works

DDE
MP:lm

c: County Counsel

RESOLUTION NO. 2008-11

RESOLUTION OF THE BOARD OF DIRECTORS OF NEWHALL COUNTY WATER DISTRICT ADOPTING THE UPPER SANTA CLARA RIVER INTEGRATED REGIONAL WATER MANAGEMENT PLAN AND AUTHORIZING STAFF TO APPLY FOR GRANTS ON BEHALF OF THE DISTRICT AND OTHER LOCAL AGENCIES PARTICIPATING IN THE PLAN

WHEREAS, Newhall County Water District ("NCWD") was formed under Division 12 of the California Water Code in 1952 for the purpose of providing retail water service to customers in portions of the Santa Clarita Valley; and

WHEREAS, the NCWD is only one of four retail water providers in the Santa Clarita Valley with a keen interest in the efficient use and management of the water supplies in and available to said Valley; and

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

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

WHEREAS, on or about March 2007, NCWD, Castaic Lake Water Agency, Santa Clarita Valley Sanitation District of Los Angeles County, City of Santa Clarita, Los Angeles County Flood Control District, Santa Clarita Water Division of the Castaic Lake Water Agency and the Valencia Water Company formed a Regional Water Management Group pursuant to a Memorandum of Understanding entered into by said parties to address the water supply, quality and quantity issues in their region; and

WHEREAS, the Regional Water Management Group, of which NCWD is a member, has developed a proposed Integrated Regional Water Management Plan for the Upper Santa Clara River, and pursuant thereto published notice of the group's intention to adopt such a plan in accordance with the requirements of the Act; and

WHEREAS, the proposed Upper Santa Clara River Integrated Regional Water Management Plan was developed through a comprehensive stakeholder process; and

WHEREAS, NCWD, separately or in concert with other members of the Regional Water Management Group, is willing to apply for grant funding available to such local agencies under Proposition 84, as passed and adopted by the California electorate in 2004; such funding to be available to help pay for the cost of developing and implementing Regional Water Management Plans.

NOW, THEREFORE, BE IT RESOLVED that, the Board of Directors of Newhall County Water District does adopt the Upper Santa Clara River Integrated Regional Water Management Plan as presented by the Regional Water Management Group; and

BE IT FURTHER RESOLVED that the General Manager and NCWD staff are hereby authorized to take any and all actions necessary to apply, either separately or collectively with other members of the Regional Water Management Group, for grants under Proposition 84 to compensate the members of the Regional Water Management Group for the costs and expenses incurred in preparation of the Integrated Regional Water Management Plan, its update, or for the funding of the implementation of the programs under the Integrated Regional Water Management Plan; and

BE IT FURTHER RESOLVED that the General Manager and staff are hereby authorized and directed to take any and all other actions as may be reasonably necessary to fully implement this resolution as above provided.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Newhall County Water District held on July 10, 2008, Resolution No. 2008-11, and approved by the following vote:

AYES: DIRECTOR ATKINS, DORE, GUTZEIT, MORTENSEN, PLAMBECK

NOES: NONE

ABSTAIN: NONE

B.J. Atkins, President of
The Board of Directors of
NEWHALL COUNTY WATER DISTRICT

ATTEST:

Karin J. Russell, Secretary of
NEWHALL COUNTY WATER DISTRICT

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

I, Karin J. Russell, Secretary of Newhall County Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 2008-11 of the Board of Directors of Newhall County Water District adopted at a Regular Meeting held on July 10, 2008, and that the same has not been amended or repealed.

Karin J. Russell, Secretary,
Newhall County Water District

DATED: 7-10-08

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June 23, 2008 - Item 8I

RESOLUTION NO. 2008-36

RESOLUTION OF THE SAN GABRIEL AND LOWER LOS ANGELES RIVERS AND MOUNTAINS CONSERVANCY (RMC) AUTHORIZING THE EXECUTIVE OFFICER TO ADOPT THE FINAL UPPER SANTA CLARA RIVER INTEGRATED REGIONAL WATER MANAGEMENT PLAN (IRWMP).

WHEREAS, The legislature has found and declared that the San Gabriel River and its tributaries, the Lower Los Angeles River and its tributaries, and the San Gabriel Mountains, Puente Hills, and San Jose Hills constitute a unique and important open space, environmental, anthropological, cultural, scientific, educational, recreational, scenic, and wildlife resource that should be held in trust to be preserved and enhanced for the enjoyment of, and appreciation by, present and future generations; and

WHEREAS, The northern boundary of the RMC extends to, and includes a significant portion of the Upper Santa Clara River watershed; and

WHEREAS, The people of the State of California have enacted the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 which establishes in state law the concept of integrated regional water management planning; and

WHEREAS, The RMC has participated with seven local agencies and numerous other stakeholders in the development of a draft Integrated Regional Water Management Plan for the Upper Santa Clara River region; and

WHEREAS, The Draft Upper Santa Clara River IRWMP includes goals and objectives that promote water and resource stewardship, including ones to preserve and improve ecosystem health, improve flood management, and preserve and enhance water-dependent recreation; and

WHEREAS, The agencies that have created the Draft Upper Santa Clara River IRWMP are now individually considering adoption of the Plan, according to the provisions of state law; and

WHEREAS, this action is exempt from the environmental impact report requirements of the California Environmental Quality Act (CEQA); and NOW

Therefore be it resolved that the RMC hereby:

1. FINDS that this action is consistent with the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy Act.

2. FINDS that the actions contemplated by this resolution are exempt from the environmental impact report requirements of the California Environmental Quality Act.

3. ACCEPTS the Draft Upper Santa Clara River IRWMP as a valuable step in the management of water, land, habitat, and other resources of that watershed.

4. AUTHORIZES the Executive Officer of the RMC to adopt the final Upper Santa Clara River IRWMP subsequent to a public hearing on July 1, 2008, *provided*, that the final version of the IRWMP is substantially the same as the June 2008 Draft.

~ End of Resolution ~

Passed and Adopted by the Board of the
SAN GABRIEL AND LOWER LOS ANGELES RIVERS AND MOUNTAINS CONSERVANCY on June 23, 2008.

Dan Arrighi, Chair

ATTEST:

Terry Fujimoto
Deputy Attorney General

SANTA CLARITA VALLEY SANITATION DISTRICT OF LOS ANGELES COUNTY

JULY 9, 2008

MINUTE EXCERPT

RE: APPROVE RESOLUTION TO ADOPT UPPER SANTA CLARA RIVER INTEGRATED REGIONAL WATER MANAGEMENT PLAN

The Chief Engineer and General Manager presented a proposed Resolution to Adopt the Upper Santa Clara River Integrated Regional Water Management Plan (USCR IRWMP). He advised that the USCR IRWMP identifies water resource management objectives, develops strategies to meet needs, and ranks projects in terms of meeting the region's objectives. The Board previously approved participation in the IRWMP process, and the District has been a member of a Regional Water Management Group (RWMG) to develop the plan along with the City of Santa Clarita, Castaic Lake Water Agency (CLWA) and its Santa Clarita Division, Newhall County Water District, Valencia Water Company, and the County Flood Control District. Three of the top twelve projects identified for potential funding under Proposition 84 address recycling of water produced by District water reclamation plants and include ultraviolet disinfection at the Saugus and Valencia Water Reclamation Plants, the Board-approved water softener public outreach and rebate program, and expansion of the CLWA recycled water program. The proposed resolution must be adopted by the members of the RWMG to apply for funding, and all publication and hearing requirements of the process are being met by the RWMG. A copy of the proposed Resolution was attached to the agenda.

Upon motion of Director Burke, duly seconded and unanimously carried, the following Resolution was adopted:

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SANTA CLARITA VALLEY SANITATION DISTRICT OF LOS ANGELES COUNTY TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE UPPER SANTA CLARA RIVER WATERSHED REGION

WHEREAS, California Water Code Division 6, Part 2.2, known as the ***Integrated Regional Water Management Planning Act of 2002*** (ACT), provides the framework for preparation of integrated regional water management plans in the State; and

WHEREAS, the City of Santa Clarita, Castaic Lake Water Agency (CLWA), Santa Clarita Water Division of the CLWA, Newhall County Water District, Los Angeles County Flood Control District, Valencia Water Company, and the Santa Clarita Valley Sanitation District of Los Angeles County have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the Integrated Regional Water Management Plan for the Upper Santa Clara River Watershed Region (PLAN); and

WHEREAS, the Regional Water Management Group collaboratively prepared a PLAN that meets the requirements of the ACT; and

WHEREAS, the adoption of the PLAN is intended to integrate planning and implementation efforts and facilitate regional cooperation; and

WHEREAS, the adoption of the PLAN is further intended to improve the Upper Santa Clara River Watershed Region's competitiveness for State and Federal funding.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Santa Clarita Valley Sanitation District of Los Angeles County hereby adopts the Integrated Regional Water Management Plan for the Upper Santa Clara River Watershed Region.

* * * * * * * * *

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } SS.

I, KIMBERLY S. COMPTON, Secretary of the Board of Directors of Santa Clarita Valley Sanitation District of Los Angeles County, do hereby certify that the foregoing is a copy of excerpts of the minutes of the regular meeting of the Board of Directors of said District held July 9, 2008.

Dated: July 24, 2008

Kimberly S. Compton

KIMBERLY S. COMPTON
Secretary

S E A L

RESOLUTION TO ADOPT

UPPER SANTA CLARA RIVER INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, in 1965, Valencia Water Company, a public utility regulated by the California Public Utilities Commission, began delivering water to retail customers in the Santa Clarita Valley; and

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

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

WHEREAS, on or about March 2007, Valencia Water Company, along with Castaic Lake Water Agency, Newhall County Water District, Santa Clarita Valley Sanitation District of Los Angeles County, City of Santa Clarita, Los Angeles County Flood Control District and the Santa Clarita Water Division of the Castaic Lake Water Agency formed a Regional Water Management Group pursuant to a Memorandum of Understanding entered into by said parties to address the water supply, quality and quantity issues in their region; and

WHEREAS, the Regional Water Management Group has developed a proposed Integrated Regional Water Management Plan for the Upper Santa Clara River, and pursuant thereto published notice of the group's intention to adopt such a plan in accordance with the requirements of the Act; and

WHEREAS, the proposed Upper Santa Clara River Integrated Regional Water Management Plan was developed through a comprehensive stakeholder process; and

WHEREAS, Valencia Water Company, separately or in concert with other members of the Regional Water Management Group, is willing to apply for grant funding available to such local agencies under Proposition 84, as passed and adopted by the California electorate in 2004.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Valencia Water Company does hereby adopt the Upper Santa Clara River Integrated Regional Water Management Plan.

VALENCIA WATER COMPANY

CERTIFICATE OF SECRETARY

I, the undersigned, hereby certify that I am the duly appointed and acting Assistant Secretary of the Valencia Water Company, and that at a regular meeting of the Board of Directors of said Company held on June 25, 2008, the foregoing Resolution was duly and regularly adopted by said Board, and that said resolution has not been rescinded or amended since the date of its adoption, and that it is in full force and effect.

July 11, 2008

Greg Milleman

Greg Milleman, Assistant Secretary

RESOLUTION NO. 1

ADOPTION BY THE UPPER SANTA CLARA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN REGIONAL WATER MANAGEMENT GROUP OF ITS 2008 INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the Integrated Regional Water Management Act ("IRWM Act") (California Water Code Sections 10531-10547) allows for the discretionary development of Integrated Regional Water Management Plans ("IRWMPs") to improve the quality, quantity and reliability of water supplies within regions and within the State, and improved coordination among local agencies toward that end, and

WHEREAS, the IRWM Act and Propositions 50 and 84 as approved by the California voters provide for grant funding for the development and implementation of IRWMPs, and encourage the development of IRWMPs by local agencies within a watershed region, and

WHEREAS, the Castaic Lake Water Agency ("CLWA"), including its Santa Clarita Water Division (SCWD) (collectively "CLWA" or "the Agency"), the Santa Clarita Valley Sanitation District of Los Angeles County ("Sanitation District"), the City of Santa Clarita ("City"), Los Angeles County Flood Control District ("Flood Control District"), Newhall County Water District ("Water District") and the Valencia Water Company ("Water Company") (hereafter, collectively, the "Regional Water Management Group" or "the RWMG") entered into a Memorandum of Understanding to Participate and Contribute in the Preparation of the Upper Santa Clara River Watershed Integrated Regional Water Management Plan ("the MOU") in order to achieve the objectives of the IRWM Act, and pursuant to its terms, on or around May 7, 2007, and

WHEREAS, subsequent to the formation of the MOU, the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) demonstrated the desire and capacity to make a significant contribution of staff resources, expertise, and perspective on open space goals to the RWMG, and was thereby accepted by the RWMG as an ex officio member of that body, and

WHEREAS, on May 1, 2007, members of the RWMG published a Notice of Intention to Prepare an Integrated Regional Water Management Plan pursuant to Water Code Section 10541(a) and in compliance with Government Code Section 6066, and

WHEREAS that notice indicated that the RWMG would hold a public hearing on whether or not to prepare an IRWMP on May 15, 2007, which the RWMG duly held, and

comments on the IRWMP's development, held 8 Stakeholder meetings noticed and open to the public, and

WHEREAS, these outreach efforts were documented in the Draft IRWMP, and made available with all other parts of the IRWMP on the website, and

WHEREAS, the RWMG noticed and held a Public Workshop on the Public Review Draft IRWMP on May 1, 2008 to take comments thereon, and

WHEREAS comments from the public and stakeholders made during the preparation of the IRWMP and the consideration of the comments on the Public Review Draft IRWMP were duly considered and included in a matrix included in the Draft Final IRWMP itself, and

WHEREAS, pursuant to Water Code Sections 10541(c) and (d), the RWMG noticed and held a public hearing on July 1, 2008, as to whether or not to consider adoption of the IRWMP, in compliance with Government Code Section 6066, and

WHEREAS the RWMG voted at the July 1, 2008 public hearing to consider adoption of the IRWMP, and

WHEREAS the RWMG received written comments after the close of the July 1, 2008 public hearing, from Santa Clarita Organization for Planning The Environment ("SCOPE"), and

WHEREAS the members of the RWMG nevertheless have duly considered those comments, and

WHEREAS further public process including outreach to disadvantaged communities has already occurred and will continue with the implementation of the IRWMP, and

WHEREAS the July 1, 2008 SCOPE letter indicated that some concept projects identified in the IRWMP might have environmental effects, but

WHEREAS any projects undertaken by a public agency are subject to environmental review whether identified in an IRWMP or not, and

WHEREAS development of the IRWMP itself does not commit the RWMG, its members, or any project proponent identified in the IRWMP to any course of action with regard to any project or concept project identified in the IRWMP,

WHEREAS the governing bodies of the following RWMG members have unanimously approved the adoption of the IRWMP: the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy at its Board meeting of June 23, 2008, the Valencia Water Company at its Board meeting of June 25, 2008, the City of Santa Clarita at its Council Meeting of July 8, 2008, the Santa Clarita Valley Sanitation District at its Board meeting of July 9, 2008, CLWA at its Board meeting July 9, 2008, and the Newhall County Water District at its Board meeting of July 10, 2008.

NOW, THEREFORE, be it resolved that the RWMG does hereby adopt the IRWMP in compliance with Water Code Section 10541(d),

RESOLVED FURTHER that the RWMG's adoption of the Plan is exempt from the California Environmental Quality Act ("CEQA") pursuant to Sections 15262 and 15306 of the CEQA Guidelines, since the IRWMP is only a conceptual plan associated with feasibility and planning studies for possible future actions, as well as basic data collection and resource evaluation activities not resulting in a serious or major disturbance to an environmental resource, and

RESOLVED FURTHER that the RWMG shall implement the IRWMP in accordance with applicable State Guidelines and State Law.

DATE: July 30, 2008

By:

- SCWD

- CLWA

RESOLUTION NO. 1

ADOPTION BY THE UPPER SANTA CLARA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN REGIONAL WATER MANAGEMENT GROUP OF ITS 2008 INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the Integrated Regional Water Management Act ("IRWM Act") (California Water Code Sections 10531-10547) allows for the discretionary development of Integrated Regional Water Management Plans ("IRWMPs") to improve the quality, quantity and reliability of water supplies within regions and within the State, and improved coordination among local agencies toward that end, and

WHEREAS, the IRWM Act and Propositions 50 and 84 as approved by the California voters provide for grant funding for the development and implementation of IRWMPs, and encourage the development of IRWMPs by local agencies within a watershed region, and

WHEREAS, the Castaic Lake Water Agency ("CLWA"), including its Santa Clarita Water Division (SCWD) (collectively "CLWA" or "the Agency"), the Santa Clarita Valley Sanitation District of Los Angeles County ("Sanitation District"), the City of Santa Clarita ("City"), Los Angeles County Flood Control District ("Flood Control District"), Newhall County Water District ("Water District") and the Valencia Water Company ("Water Company") (hereafter, collectively, the "Regional Water Management Group" or "the RWMG") entered into a Memorandum of Understanding to Participate and Contribute in the Preparation of the Upper Santa Clara River Watershed Integrated Regional Water Management Plan ("the MOU") in order to achieve the objectives of the IRWM Act, and pursuant to its terms, on or around May 7, 2007, and

WHEREAS, subsequent to the formation of the MOU, the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) demonstrated the desire and capacity to make a significant contribution of staff resources, expertise, and perspective on open space goals to the RWMG, and was thereby accepted by the RWMG as an ex officio member of that body, and

WHEREAS, on May 1, 2007, members of the RWMG published a Notice of Intention to Prepare an Integrated Regional Water Management Plan pursuant to Water Code Section 10541(a) and in compliance with Government Code Section 6066, and

WHEREAS that notice indicated that the RWMG would hold a public hearing on whether or not to prepare an IRWMP on May 15, 2007, which the RWMG duly held, and

WHEREAS, commencing on or before May, 1, 2007 through the present day, the RWMG sent out fact sheets, published public notices in *The Signal,* distributed news of the RWMG's development in CLWA's newsletter *Water Currents,* developed and publicized a website whereby members of the public could learn about and provide

comments on the IRWMP's development, held 8 Stakeholder meetings noticed and open to the public, and

WHEREAS, these outreach efforts were documented in the Draft IRWMP, and made available with all other parts of the IRWMP on the website, and

WHEREAS, the RWMG noticed and held a Public Workshop on the Public Review Draft IRWMP on May 1, 2008 to take comments thereon, and

WHEREAS comments from the public and stakeholders made during the preparation of the IRWMP and the consideration of the comments on the Public Review Draft IRWMP were duly considered and included in a matrix included in the Draft Final IRWMP itself, and

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WHEREAS the RWMG voted at the July 1, 2008 public hearing to consider adoption of the IRWMP, and

WHEREAS the RWMG received written comments after the close of the July 1, 2008 public hearing, from Santa Clarita Organization for Planning The Environment ("SCOPE"), and

WHEREAS the members of the RWMG nevertheless have duly considered those comments, and

WHEREAS further public process including outreach to disadvantaged communities has already occurred and will continue with the implementation of the IRWMP, and

WHEREAS the July 1, 2008 SCOPE letter indicated that some concept projects identified in the IRWMP might have environmental effects, but

WHEREAS any projects undertaken by a public agency are subject to environmental review whether identified in an IRWMP or not, and

WHEREAS development of the IRWMP itself does not commit the RWMG, its members, or any project proponent identified in the IRWMP to any course of action with regard to any project or concept project identified in the IRWMP,

WHEREAS the governing bodies of the following RWMG members have unanimously approved the adoption of the IRWMP: the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy at its Board meeting of June 23, 2008, the Valencia Water Company at its Board meeting of June 25, 2008, the City of Santa Clarita at its Council Meeting of July 8, 2008, the Santa Clarita Valley Sanitation District at its Board meeting of July 9, 2008, CLWA at its Board meeting July 9, 2008, and the Newhall County Water District at its Board meeting of July 10, 2008.

NOW, THEREFORE, be it resolved that the RWMG does hereby adopt the IRWMP in compliance with Water Code Section 10541(d),

RESOLVED FURTHER that the RWMG's adoption of the Plan is exempt from the California Environmental Quality Act ("CEQA") pursuant to Sections 15262 and 15306 of the CEQA Guidelines, since the IRWMP is only a conceptual plan associated with feasibility and planning studies for possible future actions, as well as basic data collection and resource evaluation activities not resulting in a serious or major disturbance to an environmental resource, and

RESOLVED FURTHER that the RWMG shall implement the IRWMP in accordance with applicable State Guidelines and State Law.

DATE: _____ **By:**

_____

_____

_____

_____

_____

_____

_____

CITY OF SANTA CLARITA:

By _____
for Ken Pulskamp, City Manager

Attest _____
Sharon L. Dawson, MMC
City Clerk 8/26/08

APPROVED AS TO FORM:
Burke, Williams & Sorensen, LLP

By _____
Legal Counsel

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

DEAN D. EFSTATHIOU, Acting Director

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

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

September 18, 2008

IN REPLY PLEASE
REFER TO FILE: WM-1

Mr. Dan Masnada
Upper Santa Clara River
Regional Water Management Group
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Dear Mr. Masnada:

ADOPTION OF THE UPPER SANTA CLARA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN

On August 5, 2008, the Los Angeles County Board of Supervisors, acting as the governing body of the Los Angeles County Flood Control District (LACFCD), voted unanimously to delegate authority to the Acting Chief Engineer of the LACFCD to adopt the Upper Santa Clara River Watershed Integrated Regional Water Management Plan (IRWMP) (enclosed). Acting on that delegated authority, the LACFCD hereby joins the other agencies in the Regional Water Management Group in formally adopting the IRWMP.

The Upper Santa Clara River Watershed IRWMP provides an important framework for collaboration and implementation of projects that address regional water resource needs. I applaud the efforts of the agencies, stakeholder groups, and individuals who participated in developing the IRWMP and look forward to continuing to work with local stakeholders during the next phase of the planning process.

If you have any questions regarding this matter, please contact me at (626) 458-4008 or your staff may contact Mr. Mark Pestrella at (626) 458-4300 or mpestrel@dpw.lacounty.gov.

Very truly yours,

DEAN D. EFSTATHIOU
Acting Chief Engineer, Los Angeles County Flood Control District

DIEGO CADENA
Deputy Director

JB:sw
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Enc.

WATERSHED MANAGEMENT DIVISION

UPPER SANTA CLARA RIVER
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
REGIONAL WATER MANAGEMENT GROUP

Adoption Meeting

July 30, 2008
Castaic Lake Water Agency
Meeting Summary

The purpose of this was to consider whether or not the USCR Regional Water Management Group (RWMG) should adopt the Final Upper Santa Clara River Integrated Regional Water Management Plan (Final IRWMP). The RWMG had previously held a public hearing on July 1, 2008, at Hart Hall to consider the adoption of the Final IRWMP. In accordance with Water Code Section 10541 (d), a decision to adopt the plan by the RWMG must be made within 30 days of the public hearing.

Jeff Ford from the Castaic Lake Water Agency led the meeting. Representatives from all but one of the RWMG member agencies were present at the meeting (the Rivers and Mountains Conservancy representative called in on the telephone for the meeting). Jeff Ford noted that the seventh voting member of the RWMG, the Los Angeles County Flood Control District, would have the Final IRMWP as an item for approval at their August 5, 2008 Board of Supervisors meeting, so they would not be voting on the item at this meeting. Jeff Ford asked for any comments on the Final IRMWP prior to a vote and Steve Cole of the Newhall County Water District thanked everyone for their work on getting the plan prepared and approved. With that comment a motion to approve the Final IRWMP was made and was seconded. A voice vote was taken and the Final IRWMP was approved without a dissenting vote.

After the vote, there was a brief discussion regarding the need for a meeting of the RWMG to plan the next steps in the IRWMP process and to discuss Proposition 84 funding, .

Following this discussion the meeting was adjourned.

Participants in the meeting and their organizational affiliations included the following

- Jackie Bick, Office of State Senator George Runner
- John Bodenchak, LA County Department of Public Works
- Steve Cole, Newhall County Water District

- Oliver Cramer, City of Santa Clarita
- Bob DiPrimio, Valencia Water Company
- Jeff Ford, Castaic Lake Water Agency
- Cathy Hollomon, Santa Clarita Water Division of CLWA
- Mauricio Guardado, Santa Clarita Water Division of CLWA
- Bruce Hamamoto, LA County Flood Control District
- Dirk Marks, Castaic Lake Water Agency
- Dan Masnada, Castaic Lake Water Agency
- Heather Merenda, City of Santa Clarita
- Dave Perry, Supervisor Michael Antonovich's Office
- Karin Russell, Newhall County Water District
- Tim Worley, Rivers and Mountains Conservancy (by telephone)
- Mary Zauner, Santa Clarita Valley Sanitation District

Table of Contents

Work Plan Part I. Introduction

Introduction

The Upper Santa Clara River (USCR) IRWM Plan Region represents an area of approximately 654 square miles within the Santa Clara River Watershed (Watershed). The Watershed consists of approximately 1,634 square miles and contains the upper reaches of the Santa Clara River, the largest natural river remaining in Southern California. The River travels through two counties: Los Angeles and Ventura. It is the last major undammed river system in Southern California, a situation that makes its preservation extremely important to the stakeholders. The USCR IRWM Plan Region is bounded by the San Gabriel Mountains to the south and southeast, the Santa Susana Mountains to the southwest, the Liebre Mountains and Transverse Ranges to the northeast and northwest, and westward to the Ventura County Line. The USCR Watershed is a logical region for integrated regional water management due to its history of cooperative water management, the topography and geography of the Region and the similarity of water issues facing agencies in the Region.

The Region is diverse, with both urban and rural areas as well as National Forest land. The Region encompasses the City of Santa Clarita, the communities of Castaic, Stevenson Ranch, Fair Oaks Ranch, Saugus, Newhall, West Ranch, Agua Dulce and Acton in unincorporated Los Angeles County, various other unincorporated community areas in Los Angeles County, open space areas of the Santa Monica Mountains Recreation and Conservation Authority and Los Angeles County Department of Parks and Recreation, and portions of the Angeles National Forest. In 2010, the Watershed was home to about 287,650 people with growth projected to increase to close to 400,000 persons by 2030 according to the Castaic Lake Water Agency's (CLWA's) 2010 Urban Water Management Plan (UWMP). CLWA is the wholesale water supplier in the Region and a member of the USCR IRWM Plan Regional Water Management Group (RWMG).

This Proposal directly addresses the key water resource challenges facing the Region. Enhancing regional self-reliance looms as an immediate and immense challenge. Currently, over half of the water supply to meet demand within the Region comes from imported water from the State Water Project (SWP). SWP deliveries are highly variable, with the amount actually available and allocated to SWP contractors each year dependent on a number of factors. The long-term estimated delivery of SWP water is 60 percent; in a dry year SWP supply may be as low as seven percent and that could be affected by climate changes and other factors. In the meantime, population in the Region is anticipated to increase by a factor of 1.8 by year 2050 or almost double by year 2050.

Water quality is also a primary concern for the Region. Water quality issues include chloride as well as the ongoing cost of monitoring and treating perchlorate contamination. The Los Angeles Regional Water Quality Control Board (RWQCB) Basin Plan identifies the Santa Clara River Watershed as impaired by chlorides. The proposed projects are consistent with the Basin Plan and directly address the water quality objectives therein.

This Proposal also includes projects that provide supply or quality benefits addressing invasive species and watershed restoration. By implementing the projects in this Proposal, the Region can advance toward its IRWM Plan objectives of increasing water supply reliability, protecting and improving water quality, and promoting resource stewardship –with successful projects that are cost-efficient, environmentally friendly, and reliable.

In the adopted 2008 USCR IRWM Plan, the Stakeholders ranked their list of priority projects. The USCR IRWM Plan is in the process of being updated and completion is anticipated no later than later 2013. The Stakeholders have already collaborated to complete the ranking process and have produced an updated list of priority projects for the 2013 Updated IRWM Plan. This Proposal was developed from the 2013 Updated

USCR IRWM Plan priority project list. The projects included in this Proposal address the critical water management challenges in the Region.

The ranking process utilized the project review factors identified in the 2012 IRWM Guidelines; the selected projects represent the highest ranked projects that were ready and feasible to implement. The projects meet the goals and objectives in the Region through the implementation of diverse approaches ranging from conservation to treatment to improved infrastructure and watershed restoration:

1. Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)
2. Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
3. Foothill Feeder Connection (CLWA-8)
4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)
5. Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)
6. USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Together, these programs incorporate a wide range of water management strategies and address the regional objectives set forth in USCR IRWM Plan.

The RWMG and stakeholders understand that local funding is and will remain central to addressing the Region's water management challenges and all parties are taking active steps through local funding measures and rate adjustments; however, due to the poor local economy, a good portion of these funds will not be available to implement projects for many years. Proposition 84 funding will help the Region continue to implement projects important to maintaining the momentum already built from the initiation of the projects and move these projects towards further addressing the Region's water resource and management needs.

List of Acronyms

AF	acre-feet
AFY	acre-feet per year
AWWA	American Water Works Association
BMPs	Best Management Practices
CCR	Consumer Confidence Report
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CII	commercial, industrial, institutional
CLWA	Castaic Lake Water Agency
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DPH	California Department of Public Health (formerly the Department of Health Services)
DWR	California Department of Water Resources
gpcd	gallons per capita per day
gpm	gallons per minute
GWMP	groundwater management plan
HECW	High-Efficiency Clothes Washer
IPS	Intake Pump Station
IRWM Plan	Integrated Regional Water Management Plan

LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sanitation District
MCL	Maximum Contaminant Levels
MGD	million gallons per day
mg/L	milligrams per liter
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
NCWD	Newhall County Water District
NPDES	National Pollutant Discharge Elimination System
RVWTP	Rio Vista Water Treatment Plant
RWMG	Regional Water Management Group
RWQCB	Regional Water Quality Control Board
SCARP	Upper Santa Clara Arundo River Watershed Removal Plan
SCV	Santa Clarita Valley
SCVSD	Santa Clarita Valley Sanitation District of Los Angeles County
SCWD	Santa Clarita Water Division of Castaic Lake Water Agency
SEA	Significant Ecological Area
SRWS	Self-Generating Water Softeners
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
US EPA	US Environmental Protection Agency
US FWS	US Fish and Wildlife Service
UWMP	Urban Water Management Plan
VCRCD	Ventura County Resource Conservation District
VWC	Valencia Water Company
WRP	Water Reclamation Plant
WTP	Water Treatment Plant

Proposal Goals and Objectives

This Proposal is comprised of six priority projects that will deliver a strong combination of water demand reduction, water quality and related benefits. These projects were developed through the Region's IRWM planning process and, when implemented, will:

- Reduce water demand on the Delta and on the Region, protect existing supplies, and promote water conservation to increase local water supply reliability;
- Improve water quality through increased use of local water supply and beneficial use of tertiary treated water;
- Reduce the risk of flooding and fire hazard; and
- Preserve open space and native habitats in multiple locations.

In doing so, this Proposal will meet the stated purpose of the USCR IRWM Plan, and help to achieve the goals and objectives that have been identified for the IRWM Plan through the Stakeholder planning process (see Table 3-1).

TABLE 3-1: PURPOSE OF THE UPPER SANTA CLARA RIVER IRWM PLAN

Goals	
Integrate water and watershed related planning efforts	
Facilitate regional cooperation	
Objectives	
Reduce Water Demand	Implement technological, legislative and behavioral changes that will reduce user demands for water.
Improve Operational Efficiency	Maximize water system operational flexibility and efficiency, including energy efficiency.
Increase Water Supply	Understand future regional demands and obtain necessary water supply sources.
Improve Water Quality	Supply drinking water with appropriate quality; improve groundwater quality; and attain water quality standards.
Promote Resource Stewardship	Preserve and improve ecosystem health; improve flood management; and preserve and enhance water-dependent recreation.

Overview of Projects

Table 3-2 provides an overview of the six projects that comprise this Proposal and that are identified on Figure 1. The project design status is identified by percent complete as of March 29, 2013. Relevant design documents are discussed in each project Work Plan section and provided electronically on CD.

TABLE 3-2: PROPOSAL PROJECT LIST

Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)	**Design Status** ***100%***	**Implementing Agency** ***Castaic Lake Water Agency***
The proposed program is based on the analysis of the 2008 CLWA Santa Clara Valley Water Use Efficiency Strategic Plan (CLWA Strategic Plan) which identified programs that will most effectively reduce per capita water use in the Santa Clarita Valley. CLWA has been implementing these recommendations and is proposing to expand its programs in light of the new State water conservation requirements. The Project includes expansion of the following programs: (1) Large Landscape Audit and Incentives, (2) Commercial, Industrial and Institutional (CII) Audit and Customized Incentives, (3) Landscape Contractor Certification and Weather-Based Irrigation Controllers, (4) High-Efficiency Clothes Washer (HECW) Rebates, and (5) Cash for Grass. Implementation of all five programs will yield avoided SWP imports of 380 acre-feet per year (AFY).		

Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)	**Design Status** *100%*	**Implementing Agency** *Santa Clarita Water Division*

The elements identified in this program originate in SCWD's Water Use Efficiency Strategic Plan (SCWD Strategic Plan). The SCWD Strategic Plan was developed in July 2012 to identify, analyze and provide a roadmap for implementing programs that will allow SCWD to achieve its State water conservation requirements and reduce dependence on imported water sources. The SCWD Strategic Plan specifies ten water use efficiency incentive programs that, when fully implemented, will save 4,437 AF of water by 2020 at a cost of approximately $1.83 million a year. Combining the implementation efforts with supporting outreach and education programs will allow SCWD to achieve its goals. SCWD-2 is requesting funding to help implement three of the programs identified in the SCWD Strategic Plan: (1) High-Efficiency Irrigation Nozzle Distribution, (2) High-Efficiency Clothes Washer (HECW) Machine Rebate Program and Residential and Commercial Program Rebate, and (3) Large Landscape Water Budgets. The first two programs are currently being implemented and SCWD would like to expand these efforts based on their success to date and the recommendations made in their Strategic Plan. The large landscape program represents a new effort with a focus on irrigation, which is a significant use of water in the Santa Clarita Valley. Full project benefits will accrue beginning in 2015. At this time, water conservation resulting from the three programs will yield avoided SWP imports of 156 AFY.

Foothill Feeder Connection (CLWA-8)	**Design Status** *100%*	**Implementing Agency** *Castaic Lake Water Agency*

CLWA's Foothill Feeder Connection Project will provide initially 6 million gallons per day (MGD) of additional capacity to CLWA's potable water system (up to a maximum of 30 MGD additional capacity when the Rio Vista Water Treatment Plant [RVWTP] is expanded in the future), consequently improving system reliability. The project will replace the current connection, which is undersized for the recently expanded RVWTP, and thus allow CLWA to utilize the full treatment plant capacity. Also, the current connection was designed as a temporary structure so a permanent connection increases infrastructure reliability.

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)	**Design Status** *10%*	**Implementing Agency** *Newhall County Water District*

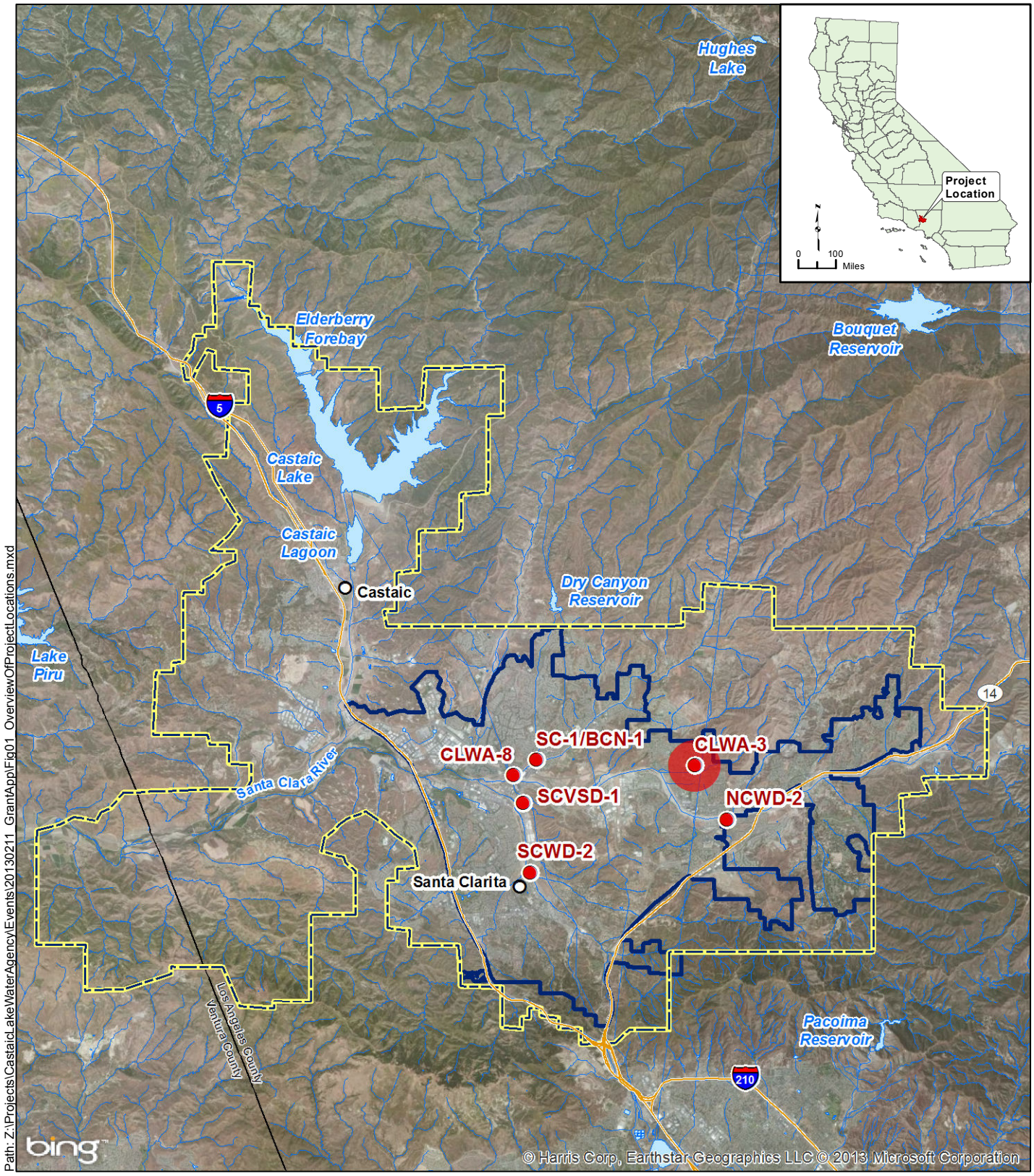
This project includes the first phase of the construction and implementation of the three phase treatment system. This Phase 1 effort consists of completing a water quality analysis for two of NCWD groundwater wells, establishing the treatment criteria and feasibility of pellet softening technology, determining the size of the treatment plant, treatment chemicals needed, and capital and operational cost estimates as well as conceptual design and an initial environmental study. The Phase 2 project (not part of this proposed grant project) completes the CEQA requirements for the project, engineering design of the pellet treatment plant, and public outreach to community for acceptance of the necessary rate increase for pre-softened water (Prop 218) and pellet usage. The Phase 3 project (not part of this proposed grant project) will complete the construction of the pellet treatment plant and initial start-up activities. Funding is being requested for Phase 1 only, which includes the engineering and planning associated with complete water quality analysis of NCWD Wells 12 and 13 to establish the treatment criteria and feasibility of pellet softening technology.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)	**Design Status** *100%*	**Implementing Agency** *Santa Clarita Valley Sanitation District*

This Project builds on a ground breaking, nationally recognized multi-pronged approach by the Sanitation District to reduce chloride sources in all customer sectors, promoted innovation, spurred three local ordinances and more. These efforts were initiated in response to the development of the USCR Chloride Total Maximum Daily Load (TMDL) requiring the Sanitation District to reduce chloride levels in the discharges from its two water reclamation plants in 2002. The Program will focus on removing the remaining automatic water softeners in the Santa Clarita Valley through a combination of activities including: home inspections, issuing Notices of Violations to residents that still have automatic water softeners, issuing rebates to residents that remove their automatic water softeners, chloride monitoring, and public outreach. The goal of the project is to remove all remaining automatic water softeners in the Sanitation District's service area. The multi-faceted effort is expected to achieve an additional reduction in the chloride discharged from the water reclamation plants (WRPs) by up to 5 mg/L, keep awareness of the chloride problem high in the community and prevent backsliding (residents installing and/or using illegal automatic water softeners), minimize the size of future chloride compliance facilities and help the Sanitation District comply with the USCR chloride TMDL.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)	**Design Status** *100%*	**Implementing Agency** *City of Santa Clarita*

The City of Santa Clarita is working with a group of homeowners to undertake a regional arundo/tamarisk eradication project along the tributaries of the Santa Clara River: the Bouquet Canyon Creek and San Francisquito Creek. The Project will restore riparian habitat through the removal of these invasive plant species, improve water quality, and increase water supply by increasing the available surface and subsurface water that can be utilized for beneficial purposes.



Path: Z:\Projects\CastaicLakeWaterAgency\Events\20130211_GrantApp\Fig01_OverviewOfProjectLocations.mxd

Legend

- Project Location
- Service Area Wide
- Castaic Lake Water Agency Service Area
- City Santa Clarita Boundary

N

0 2 4
Miles

Kennedy/Jenks Consultants

Castaic Lake Water Agency
Los Angeles County, California

Vicinity Map
Overview of Project Locations

K/J 1389003*00
March 2013

Figure 1

Purpose and Need

The purpose of this Proposal is to develop and implement regional projects and programs that will further the regional goals and objectives the IRWM Plan. Those objectives are listed above and include reducing water demand, improving water quality, improving operational efficiency, increasing water supply, and promoting resource stewardship. They also include the three new objectives identified in the 2013 Update IRWM Plan process (not yet adopted) that address Flooding/Hydromodification and taking action within the watershed to adapt to climate change, and promoting projects and actions that reduce greenhouse gas emissions.

The need for the Proposal projects is framed by challenges faced in the State as a whole, as well as challenges unique to the Region. To meet the Region's challenges and needs, this Proposal presents a combination of projects that offer a variety of ways of addressing these issues and move the Region toward realizing its IRWM Plan objectives. Local water resources are optimized with proposed project's water use efficiency programs that reduce demand, infrastructure improvements that increase and optimize capacity, and watershed restoration projects that increase the available surface and groundwater that can be utilized for beneficial purposes. Water quality standards are met with projects that reduce calcium water hardness through development of innovative and efficient technologies, source control programs and watershed restoration programs that employ natural and engineered improvements to treatment. Finally, natural processes and habitats are protected, restored, and enhanced with projects remove invasive species.

The following subsections provide more detail on why the projects are necessary and how they address the primary needs of the Region.

Water Demand Reduction

One of most significant challenges in the Region is the uncertainty of imported water supplies. Ecosystem concerns in the Bay-Delta resulted in legal and regulatory actions that have reduced the SWP supplies since 2008 and this trajectory is exacerbated by ongoing uncertainties related to climate change and drought. The 2011 SWP Delivery Reliability Report from DWR projects SWP deliveries from 9 percent to 70 percent of the maximum contract amount over an 82-year simulation period under current conditions. Deliveries are expected to average 61 percent of maximum contract amount under current conditions, but decrease to approximately 35 percent of maximum contract amount over multiple dry years.

Implementing the programs in this Proposal will assist the Region in reducing their existing water demand and increasing water supply reliability. The **Santa Clarita Valley Water Use Efficiency (SCV WUE) Strategic Plan Programs (CLWA-3)** and **Santa Clarita Water Division Water Use Efficiency (SCWD WUE) Programs (SCWD-2)** are expected to reduce imported water supply demand by 536 AFY. The conservation programs will also help the Region meet its State water conservation requirements of Senate Bill 7 of Special Extended Session 7 (SBX7-7), building on significant recent efforts to analyze demand, identify potential water savings and develop an implementation plan. By reducing demand through conservation, the Region can optimize use of existing supplies, and reduce the dependence on imported supplies. The **Foothill Feeder Connection (CLWA-8)** creates flexibility in the water conveyance system by sizing a critical connection to meet expanded WTP capacity. In addition the **USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)** will remove approximately 42 acres of arundo and will increase the water supply as these invasive plants utilizes large quantities of surface and groundwater.

Water Quality

Water Quality is also a primary issue for the Region. This Proposal is consistent with the Basin Plan for the Los Angeles Region which identifies water quality objectives for water bodies within the Region.

Salinity and nutrient management concerns in the Upper Santa Clara River Watershed are primarily driven by salt sensitive crops located downstream. High chloride levels are of particular concern since high value, chloride sensitive crops like strawberries and avocados grown in the lower watershed utilize surface waters or ground water influenced by surface water for irrigation. Findings from previous reports cite the sources of chloride as source waters and residential self-regenerating water-softeners (SRWS). In 2003, SCVSD passed an ordinance banning the installation of all new SRWSs, and by passage of Senate Bill 475, SCVSD has authority to remove all SRWSs remaining in the Santa Clarita Valley that were installed prior to 2003.

A TMDL for chloride in the Upper Santa Clara River (Reaches 5(EPA 303(d) list Reach 7) and Reach 6 (EPA 303(d) list Reach 8) was adopted by the Los Angeles RWQCB and became effective on May 5, 2005. The Basin Plan Amendment for the chloride TMDL in the Upper Santa Clara River was unanimously adopted by the RWQCB on December 11, 2008. The TMDL established waste load allocations of 100 mg/L for the Saugus and Valencia WRPs. The TMDL implementation schedule allows for several special studies to determine whether existing Water Quality Objectives (WQOs) and waste-load allocations for chloride can be revised, and provides for an 11-year schedule to attain compliance with the final water quality objectives and waste-load allocations for chloride.

Wastewater discharges from the Saugus and Valencia WRPs were determined to be the principal source, making up an estimated 70 percent of the chloride load. Efforts have been ongoing since that time to address these issues. The proposed ***Automatic Water Softener Rebate and Public Outreach (SCVSD-1)*** is a continuation of those efforts to directly address the Basin Plan's Chloride reduction goal.

Some of the programs included in the Proposal provide benefits to the key water quality challenges and objectives addressed in the Basin Plan. The ***Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)*** and ***Automatic Water Softener Rebate and Public Outreach (SCVSD-1)*** programs both use markedly different approaches with the former (once the complete project is constructed) focuses on the development of innovative technology and the latter addresses removing the source of the chloride problem. In other words, one program removes the water softeners that contribute to the chloride problem and the other program treats the water so the softeners are not needed.

The ***SCV WUE Strategic Plan Programs (CLWA-3) and SCWD WUE Programs (SCWD-2)*** also have water quality implication in their landscape-focused programs which will reduce non-point source pollution and runoff from landscape irrigation.

Invasive Species

Invasive species can irrevocably modify and disrupt the ecological systems in which they spread, causing harm to native species through sudden increased competition for the same resources. The resulting reduction in ecological diversity makes the native ecosystems more susceptible to further disturbances and reduces their ability to provide valuable ecological services. Considering the high diversity of the USCR and numerous special status species in the Region, the control of invasive species is considered important to sustain and enhance the existing natural systems and ecological processes in the Region. Invasive species are particularly an issue in floodplain areas. The restoration of riparian habitat through the removal of these invasive plant species is the primary focus of the ***USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1).*** The program also reduces the risk of flooding and fire hazard.

Table 3-3 further identifies how each of the projects will address these goals and objectives.

TABLE 3-3: HOW PROJECTS ADDRESS PROPOSAL AND IRWM PLAN GOALS AND OBJECTIVES

PROJECT	Integrate water and watershed related planning efforts	Facilitate regional cooperation	Reduce Water Demand	Improve Operational Efficiency	Increase Water Supply	Improve Water Quality	Promote Resource Stewardship
Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)	♦	♦	♦	♦	♦	♦	♦
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)	♦	♦	♦	♦	♦	♦	♦
Foothill Feeder Connection (CLWA-8)	♦	♦		♦			
Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)	♦	♦				♦	
Automatic Water Softener Rebate and Public Outreach program (SCVSD-1)	♦	♦	♦			♦	♦
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)	♦	♦	♦		♦	♦	♦

Integrated Elements of the Proposal

While each project provides its own unique benefits, this collection of projects will compound benefits and enhance the reliability of existing supplies within the Santa Clarita Valley by reducing water demand, increasing water supply, improving water quality and watershed health. The Proposal as a whole will also:

- Spur further support for the IRWM planning process
- Create projects that demonstrate multiple benefits to the community and provide incentives for agencies to pass local funding measures; and
- Develop water management partnerships for coordinated implementation of regional projects

The following section describes the synergies or linkages between projects that result in added value or require coordinated implementation. The projects are integrated in two ways: (1) through cooperation between multiple agencies, leveraging the resources of each to multiply the value added to the project. Of the Proposal's 6 projects, all six enlist the cooperation of multiple agencies and/or stakeholders, and (2) through projects that achieve a common objective.

The projects address IRWM Plan objectives in the following ways:

1. Santa Clarita Valley (SCV) WUE Strategic Plan Programs (CLWA-3) - reduces demands on the regional water supply and benefits from cooperation of all four retailers and builds on previous successful efforts in conservation: both in planning and implementation. This collaboration will increase the reach and success of the program as the combined resources will allow for a broader

messaging; Valley residents are provided with a consistent message and suite of implementation options. The landscape-focused programs will also address non-point source pollution from runoff. Finally, these programs will support the Region's efforts to meet its SBX7-7 requirements.

2. SCWD WUE Programs (SCWD-2) - reduces demands on the regional water supply and is complementary to CLWA-3 in that it provides for programs not covered within those efforts and expands on those that have proven successful, building on the conservation master plan analysis. The landscape-focused high-efficiency irrigation nozzle and large landscape budget programs will also address non-point source pollution by reducing runoff from irrigation.
3. Foothill Feeder Connection (CLWA-8) – the project will improve supply and system reliability by providing 6 MGD of additional capacity initially (and up to 30 MGD of additional capacity when the RVWTP is expanded) to CLWA's water system and replace a temporary pipeline.
4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2) – The full project (Phases 1-3) improves drinking water quality through reduction of calcium carbonate hardness, protects the availability of surface and groundwater supplies. This Phase 1 will provide the critical engineering information and design, including: 1) a water quality analysis, 2) conceptual treatment plant design to determine appropriate sizing, treatment chemical need, and capital and Operational & Maintenance (O&M) costs, and land requirements and 3) a rate study and consumer demand analysis. The complete NCWD-2 project will decrease water hardness at the source and will complement SCVSD-1 by decreasing the need for water softeners by consumers.
5. Automatic Water Softener Rebate and Public Outreach program (SCVSD-1) – strives to meet the chloride TMDL limits that have been set by the Los Angeles RWQCB. SCVSD-1 will reduce, ultimately the goal to eliminate, automatic water softeners which will reduce the chloride load entering the Water Reclamation Plants.
6. USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1) - decreases loss of local water supply to noxious non-native weeds. The restoration of riparian habitat through the removal of these invasive plant species, some of which have colonized in large extents of the Upper Santa Clara River watershed, improves water quality and increases water supply by increasing the available surface and subsurface water that can be utilized for beneficial purposes, promotes resource stewardship and also reduces the risk of flooding and fire hazard.

Regional Map

The six projects are shown on Figure 1. Figures 2 and 3 provide the IRWM Plan Region boundary and the hydrological features within the Region. During development of the 2008 IRWM Plan, no communities that met the definition as defined in the Water Code of a Disadvantaged Community (DAC) were identified. As such, none have been identified on the regional map.

Completed Work

This section identifies the status of work items for each project. For the Application, three status conditions are considered:

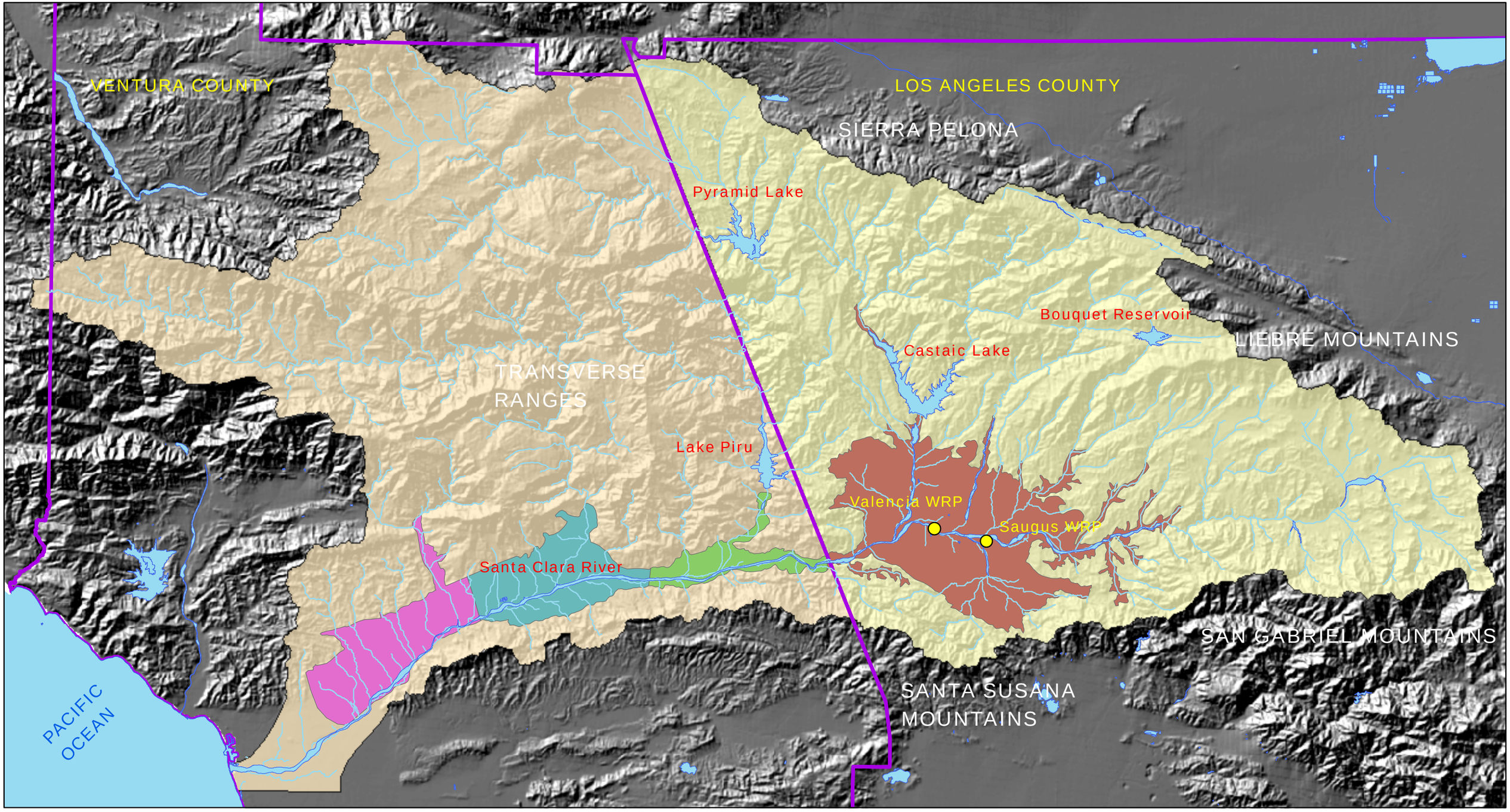
1. Work item complete as of application submittal date (March 29, 2013)
2. Work item is not complete as of application submittal date, but will be complete by October 1, 2013.
3. Work item will be completed after October 1, 2013.

October 1, 2013 is the assumed date of grant contract signature and all tasks completed after this date will be included as work items in the grant contract.

TABLE 3-4: STATUS OF CRITICAL PRE-CONSTRUCTION PROJECT WORK ITEMS

PROJECT	Land/Row Acquisition	Planning	Design/ Engineering	Environmental Documentation	Permit Acquisition
Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)	NA	Complete	NA	NA	NA
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)	NA	Complete	NA	NA	NA
Foothill Feeder Connection (CLWA-8)	2014	Complete	Complete	Complete	Complete
Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)	2014	2015	2015	2015	2015
Automatic Water Softener Rebate and Public Outreach program (SCVSD-1)	NA	Complete	November 2013	NA	NA
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)	NA	Complete	Complete	Complete	Complete

Notes:
- Pre-construction work item complete as of March 2013
- Pre-construction work item complete after October 1, 2013
- Not Applicable (NA)



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Water Reclamation Plants

Groundwater Basin

- EASTERN
- PIRU
- FILLMORE
- SANTA PAULA

Watershed

- Lower Santa Clara River
- Upper Santa Clara River

0 5 10 20 Miles

Figure 2
Upper Santa Clara River Watershed
Hydrologic Features

LOS ANGELES COUNTY

VENTURA COUNTY

Pyramid Lake

California Aqueduct

Bouquet Reservoir

Castaic Lake

Lake Piru

Santa Clara River

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Watershed

- Upper Santa Clara River
- Santa Clarita
- Santa Clarita Valley Sanitation District
- CLWA
- Valencia Water Company
- LA County WaterWorks District 36
- Santa Clarita Water Company
- Newhall County Water District
- LA County WaterWorks District 37
- US Forrest Service Boundary
- LA County Flood Control Boundary
- Lower Santa Clara River

0 1 2 4 6 8 10 Miles

Figure 3
Upper Santa Clara River Watershed/IRWMP Region

Existing Data and Studies

Numerous scientific and technical studies and feasibility reports have been conducted within the Santa Clarita Valley in support of both the IRWM planning process and for development of the implementation projects included in this Proposal. These studies and reports provide the basis for demonstrating the scientific and technical merit of the Proposal, support the statement of benefits contained throughout, and demonstrate the feasibility of successful project implementation.

Documented studies and the collection of data have been completed or are in the process of being completed for all six projects in this Proposal supporting the claimed benefits. An electronic copy of each applicable study is included on a CD provided with the Proposal and a summary of the types of information contained in each reference is provided by individual project below. The CD includes six separate folders, one for each project's reference materials.

A brief discussion of how each of these projects' technical documentation supports the technical adequacy and feasibility is provided in greater detail below. The Work Plans will identify the data reporting and monitoring requirements for each project within the Proposal.

Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)		
Reference No.	**Reference**	**Relevance**
CLWA -3.1	CLWA Santa Clarita Valley Water Use Efficiency Strategic Plan, Final Draft. August 2008. A & N Technical Services, Inc.	The CLWA Santa Clarita Valley Water Use Efficiency Strategic Plan (WUE Plan) includes programs and projects that will most effectively reduce the per capita water use in the Valley.
CLWA-3.2	2010 Urban Water Management Plan (UWMP) Prepared for CLWA, CLWA Santa Clarita Water Division, Newhall County Water District, Valencia Water Company. June 2011. Kennedy/Jenks Consultants.	The 2010 UWMP plan provides a comprehensive overview of the water supply goals for the future of the Santa Clarita Valley (SCV) and identifies the current and planned water conservation programs and projects within the CLWA service area as well as the SBX7-7 requirements for each retail agency.
CLWA-3.3	SCWD Water Use Efficiency Plan. July 2012. Kennedy/Jenks Consultants.	The SCWD WUE Strategic Plan (Strategic Plan) was developed in July 2012 to identify activities that lead SCWD to SBX7-7 compliance. The Strategic Plan specifies ten water use efficiency programs that provide incentives to increase water use efficiency in its service area within the SCV.
CLWA-3.4	VWC Water Conservation Plan, VWC, October 2012.	The VWC Water Conservation Plan was developed in October 2012 to show progress to date in meeting conservation goals and to outline the path to reaching the per capita water usage goals through 2020. It includes detailed information about past performance and future programs for the years 2013-2016.

Technical Adequacy (SCV WUE Strategic Plan Programs [CLWA-3])

CLWA and the four purveyors all utilize water conservation methods as a means to reduce demand for imported water, mitigate the effects of drought and meet state requirements. CLWA prepared its 2010

UWMP with the four local retail water agencies in the Santa Clarita Valley: CLWA's SCWD, NCWD, Valencia Water Company (VWC), and Los Angeles County Waterworks District No. 36 (LACWWD #36). CLWA and the four agencies are all members of the California Urban Water Conservation Council (CUWCC) and each are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California. Signatories pledge to develop and implement the 14 Best Management Practices (BMPs) that are intended to reduce long-term urban water demands. These BMPs are functionally-equivalent to the demand management measures specified in California Water Code Section 10631(f)(1). In addition, the 2010 UWMP required that each retail agency calculate their SBX7-7 requirements.

The 2010 UWMP (Reference CLWA-3.2) forecasts water supply demands and supplies, characterizes the Region's water portfolio, and describes the BMPs proposed to be implemented for water savings and conservation efforts in their service area. These documents show that the CLWA-3 Program will meet BMP No. 5 – Large Landscape Conservation Programs and Incentives through implementation of the Large Landscape Audit and Incentive Program, Santa Clarita Valley CII Audit and Customized Incentive Program, and Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program and the Cash for Grass Rebate Program led by CLWA. The High-Efficiency Washing Machine Program will address indoor residential use, or BMP 3. Even more critical, these programs will help the agencies meet their SBX7-7 requirements and consequently allow the State to meet its 20% reduction goals by 2020.

Project Feasibility (SCV WUE Strategic Plan Programs [CLWA-3])

The feasibility of CLWA-3 is documented in Reference CLWA-3.1, by experts in the field of water conservation technologies, through direct experience from implementing these programs in the Region as well as other agencies experiences. Implementation of Evapotranspiration (ET) Controllers as part of the Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program will result in measurable and quantifiable results in water savings in the Santa Clarita Valley, as will the ET controllers and efficient spray nozzles through the Large Landscape Audit and Incentives Program, the cash for grass rebates and high-efficiency washing machines. Each of the programs being implemented has been implemented by numerous water agencies (including CLWA), has shown documented savings and is identified by both the CUWCC and the Alliance for Water Efficiency; recognized state and national leaders in the field of conservation.

Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)		
Reference No.	**Reference**	**Relevance**
SCWD-2.1	SCWD WUE Strategic Plan. July 2012. Kennedy/Jenks Consultants.	The SCWD WUE Strategic Plan (Strategic Plan) was developed in July 2012 to identify activities that lead SCWD to SBX7-7 compliance. The Strategic Plan specifies ten water use efficiency programs that provide incentives to increase water use efficiency in its service area within the SCV.

Technical Adequacy (SCWD WUE Programs [SCWD-2])

SCWD implements water conservation programs to reduce demand for imported water and meet its SBX7-7 requirements. SCWD prepared its 2010 UWMP as part of a regional effort led by CLWA (see previous project). In it, SCWD described its conservation programs and progress towards meeting the BMPs. In addition, SCWD calculated its SBX7-7 requirements.

Subsequent to the development of the UWMP, SCWD developed a WUE Strategic Implementation Plan to ensure that the Division meets its 2015 and 2020 goals (Reference SCWD-2.1). The SCWD Strategic Plan identifies all possible program options and then analyzes them to find the optimum group of programs for the Division taking into account cost, savings, implementability and more. The ten programs and projects identified in the SCWD Strategic Plan will reduce SCWD's water use to 192 gallons per capita per day (gpcd) in 2018 and 188 gpcd by 2020. The SCWD Strategic Plan provides tools and details that can be used to guide implementation and monitor success as well as a phased implementation approach. The SCWD-2 project proposes to implement three programs identified in its Strategic Plan: 1) High-Efficiency Irrigation Nozzle Distribution, 2) High-Efficiency Washing Machine Rebate Program, and 3) Large Landscape Water Budgets.

Project Feasibility (SCWD WUE Programs [SCWD-2])

The feasibility of the WUE programs in SCWD-2 is well documented by experts in the field of water conservation technologies, and through direct experience from implementing these programs in prior years. All the assumptions in the analysis came from verified sources including the CUWCC, the Alliance for Water Efficiency and/or communications with similar water agencies and programs. High-Efficiency Irrigation Nozzle Distribution and High-Efficiency Washing Machine Rebates are both already being successfully implemented in SCWD, while Large Landscape Water Budgets have all been documented to save water for numerous agencies in the state and are identified as a CUWCC BMP.

Foothill Feeder Connection (CLWA-8)		
Reference No.	**Reference**	**Relevance**
CLWA-8.1	Final Environmental Impact Report (FEIR) for the CLWA Rio Vista Water Treatment Plant Expansion (SAIC, August 2006).	The second volume of the FEIR (this volume) contains public comments received on the DEIR during the public review period (May 22 to July 10, 2006), responses to the public comments, and changes to the text of the DEIR.
CLWA-8.2	Draft Environmental Impact Report (DEIR) for the CLWA Rio Vista Water Treatment Plant Expansion (SAIC, May 2006).	The Project is the expansion of the existing RVWTP treatment capacity from 30 MGD to 60 MGD in response to current and new water quality standards, to improve reliability to meet existing customer demands, and planned future demand. As part of the RVWTP Treatment Expansion Project, a parallel connection to the existing 42-inch connection to the Metropolitan Water District (MWD) 201-inch Foothill Feeder pipeline is constructed (including a connection to a new MWD 48-inch valve), which is the CLWA-8 Project. The proposed Project increases the existing water treatment capacity. The Project utilizes water that is part of CLWA's existing supply.
CLWA-8.3	DEIR (California State Clearinghouse No. 1998041127) CLWA Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount (SAIC, 2004).	This is a planning document that recommends expanding the RVWTP to 90 MGD. See page 3.15-15, lines 14-15.

Foothill Feeder Connection (CLWA-8)		
Reference No.	**Reference**	**Relevance**
CLWA-8.4	Santa Clara Valley Pipeline CLWA-01 Service Connection Pressure Surge Analysis (Flow Science, 2009).	Hydraulic Surge Analysis of the Rio Vista Water Pump Station and Foothill Feeder Connection including design recommendations derived from the analysis.
CLWA-8.5	Agreement between the Metropolitan Water District Of Southern California and the Castaic Lake Water Agency For Interconnection CLWA-01 Agreement NO. AO-5142.	Agreement between CLWA and MWD to allow CLWA use of Foothill Feeder Connection up to a maximum capacity of 90 MGD.
CLWA-8.6	Foothill Feeder Connection Plans and Specifications (Kennedy/Jenks Consultants, June 2012).	Design plans and specifications.
CLWA-8.7	Engineer's Estimate of Probable Cost (Kennedy/Jenks Consultants, June 2012).	Engineer's Estimate of Probable Cost.

Technical Adequacy (Foothill Feeder Connection [CLWA-8])

As part of the Rio Vista Water Treatment Plant (RVWTP) expansion, completed in 2011, the adopted 2008 USCR IRWM Plan discusses the need for a parallel connection to the existing Foothill Feeder Connection, which is what the CLWA-8 Project will accomplish.

Project Feasibility (Foothill Feeder Connection [CLWA-8])

The feasibility of this project was examined as part of Reference CLWA-8.1. Since the current Foothill Feeder Connection is owned and operated by Metropolitan Water District (MWD), the Project design uses MWD's standard specifications for the portion of the project that includes MWD's property and a separate parallel set of technical specifications for the CLWA's pipeline and buried butterfly work. All design has been approved by MWD. Agreements with MWD are signed. Scheduling will be necessary so specific construction tasks can be completed during MWD's routine yearly operational shutdown period. This has been accounted for in the recommended schedule.

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)		
Reference No.	**Reference**	**Relevance**
NCWD-2.1	Twenty Years of Experience with Central Softening in the Netherlands: Water Quality - Environmental Benefits - Costs. April 2006. Jan Hofman, Ono Kramer, Jan Peter van der Hoek, Maarten Nederlof, Martijn Groenendijk; Waternet, Vitens, Brabant Water.	Introduction of Pellet softening technology.
NCWD-2.2	Well Softening Feasibility Study. April 2006. Kennedy/Jenks Consultants.	Study examined the most efficient and cost-effective approach to groundwater wellhead softening for approximately 400 VWC customers in the North Valencia service area.

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)		
Reference No.	**Reference**	**Relevance**
NCWD-2.3	Groundwater Softening Demonstration Project for VWC. October 2009. Kennedy/Jenks Consultants.	Study analyzed the results of VWC's demonstration project.

Technical Adequacy (Pellet Water Softening Treatment Plant - Phase 1 [NCWD-2])

Pellet softening technology was first introduced in the late 1970s in the Netherlands. A comprehensive study and description of the process and benefits are detailed in Reference NCWD-2.1. Also, a feasibility study and a demonstration project have been completed for pellet softening for the Valencia Water Company (VWC), a sister retailer to NCWD (References NCWD-2.1 and 2.2). The groundwater in the area has high hardness that is not a regulated water quality parameter but is an important aesthetic parameter. The hard water has resulted in widespread use of residential water softeners. The self-regenerating type of water softener (also known as automatic water softeners or AWS) produces a high chloride, brine discharge to the wastewater system and in addition to imported potable water, is a cause of treated wastewater discharged to the Santa Clara River exceeding the Basin Plan TMDL for chloride of 100 mg/L.

The Feasibility Study (Reference NCWD-2.2) examined the most efficient and cost-effective approach to groundwater wellhead softening for approximately 400 VWC customers in the North Valencia service area. The study concluded that pellet softening was the preferred technology and recommended a demonstration project. Pellet softening utilizes chemical precipitation methods for removing calcium hardness. VWC constructed a demonstration project as recommended in the study in 2008 - 2009. A second report was completed (Reference NCWD-2.3) after the demonstration project was constructed, which analyzed the results of VWC's demonstration project and concluded the following:

(1) The average product water yield for the demonstration facility was 99.8 percent *making this process extremely efficient from a water treatment perspective*. Other softening technologies such as membranes and ion exchange have an 80 and 98 percent product water yield, respectively.

(2) Calcium hardness (as CaCO3) averaged 194 mg/L before treatment and 55mg/L following treatment, an average removal of 71.5 percent.

Project Feasibility (Pellet Water Softening Treatment Plant - Phase 1 [NCWD-2])

The results of the analysis of VWC's demonstration projects indicated that pellet softening provided a cost-effective and aesthetically acceptable treatment process for removing calcium hardness. So the project feasibility for a neighboring retailer such as NCWD should be relatively high. Reference NCWD-2.3 detailed the anticipated budgets for a softening implementation plan for many of VWC's wells. Pellet softening technology research documents have been obtained. All related data and materials will be available to assist with the conceptual design, cost estimates, and water quality analysis, which will be completed during Phase 1.

Automatic Water Softener Rebate and Public Outreach program (SCVSD-1)		
Reference No.	**Reference**	**Relevance**
SCVSD-1.1	Chloride Source Identification/ Reduction, Pollution Prevention, and Public Outreach Plan, Annual Report November 2012. Santa Clarita Valley Sanitation District of Los Angeles County (SCVSD).	Since 2005, the SCVSD has been required to submit these annual reports as part of the Regional Board's USCR Chloride TMDL. They address measures taken and planned to be taken to quantify and control sources of chloride in the SCVSD sewerage system.
SCVSD-1.2	Santa Clara River Chloride Reduction Ordinance of 2008 (Ordinance). SCVSD.	The Ordinance was approved by voters and took effect on January 1, 2009. The Ordinance required the removal and disposal of all existing residential Automatic Water Softeners (AWS) by June 30, 2009. Over 7,900 AWS have been removed, but approximately 500 may still be discharging and several thousand may still be installed.
SCVSD-1.3	Memo entitled "Estimate of Annual Industrial Waste Inspection Labor Cost for SRWS Home Inspections in the SCV," January 15, 2013. SCVSD.	Memo from the Sanitation District staff for Home Inspection cost estimates for the Automatic Water Softener Enforcement Program.

Technical Adequacy (Automatic Water Softener Rebate and Public Outreach program [SCVSD-1]

Levels and sources of chloride in the Santa Clara River have been extensively documented. The Los Angeles RWQCB first developed the TMDL for chloride in the USCR in 2000. The TMDL showed that the sources of the chloride which are loaded into the Santa Clara River are primarily chloride contained in the potable water and chloride, added by domestic uses, including self regenerating water softeners. In response, on March 27, 2003, the Ordinance Prohibiting the Installation of Certain Water Softening Appliances, took effect prohibiting the installation of residential automatic water softeners, including new and replacement units. On January 1, 2009, Measure S - Santa Clara River Chloride Reduction Ordinance of 2008 (Reference SCVSD-1.2) - took effect requiring the removal and disposal of all existing residential Automatic Water Softeners (AWS) by June 30, 2009.

Project Feasibility (Automatic Water Softener Rebate and Public Outreach program [SCVSD-1])

The project is an extension of successful efforts to remove AWS and reduce chloride levels. The Sanitation District has been implementing various phases of the AWS Public Outreach Program since February 2003. The major multimedia community-wide components of the campaign began on March 25, 2004 and concluded on June 30, 2009. The Sanitation District launched the AWS Rebate Program Phase I on November 30, 2005 and began implementing the AWS Rebate Program Phase II on April 1, 2007. These programs have been highly successful in removing over 7,900 automatic water softeners in the Santa Clarita Valley and significantly reducing the chloride load in the final effluent discharged from the Sanitation District's Saugus and Valencia WRPs. The multi-pronged approach of the program that incorporates outreach, monitoring, inspections, notices and incentives will be an effective way to remove the remaining AWS.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)		
Reference No.	**Reference**	**Relevance**
SC-1/ BCN-1.1	Upper Santa Clara River Arundo/Tamarisk Removal Program – Santa Clarita Site Specific Plan (Ventura County Resource Conservation District (VCRCD)/AMEC, July 2005)	As part of the SCARP, the Site Specific Project implements the removal of noxious and invasive plants from a highly visible 150-acre area of the river located in the City of Santa Clarita. This project has acted as a low impact arundo and tamarisk removal demonstration project for interested agencies, landowners, and non profits; and stimulates public interest in, and support for, such removal projects. It has also resulted in the removal of arundo and tamarisk in a highly infested reach of the Santa Clara River, Bouquet Creek and San Francisquito Creek.
SC-1/ BCN-1.2	Upper Santa Clara River Watershed Arundo and Tamarisk Removal Program – Long Term Implementation Plan (VCRCD, June 2006)	This Plan provides guidance to stakeholders for implementing procedures to remove invasive, non native plants. The primary objective of the plan is to guide and facilitate the implementation of arundo and/or tamarisk removal projects within the upper Santa Clara River watershed of Los Angeles County.
SC-1/ BCN- 1.3	Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Final (VCRCD, February 2006)	This EIR provides the necessary CEQA documentation for the SC-1 Project.
SC-1/ BCN-1.4	Permits from the US Fish and Wildlife Service, (California Department of Fish and Game SAA, and Army Corps of Engineers – 2004 – present)	Permitting allows for any landowner to remove arundo and tamarisk from their property adjacent to the Santa Clara River or its tributaries in Los Angeles County. Any actions require meeting the standard best management practices and mitigations in SCARP and the programmatic EIR.
SC-1/ BCN-1.5	USCR Watershed Arundo/Tamarisk Removal Plan Programmatic EIR Statement of Findings and Statement of Overriding Considerations, (VCRCD 2006)	The EIR determined potential short-term significant impacts to noise, water quality, and biological resources. Due to the long term environmental benefits of the project, a Statement of Overriding Considerations of was adopted by the VCRCD.
SC-1/ BCN-1.6	Bouquet Canyon Creek Site Specific Restoration Plan, Department of Fish and Wildlife and Natural Resources Conservation Services	The Restoration Plan documents the methods to remove various invasive weed sites from a 3.5 mile stretch of Bouquet Canyon Creek and restore the native habitat.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)		
Reference No.	**Reference**	**Relevance**
SC/BCN-1.7	Wildscape Restoration Proposal for Non-Native Invasive Plant Removal, Fall 2012 Santa Clara River Watershed Arundo/Tamarisk Removal Program Site Specific Implementation Project Site, February 15, 2012 .	Contractor's Bid Proposal 2012 Contractor's Bid Proposal to complete arundo/tamarisk removal for a portion of Area E of the SCARP Site Specific Plan — including a total of 43 acres – that has already had two rounds of cuttings in 2009 and 2010. These cost estimates are also included.

Technical Adequacy (USCR Arundo/Tamarisk Removal Program [SCARP] Implementation [SC-1/BCN-1])

SCARP represents a regional project for the removal of non-native and invasive arundo and tamarisk. This program has consisted of demonstration projects, permitting, and educational programs as well as low impact removal. An EIR prepared in 2006 showed the impacts of removal of arundo and tamarisk to the Santa Clara River and its tributaries. The findings showed that without removal the plants would continue to spread and decrease the current water resources and result in a decline in native habitats. The project found that herbicide application with the proposed approach will not impact the groundwater quality. Education programs for landowners and stakeholders further expanded the efforts to remove these species. Best management practices (BMP) will be utilized and were examined in the EIR.

Project Feasibility (USCR Arundo/Tamarisk Removal Program [SCARP] Implementation [SC-1/BCN-1])

In 2005 the feasibility of this project was established though the site specific plan which used BMPs for arundo and tamarisk removal. The SCARP included an implementation aspect which included development of a phased plan to remove arundo/tamarisk on 297 acres of land owned by the City of Santa Clarita. The site specific implementation project covered approximately 75 acres of the 297-acre site and removed 20 acres of arundo and tamarisk. As a result of the SCARP effort, several stakeholders have begun to work together to form the Santa Clara River Invasive Weeds Task Force to better coordinate and communicate about invasive species throughout the watershed. Permitting from the US Fish and Wildlife service to private landowners allows for the continued removal of arundo and tamarisk as well as community participation.

Work Plan Part II.

The following sections include detailed project specific information about the six projects within this Proposal.

Proposal Work Plans
1. Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)
2. Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
3. Foothill Feeder Connection (CLWA-8)
4. Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)
5. Automatic Water Softener Rebate and Public Outreach program (SCVSD-1)
6. USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)

I. Introduction

Project Name

Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)

Project Description

The Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan (SCV Strategic Plan) identifies programs and projects that will most effectively reduce per capita water use in the Santa Clarita Valley. The plan was completed in 2008 and is a tool that generally guides the actions of the Family of Water Suppliers (the wholesale and retail water purveyors). The SCV WUE Strategic Plan Programs (CLWA-3) will implement five programs identified in the SCV Strategic Plan.

The five programs being implemented by CLWA-3 are:

1. Santa Clarita Valley Large Landscape Audit and Incentive Program

   Original Description in SCV Strategic Plan:

   The program offers water audits, equipment rebates (incentives), and water budgeting to public and private sector large landscape sites with high water use. At the onset, the key targets will be the City of Santa Clarita Landscape Maintenance Districts, Los Angeles County Parks and Homeowner's Associations. Rebates (incentives) are offered for water saving devices including high-efficiency nozzles and weather-based irrigation controllers.

   Modification from SCV Strategic Plan: In the first quarterly progress report for the IRWM Plan Round 1 Implementation Grant (for which some of these programs in past years were awarded funding and therefore required to submit progress reports to DWR), this program was modified (for reasons described in Program 2 below) to offer rebates at $25 per active station for weather-based irrigation controllers and rebates of $300 per acre-foot saved for landscape modifications. This modification eliminated the water audit and budgeting and kept a modified form of the rebate (by active station of the irrigation controllers or by landscape modification). Also, a pre- and post-inspection of the controller are required. These same modifications were also made for the CII Audit and Customized Incentive Program described below.

2. Santa Clarita Valley Commercial, Industrial and Institutional Audit and Customized Incentive Program

   Original Description in SCV Strategic Plan:

   Approximately 19% of Santa Clarita Valley water is consumed by CII customers. As a result, this program is tailored to allow customized incentives for site-specific opportunities. The program offers comprehensive water audits and reporting of cost-effective recommendations in a clear and concise format with a focus on customer payback. The program will target high opportunity customers including: amusements parks, colleges, universities and school districts, hotels, hospitals and other customers identified by the retail water agencies. The key decision maker will be identified and

contacted via phone to enlist participation. After the audit is conducted, customers will then be offered a per acre-foot saved rebate (incentive) based upon the findings of the audit.

Modification from SCV Strategic Plan: This program was modified to offer rebates at $25 per active station for weather-based irrigation controllers and rebates of $300 per acre-foot saved for landscape modifications.

In reference to Programs 1 and 2 (above), CLWA found that almost all of the recommendations made as a result of a check-up or audit in the first two years of the program resulted in recommendations for weather-based irrigation controllers, high-efficiency sprinkler nozzles and planting modification. Part of the similarity in recommendations is a result of the nature of Santa Clarita, portions of which were built as a planned community with turf-heavy landscaping; the other factor leading to a similarity in recommendations is that many of the clients were public sector clients (schools) that had not upgraded their irrigation systems, but have made indoor plumbing upgrades instead.

CLWA conducted a literature review of weather-based irrigation controller studies and found that an assumption of 20% water savings on a large landscape or commercial site is realistic (Municipal Water District of Orange County [MWDOC] Residential Runoff Reduction Study (2004); MWDOC Smart Timer Rebate Program Evaluation (2011); San Diego Water Authority Smart Landscape Grant Program (2011)). In these studies, all of the savings (20% or more on average) occurred without audits or check-ups and was simply a result of a direct rebate program for controllers.

The current incarnation of Programs 1 and 2 includes a pre-inspection of the existing irrigation controller, a post-inspection of the new controller, and a mandatory educational component to train the customers on use and reasonable expectations for controllers. Additionally, CLWA will offer a landscape modification option to rebate landscape changes in terms of anticipated water savings.

3. Santa Clarita Valley Landscape Contractor Certification and Weather-Based Irrigation Controller Program

   Original Description in SCV Strategic Plan:

   The Program targets both landscape contractors and residents in the Santa Clarita Valley. Landscape contractors and residents would be invited to water use efficiency training workshops which combine both the principles and practical elements of efficient irrigation. Participants would combine classroom and field training to get a working and practical understanding of the importance and elements of water use efficiency, how to properly install weather-based irrigation controllers, hydrozoning, and achieving high distribution uniformity. After attending the hands-on training, landscape contractors and residents would be eligible to receive free weather-based irrigation controllers. Because the participants don't have hands-on training, after installing the weather-based irrigation controller, a consultant inspects the installation to make sure it was done correctly and landscape contractors and residents then have a final opportunity to ask questions about the programming of the controller

   Modification from SCV Strategic Plan: In 2012, CLWA contracted with Droplet Technologies to develop a web site (scvh2oprograms.com) where contractors and residents can take a class on weather-based irrigation controller use, programming and installation (as well as best management practices for landscaping). This is a modification of the original program because it offers the classes on-line rather than face-to-face.

4. High-Efficiency Clothes Washer (HECW) Machine Program

Original Description in SCV Strategic Plan:

The program targets single family and multi-family residential customers purchasing a new clothes washer. Because this is a large ticket item for most customers, the program can only leverage annual replacement sales. Getting customers to replace their clothes washer without already having a need is extremely challenging.

Modification from SCV Strategic Plan: This program is available for both residential and commercial customers and offers a $200 rebate for a high-efficiency washing machine with a water factor of 4.0 or less. The rebate is a partnership between the wholesaler and retailer in which the customer receives $200, contributed by the wholesaler ($100) and the retailer ($100).

5. Cash for Grass Rebate Program

   Original Description in SCV Strategic Plan:

   Approximately 70% of the Santa Clarita Valley water consumption is for residential and business outdoor water use. A significant amount of that water is used to irrigate water-thirsty turf grasses. For this program, Santa Clarita Valley customers would be offered an incentive per square foot to replace turf with low-water using plants.

   Using Long Beach's Lawn to Garden (http://www.lblawntogarden.com/) as a model, CLWA plans to create an on-line application and on-line class during which residents apply for funds, train in basic water saving practices in landscaping, and then re-plant their landscapes. The goal is to remove 300,000 square feet of turf.

6. Summary of Programs

   1 - Santa Clarita Valley Large Landscape Audit and Incentive Program: Includes 80 rebates @ $5,000 each, average over two years.

   2 - Santa Clarita Valley CII Audit and Customized Incentive Program: Includes 20 audits @ $5,000 each, average over two years.

   3- Santa Clarita Valley Landscape Contractor Certification and Weather-Based Irrigation Controller Program: Includes 1,700 units distributed at $425/unit.

   4 - High-Efficiency Clothes Washer (HECW) Machines: Includes 2,500 rebates per year over two years at $100 each (matched by $100 from retailer).

   5 - Cash for Grass: Includes $1.5 per square foot for 300,000 square feet.

Implementation of all five programs will yield avoided SWP imports of 380 acre-feet per year (AFY).

Goals and Objectives

The primary goal of the SCV WUE Strategic Plan Programs (CLWA-3) is to reduce water demand by at least 10 percent over the next 20 years. Newly passed State water conservation requirements calls for progress towards a 20 percent reduction in per capita water use by 2020. The goal will in turn reduce runoff and improve water quality.

Purpose and Need

The SCV WUE Strategic Plan Programs (CLWA-3) identifies programs that will most effectively reduce per capita water use in the Santa Clarita Valley. The goal of the Project is to achieve a long-term reduction in

water demand of at least 10 percent over the next 20 years. Newly passed State legislation, SBX7-7, signed into law in November 2009, calls for progress towards a 20 percent reduction in per capita water use by 2020. This CLWA-3 Project will implement five programs identified in the SCV WUE Strategic Plan to help meet these goals.

CLWA-3 will also help meet the USCR IRWM Plan's objectives of reducing water demand and improving water quality. This is accomplished by decreasing demand and the need to convey and treat imported water and by reducing runoff from irrigation to local channels.

By improving indoor and outdoor water use efficiency and conserving water, this Project will reduce water demand, avoid costs for purchase of imported water, increase water supply reliability for the CLWA customers, and improve operational flexibility for CLWA. The programs have already had three successful years of implementation and the CLWA-3 Project seeks to expand the programs as recommended in the Strategic Plan.

Synergies or Linkages

CLWA, the wholesaler for the Region, administers the SCV WUE Strategic Plan, which provides water use efficiency programs for the four water purveyors, including Santa Clarita Water Division (SCWD). The SCV WUE Strategic Plan offers comprehensive, long-term water use efficiency programs, and is part of the portfolio of programs for this IRWM Plan region. The original goal of the SCV WUE Strategic Plan was a 10% reduction in water use by 2030. This SCV WUE Strategic Plan is being updated and revised in 2013 with the goal of 20 percent by 2020 in mind.

Another WUE project is being proposed as part of this Proposal, SCWD-2. SCWD-2 is specific to the SCWD area. SCWD serves 41 percent of the Santa Clarita Valley and has specific needs that are not addressed in the SCV WUE SP. However, the two programs are complementary in that they both have popular programs, such as the High-Efficiency Clothes Washing Machines, that can add cumulative rebates to the wholesaler's existing rebates and ensure the consumer is more likely to take advantage of the rebate program given higher rebate values.

Completed Work

- *Santa Clarita Valley Large Landscape Audit and Incentive Program:* By October 1, 2013, CLWA estimates that 20 rebates will be processed for large landscape sites.

- *Santa Clarita Valley Commercial, Industrial and Institutional (CII) Audit and Customized Incentive Program:* By October 1, 2013, CLWA estimates that 5 rebates will be processed for large landscape sites.

- *Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program:* By October 1, 2013, CLWA estimates that approximately 1,800 weather-based irrigation controllers will have been distributed and inspected.

- *High-Efficiency Washing Machine Program:* By October 1, 2013, CLWA estimates that approximately 3,000 high-efficiency washing machines will have been rebated.

- *Cash for Grass Rebate Program:* This program will not be implemented until October 1, 2013.

Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)

Existing Data and Studies

CLWA-3.1 Santa Clarita Valley Water Use Efficiency Strategic Plan, Final Draft. August 2008. A & N Technical Services, Inc.

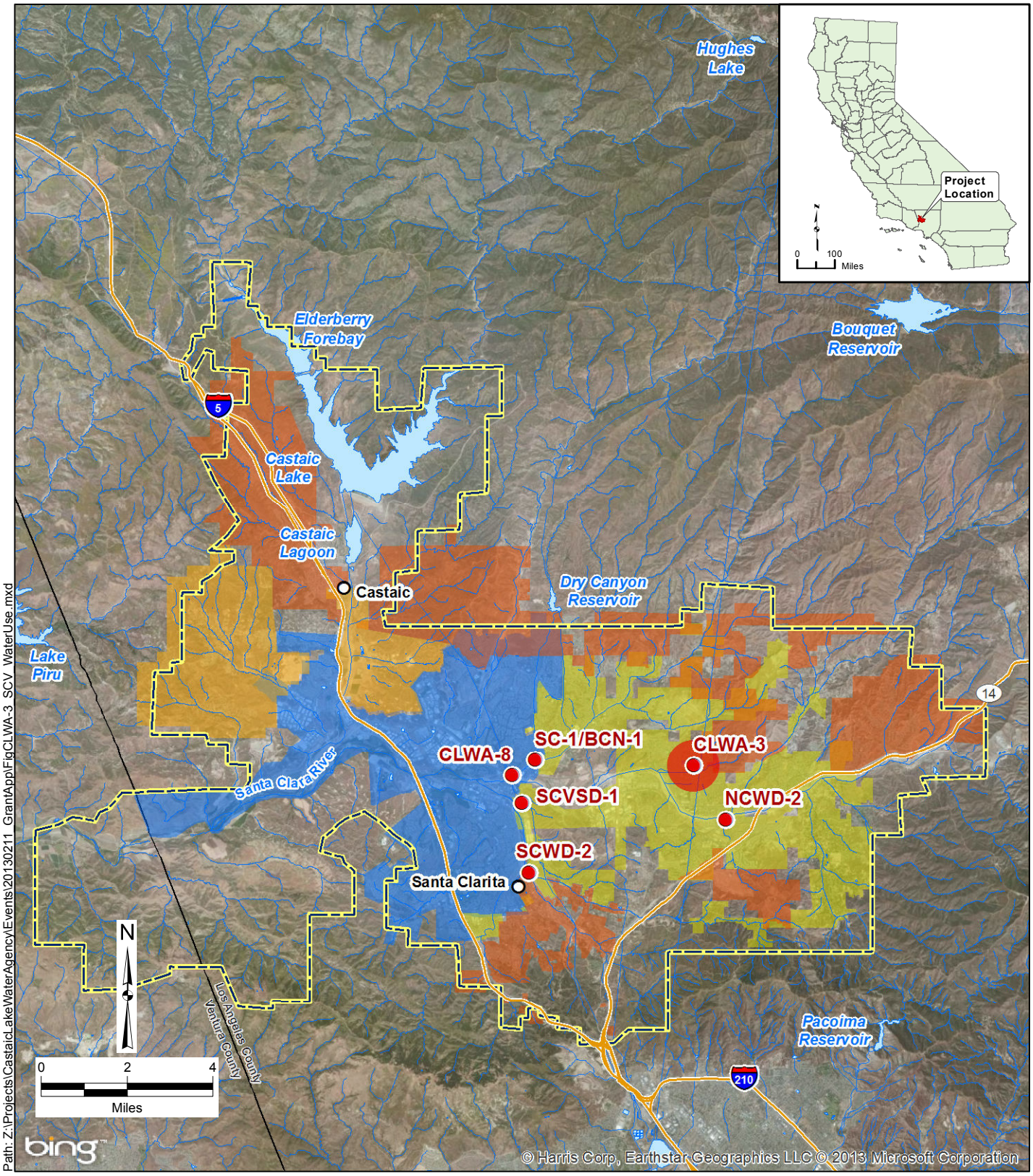
CLWA-3.2 2010 Urban Water Management Plan Prepared for CLWA, CLWA Santa Clarita Water Division, Newhall County Water District, Valencia Water Company, June 2011, Kennedy/Jenks Consultants.

CLWA-3.3 SCWD Water Use Efficiency Plan. July 2012. Kennedy/Jenks Consultants.

CLWA-3.4 VWC Water Conservation Plan, VWC, October 2012.

Project Map

See Figure CLWA-3 for a project map of the SCV WUE Strategic Plan Programs.



Path: Z:\Projects\CastaicLakeWaterAgency\Events\20130211_GrantApp\FigCLWA-3_SCV_WaterUse.mxd

Legend

- Project Location
- Service Area Wide
- Castaic Lake Water Agency Service Area
- L.A. County Waterworks District #36
- Newhall County Water District
- Santa Clarita Water Division
- Valencia Water Company

Kennedy/Jenks Consultants

Castaic Lake Water Agency
Los Angeles County, California

SCV Water Use Efficiency Strategic Plan Programs

K/J 1389003*00
March 2013

Figure CLWA-3

Project Timing and Phasing

The project will constitute years four and five of an overall five-year program. The programs have already had three successful years of implementation and now seek an extension/continuation consistent with the SCV WUE Strategic Plan.

All of the project components are identified in the SCV WUE Strategic Plan.

II. Work Plan

The tasks necessary to complete the Project are summarized in Table 3-5, and discussed in greater detail below in Table 3-6.

TABLE 3-5: OVERVIEW OF CLWA-3 WORK PLAN

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$124,620**	**10/1/13**	**9/30/15**
1	Administration	$117,800	10/1/13	9/30/15
2	Labor Compliance Program	cost included in Task 1 (Admin)	10/1/13	9/30/15
3	Reporting	$6,820	12/31/13	9/30/15
b)	**Land Purchase/Easement**	**NA**	**NA**	**NA**
4	Land Purchase/Easement	NA	NA	NA
c)	**Planning/Design/Engineering/Environmental Documentation**	**NA**	**12/31/08**	**12/31/08**
5	Assessment and Evaluation	NA	12/31/08	12/31/08
6	Design	NA	12/31/08	12/31/08
7	Environmental Documentation	NA	NA	NA
8	Permitting	NA	NA	NA
d)	**Construction/Implementation**	**$2,175,000**	**10/1/13**	**9/30/15**
9	Construction Contracting	NA	NA	NA
10	Construction/Implementation	$2,175,000	10/1/13	9/30/15
e)	**Environmental Compliance/Mitigation/ Enhancement**	**NA**	**NA**	**NA**
11	Environmental Compliance/Mitigation/Enhancement	NA	NA	NA
f)	**Construction Administration**	**NA**	**NA**	**NA**
12	Construction Administration	NA	NA	NA
g)	**Other Costs**	**$200,000**	**10/1/13**	**9/30/15**
13.1	Public Outreach	$200,000	10/1/13	9/30/15
13.2	PMP	cost included in Task 1 (Admin)	10/1/13	2/28/14
h)	**Construction/Implementation Contingency**	NA	**NA**	**NA**
14	Construction/Implementation Contingency	NA	NA	NA
	GRAND TOTAL	**$2,499,620**		

Notes: 1) Costs for Task 2 and Task 13.2 have been included in Task 1.

Tasks necessary to implement the SCV WUE Strategic Plan Programs are described in Table 3-6.

TABLE 3-6: WORK PLAN FOR SCV WUE STRATEGIC PLAN PROGRAMS (CLWA-3)

Category (a): Direct Project Administration Costs

Task 1: Administration

Description: Project administration includes administration of grant and implementation contracts, preparation of reports and plans, coordination of various contracts, and other activities as required to complete implementation. This project will be coordinated by a designated project manager employed by CLWA. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding operational and implementation issues. The budget for this project assumes the project manager will spent 19 hours per week (50 weeks per year) on this project over the entire 2-year duration.

Deliverables: Invoices.

Task 2: Labor Compliance Program

Description: Perform labor compliance in accordance with the requirements of California Labor Code §1771.5(b).

Deliverables: Execution of labor compliance program; documentation furnished to DWR as requested.

Task 3: Reporting

Description: CLWA, as the project proponent and granting agency, will prepare and submit quarterly progress reports and invoices. CLWA will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed.

Deliverables: Quarterly and final reports as specified in the Grant Agreement.

Category (b): Land Purchase/Easement

Task 4: Land Purchase/Easement

Description: Not applicable. No land purchases or right-of-way easements are required for implementing the SCV WUE Strategic Plan Programs (CLWA-3).

Deliverables: N/A

Category (c): Planning/Design/Engineering/Environmental Documentation

Task 5: Assessment and Evaluation

Description: The technical feasibility of the programs being implemented are described and supported by the SVC WUE Strategic Plan. No additional design reports or investigations are needed.

Deliverables: SVC WUE Strategic Plan (Completed 2008).

Task 6: Design

Description: The technical feasibility of the programs being implemented are described and supported by the SVC WUE Strategic Plan. No additional design reports or investigations are needed.

Deliverables: SVC WUE Strategic Plan (Completed 2008).

Task 7: Environmental Documentation

Description: The Programs within the SCV WUE Strategic Plan Programs (CLWA-3) were determined to be Categorically Exempt from CEQA under the CEQA Guidelines, Section 15061 (b)(3). Since no construction is needed, no permits or environmental compliance documentation are required.

Deliverables: N/A.

Task 8: Permitting

Description: No permits are required for implementation of the WUE Strategic Plan Programs.

Deliverables: N/A.

Category (d): Construction/Implementation

Task 9: Construction Contracting

Description: No construction contracting is required for implementation of the WUE Strategic Plan Programs.

Deliverables: N/A.

Task 10: Construction/Implementation

Subtask 10.1 - Santa Clarita Valley Large Landscape Audit and Incentive Program: Includes 80 rebates @ $5,000 each, average over two years.

Subtask 10.2 - Santa Clarita Valley CII Audit and Customized Incentive Program: Includes 20 audits @ $5,000 each, average over two years.

Subtask 10.3- Santa Clarita Valley Landscape Contractor Certification and Weather-Based Irrigation Controller Program: Includes 1,700 units distributed at $425/unit.

Subtask 10.4 - High-Efficiency Washing Machines: Includes 2,500 rebates per year over two years at $100 each (matched by $100 from retailer).

Subtask 10.5 - Cash for Grass: Includes $1.5 per square foot for 300,000 square feet.

Deliverables: Invoices, Final Construction/Implementation Summary Report

Category (e): Environmental Compliance/Mitigation/Enhancement

Task 11: Environmental Compliance/Mitigation/Enhancement

Description: The Programs in the SCV WUE Strategic Plan Programs were determined to be Categorically Exempt from CEQA under the CEQA Guidelines, Section 15061 (b)(3). No mitigation or enhancement is required.

Deliverables: N/A.

Category (f): Construction Administration

Task 12: Construction Administration

Description: Not applicable.

Deliverables: N/A.

Category (g): Other Costs

Task 13: Other Costs

Description: Task 13.1: Public Outreach

The SCV WUE Strategic Plan Programs require substantial amounts of outreach to inform targeted customers of program availability. Marketing will occurring in a variety of media outlets and dedicated materials for the water conservation programs are developed.

Task 13.2: Project Monitoring Plan

Project Monitoring Plan Requirements (PMP): A monitoring plan shall be submitted to the State prior to disbursement of grant funds for implementation or monitoring activities for this Project. Along with Attachment 6, Project Performance Measures Table, the PMP may also include: a) Baseline conditions, b) Brief discussion of monitoring systems to be utilized, c) Methodology of monitoring, d) Frequency of monitoring, and e) Location of monitoring points.

Deliverables: PMP

Category (h): Construction/Implementation Contingency

Task 14: Construction/Implementation Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item.

III. Other Required Information

Procedures

No other procedural agreements are required. CLWA, as the contracting entity, will be the recipient of the grant and act as the grant administrator. Agreements are in place between the SCV Family of Water Suppliers which is comprised of CLWA, SCWD, NCWD, Valencia Water Company (VWC), and Los Angeles County Waterworks District No. 36 (LACWWD #36) and the City of Santa Clarita. Together, these entities work to promote the efficient use of water and fund programs that are outlined within the Region's SCV WUE Strategic Plan.

Standards

The Weather-Based ET Controllers Installation and Education Program will utilize Weathermatic ET Controllers, whose performance has been proven in the conservation community. The life expectancy, results, and potential savings as a result of using the Weathermatic ET Controller technology, has been repeatedly documented. The specific controller used in the program rates highly by the Irrigation Association in their testing program.

High-efficiency washing machines are rated according to their water factor, a ratio of the volume to the amount of water used. CLWA-3 will only rebate high-efficiency washing machines with a water factor of 4.0 or less, a stringent requirement.

Status of Acquisition of Land or ROWs

No land purchase or easements are required.

Design Plans and Specifications

The SCV WUE Strategic Plan Programs design is complete.

An update of the SCV WUE Strategic Plan will be complete in May 2014 and will be used as a model from that date forward. Significant changes in terms of programs are not anticipated because the original plan was adequately comprehensive; the portfolio of programs will simply be expanded.

Permits

No permits will be required to complete CLWA-3.

Status of Preparation and Completion of Environmental Requirements

The proposed Project was determined to be exempt from CEQA.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes on the contact list maintained by the Native American Heritage Commission with traditional lands located within the area of the proposed project. The project would not involve any development or land disturbance that would impact cultural resources.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PMP, provided for in Task 13.2. A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project.

Work Items to Complete GWMP

CLWA prepared a groundwater management plan (GWMP) in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. CLWA's GWMP was drafted and adopted in 2002. Ordinance No. 34 documenting the adoption of the GWMP will be provided as documentation of this work product.

Submittals to Granting Agency

Status reports, in the form requested by the granting agency, will be submitted on a quarterly basis. A final report will also be prepared once the project is completed. Other items required by the grant contract will also be submitted to the granting agency.

Other Work Items

No other work items are anticipated to complete this project.

Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)

I. Introduction

Project Name

Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)

Project Description

The Santa Clarita Water Division Water Use Efficiency Strategic Plan (Strategic Plan) was developed in July 2012 and specifies ten water use efficiency programs that provide incentives to increase water use efficiency in its service area within the Santa Clarita Valley (SCV). The programs include:

1. Residential Audits
2. Low-Flow Showerhead Distribution
3. Ultra-High-Efficiency Toilet (UHET) Distribution
4. Multi-Family/Institutional/High-Efficiency Toilet Direct Installation
5. Turf Removal
6. High-Efficiency Nozzle Distribution
7. High-Efficiency Nozzle Direct Installation
8. Large Landscape Weather-Based Irrigation Controller Direct Installation
9. Residential and Commercial Rebate Program
10. Large Landscape Water Budgets

SCWD's Strategic Plan builds on the 2010 UWMP prepared by CLWA and SCWD, in accordance with the Urban Water Management Planning Act. The ten WUE programs, listed above, when fully implemented, will save 4,437 AF of water by 2020, at a total cost of approximately $16.5 million over a nine-year period, or an average of $1.83 million a year. While the planning horizon for SCWD's Strategic Plan ends in the year 2020 consistent with SBX7-7 requirements, water savings associated with the recommended programs will persist well past 2020. The total estimated lifetime water savings, or the sum of all the water savings associated with each device installed or measure implemented over the lifetime of each device or measure, is 50,592 AF.

The driver for the Strategic Plan is compliance with State regulations. SCWD is subject to the Urban Water Management Planning Act, Assembly Bill (AB) 1420 and SBX7-7 requirements, in addition to the commitment of compliance with the Best Management Practices (BMPs) as a signatory to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation in California (MOU).

In contrast with the BMP requirements of the MOU, SBX7-7 provides no exemption for cost-effectiveness. So while cost-effectiveness is of primary concern in choosing programs and activities, meeting the water savings goal takes precedence in this effort. Despite the level of priority given to meeting the SBX7-7 targets, the portfolio of water conservation programs to be implemented by this project are cost-effective as a whole. A cost-effectiveness analysis was performed on each measure included in the Strategic Plan using the Alliance for Water Efficiency (AWE) Conservation Tracking Tool. Results of these analyses indicate that the

estimated annual cost (2012 dollars) to implement the Strategic Plan's ten programs is $343 per AF – nearly $150 per AF less than SCWD's cost to purchase an additional AF of water at $510 per AF.

The programs and projects identified in the Strategic Plan will result in compliance with the SBX7-7 requirements by reducing the 2010 baseline of 234 gallons per capita per day (gpcd) to a 2020 average use of 188 gpcd. Additional savings will likely be achieved through non-quantifiable programs, such as public outreach and education, system operations, rates and more. SCWD's Strategic Plan provides tools and details that can be used to guide implementation and monitor success. The SCWD WUE Programs (SCWD-2) is requesting funding to implement portions of three (of the ten) programs identified in the Strategic Plan:

1. High-Efficiency Irrigation Nozzle Distribution
2. High-Efficiency Clothes Washer (HECW) Machine Rebate Residential and Commercial Rebate Program, (the high-efficiency washing machine rebate portion only, due to SCWD staffing limitations)
3. Large Landscape Water Budgets

SCWD-2 is currently implementing the first two programs (High-Efficiency Irrigation Nozzle Distribution and HECW Machine Rebate Program) of the three programs proposed and proposes to continue and expand upon them to achieve the implementation levels stated in the Strategic Plan. SCWD-2 will also initiate the third program (Large Landscape Water Budgets) to address water demands in large, irrigated landscape areas.

Both the High-Efficiency Irrigation Nozzle Distribution and the HECW Machine Rebate Programs will be implemented through two years (2014 and 2015) of the funding cycle and the Large Landscape Water Budgets will begin during the second year of funding (2015). The individual programs are described below.

<u>High-Efficiency Irrigation Nozzle Distribution</u>

There is significant potential for water savings in landscape water use within the project area. Residential water use (both indoor and outside) is the single largest use in the project area, accounting for 70 percent of the total demand. An estimated 69 percent of single family residential use occurs outdoors as landscape irrigation. Accordingly, single family residential homes' monthly water use patterns show signs of significant outdoor water use. The highest water use occurs in the months of August and September when water consumption is nearly three times higher than that of the lowest month, February.

In addition to single family residential use, commercial and dedicated landscape irrigation can also benefit from the water savings associated with high-efficiency nozzles. In fact, high-efficiency spray nozzles can improve the efficiency of any irrigation system outfitted with traditional pop-up spray nozzles. High-efficiency sprinkler nozzles are a recent technology, and, as a result, most irrigation systems have not yet been retrofitted with these water saving devices. It is estimated that there are over 430,000 nozzles available for retrofit among the project area's single family residential landscapes and an additional 174,000 nozzles available within the dedicated irrigation and commercial landscapes.

The High-Efficiency Irrigation Nozzle Distribution program will provide high-efficiency irrigation sprinkler nozzles through the existing FreeSprinklernozzles.com program, which distributes Toro High-Precision nozzles only, and through a newly developed web-based nozzle distribution program that will offer more choices in high-efficiency nozzles. The second option (new web-based program) has been repeatedly requested by landscape contractors, who often have brand-specific needs, prefer other nozzle types, or have larger landscapes to irrigate (which are not well suited for the Toro High-Precision Nozzles). Providing additional nozzle options allows more commercial, industrial and institutional entities to participate in the program. SCWD currently partners with Western Municipal Water District to offer the FreeSprinklernozzles.com program and will develop the customized, web-based irrigation nozzle distribution

program with an outside contractor to offer the additional choices beyond the Toro High-Precision nozzle requested by project area stakeholders.

Together, these programs provide a variety of options so water use efficiency is maximized and water runoff is minimized.

The high-efficiency irrigation nozzle distribution program will offer 15,000 nozzles per year for the two-year grant period.

High Efficiency Clothes Washer Machine Rebate

As part of this proposal SCWD will offer $100 rebates to encourage installation and use of high-efficiency clothes washers. SCWD-2 will implement the High-Efficiency Clothes Washing Machines part of this program. This program will be offered to residential and commercial entities for the two-year grant period. In this program, 500 rebates will be offered each year.

Large Landscape Water Budgets

Santa Clarita is an inland community and has high evapotranspiration rates. Consequently, a significant amount of water use occurs outdoors to irrigate landscapes. Distribution analysis of dedicated, large landscape areas (e.g., Home Owner Associations, community associations, and apartment complexes) indicates that in each of these groups just a few dedicated irrigated landscapes account for a large amount of total water use. For example, the ten highest multi-family landscape areas accounted for almost 40 percent of the total multi-family landscape consumption in 2011. People tend to set timers/controllers and then forget about them without making any adjustments to the schedule as the weather and watering demands change throughout the year. Few people perform regular maintenance checkups to make sure the irrigation nozzles are operating properly.

Water budgets result in water savings as people begin to understand the watering requirement of their landscape and adjust their watering practices (both timers/controllers and nozzle maintenance) accordingly. As an added bonus, the Landscape Water Budget program can also be used to drive people to other water use efficiency programs, including the irrigation nozzle distribution program resulting in additional water savings. This program is intended for those sites with dedicated irrigation meters only; these landscapes are considered large for purposes of this program.

Landscape water budgets are a calculation of the amount of water a landscape needs based on site-specific information, including landscape area, plant type and local weather data. The way that budgets yield water savings involves both educating people about the actual requirements of their site and encouraging them to adjust their watering practices accordingly. Typically large landscape sites can yield 20 percent savings through adjustment of irrigation times alone (MWDOC 2012). Through the life of the program in the SCWD Strategic Plan (nine years), 440 landscape water budgets will be created for dedicated irrigation landscapes.

SCWD-2 will begin implementing this program in 2014 (second year of the grant cycle). SCWD-2 will develop 20 water budgets during one year beginning in 2014 with anticipated savings of 26 AFY. The budgets will be developed using the California Maximum Applied Water Allowance (MAWA) equation. A report detailing the water budget and a comparison of actual water usage to the target water usage will be provided as well as recommendations on how to reduce water use if the budget shows over-watering. The report will be delivered to the appropriate person(s) either through mail, email or a face-to-face meeting. An additional field visit will be conducted if requested by the property owner. The primary purpose of a water budget is to raise awareness on the proper amount of water a landscape requires and give people the tool(s) to maintain their water use within the target budget.

In summary, the SCWD-2 Project includes:

1. High-Efficiency Clothes Washing Machine Rebates: 500 rebates for each of 2 years at $100 per rebate.
2. High-Efficiency Nozzles: Partner with Western Municipal Water District (WMWD) to offer free irrigation sprinkler nozzles. Development of customer-choice driven, web-based sprinkler nozzles program (including customer education) to provide additional options in high-efficiency irrigation sprinkler nozzles. Includes 15,000 nozzles per year at $3.25/nozzle for 2 years.
3. Large Landscape Budgets: Includes $1,000/budget for 20 budgets in 2015.

Implementation of all three programs will yield avoided SWP imports of 156 AFY.

Goals and Objectives

The goals specific to SCWD-2 are to:

1. Implement programs that help achieve SBX7-7 requirements, i.e., reduce per capita water use 20 percent by 2020. SCWD must reduce gpcd to 188 by 2020.
2. Reduce dependence on imported water sources.

Specific objectives of SCWD-2 are to:

- Target markets with the highest water savings opportunity, both in immediate savings and long-term sustainability;
- Incentivize purchase of qualified low water use products;
- Provide necessary education for the proper installation and most efficient use of rebated products; and
- Fulfill requirements as a signatory to the CUWCC MOU.
- Develop customized water budgets to inform, encourage and promote efficient irrigation practices within landscapes.
- Reduce gpcd to meet SBX7-7 requirements.

Purpose and Need

The purpose of the programs is to reduce water consumption and increase water use efficiency in residential and commercial communities. Significant potential for water savings in landscape water use exists within the SCWD-2 project area. Residential water use (indoors and outdoors) is the single largest use accounting for over 70 percent of total demand and is the key market to address. Of that usage, it is estimated that 60 to 70 percent occurs outdoors as landscape irrigation. Dedicated landscape irrigation usage (e.g., parks, community landscapes, etc.) accounts for 17 percent of water usage in the area. Focusing conservation efforts on reducing outdoor residential and dedicated landscape usage provide the largest potential savings in the most cost-effective manner. SCWD-2 will implement programs that will most effectively reduce per capita water use.

In addition to reducing water demand, the landscape programs address water quality concerns. In November 2012, the Los Angeles Regional Water Quality Control Board approved a new NPDES-MS4 permit for storm drain systems. This permit requires promotion of landscape water-use efficiency practices for existing landscapes. Both the irrigation sprinkler nozzle programs and the water budget program will reduce irrigation runoff and assist with compliance requirements of this permit.

Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)

SCWD-2 will help achieve the following IRWM Plan objectives:

1. Reduce potable water demand - the programs have incentives to reduce potable water demand.
2. Improve water quality – the programs promote the use of more efficient irrigation technologies will reduce urban runoff.
3. Promote projects and actions that reduce greenhouse gas emissions – the programs are designed to reduce dependence on imported state water reducing the use of pumps and equipment to transport imported water to the SCV.

Synergies or Linkages

CLWA administers the SCV WUE Strategic Plan, which provides water use efficiency programs for four water purveyors, including SCWD. The SCV WUE Strategic Plan offers comprehensive, long-term water use efficiency programs, and is part of the portfolio of programs for this IRWM Plan region. The original goal of the SCV WUE Strategic Plan was a 10% reduction in water use by 2030. This SCV WUE Strategic Plan is being updated and revised in 2013 with the goal of 20 percent by 2020 in mind.

SCWD-2 is specific to the SCWD area. SCWD serves 41 percent of the Santa Clarita Valley and has specific needs that are not addressed in the SCV WUE Strategic Plan. SCWD-2 is complementary to the SCV WUE Strategic Plan in two ways. First, with the most popular programs, such as the High-Efficiency Clothes Washing Machines, SCWD-2 can add cumulative rebates to the wholesaler's existing rebates and ensure the consumer is more likely to take advantage of the rebate program given the higher rebate value. The second way the two WUE Projects complement each other is that the SCWD-2 Project provides coverage for programs not within the efforts of SCV WUE Strategic Plan and in that it provides programs that the water wholesaler, CLWA, simply cannot implement. For example, CLWA does not have access to consumption data directly, and so cannot create large landscape water budgets.

Completed Work

The Division is currently implementing two programs (High-Efficiency Irrigation Nozzle Distribution and HECW Rebate Program) out of ten programs recommended from their recently completed Strategic Plan. The Strategic Plan proposes to continue both of these programs and extend them to achieve the optimum implementation levels.

High-Efficiency Nozzle Distribution – SCWD is currently partnering with Western Municipal Water District to participate in the FreeSprinklerNozzles.com program. This program works cooperatively with five other water agencies in Los Angeles County. It is expected that 36,000 nozzles will have been distributed by October 1, 2013, through this program. Encouraging people to replace their existing nozzles with high-efficiency nozzles will not only replace worn (and water-wasting products) and inefficient equipment, but encourage people to perform regular maintenance check-ups of their irrigation systems.

HECW Rebate Program – SCWD is currently cost sharing HECW rebate vouchers with CLWA and three other water purveyors. It is anticipated that 1,000 HECW machine rebates will have been distributed by October 1, 2013.

Existing Data and Studies

SCWD-2.1 Santa Clarita Water Division Water Use Efficiency Plan. July 2012. Kennedy/Jenks Consultants.

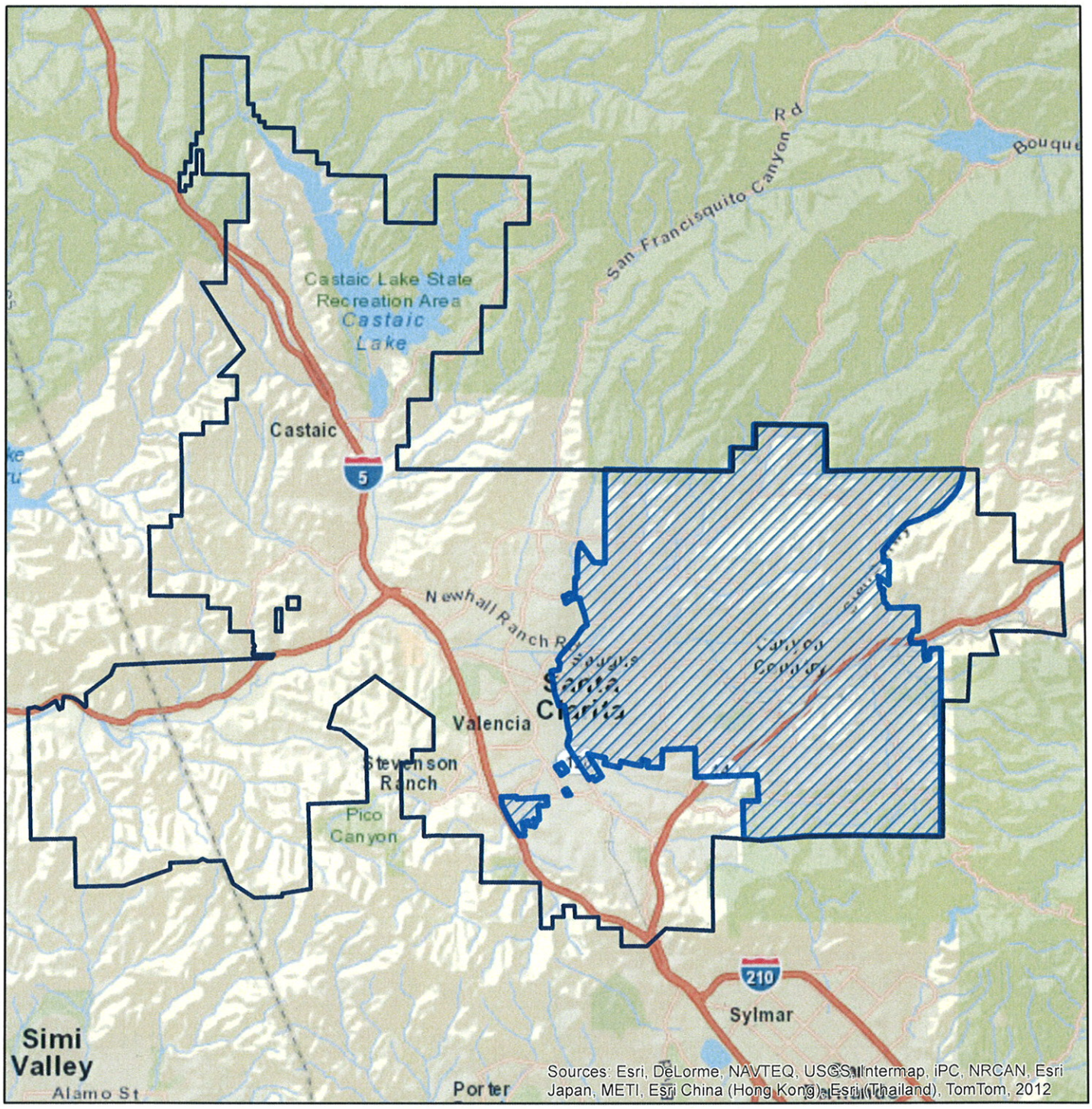
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)

Project Map

See Figure SCWD-2 for a project map of the SCWD WUE Programs.

Project Timing and Phasing

The project will constitute years two and three of an overall eight-year program. Two of the three proposed programs have already had one successful years of implementation and now seek an extension/continuation consistent with the 2012 SCWD Water Use Efficiency Strategic Plan. The third proposed program (one-year) will begin in 2014 upon grant award.



LEGEND

Santa Clarita Water Division Project Area

Castiac Lake Water Agency

SCWD

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SCWD-2

Santa Clarita Water Division Water Use Efficiency Plan Program

II. Work Plan

The tasks necessary to complete the Project are summarized in Table 3-7, and discussed in greater detail below in Table 3-8.

TABLE 3-7: OVERVIEW OF SCWD-2 WORK PLAN

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$15,000**	**10/1/13**	**9/30/15**
1	Administration	$9,000	10/1/13	9/30/15
2	Labor Compliance Program	cost included in Task 1 (Admin)	10/1/13	9/30/15
3	Reporting	$6,000	12/31/13	9/30/15
b)	**Land Purchase/Easement**	**NA**	**NA**	**NA**
4	Land Purchase/Easement	NA	NA	NA
c)	**Planning/Design/Engineering/Environmental Documentation**	**NA**	**7/10/12**	**7/10/12**
5	Assessment and Evaluation	NA	7/10/12	7/10/12
6	Design	NA	7/10/12	7/10/12
7	Environmental Documentation	NA	NA	NA
8	Permitting	NA	NA	NA
d)	**Construction/Implementation**	**$280,500**	**10/1/13**	**9/30/15**
9	Construction Contracting	NA	NA	NA
10	Construction/Implementation	$280,500	10/1/13	9/30/15
e)	**Environmental Compliance/Mitigation/ Enhancement**	**NA**	**NA**	**NA**
11	Environmental Compliance/Mitigation/Enhancement	NA	NA	NA
f)	**Construction Administration**	**NA**	**NA**	**NA**
12	Construction Administration	NA	NA	NA
g)	**Other Costs**	**NA**	**10/1/13**	**2/28/14**
13	PMP	cost included in Task 1 (Admin)	10/1/13	2/28/14
h)	**Construction/Implementation Contingency**	**NA**	**NA**	**NA**
14	Construction/Implementation Contingency	NA	NA	NA
	GRAND TOTAL	**$295,500**		

Notes: 1) Costs for Tasks 2 and 13 have been included in Task 1.

Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)

Tasks necessary to implement the SCWD WUE Programs are described in Table 3-8.

TABLE 3-8: WORK PLAN FOR SANTA CLARITA WATER DIVISION WATER USE EFFICIENCY PROGRAMS

Category (a): Direct Project Administration Costs

Task 1: Administration

Description: Project administration includes administration of grant and implementation contracts, preparation of reports and plans, coordination of various contracts, and other activities as required to complete implementation. This project will be coordinated by a designated project manager employed by SCWD. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding operational and implementation issues. The budget for this project assumes administrative costs will be 3% of the total project cost.

Deliverables: Invoices.

Task 2: Labor Compliance Program

Description: Perform labor compliance in accordance with the requirements of California Labor Code §1771.5(b).

Deliverables: Execution of labor compliance program; documentation furnished to DWR as requested.

Task 3: Reporting

Description: SCWD will prepare and submit quarterly progress reports and invoices to CLWA. SCWD will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed.

Deliverables: Quarterly and a final report as specified in the Grant Agreement.

Category (b): Land Purchase/Easement

Task 4: Land Purchase/Easement

Description: Not applicable. No land purchases or right-of-way easements are required for implementing SCWD-2.

Deliverables: N/A

Category (c): Planning/Design/Engineering/Environmental Documentation

Task 5: Assessment and Evaluation

Description: The technical feasibility of the programs being implemented is described and supported by the SCWD Water Use Efficiency Strategic Plan. No additional design reports or investigations are needed.

Deliverables: SCWD Water Use Efficiency Strategic Plan (Completed 2012).

Task 6: Design

Description: The technical feasibility of the programs being implemented is described and supported by the SCWD Water Use Efficiency Strategic Plan. No additional design reports or investigations are needed.

Deliverables: SCWD Water Use Efficiency Strategic Plan (Completed 2012).

Task 7: Environmental Documentation

Description: The Programs were determined to be Categorically Exempt from CEQA under the CEQA Guidelines, Section 15061 (b)(3). Since no construction is needed, no permits or environmental compliance documentation are required.

Deliverables: N/A.

Task 8: Permitting

Description: No permits are required for implementation of SCWD-2.

Deliverables: N/A.

Category (d): Construction/Implementation

Task 9: Construction Contracting

Description: No construction contracting is required for implementation of the SCWD Water Use Efficiency Strategic Plan programs.

Deliverables: N/A.

Task 10: Construction/Implementation

Description:

Subtask 10.1 - Large Landscape Budgets: Includes $1,000/budget for 20 budgets in 2015.

Subtask 10.2 - High-Efficiency Nozzles: Partner with Western Municipal Water District (WMWD) to offer free irrigation sprinkler nozzles. Development of customer-choice driven, web-based sprinkler nozzles program (including customer education) to provide additional options in high-efficiency irrigation sprinkler nozzles. Includes 15,000 nozzles per year at $3.25/nozzle for 2 years plus site development at $30K.

Subtask 10.3 - High-Efficiency Clothes Washing Machine Rebates: Includes 500 rebates ($100 value)/yr over 2 yrs; plus $33K for processing

Deliverables: Invoices, Final Construction/Implementation Summary Report

Category (e): Environmental Compliance/Mitigation/Enhancement

Task 11: Environmental Compliance/Mitigation/Enhancement

Description: The Programs were determined to be Categorically Exempt from CEQA under the CEQA Guidelines, Section 15061 (b)(3). No mitigation or enhancement is required.

Deliverables: N/A.

Category (f): Construction Administration

Task 12: Construction Administration

Description: Not applicable.

Deliverables: N/A.

Category (g): Other Costs

Task 13: Other Costs

Description: Task 13: Project Monitoring Plan

Project Monitoring Plan Requirements (PMP): A monitoring plan shall be submitted to the State prior to disbursement of grant funds for implementation or monitoring activities for this Project. Along with Attachment 6 Project Performance Measures Tables, the PMP may also include: a) Baseline conditions, b) Brief discussion of monitoring systems to be utilized, c) Methodology of monitoring, d) Frequency of monitoring, and e) Location of monitoring.

Deliverables: PMP

Category (h): Construction/Implementation Contingency

Task 14: Construction/Implementation Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item.

III. Other Required Information

Procedures

CLWA is the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with SCWD in order to implement the activities outlined in this proposal. There is an agreement in place between SCWD and WMWD for coordination and distribution of the irrigation sprinkler nozzles. No other procedural agreements are identified.

Standards

Large Landscape water budgets will be created using the state-approved Maximum Applied Water Allowance (MAWA) equation.

SCWD will require nozzles be rated "high-efficiency". High-efficiency irrigation nozzles are rated according to their precipitation rate (inches per hour). High-efficiency nozzles are considered those with a precipitation rate less than one-inch per hour.

High-efficiency washing machines are rated according to their water factor, a ratio of the volume to the amount of water used. SCWD-2 will only rebate high-efficiency washing machines with a water factor of 4.0 or less.

Status of Acquisition of Land or ROWs

No land purchase or easements are required.

Design Plans and Specifications

The SCWD Water Use Efficiency Strategic Plan was completed in July 2012.

Permits

No permits will be required to complete SCWD-2.

Status of Preparation and Completion of Environmental Requirements

The proposed Project was determined to be exempt from CEQA.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands located within the area of the proposed project. The project would not involve any development or land disturbance that would impact cultural resources.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PMP, provided for in Task 13. A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project.

Work Items to Complete GWMP

CLWA prepared a groundwater management plan (GWMP) in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. CLWA's GWMP was drafted and adopted in 2002. Ordinance No. 34 documenting the adoption of the GWMP will be provided as documentation of this work product.

Submittals to Granting Agency

Quarterly and a Final report will be prepared and provided to DWR. Status reports, in the form requested by the granting agency, will be submitted on a quarterly basis. A final report will also be prepared once the project is completed. Other items required by the grant contract will also be submitted to the granting agency.

Other Work Items

No other work items are anticipated to complete this project.

Foothill Feeder Connection (CLWA-8)

I. Introduction

Project Name

Foothill Feeder Connection (CLWA-8)

Project Description

Currently CLWA accesses SWP water from Castaic Lake through a connection to the Metropolitan Water District's Foothill Feeder. Water taken by CLWA from the Foothill Feeder is sent to CLWA's 102-inch raw water pipeline that feeds CLWA's Rio Vista Water Treatment Plant. The existing connection to the Foothill Feeder dates to 1996 and was intended to be a temporary structure. The existing Foothill Feeder Connection has a capacity of only 60 MGD. This is insufficient to fully utilize the Rio Vista Water Treatment Plan which has a current capacity of 66 MGD and is planned for a future capacity of 90 MGD. This project will construct a permanent Foothill Feeder Connection. The project includes:

- Installation of approximately 200 feet, 48-inch diameter pipeline
- Installation of a 140 cubic feet per second (cfs)/90 MGD turnout structure, valve vault, and meter vault
- Installation of electrical and supervisory control and data acquisition (SCADA) equipment.

Goals and Objectives

The Foothill Feeder Connection (CLWA-8) Project will provide additional capacity to CLWA's potable water system allowing CLWA to more reliably meet consumers' demands. The Project allows for an increase of up to 6 MGD (6,700 AFY) of water delivery immediately for CLWA and 30 MGD (33,600 AFY) of water delivery available once the RVWTP is expanded to the planned 90 MGD capacity. The CLWA-8 Project is also necessary for planned future expansions of the Rio Vista Water Treatment Plant.

Purpose and Need

Both CLWA and the Metropolitan Water District (MWD) are SWP Contractors that take water from Castaic Lake, a reservoir at the southern terminus of the West Branch of the SWP. During the design of the Rio Vista Water Treatment Plant in the 1990s, CLWA made arrangements to utilize available capacity in MWD's Foothill Feeder rather than construct a new pipeline to convey water three miles from Castaic Lake to an area close to the Rio Vista Intake Pump Station. The original temporary connection (30 MGD capacity) was large enough to handle flows for the first 20 years of operations, but now needs to be expanded. Moreover, the connection did not meet all of the MWD requirements. For these two reasons, the existing connection has always been considered temporary and now needs to be improved and enlarged.

The RVWTP obtains its raw water supply from SWP water stored in Castaic Lake via a 201-inch diameter pipeline (the Foothill Feeder) owned and operated by MWD, one 42-inch diameter pipeline connection to the Foothill Feeder and one 102-inch diameter pipeline (that conveys raw water to CLWA's Intake Pump Station [IPS]), and a 102-inch diameter raw water pipeline between the IPS and the RVWTP site. The recent increase in capacity of the RVWTP (from 30 MGD to 66 MGD) has taken place in response to current and new water quality standards, and is intended to improve reliability to meet existing customer demands and planned future demand.

The RVWTP's recent expansion was designed for a 60 MGD capacity, but the actual constructed capacity of the RVWTP is 66 MGD. Future expansion from its current 66 MGD treatment capacity is planned to 90 MGD as demand for treated water increases (Reference CLWA-8.3). CLWA has an agreement (AO-5142) with MWD, dated March 2009, stating that CLWA requested construction of a service connection with a maximum capacity of 140 cfs (90 MGD) on MWD's Foothill Feeder pipeline (Reference CLWA-8.5). For this reason, the proposed capacity of the Foothill Feeder Connection (current capacity is 60 MGD) is 90 MGD to match the planned maximum capacity of the RVWTP.

Synergies or Linkages

This Foothill Feeder Connection Project (CLWA-8) is one of three proposed projects that offer the benefit of improving the operational efficiency of the Region. The Project accomplishes this benefit by providing additional capacity to the potable water supply and offering an alternative if there needs to be an emergency shutdown in operations. The other two projects that offer improved operational efficiency are the Water Use Efficiency Projects (CLWA-3 and SCWD-2). By improving indoor and outdoor water use efficiency and conserving water, the two WUE Projects improve operational flexibility for CLWA, as does the CLWA-8 Project.

Completed Work

The CLWA-8 Project was planned as part of the EIR for the CLWA Rio Vista Water Treatment Plant Expansion (SAIC, 2006) (Reference CLWA-8.1). Also, in 2009, a hydraulic surge analysis was completed for the project entitled Santa Clara Valley Pipeline CLWA-01 Service Connection Pressure Surge Analysis (Flow Science, 2009) (Reference CLWA-8.4). The analysis recommended installation of specific valving at the connection to avoid negative pressures in the pipeline caused from pump failure at the IPS.

The Foothill Feeder Connection 100% Plans and Specifications (Reference CLWA-8.6), and an Engineer's Estimate of Probable Cost (CLWA-8.7) for the construction of the Project were completed by Kennedy/Jenks Consultants in June 2012.

Existing Data and Studies

CLWA-8.1 Final Environmental Impact Report (FEIR) CLWA Rio Vista Water Treatment Plant Expansion (SAIC, August 2006).

CLWA-8.2 Draft Environmental Impact Report (DEIR) CLWA Rio Vista Water Treatment Plant Expansion (SAIC, May 2006).

CLWA-8.3 DEIR (California State Clearinghouse No. 1998041127) CLWA Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount (SAIC, 2004).

CLWA-8.4 Santa Clara Valley Pipeline CLWA-01 Service Connection Pressure Surge Analysis (Flow Science, 2009).

CLWA-8.5 Agreement between the Metropolitan Water District Of Southern California and the Castaic Lake Water Agency for Interconnection CLWA-01 Agreement NO. AO-5142.

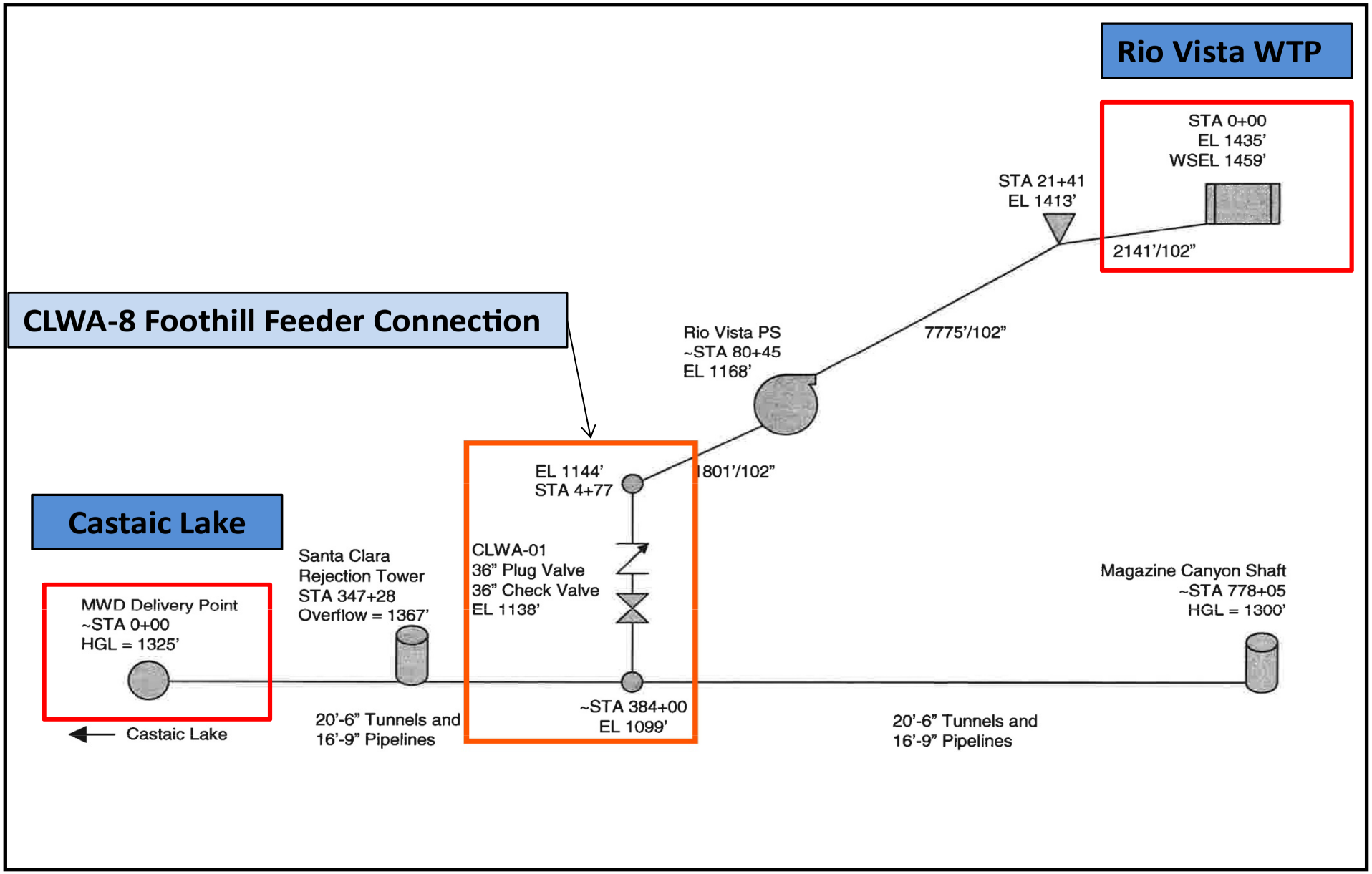
CLWA-8.6 Foothill Feeder Connection Plans and Specifications (Kennedy/Jenks Consultants, June 2012).

CLWA-8.7 Engineer's Estimate of Probable Cost (Kennedy/Jenks Consultants, June 2012).

Foothill Feeder Connection (CLWA-8)

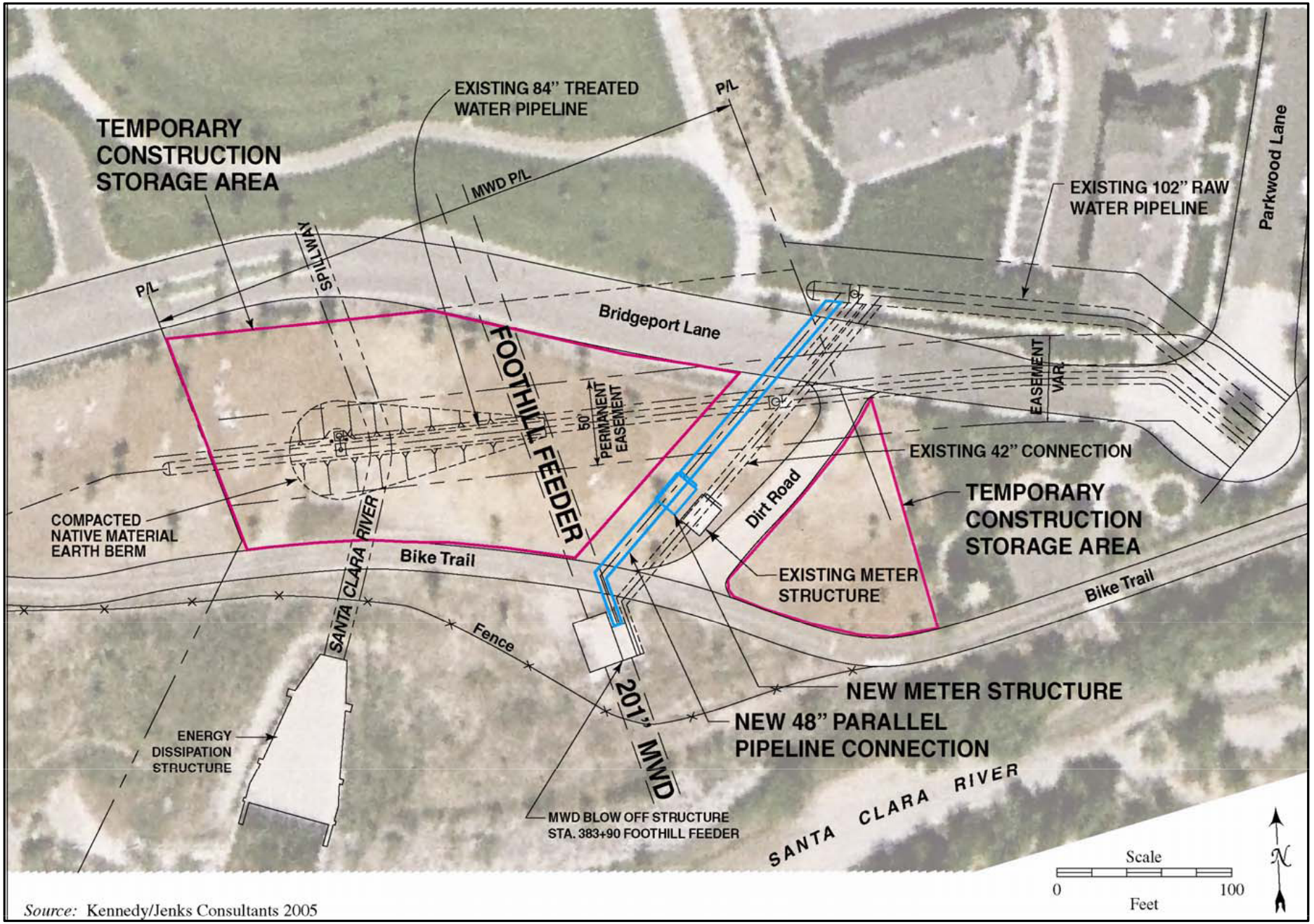
Project Map

A system schematic is provided on Figure CLWA-8.1, which shows the various components of the water system. Figure CLWA-8.2 shows the detailed project area.



Source: Santa Clara Valley Pipeline CLWA-01 Service Connection Pressure Surge Analysis (Flow Science, 2009)

CLWA-8.1
Foothill Feeder Connection (CLWA-8)
Schematic of System



Source: Kennedy/Jenks Consultants 2005

CLWA-8.2
Foothill Feeder Connection (CLWA-8)
Detail of Connection

Project Timing and Phasing

Grant funding requested under this Proposition 84 Round 2 Implementation Grant Application for the CLWA-8 Project is $1,500,000. Design drawings and specifications for the Project were completed in June 2012 and all environmental documents are complete as well. Bidding and Construction can proceed once funding becomes available. Construction will consist of installing and connecting valves, pipelines, and associated electrical hook-ups and controls.

II. Work Plan

The tasks necessary to implement and complete the Project are summarized in Table 3-9, and discussed in greater detail below in Table 3-10.

TABLE 3-9: OVERVIEW OF CLWA-8 WORK PLAN

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$30,200**	**10/1/13**	**10/30/15**
1	Administration	$3,600	10/1/13	10/30/15
2	Labor Compliance Program	$25,000	10/1/13	10/30/15
3	Reporting	$1,600	12/31/13	10/30/15
b)	**Land Purchase/Easement**	**$25,000**	**10/1/13**	**2/28/14**
4	Land Purchase	$25,000	10/1/13	2/28/14
c)	**Planning/Design/Engineering/ Environmental Documentation**	**$155,205**	10/1/13	3/28/14
5	Assessment and Evaluation	NA	NA	NA
6	Design	$137,873	NA	NA
7	Environmental Documentation	$13,812	NA	NA
8	Permitting	$3,520	10/1/13	3/28/14
d)	**Construction/Implementation**	**$2,812,599**	**2/3/14**	**10/30/15**
9	Construction Contracting	$55,149	2/3/14	4/1/14
10	Project Construction	$2,757,450	4/1/14	10/30/15
e)	**Environmental Compliance/Mitigation/Enhancement**	**$1,800**	**4/1/14**	**10/30/15**
11	Environmental Compliance/Mitigation/Enhancement	$1,800	4/1/14	10/30/15
f)	**Construction Administration**	**$220,596**	**7/1/14**	**10/30/15**
12	Construction Administration	$220,596	7/1/14	10/30/15
g)	**Other Costs**	**$2,400**	**11/1/13**	**4/1/14**
13	PMP	$2,400	11/1/13	4/1/14
h)	**Construction/Implementation Contingency**	**$275,745**	**NA**	**NA**
14	Construction Contingency	$275,745	NA	NA
	GRAND TOTAL	**$3,523,545**		

Tasks necessary to implement the CLWA-8 Project are described in Table 3-10.

TABLE 3-10: WORK PLAN FOR FOOTHILL FEEDER CONNECTION PROJECT

Category (a): Direct Project Administration Costs

Task 1: Administration

Description: Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and construction. This project will be coordinated by a designated project manager employed by CLWA. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding permitting, environmental, design, and construction issues. The budget for this project assumes the project manager will spent 90 hours on this project over the entire 2-year duration.

Deliverables: Invoices.

Task 2: Labor Compliance Program

Description: Perform labor compliance in accordance with the requirements of California Labor Code §1771.5(b).

Deliverables: Execution of labor compliance program; documentation furnished to DWR as requested.

Task 3: Reporting

Description: CLWA, as the project proponent and granting agency, will prepare and submit quarterly progress reports and invoices. CLWA will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed. The budget for this project assumes the project manager will spent 40 hours on this project over the entire 2-year duration.

Deliverables: Quarterly and final reports as specified in the Grant Agreement.

Category (b): Land Purchase/Easement

Task 4: Land Purchase/Easement

Description: No land purchase is necessary; however, easements will be obtained from the City of Santa Clarita for the routing of electric conduit that will be needed to provide power to the valve vault.

Deliverables: Easement from the City of Santa Clarita.

Category (c): Planning/Design/Engineering/Environmental Documentation

Task 5: Assessment and Evaluation

Description: The CLWA-8 Project was planned as part of the EIR for the CLWA Rio Vista Water Treatment Plant Expansion (SAIC, 2006). In addition, a hydraulic surge analysis was completed for the project in 2009.

Deliverables: Santa Clara Valley Pipeline CLWA-01 Service Connection Pressure Surge Analysis (Completed 2009). CLWA Rio Vista Water Treatment Plant Expansion EIR (Completed 2006).

Task 6: Design/Engineering

Description:

Subtask 6.1 – Pipeline Design: The pipeline design includes piping, meter and valves for interconnections with the existing MWD Foothill Feeder pipeline and CLWA's 102-inch diameter Raw Water Pipeline.

Subtask 6.1.1 - Construction Drawings (Task – DWGS): Kennedy/Jenks' design was presented on Construction Drawings prepared on MWD standard sheets. Construction Drawings presented the design in sufficient detail to obtain competitive bids and MWD approval. The 131 drawings (including reference drawings) for the work include the turnout valve vault, metering vault, 48-inch diameter pipeline plan and profile and the buried isolation valve.

Subtask 6.1.2 - Contract Documents/Technical Specifications (Task – SPECS): Design uses MWD's standard specifications for the portion of the project that includes the valve vault and the metering vault and a separate parallel set of technical specifications for the pipeline and buried butterfly work.

Subtask 6.1.3 – Opinion of Probable Construction Cost/Schedule (Task – COST): Kennedy/Jenks prepared an opinion of the probable construction cost to accompany each design submittal. The final opinion of probable construction cost includes a detailed breakdown to show the estimated costs for the major components of the design. An opinion of the probable construction schedule for each design submittal has been prepared. The construction schedule depicts the time frame for the significant items of construction work.

Subtask 6.2 – Review Submittals (Task - SUBMIT): Design was submitted for CLWA and MWD review at the 30, 60, 90 and 100 percent levels of completion.

Final plans are complete.

Deliverables: 100% Plans and Specifications for the Project (Completed 2012).

Task 7: Environmental Documentation

Description: CEQA Documentation

The Foothill Feeder Connection Project is a part of the Rio Vista Treatment Plant Expansion Project for which CLWA prepared an Environmental Impact Report. CLWA approved the project and EIR on August 23, 2006.

Deliverables: Final Environmental Impact Report and Notice of Determination (Completed 2006).

Task 8: Permitting

Description: The contractor doing the construction for the project will obtain the following permits, except as noted:

1. Los Angeles County Department of Public Works, Flood Control Encroachment Permit – CLWA has applied for this permit.
2. CALOSHA Trenching and Excavation Permit
3. County of Los Angeles Encroachment Permit
4. City of Santa Clarita Encroachment Permit
5. SWPPP Permit (Storm Water Pollution Prevention Plan) – Notice of Intent has been filed by CLWA,
6. NPDES (National Pollution Discharge Elimination System Permit)

No building permit is required for this project.

Deliverables: Copies of permits (to be provided as part of the final Specifications).

Category (d): Construction/Implementation

Task 9: Construction Contracting

Description: Once right-of-way is acquired, all permits are procured, and funding has been secured, the Foothill Feeder Connection Project will be advertised for bidding through standard CLWA procedures. CLWA will hold a pre-bid meeting and respond to questions from contractors, open and review bids for completeness and to determine whether the contractor meets the experience requirements, and award the project to the responsible bidder with the lowest bid in accordance with the Public Contract Code.

Deliverables: Notice of Award issued to Contractor.

Task 10: Construction

Description: Once the project has been bid and awarded, the contractor will construct the Foothill Feeder Connection Project in accordance with the final plans and specifications. Construction will consist of installing and connecting valves, pipelines, and associated electrical hook-ups and controls.

Deliverables: Record Drawings, Construction Photos

Category (e): Environmental Compliance/Mitigation/Enhancement

Task 11: Environmental Compliance/Mitigation/Enhancement

Description: During construction, CLWA staff and/or qualified engineering consultants will provide environmental compliance services, which may include, but are not limited to, sampling and analysis of stormwater, dewatering water, and hydrostatic test water discharges; specialized archaeological/cultural resource inspection, oversight, and analysis; biological surveys; and compliance reporting for these and other environmental issues.

Deliverables: Information on assessment and Evaluation will be provided during construction as part of quarterly grant reports (Task 3).

Category (f): Construction Administration

Task 12: Construction Administration

Description: During construction, CLWA staff and/or qualified engineering consultants will provide construction management and administration, including daily on-site observation; inspection of pipe material and fabrication processes at the factory; testing of materials used for construction, including soils and concrete; and documentation of these activities.

Deliverables: Same as for Task 10, Construction.

Category (g): Other Costs

Task 13: Project Monitoring Plan

Project Monitoring Plan Requirements (PMP): A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project. Along with Attachment 6 Project Performance Measures Tables, the PMP may also include: a) data from the RVWTP intake flow meter, b) SCADA data for daily operations, c) SWP import records d) MWD flow meter records, and e) Frequency of monitoring.

Deliverables: PMP

Category (h): Construction/Implementation Contingency

Task 14: Construction Contingency

Description: A construction/implementation contingency is included for this project to cover the cost of potential change orders during implementation of Task 10 activities. Contingency includes management of unknown conditions that may be encountered during construction or implementation of the project, such as damage to existing utilities within the right-of-way or unearthing of archaeological resources during ground disturbance, and would also cover unexpected design constraints. The contingency is estimated to be 10% of the total cost of construction and is based on professional knowledge for this type of project.

III. Other Required Information

Procedures

CLWA is the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA and its consultants will oversee, inspect and manage the construction of this Project. However, MWD will provide inspectors to review the construction work. This is standard operating procedure for projects that connect to MWD facilities so that MWD can be assured their standards are met. This will also provide additional quality assurance/control.

Since the current Foothill Feeder Connection is owned and operated by MWD, the Project design uses MWD's standard specifications for the portion of the project that includes MWD's property and a separate parallel set of technical specifications for the CLWA's pipeline and buried butterfly work. All design has been approved by MWD. Scheduling is necessary so specific construction tasks can be completed during MWD's routine yearly operational shutdown period. This has been accounted for in the recommended schedule.

Standards

The project will be designed and constructed in accordance with the appropriate standards, including those from the Association of Testing and Materials (ASTM), American Water Works Association (AWWA), and other construction industry entities, as applicable. All California Department of Public Health requirements will be strictly enforced. Standards required by MWD will also be met.

Status of Acquisition of Land or Right-of-Way

No land purchase is necessary. However, an easement will need to be obtained from the City of Santa Clarita for the routing of electric conduit that will be needed to provide power to the valve vault.

Design Plans and Specifications

The 100% design plans and specifications have been prepared by the design engineer. They are provided as Reference CLWA-8.7.

CEQA is complete. Bidding and Construction can proceed once funding becomes available. Construction will consist of installing and connecting valves, pipelines, and associated electrical hook-ups and controls.

Permits

Contractor to obtain required permits as described above in Task 8.

Status of Preparation and Completion of Environmental Requirements

Environmental impacts were evaluated and necessary mitigation measures developed as part of the Rio Vista Water Treatment Plant Expansion EIR. Applicable mitigation measures (described in Task 11) will be applied to this project.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands located within the area of the proposed project. The project would not involve any development or land disturbance that would impact cultural resources.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PMP, provided for in Task 13. A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project.

Work Items to Complete GWMP

CLWA prepared a groundwater management plan (GWMP) in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. CLWA's GWMP was drafted and adopted in 2002. Ordinance No. 34 documenting the adoption of the GWMP will be provided as documentation of this work product.

Submittals to Granting Agency

Status reports, in the form requested by the granting agency, will be submitted on a quarterly basis. A final report will also be prepared once the project is completed. Other items required by the grant contract will also be submitted to the granting agency.

Other Work Items

No other work items are anticipated to complete this project.

Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)

I. Introduction

Project Name

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

Project Description

This Project is designed to improve drinking water quality by reducing calcium carbonate hardness. The focus of the project is to alleviate the number one water quality customer complaint. Over the years, NCWD has received more customer complaints about hard water than any other type of water quality concern. It remains by the far the greatest number of customer complaints received by NCWD. Source water treatment is a more cost-effective solution compared to point-of-use systems.

Local groundwater produced in the Santa Clarita Valley contains high concentrations of naturally occurring minerals such as calcium and magnesium; as such, many customers have identified problems with clogged pipes, hot water heaters, washing machines and dishwashers. Customers have addressed these problems by installing in-home water softening devices at their own expense. It is estimated in 2008, based on previous customer surveys conducted by a neighboring retailer (Valencia Water Company) that over half of the customers in their service area had installed a home water softening device. Although these in-home devices produce soft water, they are expensive to maintain and some types discharge high concentrations of minerals and salts (or chlorides) to the sewer system that end up in the Santa Clara River. The river then flows through an agriculturally rich region growing salt sensitive crops. The Santa Clara River provides a source of irrigation water for this agriculture which is chloride sensitive. These discharges are a serious environmental concern.

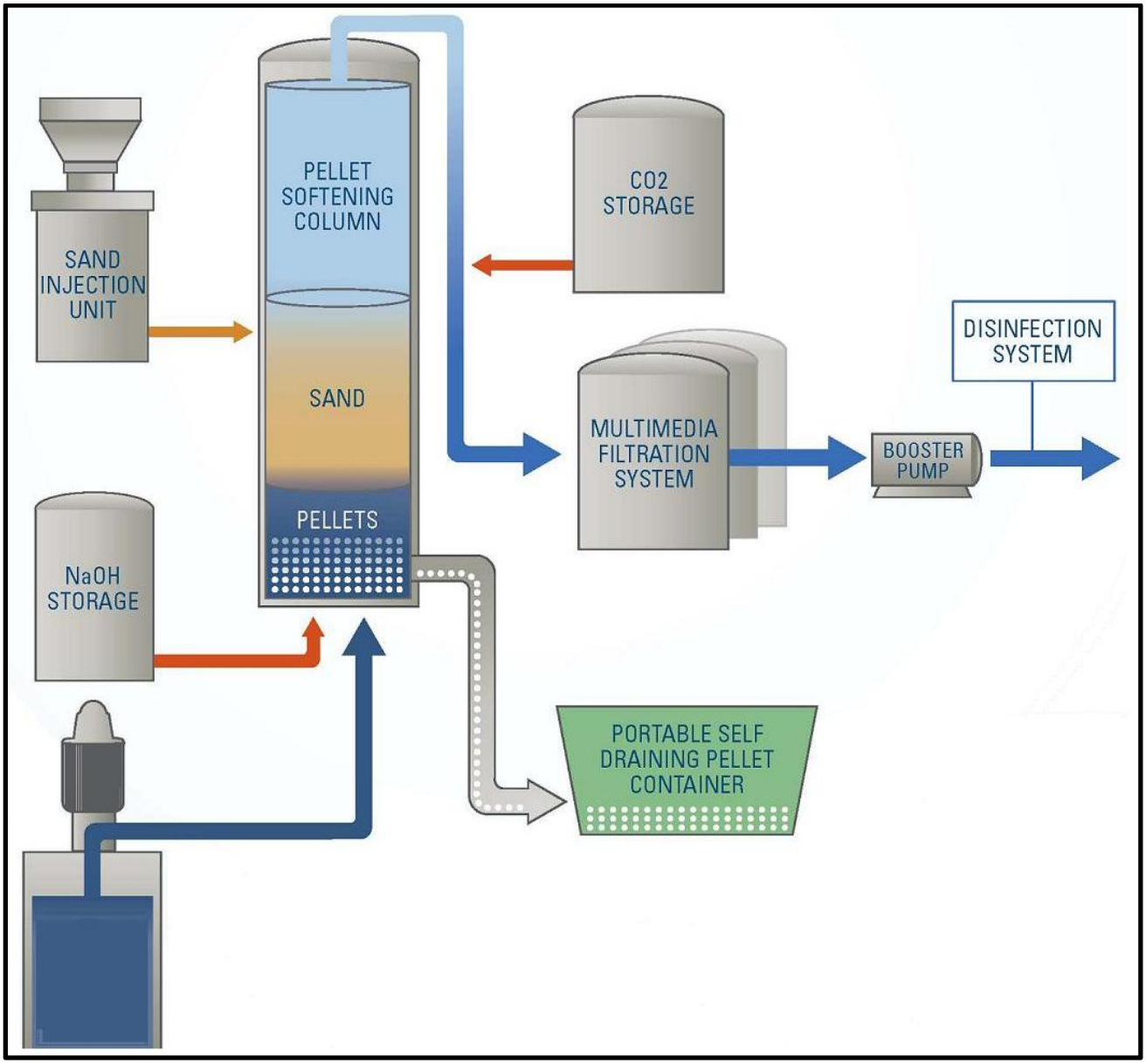
The Santa Clarita Valley Sanitation District (SCVSD), owner of the local wastewater treatment plants (operated by Los Angeles County Sanitation District [LACSD]), is considering alternatives to comply with the USCR Chloride TMDL including installation of costly advanced treatment to reduce chloride levels in the recycled water discharged to the Santa Clara River. In 2008, it was estimated that additional treatment to remove the salt added by the remaining AWS would cost up to an additional $74 million (Measure S information, 2008). SCVSD ratepayers would see their sewer rates increase to pay for this new wastewater treatment system.

Pellet softening is a precipitation process using sodium or calcium hydroxide. The pH of the source water is raised with either of these chemicals and sent through a fluidized bed of sand. The calcium carbonate precipitates out of the water and crystallizes on to the grains of sand creating “pellets.” These calcium carbonate pellets are then replaced with more sand. The pellets can be reused in a variety of textile and aggregate related industries. As the pellets are removed, additional sand is added to continue the process. The pH of the effluent water coming out of the softening column is lowered and then the water flows through a series of filters. The filters are designed to remove any carry-over particles (i.e., sand, light pellets) or crystallized calcium carbonate that did not adhere to the sand. In addition, the pellet softening technology has benefits over more traditional softening techniques such as ion exchange and reverse osmosis. For example, pellet softening requires less energy and creates a reusable by-product unlike the high-energy demands and “brine” waste that ion exchange and reverse osmosis treatments produce.

Prior to construction and implementation of a full-scale pellet softening treatment plant, a thorough analysis of the source water quality is required. In addition, available land for the treatment system and various

related components is vital. Lastly, a cost analysis is required to establish capital and operational costs. Any additional operational costs need to be examined on how these costs might affect existing water rates. If water rates are to be increased because of an unregulated treatment process, community acceptance is critical. Surveys and focus groups will need to be used to understand the community's interest in receiving "pre-softened" water as an alternative to the high cost of point-of-use devices. Phase 1 of this project would address the aforementioned.

The schematic that follows explains the pellet treatment process.



Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)

Goals and Objectives

This project would achieve the following goals and objectives.

1. Improve source water quality by reducing naturally occurring calcium water hardness.
2. Reduce water demand, because hard water contributes to the inefficiency of household appliances, increases the need for additional soaps and detergents, and contributes to the increased use of point-of-use treatment devices, all of which increase water use.
3. Reduce and/or eliminate the need for costly point-of-use water softening systems. Thereby reducing water demand if the water softening systems removed are the self-regenerating water softeners (SRWS) types.
4. Reduce the amount of chloride being discharged into the sewer system.
5. Increase life of plumbing and appliances.

Some of these goals are expanded on below:

2. Increased Use/Need for Soap

   The amount of hardness minerals in water determines the amount of soap and detergent necessary for cleaning. Excessive minerals form a sticky curd or deposit a film, such as bathtub ring, when soap is added to water. Removing this requires greater amounts of soap, detergent, cleaning compound, shampoo, and time. The hardness precipitate lodges in fabric after washing and makes it stiff and rough. Remaining soil causes the graying of white fabric and the loss of brightness in colors.

   Both bathing and grooming with soap in hard water leave a film of sticky soap curd on the skin. The film may prevent removal of soil and bacteria. Soap curd interferes with the return of the skin to its normal, slightly acid condition, and it may lead to irritation and infection. Soap curd on the hair makes it dull, lifeless, and difficult to manage. Synthetic dishwater detergents are less effective in hard water because the active ingredient is partially inactivated by hardness, even though it stays dissolved. The alkaline builders, added to the detergent mixture to cut greases and oils, reacts with these greases and oils to form soap, which in turn produces soap curd in hard water. The deposits protect soil and bacteria and interfere with thorough cleaning.

3. Savings from Using Less Soaps and Detergents

   Hard water also contributes to inefficient and costly water heater operation. Heated hard water forms a scale that is a major cause of water heater failure resulting in a shorter water heater lifespan. The typical lifespan of a water heater is 10-12 years. Better heaters have longer warranties, such as six to 10 years. Soften water generates less scale so one would expect a longer lifespan of the water heater using soft water.

   Once hard water scale forms in a water heater, it is a poor conductor and heat is not transmitted to the water as rapidly as it is applied. The fuel wasted by poor heat transference increases hot water costs. A comparison of the energy efficiency of gas water heaters using hard and soft water supplies over a 14-day period indicated that the hard-water heaters used 29.57% more BTUs of energy (Isaacs and Stockton, 1984) Talbert, et al, 1987 reported on pilot testing of water.

   The savings to the customers would come from a longer lifespan of the water heater and lower utility bill from more efficient heat transfer. The savings from generating less scale would arise from the connections without a portable exchange water softener and those connections that remove their portable exchange water softener.

Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)

Project Background

NCWD's service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Newhall, Canyon Country (Pinetree), Saugus (Tesoro), and Castaic. NCWD currently supplies a population of approximately 44,400 with nearly 9,700 service connections. NCWD is one of four (4) purveyors in the Santa Clarita Valley (SCV). NCWD water supplies consist of local groundwater blended with imported water purchased from the SCV's wholesale water agency, CLWA.

NCWD and the other IRWM Plan stakeholders worked cooperatively to produce the currently adopted 2008 IRWM Plan for the USCR Region. They are currently updating the IRWM Plan, working collaboratively again with the same stakeholders. For this Proposed Project, NCWD is using the experience from their neighboring retail purveyor, Valencia Water Company (VWC) (also a retail purveyor to CLWA); in regards to the valuable information they learned operating a demonstration pellet softening treatment plant.

Purpose and Need

NCWD provides a blend of local groundwater and imported SWP water from CLWA to its potable water consumers. The groundwater is supplied by 11 active wells from two different aquifer systems within the Santa Clara River Valley Groundwater Basin. The two aquifer systems are the Alluvium and the Saugus Formation. The groundwater has high hardness that is not a regulated water quality parameter but is an important aesthetic parameter. The hard water supply has resulted in widespread use of residential water softeners. The self-regenerating type of water softener produces a high chloride, brine discharge to the wastewater system. NCWD has made significant investments in its water delivery system in order to improve the aesthetic quality of its water supply and reduce its hardness to acceptable consumer levels. Some of these investments have included replacement of old and inefficient wells, addition of CLWA turnouts in strategic locations to maximize blending and construction of additional transmission pipelines for both groundwater and import water to improve product delivery.

While NCWD's system improvements have decreased the overall system hardness, the blended CLWA water and groundwater quality is still considered hard to very hard. In an effort to reduce the water hardness and increase customer satisfaction, NCWD proposes to complete the Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2). The objectives of this Phase 1 are to address key technical and economic issues of wellhead softening before implementation of the project in Phases 2 and 3.

Of NCWD's active 11 wells, 2 are Saugus wells and 9 are Alluvial wells. The Alluvium aquifer generally underlies the entire Upper Santa Clara River and its several tributaries, and the Saugus Formation underlies practically the entire Upper Santa Clara River area. Water quality data for the existing wells, with sample data ranging from 2002 to 2012, shows that NCWD wells had values between 180 and 500 mg/L total hardness as CaCO3. Waters with hardness over 300 mg/L are considered very hard and can impact consumers by increasing soap usage, creating undesirable deposits on glassware, appliances and cars, and can impact industrial processes. CLWA water, which blends with the groundwater supply at varying ratios, has a typical hardness of 154 mg/L which is considered moderately hard. Even after blending, the product water being sent to the consumer is in the hard to very hard range. In order to decrease the effects of hard water seen by consumers and to eliminate the need for most home water softeners, a target goal of 150 mg/L hardness has been set for the NCWD-2 Project.

Pellet Softening utilizes chemical precipitation methods for removing calcium hardness. Water is first pretreated with either caustic soda or lime to increase the pH for calcium precipitation. The water is then injected at the bottom of a pellet reactor. The water fluidizes a bed of sand that is used as a nucleus for formation of calcium carbonate pellets. Treated water is collected at the top of the reactor and the pH is adjusted to stop the precipitation reaction. As the pellets grow, the larger pellets settle to the bottom of the

reactor and are either removed in batch or taken out periodically during operation. As pellets are removed, additional sand is added.

When the pellets are removed, they are typically 1 mm in size and are easy to dewater. The dewatered pellets are the only waste stream from the pellet softener and can be beneficially used as a soil amendment, construction fill, animal feed additive and in industrial uses. If no beneficial users are found, the pellets can also be sent to landfill. The advantage to the pellet softening process is that it removes calcium hardness without reducing the supply water and with minimal waste. The disadvantage of pellet softening is that while some magnesium may be removed in the process, it is designed to remove only the calcium hardness causing the treated water total hardness to remain higher than the treatment goal of 150 mg/L.

Synergies or Linkages

The proposed Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2) and the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) work hand in hand, one to reduce the need for water softeners and the other to eliminate the water softeners, with the common goal of improving operational efficiency and improving water quality.

Completed Work

Property boundaries of existing NCWD land have been identified. Water quality data has been collected and prepared for analysis. Pellet softening technology research documents have been obtained. All related data and materials will be available to assist with the conceptual design, cost estimates, and water quality analysis, which will be completed during Phase 1.

Existing Data and Studies

Pellet softening technology was first introduced in the late 1970s in the Netherlands. A comprehensive study and description of the process and benefits are detailed in a research paper entitled Twenty Years of Experience with Central Softening in the Netherlands: Water Quality - Environmental Benefits - Costs.

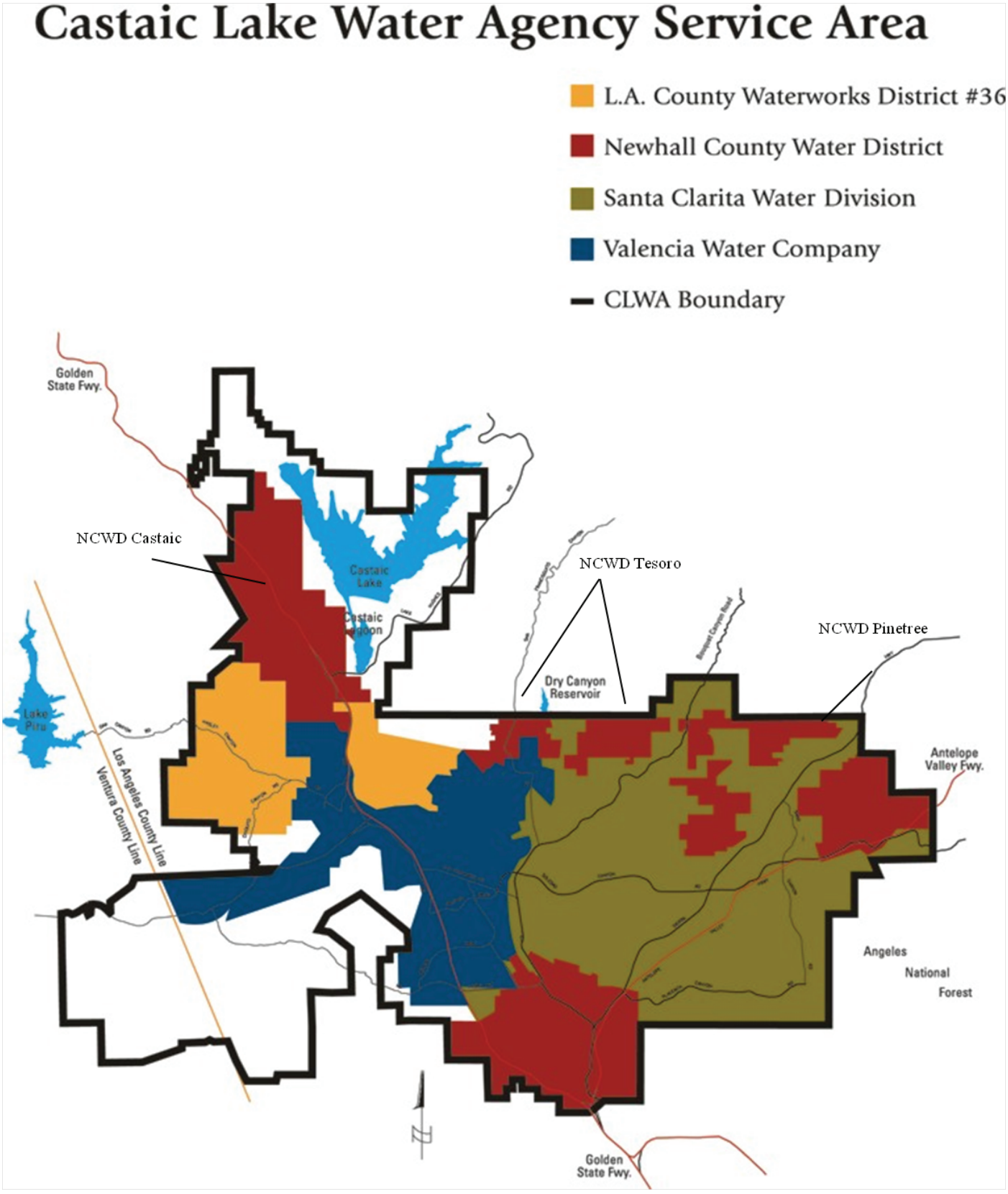
Kennedy/Jenks Consultants, an engineering and environmental sciences consulting firm, also completed two studies pertaining to pellet softening for the VWC, a retail purveyor of CLWA as is NCWD and located adjacent to NCWD as shown on Figure NCWD-2.1. The initial study Well Softening Feasibility Study (Kennedy/Jenks Consultants, April 2006), examined the most efficient and cost-effective approach to groundwater wellhead softening for approximately 400 VWC customers in the North Valencia service area. The study concluded that pellet softening was the preferred technology and recommended a demonstration project. VWC operated a demonstration project as recommended in the study –for sixteen months. A second report was completed (Groundwater Softening Demonstration Project for VWC, Kennedy/Jenks Consultants, October 2009) after the demonstration project was constructed, which analyzed the results of VWC's demonstration project. The results indicated that pellet softening provided a cost-effective and aesthetically acceptable treatment process to soften groundwater. The 2009 Kennedy/Jenks report detailed the anticipated budgets for a softening implementation plan for many of VWC's wells.

The VWC's Pellet Softening Demonstration Project was in operation from August 2008 until December 2009. In December 2009, the plant was taken off-line for inspection and assessment. A number of items which needed addressing were noted during the inspection. Among them were a relocation of the carbon dioxide pH adjustment injection point, a replacement of a portion of the effluent piping, adjustment of the sodium hydroxide pH adjustment injection quills, and a complete de-scaling of the system. Much of the work occurred over the next several months. However, in early 2010 the owners of Valencia Water Company decided not to proceed with a full-scale implementation of pellet softening as recommended by

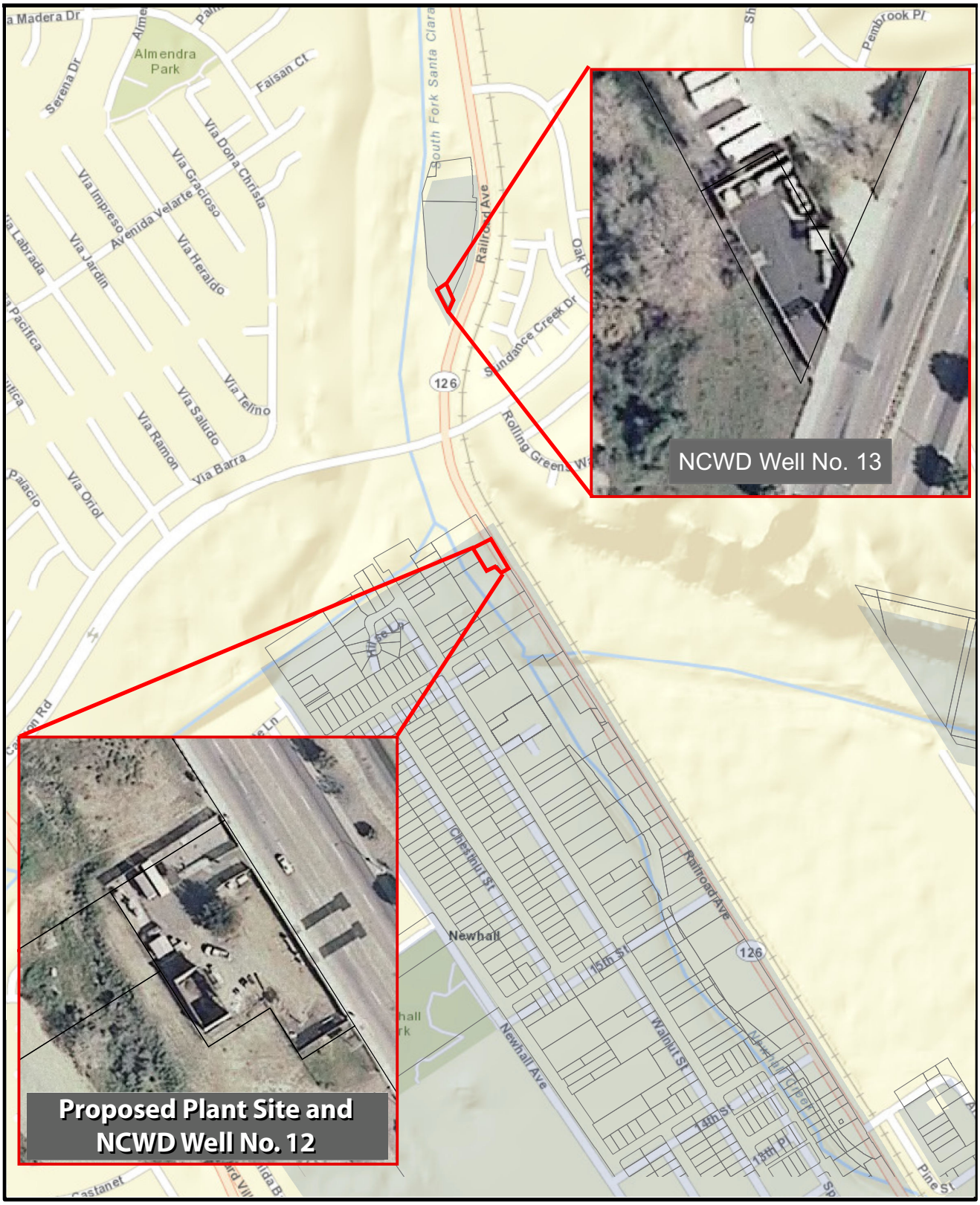
Kennedy/Jenks. VWC's Demonstration Plant remained off-line until the middle of 2012; it is now operating and serving the Decoro Highlands development known as the Copperhill Community. The Copperhill Community comprises 419 residential and multi-residential connections, one (1) community recreation center connection, and eight (8) landscape connections..

Project Map

The service area for CLWA and the retail water purveyors is shown on Figure NCWD-2.1. Figure NCWD-2.2 shows the proposed project location for the Pellet Water Softening Treatment Plant, which is located on NCWD property.



NCWD-2.1
Newhall County Water District
Service Area Boundry



NCWD-2.2
Newhall County Water District
Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

Project Timing and Phasing

As part of this Proposal, funding is being sought for Phase 1 of a three phase project. This project is a three (3) phase project. Phase 1 includes a complete water quality analysis of NCWD Wells 12 and 13 to establish the treatment criteria and feasibility of pellet softening technology. This information will be used to determine the size of the treatment plant, treatment chemicals needed, and capital and operational cost estimates. In addition, an estimated cost per customer will be calculated. A conceptual design will be prepared to determine if the current land that NCWD owns is sufficient in size. If not, then a parcel search of adjoining land will be addressed to determine if additional land purchases are required. Upon completion of Phase 1, enough information will be collected to determine the feasibility of constructing and implementing wellhead pellet softening. It is the intent of NCWD to seek additional funding to complete Phases 2 and 3. Each of these later phases is detailed below.

Phase 2 is to communicate and solicit support for the project by consumers, community leaders, and NCWD Board of Directors. Phase 3 is the construction and implementation of the project. Table 3-11 below outlines the timing and funding for each phase.

TABLE 3-11: NCWD-2 PHASING

Phase	Description	Funding Match	Anticipated Grant Funding	Timing
1	Feasibility and Cost Estimates to Implement Pellet Softening	$50,000 Provided by and Budgeted for in NCWD's FY2013/14	$150,000	Completed by June 2015.
2	Communication, Outreach, and Solicitation of Support for the Pellet Softening Project	Provided in NCWD's FY2014/15 Public Outreach Budget	N/A	Completed by June 2016.
3	Project Construction and Implementation	Provided in NCWD's FY2015/17 Budgets	N/A	After Phase 2

II. Work Plan

The tasks necessary to complete the Project are summarized in Table 3-12, and discussed in greater detail below in Table 3-13.

TABLE 3-12: OVERVIVEW OF NCWD-2 WORK PLAN

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$15,000**	**10/1/13**	**6/30/15**
1	Administration	$7,000	10/1/13	6/30/15
2	Labor Compliance	$0	10/1/13	2/28/14
3	Reporting	$8,000	12/31/13	6/30/15
b)	**Land Purchase/Easement**	**$0**	**10/1/13**	**2/28/14**
4	Land Purchase/Easement	$0	**10/1/13**	**2/28/14**
c)	**Planning/Design/Engineering/Environ-mental Documentation**	**$125,000**	**10/1/13**	**6/30/15**
5	Assessment and Evaluation	$10,000	10/1/13	6/27/14
6	Planning/Design	$100,000	10/1/13	6/30/15

Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
7	Environmental Documentation	$15,000	7/2/14	6/30/15
8	Permitting	$0	NA	NA
d)	**Construction/Implementation**	**NA**	**NA**	**NA**
9	Construction Contracting	NA	NA	NA
10	Construction/Implementation	NA	NA	NA
e)	**Environmental Compliance/Mitigation/Enhancement**	**NA**	**NA**	**NA**
11	Environmental Compliance/Mitigation/Enhancement	NA	NA	NA
f)	**Construction Administration**	**NA**	**NA**	**NA**
12	Construction Administration	NA	**NA**	**NA**
g)	**Other Costs**	**$60,000**	**10/1/13**	**6/30/15**
13.1	PMP	Cost is included in Task 1	10/1/13	2/28/14
13.2	Budget Reports	$60,000	1/1/15	6/30/15
h)	**Construction/Implementation Contingency**	**NA**	**NA**	**NA**
14	Construction Contingency	NA	NA	NA
	GRAND TOTAL	**$200,000**		

Notes: 1) Costs for Task 13.1 have been included in Task 1.

TABLE 3-13: WORK PLAN FOR PELLET WATER SOFTENING TREATMENT PLANT PHASE 1

Category (a): Direct Project Administration Costs

Task 1: Administration

Description: The project team will consist of NCWD staff and engineering consultants to provide analysis of water quality data and feasibility of pellet softening technology. Engineering consultants will also provide conceptual designs and treatment system layout. Vendors will be contacted for treatment system construction costs and chemical cost estimates.

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and engineering that may not be directly related to those tasks. This project will be coordinated by a designated project manager employed by NCWD. The project manager will be the point of contact for the project's duration and will be responsible for the day-to-day activities of the project and all reporting to the granting agency, and will coordinate with the various agencies regarding permitting, environmental, and design issues. The budget for this project assumes the project manager will spend 70 hours on this project over the entire 2-year duration.

Deliverables: Invoices and contracts.

Task 2: Labor Compliance Program

Description: Labor Compliance applies to "craft work" performed as part of traditional building and construction trades. Work performed for NCWD-2 is not craft-work and a labor compliance program will not be required.

Deliverables: N/A

Task 3: Reporting

Description: The project manager for NCWD will prepare and submit quarterly progress reports and invoices to CLWA, the granting agency. NCWD will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed. It is likely that the report will information such as: final design drawings and specifications; alternative site locations; monitoring results from geotechnical studies; easement problems encountered and the preventative and/or corrective actions taken; and copies of permits obtained.

Deliverables: Quarterly and final reports as specified in the Grant Agreement.

Category (b): Land Purchase/Easement

Task 4: Land Purchase/Easement

Description: NCWD currently owns ~14,000 square feet of available land for the construction of a pellet softening treatment plant. Phase 1 will determine if this land is suitable for construction or if additional land is needed.

Deliverables: N/A

Category (c): Planning/Design/Engineering/Environmental Documentation

Task 5: Assessment and Evaluation

Water quality data will be analyzed and evaluated to determine if NCWD groundwater quality is conducive to pellet softening. A determination will be made to the feasibility of pellet softening and the treatment chemicals necessary. Water quality and production data from NCWD wells 12 and 13 will be evaluated to determine the optimum dosages, treatment chemicals, and flow rates.

Deliverables: Groundwater quality results and pellet softening calculations, flow rate calculations, pellet formation analysis.

Task 6: Design/Engineering

After water quality assessment is complete, the size and type of treatment system can be determined. At this point, a layout of each treatment component will be sized and a conceptual layout plan will be created on the existing NCWD land. If the land is sufficient in size to construct the treatment system, conceptual design drawings will be prepared. If not, land acquisition options will be explored.

Pellet softening column specifications - based on the results of the assessment and evaluation, specifications will be identified for the softening column including up flow velocities and flow and chemical nozzles.

Chemical dosage specifications - based on flow rates and water quality data chemical dosages for pH adjustment will be specified.

Treatment system skid conceptual design and layout - all treatment and piping components will be identified and skid conceptual design for the softening column, chemical injection points, and piping configurations will be designed. After the treatment skid conceptual design has been completed, a conceptual layout will be designed to include pellet bins, chemical storage tanks, and operational and maintenance staging areas.

Deliverables: Preliminary Design Report, Pellet Softening Column Specifications, Chemical Dosage

Specifications, Treatment Skid Conceptual Design and Layout

Task 7: Environmental Documentation

For Phase 1, an Initial Study will be prepared to assess the potential impacts upon construction and implementation of Phases 2 and 3.

Deliverables: Preliminary Initial Study

Task 8: Permitting

No permits are required.

Deliverables: N/A

Category (d): Construction/Implementation

Task 9: Construction Contracting

No construction in Phase 1.

Deliverables: N/A

Task 10: Construction/Implementation

No construction or implementation in Phase 1. For Phases 2 and 3, construction/implementation is estimated to start in 2016.

Deliverables: Conceptual design drawings will be provided.

Category (e): Environmental Compliance/Mitigation/Enhancement

Task 11: Environmental Compliance/Mitigation/Enhancement

CEQA compliance for the project is discussed in Task 7. These efforts have been budgeted separately and their costs are included in the Planning/Design/Engineering/Environmental Documentation Task.

Deliverables: N/A

Category (f): Construction Administration

Task 12: Construction Administration

No construction administration is necessary in Phase 1.

Deliverables: N/A

Category (g): Other Costs

Task 13: Other Costs

Description: Task 13.1: Project Monitoring Plan

Project Monitoring Plan Requirements (PMP): A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project. Along with Attachment 6 Project Performance Measures Tables, the PMP will also include: a) Monitoring of Phase 1 goals to determine feasibility of treatment using pellet softening using: 1) Adequacy of selected site to fit the necessary treatment plant size, 2) Increased costs to rate payer not over $5/month target, and 3) Groundwater quality of wells suitable for pellet type treatment.

Deliverables: PMP

Description: Task 13.2: Budget Reports

Because NCWD is a public agency, in order to plan for funding for the potential Pellet Water Softening Treatment Plant, some preliminary costs estimates of the necessary capital and Operations and Maintenance (O&M) budgets to construct and run the treatment plant are required. These estimates will allow NCWD to see if and how much the cost of the facility will impact the water rates seen by the customer. Since the customer will most likely be responsible for at least the O&M costs of the facility (assuming grant funding is possible for the capital cost), these impacts are crucial in determining feasibility of future phases of the project.

Using the results of planning, engineering and design tasks (Tasks 5 and 6), the capital, O&M, and water rate budgetary cost estimates will be completed in this task.

Deliverables: Capital Budgetary Cost Estimate Report, Operations and Maintenance Budgetary Cost Estimate Report, Water Rate Impact Cost Estimate Report.

Category (h): Construction/Implementation Contingency

Task 14: Construction Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item.

III. Other Required Information

Procedures

CLWA is the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with NCWD in order to implement the activities outlined in this proposal. No other procedural agreements are identified.

Standards

The project will be subject to regulation/input primarily by two regulatory/oversight entities: The California Department of Public Health (CDPH) (for drinking water); and appropriate planning agencies (City/NCWD).

The CDPH's Division of Drinking Water and Environmental Management (DDWEM) promotes and maintains a physical, chemical, and biological environment that contributes positively to health, prevents illness, and ensures protection of the public. Through the DDWEM's Drinking Water Program, public water systems are regulated through the enforcement of the primary maximum contaminant levels (MCLs) standards found in Title 22 of California Code of Regulations (CCRs).

Primary and Secondary Drinking Water Standards. Drinking water regulations are enforced at the State and Federal level. The USEPA is responsible for the enforcement of National Primary Drinking Water Regulations (NPDWRs or primary standards), which apply to public water systems. Primary standards protect public health by limiting the levels of contaminants in drinking water. National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are nonenforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. The USEPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

California Water Code. The California Water Code (CWC) is the principal state law regulating water quality in California. The Health and Safety Code, Fish and Game Code, Harbors and Navigation Code, and the Food and Agriculture Code also contain water quality provisions that require compliance.

The CWC contains provisions regulating water and its use. Division 7 (Porter-Cologne Act) of the CWC establishes a program to protect water quality and beneficial uses of the state water resources and includes groundwater and surface water. The SWRCB and the RWQCBs are the principal state agencies responsible for control of water quality. They establish waste discharge requirements, water quality control planning and monitoring, enforcement of discharge permits, and ground and surface water quality objectives. They also prevent waste and unreasonable use of water, and adjudicate water rights.

The California Code of Regulations (CCRs) also contains administrative procedures for the State and RWQCBs in Title 23; and for water quality for domestic uses, wastewater reclamation, and hazardous waste management in Title 22.

Status of Acquisition of Land or ROWs

NCWD owns approximately 14,000 square feet of land. Currently Well Nos. 12 and 13 pump water through a disinfection facility on this land. Phase 1 will determine if the land is sufficient in size to construct and operate a pellet softening treatment plant.

Design Plans and Specifications

A process flow schematic for a pellet softening treatment process was shown previously on page 3-60 of this Work Plan. General layout and components of the treatment skid are detailed in the schematic.

Pellet softening requires a fluidized bed of sand through an up flow column. A chemical to raise the pH of the source water is introduced as the water enters the column to promote precipitation of calcium. The precipitated calcium crystallizes on the grains of sand. The pH of the effluent water from the column will be lowered to CDPH standards. The water will then pass through a series of filters to remove any carry over material or precipitates that do not crystallize on sand.

The work of Phase 1 will be to prepare preliminary design.

Permits

No permits are needed for Phase 1. However, for Phases 2 and 3, the following permits are anticipated: NPDES from the Regional Board for discharge and/or stormwater and a CDPH permit amendment.

Status of Preparation and Completion of Environmental Requirements

Environmental documentation is not required for the feasibility and cost estimating Phase 1 of the project. However, a preliminary Initial Study will be prepared to evaluate the potential impacts from constructing and operating a pellet softening treatment plant.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands located within the area of the proposed project. The project would not involve any development or land disturbance that would impact cultural resources.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PMP, provided for in Task 13.1. A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project.

Work Items to Complete GWMP

CLWA prepared a groundwater management plan (GWMP) in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area and covers the NCWD service area. CLWA's GWMP was drafted and adopted in 2002. Ordinance No. 34 documenting the adoption of the GWMP will be provided as documentation of this work product.

Submittals to Granting Agency

Status reports, in the form requested by the granting agency, will be submitted on a quarterly basis. A final report will also be prepared once the project is completed. Other items required by the grant contract will also be submitted to the granting agency.

Other Work Items

No other work items are anticipated to complete this project.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

I. Introduction

Project Name

Santa Clarita Valley Sanitation District's Automatic Water Softener Rebate and Public Outreach Program, *Enforcement Phase* (SCVSD-1)

Project Description

The Santa Clarita Valley Sanitation District (Sanitation District) operates two water reclamation plants (WRPs) in the Santa Clarita Valley, the Saugus and Valencia WRPs, along with more than thirty miles of Sanitation District operated trunk lines and one pumping plant. The Saugus and Valencia WRPs discharge treated wastewater into the USCR, which contains chloride in excess of the Los Angeles Regional Water Quality Control Board (RWQCB) water quality objective for the USCR of 100 mg/L. In 2002, the Los Angeles RWQCB first began development of the USCR Chloride TMDL, which was subsequently revised most recently under RWQCB Resolution No. R4-2008-012, requiring the Sanitation District to reduce chloride levels in the discharges from the WRPs.

The Sanitation District has conducted a groundbreaking, nationally recognized source control program for chloride in the Santa Clarita Valley. Because residential automatic water softeners have been the largest controllable source of chloride, the source control efforts have focused on the removal of these units. In addition to efforts to reduce chloride from residences, the Sanitation District has also reduced chloride from the industrial sector, commercial sector, hauled waste, and treatment plant operations. Chloride in water supply has also been examined. The Sanitation District is firmly committed to reducing chloride sources in the sewerage system to the maximum extent technologically and economically feasible, and continues to explore innovative and effective means to bring about this reduction. The Sanitation District annually reviews the effectiveness of the program and makes adjustments as necessary.

The Sanitation District has been implementing various phases of the AWS Public Outreach Program since February 2003. The major multimedia community-wide components of the campaign began on March 25, 2004 and concluded on June 30, 2009. The Sanitation District launched the Automatic Water Softener Rebate Program Phase I on November 30, 2005 and began implementing the Automatic Water Softener Rebate Program Phase II on April 1, 2007. These programs have been highly successful in removing over 7,900 automatic water softeners in the Santa Clarita Valley and significantly reducing the chloride load in the recycled water discharged from the Sanitation District's Saugus and Valencia WRPs.

The Sanitation District's Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase (phase currently being applied for with this implementation grant application) will focus on removing the remaining automatic water softeners in the Santa Clarita Valley. The Program will consist of home inspections, issuing Notices of Violations to residents that still have their automatic water softeners, issuing rebates to residents that remove their automatic water softeners, chloride monitoring, and public outreach.

Goals and Objectives

The Sanitation District's goal is to remove all remaining automatic water softeners in the Sanitation District's service area. By removing these units, it is expected to achieve a reduction in the chloride discharged from

the Saugus and Valencia WRPs by up to 5 mg/L.[1] In addition, the publicity associated with this project is expected to prevent backsliding (residents installing and/or using illegal automatic water softeners) by keeping awareness of the chloride problem high in the community. Reducing the chloride load in the Sanitation District's WRP discharges will minimize the size of future chloride compliance facilities and help the Sanitation District comply with the USCR Chloride TMDL.

Removing AWS also saves water. AWS use a high-water flushing method to dispose of salts. Flushed water is disposed of to the sewer. Other types of softeners do not use or waste as much water to remove salts. Removal or replacement of AWS will reduce water demand on the Delta.

Purpose and Need

The Saugus and Valencia WRPs discharge treated wastewater into the USCR, which contains chloride in excess of the water quality objective for the USCR of 100 mg/L. In 2002, the RWQCB, Los Angeles Region first developed the USCR Chloride TMDL, which was subsequently revised most recently under RWQCB Resolution No. R4-2008-012, requiring the Sanitation District to reduce chloride levels in the discharges from the WRPs.

The Santa Clara River Chloride Reduction Ordinance of 2008 (Ordinance) was approved by voters and took effect on January 1, 2009. The Ordinance required the removal and disposal of all existing residential AWS by June 30, 2009. Over 7,900 AWS have been removed, but approximately 500 may still be discharging and several thousand may still be installed. The goal of the *Enforcement Phase* of the Automatic Water Softener Rebate and Public Outreach Program is to remove the remaining automatic water softeners in the Sanitation District's service area, and thereby reduce the chloride load in the Sanitation District's final effluent and recycled water at the Saugus and Valencia WRPs by up to 5 mg/L. This program will also reduce greenhouse gas emissions by minimizing the size of future chloride compliance facilities that otherwise are required to remove chloride from the WRP discharges.

Synergies or Linkages

The NCWD's proposed Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2) (once all phases 1-3 are complete) has synergies with the Sanitation District's Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1). If NCWD provides softer water in their service area, residents may have less desire to use an illegal automatic water softener.

Completed Work

The Sanitation District has (1) already sent letters to residents suspected of having automatic water softeners to inform them that the ordinance requires them to remove the units; (2) conducted a pilot scale home inspection program; (3) begun public outreach for the Enforcement Phase; and (4) conducted additional influent chloride monitoring at the Saugus and Valencia WRPs. The Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase was approved by the Sanitation District's Board of Directors on October 18, 2010. The Sanitation District is seeking Proposition 84 grant funding for the Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase for activities since October 18, 2010.

[1] 2012 Chloride Source Identification/Reduction, Pollution Prevention, Public Outreach Program Report, Santa Clarita Valley Sanitation District, November 2012. Page 3-22, Per Table 3.9-2, the chloride loading contributed from self-regenerating water softeners (SRWS) concentration is estimated at around 5-6 mg/L in 2011. Sanitation District is assuming all AWS are removed so load=0 and the 5-6mg/L is eliminated.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

It is anticipated that prior to the start of this grant application program (assumed to be October 2013), the Sanitation District will also train inspectors and begin the full-scale inspection program, create and distribute additional public outreach materials, and conduct additional influent chloride monitoring at the Saugus and Valencia WRPs. In addition, the Sanitation District plans to continue on-going work with the salt retailers to remove salt and potassium chloride used in AWS from store shelves.

Existing Data and Studies

As part of the USCR Chloride TMDL, the Sanitation District is required to submit an annual report to address measures taken and planned to be taken by the Sanitation District to quantify and control sources of chloride in the Sanitation District's sewerage system. Information on the Sanitation District's Automatic Water Softener Rebate and Public Outreach Program can be found in Section 4 of the Sanitation District's 2012 Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan, November 2012 (2012 Annual Chloride Report).

As discussed in earlier sections, the 2012 Annual Chloride Report documents the chloride reduction benefits from AWS removal to date from the Sanitation District's efforts remove AWS from their service area.

Project Map

Three maps of the project follow; the first, SCVSD-1.1 presents the locations of the 7,900 AWS that have been removed to-date by the SCVSD. The second, SCVSD-1.2, presents the suspected locations of the remaining 500 AWS still left within the SCVSD service area. The last, SCVSD-1.3, presents the suspected locations of the remaining AWS still left within the NCWD service area and the location of the proposed Pellet Water Softening Treatment Plant (NCWD-2), discussed in the previous project.

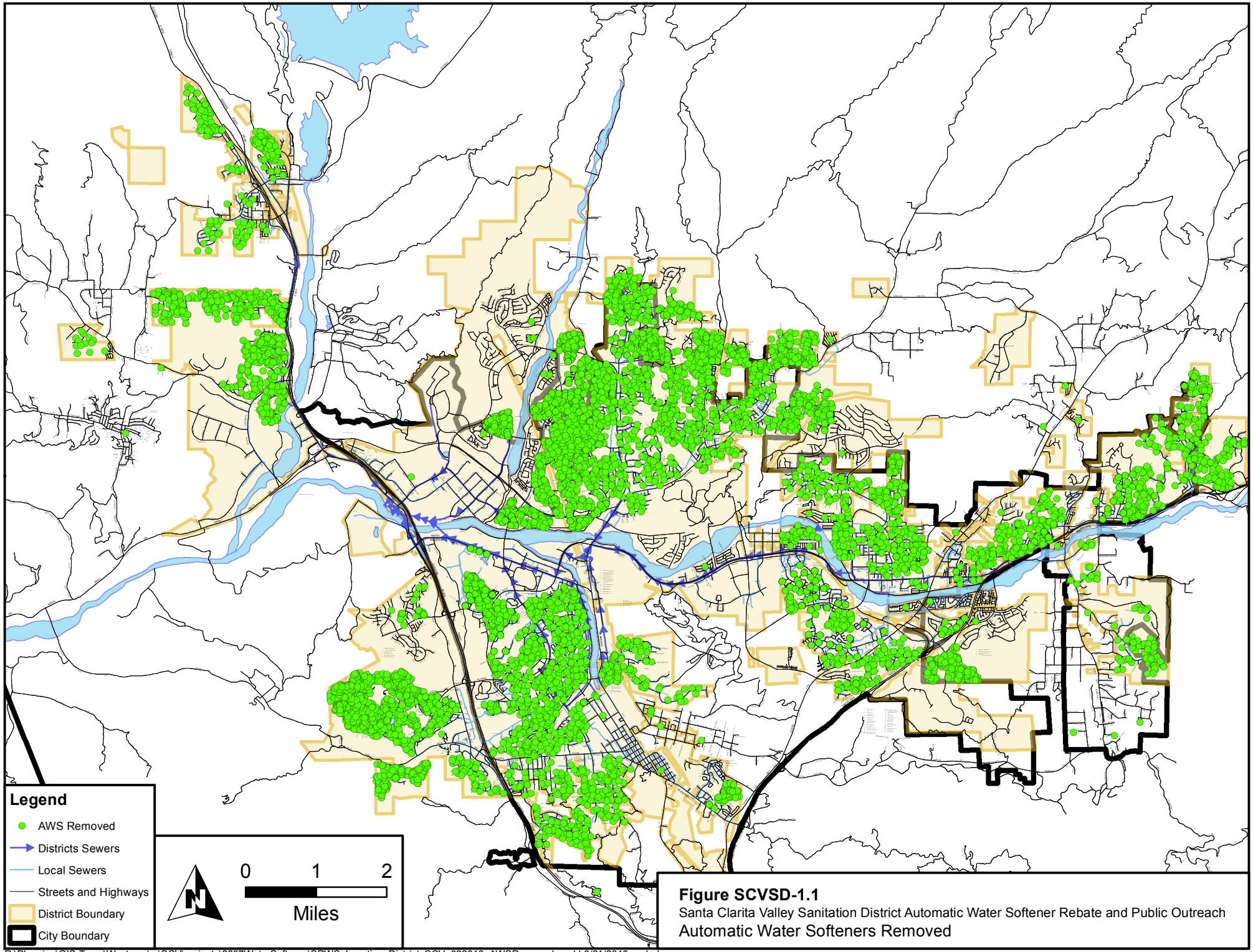


Figure SCVSD-1.1
Santa Clarita Valley Sanitation District Automatic Water Softener Rebate and Public Outreach
Automatic Water Softeners Removed

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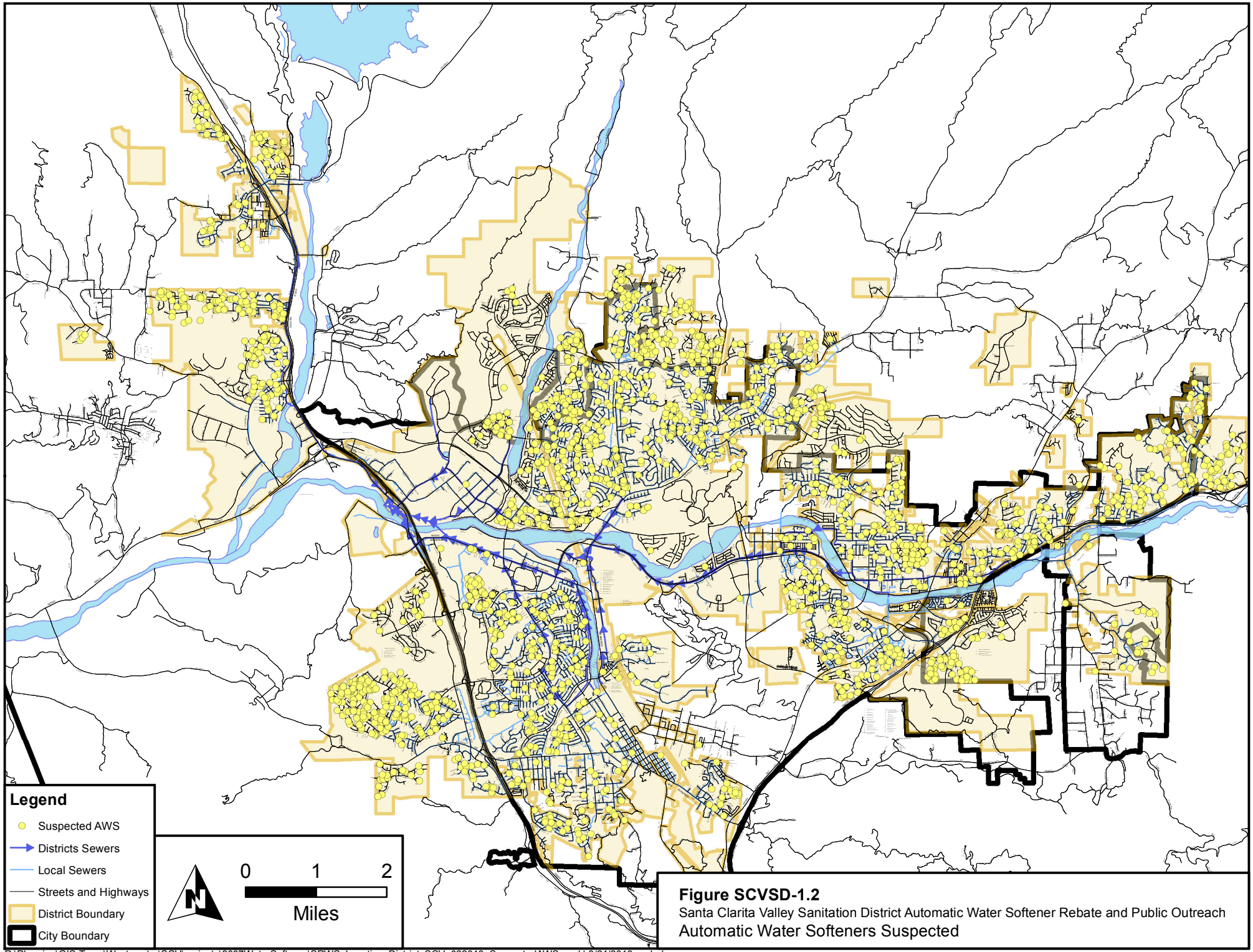

Figure SCVSD-1.2
Santa Clarita Valley Sanitation District Automatic Water Softener Rebate and Public Outreach
Automatic Water Softeners Suspected

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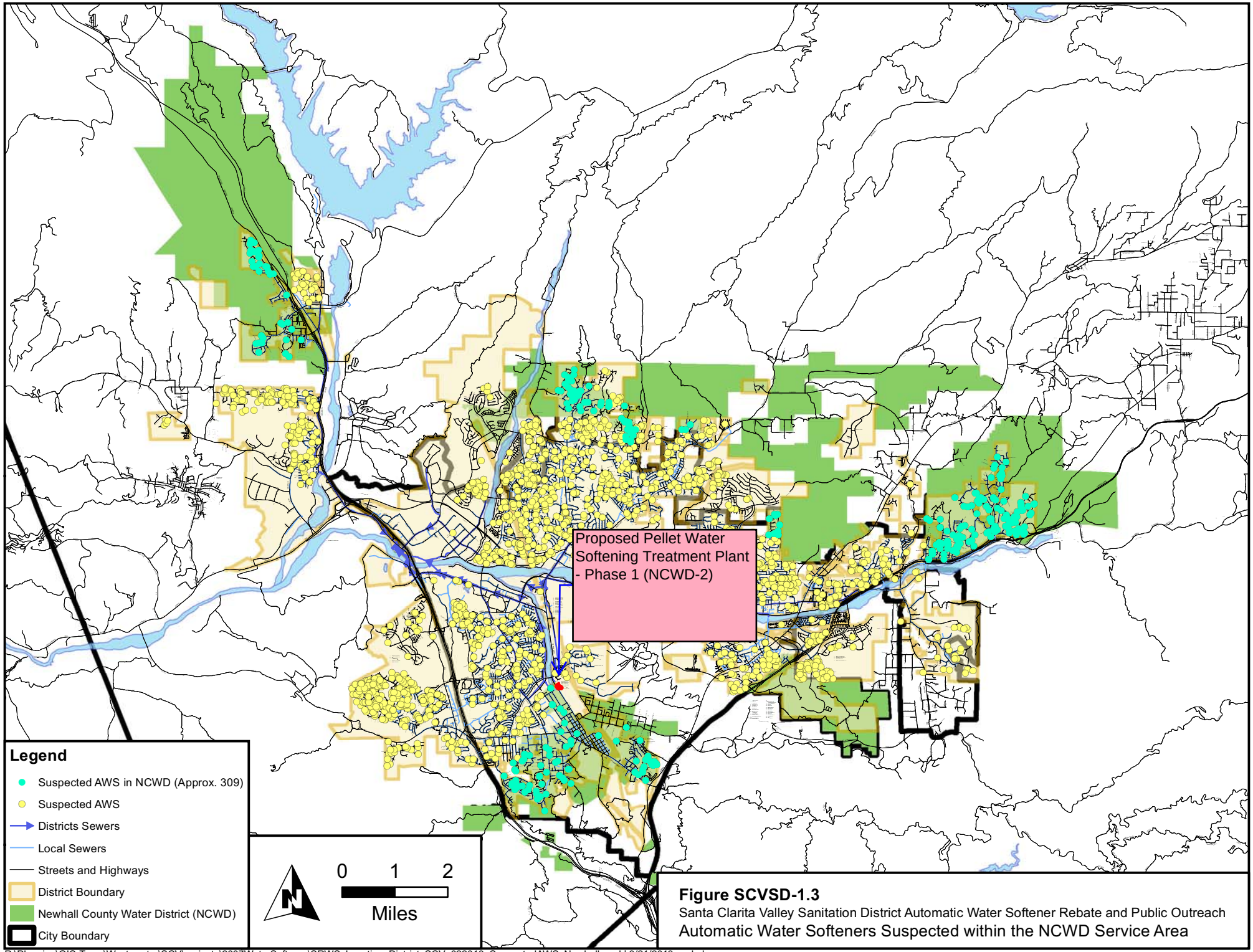

Figure SCVSD-1.3
Santa Clarita Valley Sanitation District Automatic Water Softener Rebate and Public Outreach
Automatic Water Softeners Suspected within the NCWD Service Area

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TABLE 3-15: WORK PLAN FOR AUTOMATIC WATER SOFTENER REBATE AND PUBLIC OUTREACH PROGRAM, *ENFORCEMENT PHASE* (SCVSD-1)

Category (a): Direct Project Administration Costs

Task 1: Administration

Description: Project administration includes administration of grant and implementation contracts, preparation of reports and plans, coordination of various contracts, and other activities as required to complete implementation. This project will be coordinated by a designated project manager employed by SCVSD. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding permitting, environmental, and implementation issues. The budget for this project assumes administrative costs will be 3% of the total project cost.

Deliverables: Invoices.

Task 2: Labor Compliance Program

Description: Project has been determined to not be a public work nor is it subject to the labor compliance program requirements. Therefore this task is not applicable.

Deliverables: Not applicable.

Task 3: Reporting

Description: Sanitation District will prepare and submit quarterly progress reports and invoices to CLWA. Sanitation District will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed.

Deliverables: Quarterly and final reports as specified in the Grant Agreement.

Category (b): Land Purchase/Easement

Task 4: Land Purchase/Easement

Description: Not applicable. No land purchases or right-of-way easements are required for implementing this program.

Deliverables: Not applicable.

Category (c): Planning/Design/Engineering/Environmental Documentation

Task 5: Assessment and Evaluation

Description: All planning efforts have been successfully completed. Evaluation will be done annually in the Sanitation District's Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan.

Deliverables: Annual Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan.

Task 6: Design/Engineering

Description: Preliminary design of the program has been successfully completed. Description of the preliminary design will be provided in the 2013 Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan. The report will be completed on November 4, 2013. Project tasks will be evaluated and modified as necessary.

Deliverables: 2013 Annual Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan.

Task 7: Environmental Documentation

Description: Because the project will reduce the presence of chloride, a pollutant of concern in the Santa Clara River, it is categorically exempt from CEQA, pursuant to CEQA Guidelines Sections 15307 and 15308 – Actions by Regulatory Agencies for the Protection of Natural Resources and to Protect the Environment. In addition, the authorization for inspections is categorically exempt under CEQA Guidelines Section 15309; and the authorization for enforcement actions is statutorily exempt under CEQA Guidelines Section 15321.

Deliverables: Notice of Exemption for the Santa Clara River Chloride Reduction Ordinance of 2008.

Task 8: Permitting

Description: No permits are required for implementation of the program.

Deliverables: Not Applicable.

Category (d): Construction/Implementation

Task 9: Construction Contracting

Description: No construction contracting is anticipated for implementation of the program.

Deliverables: Not Applicable.

Task 10: Construction/Implementation

Description:

Subtask 10.1 - Automatic Water Softener Rebates: Issue rebates to residents for the removal and disposal of an automatic water softener in accordance with the terms and conditions of the Automatic Water Softener Rebate Program. Subtask also includes administration of the Automatic Water Softener Rebate Program and pickup and dismantling of automatic water softeners.

Subtask 10.2 - Developed Initial Documents, Prepared Letter Packages for Residents, Mailed Letters to Residents, and Processed Rebate Applications and Questionnaires Returned From August 2011 Resident Letters: Developed letters for 1) residents on the vendor sales lists, homebuilder lists, and building permit list that had not previously applied for a rebate, 2) residents that had responded they removed their automatic water softener but the Sanitation District did not receive the unit, 3) residents that had applied for Automatic Water Softener Rebate Program but the Sanitation District did not receive the automatic water softener (these residents received an updated Authorization for Rebate letter), 4) residents that illegally installed automatic water softeners (these residents are not eligible for Automatic Water Softener Rebate Program but were encouraged to complete a questionnaire stating their unit had been removed), and 5) residents that had rental automatic water softeners that would not allow the rental company access to remove unit. In addition, developed other documents such as the questionnaire (residents that no longer had an automatic water softener were asked to confirm in writing that the unit is no longer at the home and document where the unit was taken to or disposed of), revised letter for new homeowners stating that if they had an automatic water softener they must apply for Automatic Water Softener Rebate Program within 60 days of receiving letter, Notice of Violation (will be given to residents if an automatic

water softener is found at the home during an inspection), and Administrative Order (given to residents that do not remove automatic water softeners within 60 days after being issued a Notice of Violation).

Printed letters, rebate applications, questionnaires, and updated Authorization for Rebate letters for approximately 3,000 residents. Prepared mailers for residents. Also, updated database to collect resident responses, select homes for inspections, and document responses from inspections. Letters to residents were mailed in one batch to allow for an equivalent amount of time for them to submit paperwork back to Sanitation District.

Entered information from rebate applications and questionnaires into database. Evaluated responses on questionnaires and determined which residents need further follow-up. Selected 10 percent of questionnaires for home inspections (spot checks); the spot check home inspections will be conducted under Subtask 10.4.

Sanitation District staff will also work with companies to verify removal of automatic water softeners from residents that stated on questionnaires that these companies removed their units. If verification that the unit was removed is obtained then these files can be closed.

Subtask 10.3 - Public Outreach Program: Develop messages and design and produce materials for use during the *Enforcement Phase*. Public outreach items may include preparing press releases; meeting with local newspaper editorial staff; answering reporter questions; conducting television and radio interviews; designing notices for City of Santa Clarita's newsletter and website; newspaper, magazine, radio, billboard, bus shelter, and direct mail advertisements, newspaper and magazine articles; television and movie theater advertisements, redesign of webpages; direct mail pieces; focus groups; mailing information in water and trash bills; using robocalls; hanging street banners, street flag poles, and waste hauler signs; displaying signs; distribution of door hangers; mailing letters to new homeowners; participating in community events; working with real estate professionals; door-to-door outreach; phone surveys; targeted outreach programs; and staffing toll-free phone line and dedicated email address. Implement public outreach program utilizing above methods and other methods as needed.

Sanitation District staff will also work with companies to verify removal of automatic water softeners from residents that stated on questionnaires that these companies removed their units. If verification that the unit was removed is obtained then these files can be closed.

Subtask 10.4 - Home Inspection Program: Conducted a pilot scale inspection program consisting of Industrial Waste senior and supervising inspectors visiting homes in at least 3 geographic areas during 3 different times of the day/week (once during work hours, once during evening hours, and once on Saturday) to examine if certain times/days are more successful and to preview resident reactions to home inspections. Sanitation District staff introduced themselves, stated why the Sanitation District believes that the home may have an automatic water softener, and inquired if the resident will allow a home inspection of the garage and side of the house. Sanitation District staff documented all responses by residents. Determined that additional trial runs were not needed.

Assessed effectiveness of pilot scale inspection program including determining optimal time to contact residents. Revised program to maximize effectiveness. Train inspectors on conducting home inspections. Inform inspectors of Sanitation District's ordinances, components of AWS, how to communicate with residents, how to issue Notices of Violations, Rebate Program, and the information that should be documented during home inspections. Tasks include administration, legal, and implementation items such as selecting homes for inspection; modifying database as necessary; preparing inspection documents; conducting home inspections; entering inspection records into database; addressing resident and inspector concerns; potentially issuing Notices of Violations, inspection warrants, and administrative fines; and managing program. Modify program as necessary.

Subtask 10.5 - Monitoring: Conducting quarterly influent chloride monitoring at the Saugus and Valencia WRPs for a week to establish current influent chloride load. Also, collect and analyze potable water

samples during the influent sampling period to approximate blended potable water supply chloride concentration.

Conduct chloride sampling in six neighborhoods sampled in 2002 to evaluate change in chloride load from these neighborhoods.

Conduct chloride sampling in other neighborhoods to estimate number of automatic water softeners still in operation in the neighborhood or confirm that all discharging automatic water softeners are removed.

Conduct sampling of individual homes to determine if an automatic water softener is discharging.

Monitoring results will be used to modify program as necessary.

Subtask 10.6 - Commercial Inspections: Perform inspections of stores that sell or potentially could sell salt and potassium chloride for automatic water softeners and request that they stop selling salt and potassium chloride. Visit stores periodically to confirm the removal of salt, potassium chloride, and automatic water softeners. Conduct other commercial inspections as necessary.

Deliverables: Quarterly and final reports and annual Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan

Category (e): Environmental Compliance/Mitigation/Enhancement

Task 11: Environmental Compliance/Mitigation/Enhancement

Description: The Sanitation District will conduct environmental compliance monitoring in accordance with the Saugus and Valencia WRPs National Pollutant Discharge Elimination System (NPDES) Permits.

Deliverables: Saugus and Valencia WRPs Annual Monitoring Reports to RWQCB.

Category (f): Construction Administration

Task 12: Construction Administration

Description: No construction administration will be conducted as part of the program.

Deliverables: Not Applicable.

Category (g): Other Costs

Task 13: Other Costs

Description: Task 13: Project Monitoring Plan

Project Monitoring Plan Requirements (PMP): A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project. Along with Attachment 6 Project Performance Measures Tables, the PMP may also include: a) Baseline conditions, b) Brief discussion of monitoring systems to be utilized, c) Collect data regarding the reduction in the chloride discharged from the Saugus and Valencia WRPs, total number of confirmed automatic water softeners removed, total number of home inspections conducted, and total number of contacts with public d) Collect and monitor chloride level at WRP discharge location pre and post rebate period, and e) Location of monitoring at WRPs.

Deliverables: PMP

Category (h): Construction/Implementation Contingency

Task 14: Construction/Implementation Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item.

III. Other Required Information

Procedures

CLWA is the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with the Sanitation District in order to implement the activities outlined in this proposal. No other procedural agreements are identified.

Standards

Chloride samples will be analyzed using the US Environmental Protection Agency (EPA) Test Method 300.0. All appropriate sample handling and quality assurance/quality control procedures will be followed.

Status of Acquisition of Land or ROWs

No land acquisition or right-of-way easements are needed for the project.

Permits

No permits are needed for the project.

Status of Preparation and Completion of Environmental Requirements

The proposed project was determined to be exempt from CEQA.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands located within the area of the proposed project. The project would not involve any development or land disturbance that would impact cultural resources.

Design Plans and Specifications

The plan for the Automatic Water Softener Rebate and Public Outreach Plan, Enforcement Program was presented to the Sanitation District's Board of Directors on October 18, 2010. The program information is available in the Call, Notice, and Agenda of the Special Meeting of the Board of Directors of Santa Clarita Valley Sanitation District, October 18, 2010 and the Minutes of the same meeting.

The Sanitation District intends to use the following performance indications to assess and evaluate the effectiveness of the program: total number of confirmed automatic water softeners removed, total number of Automatic Water Softener Rebates issued, and total number of home inspections completed. The Sanitation District will modify the program as needed as a result of the performance indicators.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the project will be developed in the PMP, provided for in Task 13. A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project.

Work Items to Complete GWMP

CLWA prepared a groundwater management plan (GWMP) in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. CLWA's GWMP was drafted and adopted in 2002. Ordinance No. 34 documenting the adoption of the GWMP will be provided as documentation of this work product.

Submittals to Granting Agency

Status reports, in the form requested by the granting agency, will be submitted on a quarterly basis. A final report will also be prepared once the project is completed. Other items required by the grant contract will also be submitted to the granting agency.

Other Work Items

No other work items are anticipated to complete this project.

Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

I. Introduction

Project Name

Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Project Description

The Proposed project is the implementation of arundo and tamarisk removal projects in two specific locations within the Upper Santa Clara River watershed. The City of Santa Clarita (City) (SC-1) and a group of homeowners in Los Angeles County unincorporated area who live along Bouquet Canyon Creek (BCN-1) propose to address areas infested by arundo. The goal of implementing these projects (SC-1/BCN-1) is to further reduce the percent cover of arundo within the Upper Watershed to 10% or less, and specifically to get the percent cover of Bouquet Canyon Creek to 10% or less.

The City received an implementation grant from the Department of Water Resources (DWR) Round 1 Implementation Grant to remove arundo and tamarisk from within a site specific implementation area within the City limits, approximately 150 acres (areas D, E, F and G on Figure 1). This Project (SC-1/BCN-1) seeks to move work into the two tributaries of the Santa Clara River, Bouquet Canyon Creek and San Francisquito Creek. Project SC-1 will continue removal of arundo within this vicinity that is in City boundaries in a portion of designated area A (Bouquet Creek confluence) and to the north of area D (San Francisquito Creek). These areas (see Figure 2, red colored areas) are the remaining sections of these two tributaries that flow within the City of Santa Clarita boundary. The Bouquet Canyon Creek has patches of unlined riparian areas that will be treated for arundo removal, as the other areas represent concrete lined areas that Los Angeles County Flood Control District clears of all vegetation annually.

Project BCN-1 involves arundo removal within the upper Bouquet Canyon Creek Network (BCN), outside of the City limits up to the Angeles National Forest boundary. Here, the arundo removal effort will be a joint effort with the City and a group of homeowners whose property is adjacent to the riparian area. The BCN is a group of twenty homeowners located adjacent to the creek that have filed the "Bouquet Canyon Creek Site-Specific Restoration Plan" with the California Department of Fish and Game (CDFG) to allow arundo removal on their property. Implementation within this area will support the efforts by the Angeles National Forest who is also working to abate the arundo and tamarisk on their properties in the Bouquet Canyon Creek tributary. Between the various efforts, the groups are working to meet the collective goal of under 10% arundo in the Bouquet Canyon Creek.

The common work method (discussed below) between SC-1 and BCN-1 will be in the cutting and retreatment of re-sprouts that occurs when warm weather returns, as well as an education component. The SC-1 Project includes removal of arundo and tamarisk, while the BCN-1 Project includes removal of arundo and tree tobacco. BCN-1 also includes a restoration of native plants in the Bouquet Canyon Creek area outside City limits.

Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Methodology for Effective Eradication Of The Invasive Species

Two types of restoration efforts will be employed to ensure the effective eradication of the invasive species. The first effort will include the initial treatment of the arundo, which includes non-native biomass removal and herbicide application. Arundo may be ground in place with mechanical equipment such as a brush grinder (where appropriate), or removed by manual means employing tools such as chainsaws and brush cutters. After removal of the targeted vegetation, an appropriate aquatically approved herbicide will be applied. In areas where mechanical vegetation grinding is to occur, arundo will be allowed to resprout to a height of 2 to 3 feet, and herbicide will be applied via foliar spray. In areas where manual removal is to occur, herbicide will be applied immediately to the cut stumps via daubing or painting. Foliar application of herbicide may also occur on non-native stands of vegetation where appropriate. In addition to arundo, other invasive plants may be removed, if applicable. As the area is home to several endangered species, the manual means will likely be the prevailing method.

In addition to removal of noxious weeds, this project contains a potential restoration component. Monitoring of the site will indicate if revegetation is necessary. Native species common to the site such as willows (Salix sp.) and mule fat (Baccharis salicifolia) reestablish readily through natural recruitment once competition from non-native species is removed. However, it may be determined that certain areas within the site require more rapid enhancement than natural recruitment can provide. This would be accomplished through the installation of cuttings of these species, as appropriate.

Previous restoration efforts have shown that this after treatment monitoring and maintenance program is essential to the success of the restoration effort. The monitoring and maintenance program is backed by the Santa Clara River Invasive Weeds Task Force and funded through an endowment that the US Fish and Wildlife Service developed specifically to fund long-term management of previously cut arundo infestation areas. The City has been in discussions with US Fish and Wildlife Service to continue the life of this program.

SC-1- City of Santa Clarita Project Location Areas: (Figure 2, red outlined)

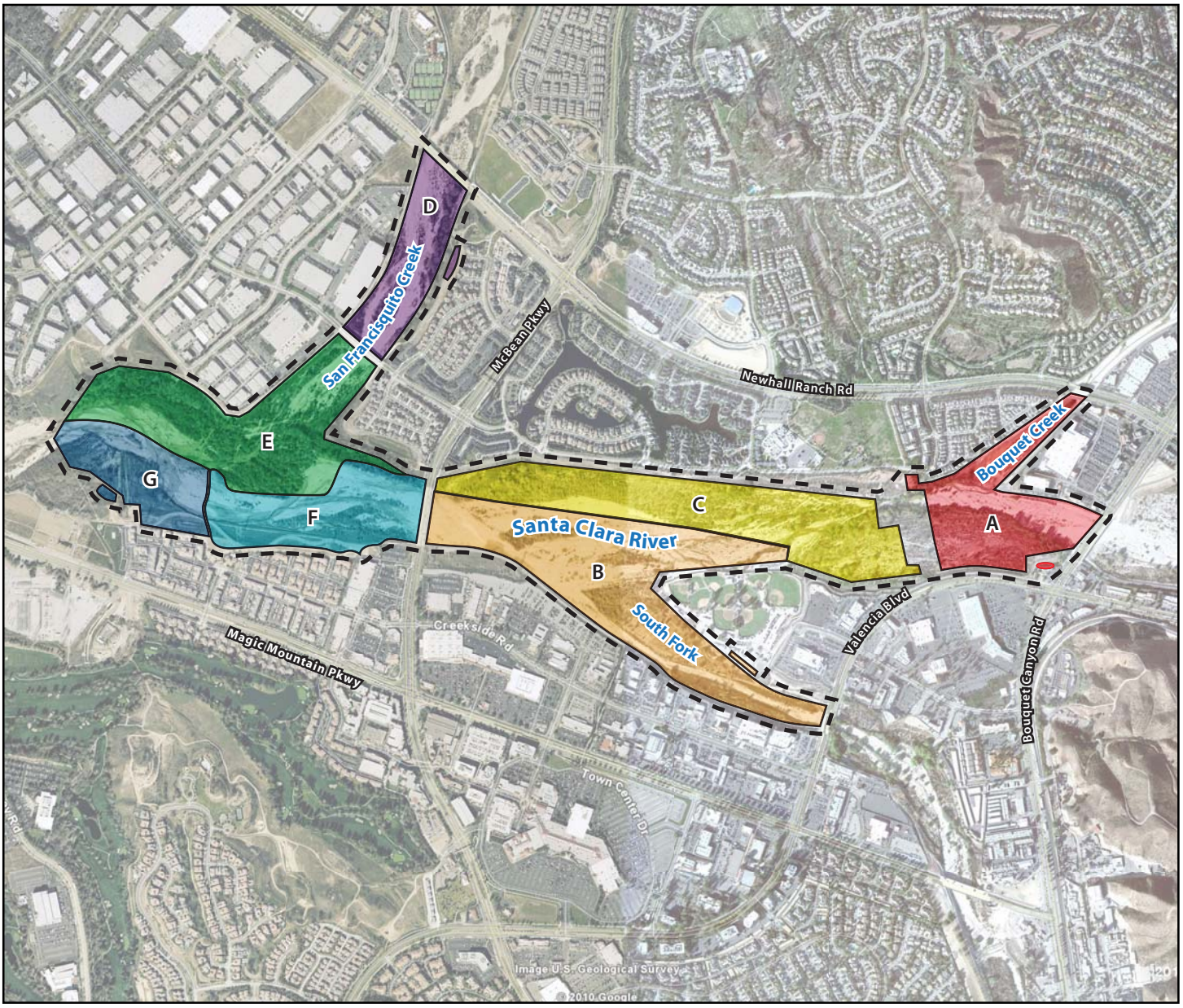
Area 1 - San Francisquito Creek: roughly between Newhall Ranch Road and the City limits near Decoro Drive (approximately 60 acres).

Bouquet Canyon Creek:

Area 2 - Near the confluence of the Santa Clara River up to where the creek is concrete lined near the intersection of Newhall Ranch Road (approximately 30 acres).

Area 3 -Adjacent to the City's Central Park. The City acquired a three acre parcel of riparian area that is not concrete lined, but the areas upstream and downstream are lined (approximately 3 acres).

Area 4 - A joint effort between BCN-1 and SC-1: It is within City limits, but the owner is a member of the BCN-1 group. While the primary work will be completed by BCN-1, the City of Santa Clarita will help with administrative requirements (approximately 7 acres) (shown in pink on Figure 2).



LEGEND:

- Project & Staging Area A
- Project & Staging Area B
- Project & Staging Area C
- Project & Staging Area D
- Project & Staging Area E
- Project & Staging Area F
- Project & Staging Area G

N

Sources:
1. Upper Santa Clara River Watershed Arundo and Tamarisk Removal Project (SCARP), Site-Specific Implementation Project (SSIP) Area, Wildscape Restoration, November 2008
2. Google Earth - Image U.S. Geological Survey

FIGURE 1 OF SC-1/BCN-1

Santa Clara River, San Francisquito Creek Arundo & Tamarisk Removal Project .

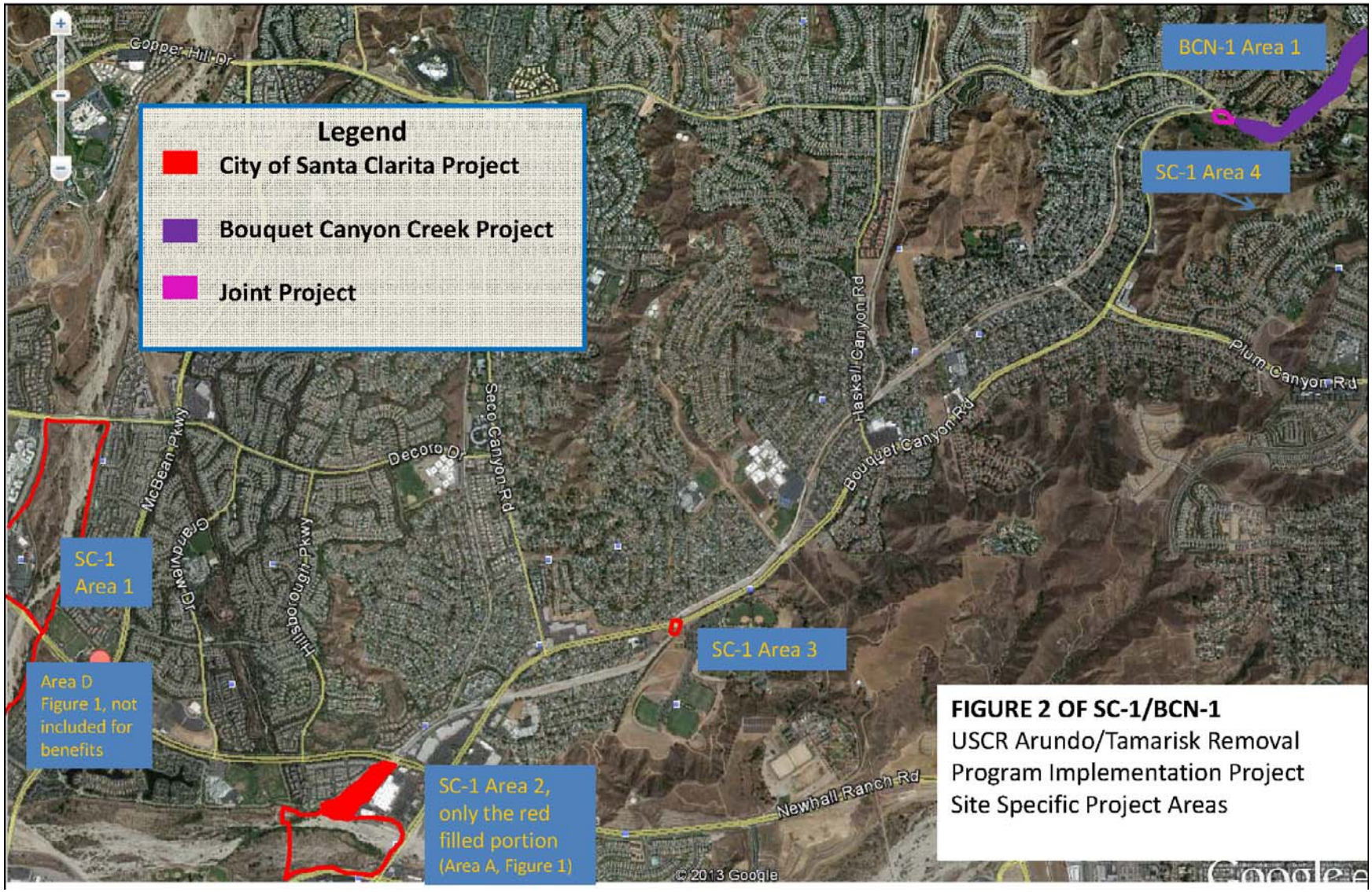


FIGURE 2 OF SC-1/BCN-1
USCR Arundo/Tamarisk Removal Program Implementation Project
Site Specific Project Areas

BCN-1 - Bouquet Canyon Creek Restoration Project Location Areas

(1) A joint effort between BCN-1 and SC1 (shown in pink on Figure 2). It is within City limits, but the owner is a member of the BCN-1 group. While the primary work will be completed by BCN-1, the City of Santa Clarita will help with administrative requirements (approximately 7 acres).

(2) The second location is adjacent to the City limits in the first location and then continues north along the Bouquet Canyon Creek to the intersection with the Angeles National Forest boundary (approximately 5 acres and shown in purple on Figure 2).

For each of the two BCN-1 Project areas described above, in addition to the removal of the invasive species to be completed, as was described previously, two extra steps are planned, both of which will occur simultaneously for this project.

The BCN-1 project area includes a linear stretch of riparian habitat of 3.5 miles in length along the Bouquet Canyon Creek with approximately 60 to 100 invasive weed sites are arundo. By selecting various weed sites to become restoration points along the creek, the use of native plants to suppress weed regrowth and promote native habitat will achieve local restoration.

The approach of the watershed restoration protocol is simple. For each invasive weed site treated, native plant species will be encouraged to reestablish through a series of transplanting regimes. The native species will represent three canopy levels: tree, shrub, and groundcover. The selected native species will be based on natural plant-to-plant associations; that is, those species that can grow in close proximity to each other based on shared topographic, watershed, and chemical properties. Natural propagation and regrowth of the native plant ecology will be encouraged through seasonal exclusion of new invasive weed sites, monitoring, and nutrient management (carbon inputs) to accelerate the recovery of the native ecology.

A goal to restoring this particular watershed is to educate the landowners on how to protect and steward a section of riparian habitat that interfaces each individuals property. To begin accomplishing this goal, community outreach will take place in order to provide private property owners knowledge on the responsibilities of stewardship for riparian habitats. The education of private property owners will occur on a biannual basis to all those participating with the project. Various components of program will allow private and region technicians, such as: LA County Fire, Natural Resources Conservation Service to provide resources, advice, and activities to help inform landowners of ways to improve their individual riparian habitats. A total of 4 meetings/workshops are planned over the duration of the project to be held at the community center, to allow property owners access to the available resources.

Project Background

In 2006, the Ventura County Resource Conservation District (VCRCD), as the lead agency for the then Ventura County Arundo Task Force, received a $1.5 million grant from the Proposition 13 State Water Resources Control Board (SWRCB) Non-point Source Pollution Control Program to facilitate the Task Force's regional eradication program of non-native, invasive species such as arundo/giant reed and tamarisk/salt cedar within the Santa Clara River watershed. That effort resulted in the development of the Upper Santa Clara River Arundo and Tamarisk Removal Program (SCARP),

SCARP is a long-term eradication, monitoring, and maintenance plan to guide and facilitate the implementation of arundo and/or tamarisk removal projects within the upper Santa Clara River watershed. The plan includes a programmatic CEQA and National Environmental Policy Act (NEPA) document and related documentation for the implementation, maintenance, and monitoring of arundo and tamarisk removal projects within the riparian corridors (500-year floodplain) of the upper Santa Clara River watershed which

allows any agency or organization to perform arundo/tamarisk removal projects of any size within upper Santa Clara Watershed. The SCARP is a living document and will be updated periodically as new technologies become available, regulations change, or new resources/issues are identified.

The SCARP also included an implementation aspect which included development of a phased plan to remove arundo/tamarisk on 297 acres of land owned by the City of Santa Clarita. The site specific implementation project covered approximately 75 acres of the 297-acre site and removed 20 acres of arundo and tamarisk. Due to the timeframe of the grant and the presence of endangered species, the Task Force was only able to initiate the first year of the site specific removal project. Since that time returning to the site specific project site to complete the eradication activities has been a priority of the Task Force. As a result of the SCARP effort, several stakeholders have begun to work together to form the Santa Clara River Invasive Weeds Task Force to better coordinate and communicate about invasive species throughout the watershed.

Project Benefits

The restoration of riparian habitat through the removal of these invasive plant species, some of which have colonized in large extents of the Upper Santa Clara River watershed, (1) improves water quality and (2) increases water supply by increasing the available surface and subsurface water that can be utilized for beneficial purposes, (3) also reduces the risk of flooding and fire hazard.

The Project will meet the following IRWM Plan objectives:

- Improve Water Quality
- Enhance Water Supply
- Promote Resource Stewardship

Existing Data and Studies

The following references support SC/BCN-1's feasibility and technical methods. The SCARP included three distinct but interdependent efforts. These efforts included the following documents and permits:

- SC/BCN-1.1 Upper Santa Clara River Arundo/Tamarisk Removal Program – Santa Clarita Site Specific Plan (Ventura County Resource Conservation District/AMEC, July 2005).
- SC/BCN-1.2 Upper Santa Clara River Watershed Arundo and Tamarisk Removal Program – Long Term Implementation Plan (Ventura County Resource Conservation District, June 2006).
- SC/BCN-1.3 Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Final (Ventura County Resource Conservation District) February 2006.
- SC/BCN-1.4 Permits from the US Fish and Wildlife Service, California Department of Fish and Game SAA, and Army Corps of Engineers – 2004 – present.
- SC/BCN-1.5 Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Statement of Findings and Statement of Overriding Considerations, VCRCD 2006.
- SC/BCN-1.6 Bouquet Canyon Creek Site Specific Restoration Plan, California Department of Fish and Game and Natural Resources Conservation Services, 2011.

- SC/BCN-1.7 Wildscape Restoration Proposal for Non-Native Invasive Plant Removal, Fall 2012 Santa Clara River Watershed Arundo/Tamarisk Removal Program Site Specific Implementation Project Site, February 15, 2012 .

Project Map

A map of the project area is provided on Figure 2.

Project Timing and Phasing

The SCARP is part of the larger effort to reduce invasive plants, and specifically arundo and tamarisk, to 2% of the canopy within the riparian areas of the Santa Clara River and its tributaries. This project for restoration focuses the effort into the San Francisquito Creek and Bouquet Canyon Creek tributaries and allows areas approximately 25 acres of tributary land to meet the 2% standard.

California Environmental Quality Act (CEQA) documentation has already been completed for areas included in this Project. The Ventura County Resource Conservation District (VCRCD) certified the EIR prepared for the programmatic program, which covers the actions provided for this Project, within the City of Santa Clarita. For the BCN-1Project, it was considered exempt from CEQA and a Notice of Exemption was completed by the California Department of Fish and Game in August 2011. Project plans have been developed, and construction contracting will begin in October 2013 assuming sub agreements are in place.

II. Work Plan

The tasks necessary to complete the Project are summarized in Table 3-16, and discussed in greater detail below in Table 3-17.

TABLE 3-16: OVERVIEW OF SC-1/BCN-1 WORK PLAN

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$27,700**	**6/17/14**	**2/29/16**
1	Administration	$22,700	6/17/14	2/29/16
2	Labor Compliance Program	$5,000	6/17/14	2/29/16
3	Reporting	See Note 1	9/17/14	2/29/16
b)	**Land Purchase/Easement**	**NA**	**NA**	**NA**
4	Land Purchase/Easement	NA	NA	NA
c)	**Planning/Design/Engineering/ Environmental Documentation**	**$62,275**	**6/17/14**	**12/30/14**
5	Assessment and Evaluation	$2,275	NA	NA
6	Design/Engineering	NA	NA	NA
7	Environmental Documentation	NA	NA	NA
8	Permitting	$60,000	6/17/14	12/30/14
d)	**Construction/Implementation**	**$ 379,250**	**9/1/14**	**2/29/16**
9	Construction Contracting	NA	NA	NA
10	Construction/Implementation	$379,250	9/1/14	2/29/16
e)	**Environmental Compliance/Mitigation/Enhancement**	**$18,000**	**9/1/14**	**2/29/16**
11	Environmental Compliance	$18,000	9/1/14	2/29/16
f)	**Construction Administration**	**$40,000**	**11/28/14**	**2/29/16**
12	Construction Administration	$40,000	11/28/14	2/29/16

Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Task Number	Work Task Title	Budget	Schedule Start Date	Schedule End Date
g)	**Other Costs**	**NA**	**6/17/14**	**9/26/14**
13	PMP	See Note 2	6/17/14	9/26/14
h)	**Construction/Implementation Contingency**	**$45,000**	**9/1/14**	**2/29/16**
14	Construction Contingency	$45,000	9/1/14	2/29/16
	GRAND TOTAL	**$572,225**		

Notes: 1) Costs for Task 3 have been included in Task 1
2) Costs for Task 13 have been included in Task 12.

Tasks necessary to implement the USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1) are described in Table 3-17.

TABLE 3-17: WORK PLAN FOR USCR ARUNDO/TAMARISK REMOVAL PROGRAM (SCARP) IMPLEMENTATION (SC/BCN-1)

Budget Category (a): Direct Project Administration Costs

Task 1: Administration

Description: Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of construction contracts between sites and coordination of agreements between the City of Santa Clarita and the BCN-1 group homeowners, and other activities as required to complete construction that may not be directly related to those tasks. The budget for this project assumes the project manager will spend an average of 16 hours per month on this project over the entire 2 year duration.

Deliverables: Invoices.

Task 2: Labor Compliance Program

Description: The City has a Labor Compliance Program in accordance with the Labor Code 1771.5; ID: 2003.00362. The City's Labor Compliance Specialist will be on staff and will be available to perform preconstruction meetings, to provide reporting forms, perform inspections, and written reports as required in state law for this project.

Deliverables: Execution of labor compliance program; documentation furnished to DWR as requested.

Task 3: Reporting

Description: The Sustainability Planner for the City of Santa Clarita will complete required tracking and quarterly reports as required by this grant and submit them to CLWA, the granting agency. This person will also coordinate with contractors and develop the necessary administrative record (contracts, RFPs, City Council items, etc.) necessary to complete the requirements of the grant. A final summary report will be prepared and submitted once the project is completed.

Deliverables: Quarterly and a final report as specified in the Grant Agreement.

Budget Category (b): Land Purchase/Easement

Task 4: Land Purchase/Easement

Description: Not applicable. No land purchase or easements are required. Property access agreements with private property owners for the BCN portion of the project are on file with the CDFG.

Deliverables: N/A

Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Budget Category (c): Planning/Design/Engineering/Environmental Documentation

Task 5: Assessment and Evaluation

Description: All planning and preliminary design efforts have been successfully completed.

Deliverables: Santa Clarita Site Specific Plan and the Bouquet Canyon Creek Site Specific Restoration Plan.

Task 6: Design/Engineering

Description: Design of the Project is complete and documented in the Santa Clarita Site Specific Plan, Santa Clara River Long Term Implementation Plan, and a programmatic EIR with regional agency permitting.

Deliverables: Santa Clara River Long Term Implementation Plan.

Task 7: Environmental Documentation

Description: For the SC-1 portion of the Project, the VCRCD certified the EIR prepared for the programmatic program, which covers the actions provided for the City of Santa Clarita's portion of the project. CEQA for the BCN-1 portion of this Project was completed by the CDFG in August 2011 with a Notice of Exemption.

Deliverables: Programmatic EIR. Negative Declaration #: 2011098367

Task 8: Permitting

Description: This project plans to utilize the Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) programmatic permits held by the VCRCD. A CDFG Section 1602 Streambed Alteration Agreement, Army Corps 404/401 certifications had previously been acquired, but will now need annual renewal to ensure compliance.

Deliverables: Copies of permits ACOE 404/RWQCB 401, CDFG Section 1602.

Budget Category (d): Construction/Implementation

Task 9: Construction Contracting

Description: Removal of arundo and tamarisk is currently done at the current sites using the subcontractor Wildscape Restoration. The contractor was chosen during the project bid and award process in 2008. The proposed project will utilize this contract which can be amended for current and future work of a similar type and scale.

Deliverables: Notice of Proceed

Task 10: Construction

Description:

SubTask10.1 - Mobilization and Site Preparation

- Pre-construction surveys
- Pre-construction meeting
- Delivering equipment to site and predetermined staging area

Subtask 10.2 - Project Construction

- Biological monitor on site at all times
- Project management consultant surveying initial work
- Deploying tractors and chippers
- Vegetation removal hand crews

- Certified applicators daubing Aquamaster with Blazon dye over cut arundo stalks
- Removing biomass to chipper and placing chipped material into dump truck for appropriate disposal Dump truck hauls material away

Subtask 10.3 - Manage Resprouts

- Project management consultant monitors for resprouts
- Hand crews and biologists deployed to spray resprouts with Aquamaster with Blazon dye
- Three rounds of managing resprouts have been assumed in the budget for this subtask

Deliverables: Notice of Completion.

Budget Category (e): Environmental Compliance/Mitigation/Enhancement

Task 11: Assessment and Evaluation

Description: CEQA compliance for the project is discussed in Task 7. The VCRCD adopted a Mitigation Monitoring Plan as part of the Final PEIR which contains feasible mitigation measures to reduce impacts to the environment from implementation of the SCARP (see Reference SC-1/BCN-1.5 included on CD). The programmatic EIR describes the range of techniques typically employed for removal of arundo and tamarisk infestations, analyzes the impacts resulting from the range of techniques, and identifies appropriate mitigation measures. This allows for the selection from a wide variety of techniques by future project proponents. Project proponents wishing to use techniques not covered by these programmatic permits would need to apply for individual permits for future removal projects. The EIR determined potential short-term significant impacts: Noise, Water Quality, and Biological Resources. However, due to the long term environmental benefits, a Statement of Overriding Considerations was adopted by the VCRCD.

These efforts have not been budgeted separately and their costs are included in the Design/Engineering Task (Task 6). Also, please see Task 13 for PMP.

Budget Category (f): Construction Administration

Task 12: Construction Administration

Description: During construction, City staff and project management consultants will provide construction management and administration. This includes including daily on-site observation before the start of work; inspection of equipment to ensure good working order; checking progress and issues from previous day, developing action plan for working in consultation with on site biologist.

Deliverables: Quarterly and final reports.

Budget Category (g): Other Costs

Task 13: Project Monitoring Plan

Project Monitoring Plan Requirements (PMP): A monitoring plan shall be submitted to the State prior to disbursement of grant funds for construction or monitoring activities for this Project. Along with Attachment 6 Project Performance Measures Tables, the PMP may also include: a) Collect and maintain information regarding weed removal, planting/seeding (number, size, species, and location), bird/animal counts, and other project related activities, in accordance with the Santa Clara River Invasive Weeds Task Force, b) Compile and analyze collected data and use results to assess progress toward project objectives, c) Santa Clara River monthly monitoring of water quality (dissolved oxygen, pH, temperature, turbidity, conductivity, salinity, TDS).

Deliverables: PMP

Budget Category (h): Construction/Implementation Contingency

Task 14: Construction Contingency

Description: A construction/implementation contingency effort is included for this project to cover the cost of potential change orders during implementation of Task 10 activities. In addition, this contingency task includes management of unknown conditions that may be encountered during construction or implementation of the project, such as to cover delays to avoid bird breeding season or the need for biological surveys to avoid sensitive species. The contingency is estimated to be 15% of the total cost of implementation and is based on professional knowledge for this type of project.

III. Other Required Information

Procedures

The City and stakeholders through the Task Force will be working with the US Fish and Wildlife Service to fund long-term management of previously cut arundo infestations. The BCN group of homeowners has all completed the CDFG's Landowner Access Agreement which allows access to their property for arundo removal.

CLWA is also the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with the City of Santa Clarita in order to implement the activities outlined in this proposal.

Standards

The project will be designed and constructed in accordance with the appropriate standards, including those from the Association of Testing and Materials (ASTM), American Water Works Association (AWWA), and other construction industry entities, as applicable. All California Department of Public Health requirements will be strictly enforced.

Status of Acquisition of Land or Right-of-Way

No land purchase or easements are required for this Project. However, if needed, the City has requested and been granted access to Los Angeles County property for staging or accessing land on flood control right-of-way or easements.

Permits

Required permits are described above in Task 8. Permits had previously been acquired, but will now need annual renewal to ensure compliance.

Status of Preparation and Completion of Environmental Requirements

CEQA has been previously complied with for the SC-1 project. CEQA for the BCN-1 portion of this Project has been completed by the CDFG in August 2011 with a Notice of Exemption.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes which are on the contact list maintained by the Native American Heritage Commission that have tribes that have traditional lands located within the area of the proposed project.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PMP, provided for in Task 13.

Work Items to Complete GWMP

CLWA prepared a groundwater management plan (GWMP) in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. CLWA's GWMP was drafted and adopted in 2002. Ordinance No. 34 documenting the adoption of the GWMP will be provided as documentation of this work product.

Submittals to Granting Agency

Status reports, in the form requested by the granting agency, will be submitted on a quarterly basis. A final report will also be prepared once the project is completed. Other items required by the grant contract will also be submitted to the granting agency.

Other Work Items

No other work items are anticipated to complete this project. It is possible that SC-1/BCN-1 will have a positive impact to the underlying groundwater basin by protecting the recharge area, replacing high water use non-native plants with natives, and improving the water quality by increasing the available surface and subsurface water; reducing erosion and sedimentation after native vegetation becomes established; reducing salinity in the water and soil produced by tamarisk trees; and improving hydrogeomorphological characteristics of the watershed. As SC-1/BCN-1 is not a recharge or groundwater management project; a GWMP need not be prepared.

Budgets Provided

A summary budget for the Proposal is provided as Table 4-1. Projects in this Proposal are numbered as follows:

1. Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3)
2. Santa Clarita Water Division (SCWD) Water Use Efficiency (WUE) Programs (SCWD-2)
3. Foothill Feeder Connection (CLWA-8)
4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)
5. Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)
6. Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Tables 4-2 through 4-7 provide detailed budgets for each of the individual projects consistent with the categories provided in the Guidelines. Table 4-8 provides the funds requested for grant administration.

Consistency With Work Plan and Schedule

Both the Work Plan and Schedule provide discussions of the work items under the general categories outlined in the budget and are thus consistent with the budget items provided in this attachment. The general categories for the budget are as follows:

a) Direct Project Administration Costs
b) Land Purchase/Easement
c) Planning/Design/Engineering/Environmental Documentation
d) Construction/Implementation
e) Environmental Compliance/Mitigation/Enhancement
f) Construction Administration
g) Other Costs
h) Construction/Implementation Contingency

For purposes of this proposal, a Project Monitoring Plan (PMP) preparation was provided under the Other Costs category. Preparation of the necessary California Environmental Quality Act (CEQA) documentation was included under the Planning/Design/Engineering/Environmental Documentation budget category. Furthermore, the schedule also provides the breakdown of work items by the budget categories included in this attachment and is therefore also consistent with this attachment.

Reasonableness of Detailed Costs and Supporting Documentation

All detailed costs shown for each project are reasonable and, where applicable, supporting information has been provided to justify the cost estimates. Supporting information includes staff rates and number of hours for labor; percentage of total used to approximate costs; and/or engineer's estimate.

Funding Match

The proposal includes a funding match above the required 25% match. The proposal funding match is 36% of the total cost of the Proposal.

TABLE 4-1: PROPOSAL BUDGET

Proposal Title: Upper Santa Clara River IRWM Plan Round 2 Proposition 84 Implementation Grant						
	Individual Project Title	Requested Grant Funding	Non-State Share (Funding Match)	Other State Funds Being Used	Total	% Funding Match
(a)	Grant Administration	$333,642	$189,481	$0	$523,123	5%
(b)	SCV WUE Programs (CLWA-3)	$1,874,715	$624,905	$0	$2,499,620	25%
(c)	SCWD WUE Programs	$220,500	$75,000	$0	$295,500	25%
(d)	Foothill Feeder Connection	$1,500,000	$2,023,545	$0	$3,523,545	57%
(e)	Pellet Water Softening Treatment Plant	$150,000	$50,000	$0	$200,000	25%
(f)	SCVSD Automatic Water Softener Rebate and Public Outreach Program	$2,508,574	$862,989	$0	$3,371,563	26%
(g)	USCR Arundo/Tamarisk Removal Program (SCARP) Implementation	$419,050	$153,175	$0	$572,225	27%
(h)	**Grand Total**	**$7,006,481**	**$3,979,094**	**$0**	**$10,985,575**	**36%**

TABLE 4-2: PROJECT BUDGET

Proposal Title: USCR IRWM Plan Round 2 Proposition 84 Implementation Grant						
Project Title: 1. Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3)						
		(a)	(b)	(c)	(d)	(e)
	Budget Category	Requested Grant Funding	Non-State Share* (Funding Match)	Other State Funds Being Used	Total	% Funding Match
(a)	Direct Project Administration Costs	$93,465	$31,155	$0	$124,620	25%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$0	$0	$0	$0	0%
(d)	Construction/Implementation	$1,631,250	$543,750	$0	$2,175,000	25%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$0	$0	$0	0%
(g)	Other Costs	$150,000	$50,000	$0	$200,000	25%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	**$1,874,715**	**$624,905**	**$0**	**$2,499,620**	**25%**

***List sources of funding:** *CLWA Water Resources Budget BMP Implementation account from wholesale water rate connection fees and/or property tax revenues.*

TABLE 4-3: PROJECT BUDGET

Proposal Title: USCR IRWM Plan Round 2 Proposition 84 Implementation Grant						
Project Title: 2. Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)						
	Budget Category	(a) Requested Grant Funding	(b) Non-State Share* (Funding Match)	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
(a)	Direct Project Administration Costs	$15,000	$0	$0	$15,000	0%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$0	$0	$0	$0	0%
(d)	Construction/Implementation	$205,500	$75,000	$0	$280,500	27%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0		$0	$0	0%
(f)	Construction Administration	$0		$0	$0	0%
(g)	Other Costs	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	$220,500	$75,000	**$0**	**$295,500**	**25%**

***List sources of funding:** *SCWD engineering funds.*

TABLE 4-4: PROJECT BUDGET

Proposal Title: USCR IRWM Plan Round 2 Proposition 84 Implementation Grant						
Project Title: 3. Foothill Feeder Connection (CLWA-8)						
	Budget Category	(a) Requested Grant Funding	(b) Non-State Share* (Funding Match)	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
(a)	Direct Project Administration Costs	$22,700	$7,500	$0	$30,200	25%
(b)	Land Purchase/Easement	$25,000	$0	$0	$25,000	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$141,393	$13,812	$0	$155,205	9%
(d)	Construction/Implementation	$1,086,111	$1,726,488	$0	$2,812,599	61%
(e)	Environmental Compliance/ Mitigation/Enhancement	$1,800	$0	$0	$1,800	0%
(f)	Construction Administration	$220,596	$0	$0	$220,596	0%
(g)	Other Costs	$2,400	$0	$0	$2,400	0%
(h)	Construction/Implementation Contingency	$0	$275,745	$0	$275,745	100%
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	**$1,500,000**	**$2,023,545**	**$0**	**$3,523,545**	**57%**

***List sources of funding:** *CLWA capital improvement program funds, from wholesale water rate connection fees and/or property tax revenues.*

TABLE 4-5: PROJECT BUDGET

Proposal Title: USCR IRWM Plan Round 2 Proposition 84 Implementation Grant Project Title: 4. Pellet Water Softening Treatment Plant (NCWD-2)						
	Budget Category	(a) Requested Grant Funding	(b) Non-State Share* (Funding Match)	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
(a)	Direct Project Administration Costs	$0	$15,000	$0	$15,000	100%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$100,000	$25,000	$0	$125,000	20%
(d)	Construction/Implementation	$0	$0	$0	$0	0%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$0	$0	$0	0%
(g)	Other Costs	$50,000	$10,000	$0	$60,000	17%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	**$150,000**	**$50,000**	**$0**	**$200,000**	**25%**

***List sources of funding:** *NCWD Capital Improvement Program.*

TABLE 4-6: PROJECT BUDGET

Proposal Title: USCR IRWM Plan Round 2 Proposition 84 Implementation Grant						
Project Title: 5. Santa Clarita Valley Sanitation District Automatic Water Softener Rebate and Public Outreach Program (SCVSD-2)						
		(a)	(b)	(c)	(d)	(e)
	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source	Total	% Funding Match
(a)	Direct Project Administration Costs	$165,000	$0	$0	$165,000	0%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$19,002	$16,895	$0	$35,897	47%
(d)	Construction/Implementation	$2,324,572	$846,094	$0	$3,170,666	27%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$0	$0	$0	0%
(g)	Other Costs	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	**$2,508,574**	**$862,989**	**$0**	**$3,371,563**	**26%**

***List sources of funding:** *Santa Clarita Valley Sanitation District Operating Fund.*

TABLE 4-7: PROJECT BUDGET

Proposal Title: USCR IRWM Plan Round 2 Proposition 84 Implementation Grant						
Project Title: 6. USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)						
	Budget Category	(a) Requested Grant Amount	(b) Cost Share: Non-State Fund Source (Funding Match)*	(c) Cost Share: Other State Fund Source	(d) Total	(e) % Funding Match
(a)	Direct Project Administration Costs	$0	$27,700	$0	$27,700	100%
(b)	Land Purchase/Easement	$0		$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$60,000	$2,275	$0	$62,275	4%
(d)	Construction/Implementation	$260,750	$118,500	$0	$379,250	31%
(e)	Environmental Compliance/ Mitigation/Enhancement	$13,300	$4,700	$0	$18,000	26%
(f)	Construction Administration	$40,000	$0	$0	$40,000	0%
(g)	Other Costs	$0		$0	$0	0%
(h)	Construction/Implementation Contingency	$45,000	$0	$0	$45,000	0%
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	**$419,050**	**$153,175**	**$0**	**$572,225**	**27%**

***List sources of funding:** *City of Santa Clarita Stormwater Utility Fund.*

TABLE 4-8: PROJECT BUDGET

Proposal Title: Upper Santa Clara River IRWM Plan Round 2 Proposition 84 Implementation Grant						
Project Title: Grant Administration						
	Budget Category	(a) Requested Grant Amount	(b) Cost Share: Non-State Fund Source (Funding Match)*	(c) Cost Share: Other State Fund Source	(d) Total	(e) % Funding Match
(a)	Direct Project Administration Costs	$333,642	$189,481	$0	$523,123	**5%**
(b)	Land Purchase/Easement	$0	$0	$0	$0	**0%**
(c)	Planning/Design/Engineering/ Environmental Documentation	$0	$0	$0	$0	**0%**
(d)	Construction/Implementation	$0	$0	$0	$0	**0%**
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	**0%**
(f)	Construction Administration	$0	$0	$0	$0	**0%**
(g)	Other Costs	$0	$0	$0	$0	**0%**
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	**0%**
(i)	**Grand Total (Sum rows (a) through (h) for each column)**	**$333,642**	**$189,481**	**$0**	**$523,123**	**5%**

***List sources of funding:** *Castaic Lake Water Agency general operating fund and revenue from water rates.*

Attachment 4 - Budget
Santa Clarita Valley Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3)
Summary and Back-up

Project Name: Santa Clarita Valley WUE Strategic Plan Programs (CLWA-3)

	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source*	Total Cost	% Funding Match
(a)	Direct Project Administration Costs	$93,465	$31,155	$0	$124,620	25%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$0	$0	$0	$0	0%
(d)	Construction/Implementation	$1,631,250	$543,750	$0	$2,175,000	25%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$0	$0	$0	0%
(g)	Other Costs	$150,000	$50,000	$0	$200,000	25%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total, (a) through (h)**	**$1,874,715**	**$624,905**	**$0**	**$2,499,620**	**25%**

*** List sources of funding:**

* *CLWA Water Resources Budget BMP Implementation account from wholesale water rate connection fees and/or property tax revenues.*

Attachment 4 - Budget
Santa Clarita Valley Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3)
Summary and Back-up

(a) Direct Project Administration

Task	Cost		Back-up Calculations			
			# of hours	$/hr for administrator	Total Project Cost	Justification for %
Task 1: Administration	$117,800		1,900	$62	$117,800	19 hours per week over two years (50 weeks per year). Rate: CLWA 2012-2013 burdened rate.
Task 2: Labor Compliance Program	$0		Cost included in Task 1.			
Task 3: Reporting	$6,820		110	$62	$6,820	11 reports over two years at 10 hours per report. Rate: CLWA 2012-2013 burdened rate.
Total	**$124,620**					

(b) Land Purchase/ Easement

	ROW Agent/Surveyor/Appraiser	Land Purchase	Total	Cost Assumptions and Basis
Task 4: Land Purchase/Easement	$ -		$ NA	
	$/Acre	**Acres**	**Land Cost**	**Cost Assumptions and Basis**
Permanent Easement Cost			$ NA	

Attachment 4 - Budget
Santa Clarita Valley Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3)
Summary and Back-up

(c) Planning / Design/ Engineering/ Environmental Documentation

		Back-up Calculations		
	Cost	**% of Total Project Cost**	**Total Project Cost**	**Justification for %**
Task 5: Assessment and Evaluation	NA			
Task 6: Design	NA			
Task 7: Environmental Documentation	NA			
Task 8: Permitting	NA			
Total	NA			

(d) Construction/ Implementation

Item	**Cost**		**Justification for %**
Task 9: Construction management	**$0**		
Task 10: Construction/Implementation	**$2,175,000**		
SubTask 10.1: SCV Large Landscape Audit and Incentive Program	$400,000		80 rebates @ $5,000 each, average over two years.
SubTask 10.2: SCV CII Audit and Customized Incentive Program	$100,000		20 rebates @ $5,000 each, average over two years.
SubTask 10.3: SCV Landscape Contractor Certification and Weather-Based Irrigation Controller Program**	$725,000		1,700 units distributed at $425/unit.
SubTask 10.4: High-Efficiency Washing Machine Program	$500,000		2,500 rebates per year over two years at $100 each (matched by $100 from retailer)
SubTask 10.5: Cash for Grass Rebate Program	$450,000		$1.5 per square foot for 300,000 square feet (SCWD's program is for 1.5 million square feet by 2020).

Attachment 4 - Budget
Santa Clarita Valley Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3)
Summary and Back-up

(e) Environmental Compliance/ Mitigation / Enhancement

Item	Cost	
Task 11: Environmental Compliance/Mitigation/Enhancement	NA	
Total	NA	

(f) Construction Administration

Item	Cost
Task 12: Construction Admin	NA
Total	NA

(g) Other Costs

Item	Cost
Task 13.1 Other (outreach for 2 years)	$200,000
Task 13.2 PMP	cost included in Task 1 (Admin)
Total	$200,000

(h) Construction/Implementation Contingency

Item	Cost
Task 14: Construction Contingency	NA
Total	NA

Grand Total

Item	Cost
(f) Construction Administration	NA
(g) Other Costs	$200,000
(h) Construction/Implementation Contingency	NA
Total	$200,000

Attachment 4 - Budget
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
Summary and Back-up

Project Name: SCWD-2 Santa Clarita Water Division Water Use Efficiency Programs

	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source*	Total Cost	% Funding Match
(a)	Direct Project Administration Costs	$15,000	$0	$0	$15,000	0%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$0	$0	$0	$0	0%
(d)	Construction/Implementation	$205,500	$75,000	$0	$280,500	27%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0		$0	$0	0%
(f)	Construction Administration	$0		$0	$0	0%
(g)	Other Costs	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total, (a) through (h)**	**$220,500**	**$75,000**	**$0**	**$295,500**	**25%**

*** List sources of funding:**

1 SCWD engineering funds.

Attachment 4 - Budget
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
Summary and Back-up

(a) Direct Project Administration

Task	Cost
Task 1: Administration	$9,000
Task 2: Labor Compliance Program	$0
Task 3: Reporting	$6,000
Total	$15,000

	Back-up Calculations		
	% of Total Project Cost	Total Project C4ost	Justification for %
	0.03	$300,000	actual costs far exceed allowable limit
	Cost included in Task 1.		
	0.02	300,000	actual costs far exceed allowable limit

(b) Land Purchase/ Easement

	ROW Agent/Surveyor/Appraiser	Land Purchase	Total	Cost Assumptions and Basis
Task 4: Land Purchase/Easement	$ -		NA	

	$/Acre	Acres	Land Cost	Cost Assumptions and Basis
Permanent Easement Cost			$ NA	

(c) Planning / Design/ Engineering/ Environmental Documentation

	Cost
Task 5: Assessment and Evaluation	NA
Task 6: Design	NA
Task 7: Environmental Documentation	NA
Task 8: Permitting	NA
Total	NA

Attachment 4 - Budget
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
Summary and Back-up

(d) Construction/ Implementation

Item	Cost	Back-up Calculations
Task 9: Construction Management	$0	
Task 10: Construction	**$280,500**	
SubTask 10.1: Large Landscape Budgets	$20,000	$1,000/budget for 20 budgets in 2015
SubTask 10.2: High-Efficiency Nozzles	$127,500	15,000 nozzles/yr at $3.25/nozzle for 2 years plus site development at $30K.
SubTask 10.3: High-Efficiency Clothes Washing Machine Rebates	$133,000	500 rebates ($100 value)/yr over 2 yrs; plus $33K for processing

(e) Environmental Compliance/ Mitigation / Enhancement

Item	Cost
Task 11: Environmental Compliance/Mitigation/Enhancement	NA
	$ -
Total	$ - NA

(f) Construction Administration

Item	Cost
Task 12 Construction Admin	NA
Total	NA

(g) Other Costs

Item	Cost
Task 13: PMP	Cost included in Task 1 (Admin)
Total	$ -

Attachment 4 - Budget
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
Summary and Back-up

(h) Construction/Implementation Contingency

Item	**Cost**
Task 14 Construction Contingency	NA
Total	NA

Grand Total	
Item	**Cost**
(f) Construction Administration	NA
(g) Other Costs	Cost included in Task 1 (Admin)
(h) Construction/Implementation Contingency	NA
Total	NA

Attachment 4 - Budget
Foothill Feeder Connection (CLWA-8)
Summary and Back-up

Project Name: Foothill Feeder Connection (CLWA-8)

	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source*	Total Cost	% Funding Match
(a)	Direct Project Administration Costs	$22,700	$7,500	$0	**$30,200**	**25%**
(b)	Land Purchase/Easement	$25,000	$0	$0	**$25,000**	**0%**
(c)	Planning/Design/Engineering/ Environmental Documentation	$141,393	$13,812	$0	**$155,205**	**9%**
(d)	Construction/Implementation	$1,086,111	$1,726,488	$0	**$2,812,599**	**61%**
(e)	Environmental Compliance/ Mitigation/Enhancement	$1,800	$0	$0	**$1,800**	**0%**
(f)	Construction Administration	$220,596	$0	$0	**$220,596**	**0%**
(g)	Other Costs	$2,400	$0	$0	**$2,400**	**0%**
(h)	Construction/Implementation Contingency	$0	$275,745	$0	**$275,745**	**100%**
(i)	**Grand Total, (a) through (h)**	**$1,500,000**	**$2,023,545**	**$0**	**$3,523,545**	**57%**

*** List sources of funding:**

* *CLWA capital improvement program funds, from wholesale water rate connection fees and/or property tax revenues.*

Attachment 4 - Budget
Foothill Feeder Connection (CLWA-8)
Summary and Back-up

(a) Direct Project Administration

Task	Cost		Back-up Calculations					
			# of hours	$/hr for administrator	Total Project Cost	Justification for %		
Task 1: Administration	$3,600		90	$ 40	$ 3,600	Rate: CLWA 2012-2013 burdened rate.		
Task 2: Labor Compliance Program	$25,000		625	$ 40	$ 25,000	Rate: CLWA 2012-2013 burdened rate.		
Task 3: Reporting	$1,600		40	$ 40	$ 1,600	Rate: CLWA 2012-2013 burdened rate.		
Total	$30,200							

(b) Land Purchase/ Easement

	ROW Agent/Surveyor/Appraiser	Land Purchase	Total	Cost Assumptions and Basis
Task 4: Land Purchase/Easement	$ -		$ 25,000.00	Engineer's estimate.
	$/Acre	**Acres**	**Land Cost**	**Cost Assumptions and Basis**
Permanent Easement Cost			$ NA	

Attachment 4 - Budget
Foothill Feeder Connection (CLWA-8)
Summary and Back-up

(c) Planning / Design/ Engineering/ Environmental Documentation

		Back-up Calculations		
	Cost	**% of Total Project Cost**	**Total Project Cost**	**Justification for %**
Task 5: Assessment and Evaluation	$0			NA
Task 6: Design	$137,873	5%	$2,757,450	Engineer's rule of thumb.
Task 7: Environmental Documentation	$13,812		$13,812	See Tables 1 and 2 below assuming CEQA costs are proportional to construction costs.
Task 8: Permitting	$3,520		$3,520	Total assumed: 40 hours x $88/hr. Rate: CLWA 2012-2013 burdened rate.
Total	**$155,205**			

Table 1: Rio Vista Treatment Plant Expansion and Foothill Feeder CEQA Expenses

WO #	**TOTAL CEQA Expenditures**
05-005	$139,979
03-063	$23,977
04-025	$3,280
	$167,236

Table 2: Allocation of CEQA Costs Based on Construction Costs

	Construction Cost	**% of Construction Total**	**Allocated CEQA Costs**
RVWTP Expansion	$39,531,094	92%	$153,424
Foothill Feeder (Est.)	$3,558,841	8%	***$13,812***
Total	$43,089,935		$167,236

Attachment 4 - Budget
Foothill Feeder Connection (CLWA-8)
Summary and Back-up

(d) Construction/ Implementation

Item	Cost	% of Total Project Cost	Justification for %
Task 9: Construction Management	$55,149	2%	Engineer's rule of thumb.
Task 10 Construction	$2,757,450	$2,757,450	See Engineer's Estimate of Probable Cost, dated August 8, 2011. Reference CLWA-8.8.

(e) Environmental Compliance/ Mitigation / Enhancement

Item	Cost	Justification for %
Task 11: Environmental Compliance/Mitigation/Enhancement	$ 1,800	Engineer's estimate.
Total	$ 1,800	

(f) Construction Administration

Item	Cost	
Task 12 Construction Admin	$220,596	Assumed 8% of total cost – Engineer's rule of thumb.
Total	$220,596	

(g) Other Costs

Item	Cost	
Task 13: PMP	$2,400	Assumed 40 hrs for hrly admin person making $60/hr. Rate: CLWA 2012-2013 burdened rate.
Total	$2,400	

(h) Construction/Implementation Contingency

Item	Cost	
Task 14 Construction Contingency	$275,745	Assumed 10% of total cost – Engineer's rule of thumb.
Total	$275,745	

Attachment 4 - Budget
Foothill Feeder Connection (CLWA-8)
Summary and Back-up

Grand Total	
Item	**Cost**
(f) Construction Administration	$220,596
(g) Other Costs	$2,400
(h) Construction/Implementation Contingency	$275,745
Total	**$498,741**

Attachment 4 - Budget
Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)
Summary and Back-up

Project Name: Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)

	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source*	Total Cost	% Funding Match
(a)	Direct Project Administration Costs	$0	$15,000	$0	**$15,000**	**100%**
(b)	Land Purchase/Easement	$0	$0	$0	**$0**	**0%**
(c)	Planning/Design/Engineering/ Environmental Documentation	$100,000	$25,000	$0	**$125,000**	**20%**
(d)	Construction/Implementation	$0	$0	$0	**$0**	**0%**
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	**$0**	**0%**
(f)	Construction Administration	$0	$0	$0	**$0**	**0%**
(g)	Other Costs	$50,000	$10,000	$0	**$60,000**	**17%**
(h)	Construction/Implementation Contingency	$0	$0	$0	**$0**	**0%**
(i)	**Grand Total, (a) through (h)**	**$150,000**	**$50,000**	**$0**	**$200,000**	**25%**

*** List sources of funding:**

* *NCWD Capital Improvement Program.*

Attachment 4 - Budget
Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)
Summary and Back-up

(a) Direct Project Administration

Task	Cost	Back-up Calculations						
			# of hours	$/hr for administrator	Total Project Cost	Justification for %		
Task 1: Administration	$7,000		70	$100	$ 7,000	Rate: NCWD 2012-2013 burdened rate.		
Task 2: Labor Compliance Program	NA	No construction for this project.						
Task 3: Reporting	$8,000		80	$100	$ 8,000	Rate: NCWD 2012-2013 burdened rate.		
Total	**$15,000**							

(b) Land Purchase/ Easement

	ROW Agent/Surveyor/Appraiser	Land Purchase	Total	Cost Assumptions and Basis
Task 4: Land Purchase/Easement	$ -		$0	Land is owned by District so no cost is required for easement.
	$/Acre	**Acres**	**Land Cost**	**Cost Assumptions and Basis**
Permanent Easement Cost			$ NA	

Attachment 4 - Budget
Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)
Summary and Back-up

(c) Planning / Design/ Engineering/ Environmental Documentation

	Cost
Task 5: Assessment and Evaluation	$10,000
Task 6: Planning/Design	$100,000
Task 7: Environmental Documentation (Initial Study)	$15,000
Task 8: Permitting	$0
Total	**$125,000**

Back-up Calculations		
Task 6: Planning/Design	**Estimated Cost**	**Justification for Cost**
Pellet Softening Column Specs	$25,000	Engineer's Estimate
Chemical Dosage Specs	$15,000	Engineer's Estimate
Treatment Skid Conceptual Design	$30,000	Engineer's Estimate
Treatment System Conceptual Layout	$30,000	Engineer's Estimate
Total	**$100,000**	

(d) Construction/ Implementation

Item	**Cost**
Task 9: Construction Management	NA
Task 10 Construction	NA

(e) Environmental Compliance/ Mitigation / Enhancement

Item	**Cost**
Task 11: Environmental Compliance/Mitigation/Enhancement	NA
Total	NA

Attachment 4 - Budget
Pellet Water Softening Treatment Plant – Phase 1 (NCWD-2)
Summary and Back-up

(f) Construction Administration

Item	Cost
Task 12 Construction Admin	NA
Total	NA

(g) Other Costs

Item	Cost
Task 13.1 PMP	Cost is included in Task 1
Task 13.2 Budget Reports	$60,000
Total	$60,000

(h) Construction/Implementation Contingency

Item	Cost
Task 14 Construction Contingency	NA
Total	NA

Back-up Calculations		
Task 13.2 Budget Reports	**Estimated Cost**	**Justification for Cost**
Capital Budgetary Cost Estimates	$25,000	Engineer's Estimate
O&M Budgetary Cost Estimates	$20,000	Engineer's Estimate
Water Rate Impact Cost Estimates	$15,000	Engineer's Estimate
Total	**$60,000**	

Grand Total	
Item	**Cost**
(f) Construction Administration	NA
(g) Other Costs	$60,000
(h) Construction/Implementation Contingency	NA
Total	**$60,000**

Attachment 4 - Budget
SCVSD's Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase (SCVSD-1)
Summary and Back-up

Project Name: Santa Clarita Valley Sanitation District's Automatic Water Softener Rebate and Public Outreach Program, *Enforcement Phase* (SCVSD-1)

	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source	Total Cost	% Funding Match
(a)	Direct Project Administration Costs	$165,000	$0	$0	$165,000	0%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$19,002	$16,895	$0	$35,897	47%
(d)	Construction/Implementation	$2,324,572	$846,094	$0	$3,170,666	27%
(e)	Environmental Compliance/ Mitigation/Enhancement	$0	$0	$0	$0	0%
(f)	Construction Administration	$0	$0	$0	$0	0%
(g)	Other Costs	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$0	$0	$0	$0	0%
(i)	**Grand Total, (a) through (h)**	**$2,508,574**	**$862,989**	**$0**	**$3,371,563**	**26%**

*** List sources of funding:**

***** *Santa Clarita Valley Sanitation District Operating Fund*

Attachment 4 - Budget
SCVSD's Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase (SCVSD-1)
Summary and Back-up

(a) Direct Project Administration

Task	Cost	Back-up Calculations		
		% Total Project Cost	Total Project Cost	Justification for %
Task 1: Administration	$99,000	3	$ 3,300,000	Based on prior experience and expert judgment.
Task 2: Labor Compliance Program	NA	NA		
Task 3: Reporting	$66,000	2	$ 3,300,000	Based on prior experience and expert judgment.
Total	**$165,000**			

(b) Land Purchase/ Easement

	ROW Agent/Surveyor/Appraiser	Land Purchase	Total	Cost Assumptions and Basis
Task 4: Land Purchase/Easement	$ -		$ NA	
	$/Acre	**Acres**	**Land Cost**	**Cost Assumptions and Basis**
Permanent Easement Cost			$ NA	

(c) Planning / Design/ Engineering/ Environmental Documentation

	Cost	Estimated Expenditure From 10/18/10 to 9/30/13	Estimated Expenditure From 10/1/13 to 12/31/16	Justification
Task 5: Assessment and Evaluation	$35,897	$16,895	$19,002	See Task 5 backup
Task 6: Design	$0	$0	$0	
Task 7: Environmental Documentation	N/A	$0	$0	
Task 8: Permitting	N/A	$0	$0	
Total	**$35,897**	$16,895	$19,002	

Attachment 4 - Budget
SCVSD's Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase (SCVSD-1)
Summary and Back-up

(d) Construction/ Implementation

	Cost	Footnotes	Estimated Expenditure From 10/18/10 to 9/30/13	Estimated Expenditure From 10/1/13 to 12/31/16
Task 9: Construction Management	NA			
Task 10: Construction				
Subtask 10.1: Automatic Water Softener (AWS) Rebates	$1,544,985	See Footnote 1 table below and Task 10.1 backup	$618,223	$926,762
Subtask 10.2: Developed Initial Documents, Prepared Letter Packages for Residents, Mailed Letters to Residents, and Processed Rebate Applications and Questionnaires Returned From August 2011 Resident Letters	$38,003	Task 10.2 backup	$38,003	$0
Subtask 10.3: Public Outreach Program	$275,427	Task 10.3 backup	$37,155	$238,272
Subtask 10.4: Home Inspection Program	$911,171	Task 10.4 backup	$124,533	$786,638
Subtask 10.5: Monitoring	$387,736	Task 10.5 backup	$28,180	$359,556
Subtask 10.6: Commercial Inspections	$13,344	Task 10.6 backup	$0	$13,344
TOTAL	**$ 3,170,666**		**$846,094**	**$2,324,572**

Footnote 1 (AWS Rebates)* **	**Estimated Expenditure From 10/18/10 to 9/30/13**	**Estimated Expenditure From 10/1/13 to 12/31/16**
Actual Costs	$556,354	$0
Estimated District Staff Costs	$48,621	$222,596
Estimated Temporary Staff Costs	$13,248	$64,166
Estimated Future Rebates	$0	$400,000
Estimated Future Plumber Costs	$0	$240,000
SubTotal	*$618,223*	*$926,762*
Combined Total		**$1,544,985**
*** *See Task 10.1 backup for detailed information.*		

Attachment 4 - Budget
SCVSD's Automatic Water Softener Rebate and Public Outreach Program, Enforcement Phase (SCVSD-1)
Summary and Back-up

(e) Environmental Compliance/ Mitigation / Enhancement

Item	Cost
Task 11: Environmental Documentation	$ NA
Total	$ NA

(f) Construction Administration

Item	Cost
Task 12 Construction Administration	NA
Total	NA

(g) Other Costs

Item	Cost
Task 13: PMP	Cost is included in Task 1.
Total	NA

(h) Construction/Implementation Contingency

Item	Cost
Task 14: Construction Contingency	NA
Total	NA

Grand Total

Item	Cost
(f) Construction Administration	NA
(g) Other Costs	Cost is included in Task 1.
(h) Construction/Implementation Contingency	NA
Total	NA

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

Task 5 Backup
Assessment and Evaluation

Task 5 Backup **Assessment and Evaluation**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
50% of actual cost for Sanitation District staff (with overhead and benefits) to prepare 2011 and 2012 Annual Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan. Actual cost from Sanitation District's General Ledger obtained on February 14, 2013. Used 50% of total cost because report is also used for other reporting requirements.	$10,926.14	$0	**$10,926**
Estimate of 2013 cost using 2012 cost and assuming increase in staff cost of 3% per year based on best professional judgment. $\$5{,}794.69 * 1.03 = \$5{,}968.53$	$5,968.53	$0	**$5,969**
Estimate of 2014, 2015, and 2016 cost using 2012 cost and assuming increase in staff cost of 3% per year based on best professional judgment. $\$5{,}794.69 * 1.03 * 1.03 = \$6{,}147.59$ $\$5{,}794.69 * 1.03 * 1.03 * 1.03 = \$6{,}332.01$ $\$5{,}794.69 * 1.03 * 1.03 * 1.03 = \$6{,}521.97$	$0	$19,001.58	**$19,002**
Total	**$16,895**	**$19,002**	**$35,897**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.1 Backup
Automatic Water Softener Rebates

SubTask 10.1 Backup **Automatic Water Softener Rebates**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Actual cost to administer the Automatic Water Softener Rebate Program from October 18, 2010 to December 31, 2012. Actual cost from Sanitation District's General Ledger obtained on February 14, 2013. Actual cost includes District staff (with overhead and benefits), temporary labor, rebates paid to residents, plumber costs, and other small miscellaneous costs.	$556,353.97	$0	**$556,354**
Estimate of Sanitation District staff cost to administer Automatic Water Softener Rebate Program from January 1, 2013 to September 30, 2013. Estimate based on Sanitation District actual staff cost from March and April 2012 ($5,245), obtained from Sanitation District's General Ledger on February 14, 2013, when 20-30 rebates per month were processed. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$5{,}245}{month} * 1.03 * 9\ months = \$48{,}621.15$	$48,621.15	$0	**$48,621**
Estimate of Sanitation District staff cost to administer Automatic Water Softener Rebate Program from October 1, 2013 to December 31, 2013. Estimate based on Sanitation District actual staff cost from March and April 2012 ($5,245), obtained from Sanitation District's General Ledger on February 14, 2013, when 20-30 rebates per month were processed. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$5{,}245}{month} * 1.03 * 3\ months = \$16{,}207.05$	$0	$16,207.05	**$16,207**
Estimate of Sanitation District staff cost to administer Automatic Water Softener Rebate Program for 2014, 2015, and 2016. Estimate based on Sanitation District actual staff cost from March and April 2012 ($5,245), obtained from Sanitation District's General Ledger on February 14, 2013, when 20-30 rebates per month were processed. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$5{,}245}{month} * 1.03 * 1.03 * 12\ months = \$66{,}773.05$ $\frac{\$5{,}245}{month} * 1.03 * 1.03 * 1.03 * 12\ months = \$68{,}776.24$ $\frac{\$5{,}245}{month} * 1.03 * 1.03 * 1.03 * 1.03 * 12\ months = \$70{,}839.52$	$0	$206,388.81	**$206,389**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.1 Backup **Automatic Water Softener Rebates**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate temporary staff cost for January 1, 2013 to September 30, 2013 at 1 person at 40% time, 40 hours per week, paid $23 per hour based on 2012 staff costs. Assume no increase in staff cost for 2013. $\frac{\$23}{hour} * 40\ \frac{hours}{week} * 36\ weeks * 40\% = \$13{,}248.00$	$13,248.00	$0	**$13,248**
Estimate temporary staff cost for October 1, 2013 to December 31, 2013 at 1 person at 40% time, 40 hours per week, paid $23 per hour based on 2012 staff costs. Assume no increase in staff cost for 2013. $\frac{\$23}{hour} * 40\ \frac{hours}{week} * 12\ weeks * 40\% = \$4{,}416.00$	$0	$4,416.00	**$4,416**
Estimate temporary staff cost for 2014, 2015 and 2016 at 1 person at 40% time, 40 hours per week, 51 weeks per year, paid $23 per hour based on 2012 staff costs. Assume no increase in staff cost for 2013. Assume increase of staff cost of 3% per year for 2014, 2105, and 2016 based on best professional judgment. $\frac{\$23}{hour} * 40\ \frac{hours}{week} * 51\ \frac{weeks}{year} * 40\% * 1.03 = \$19{,}331.04$ $\frac{\$23}{hour} * 40\ \frac{hours}{week} * 51\ \frac{weeks}{year} * 40\% * 1.03 * 1.03 = \$19{,}910.97$ $\frac{\$23}{hour} * 40\ \frac{hours}{week} * 51\ \frac{weeks}{year} * 40\% * 1.03 * 1.03 * 1.03 = \$20{,}508.30$	$0	$59,750.31	**$59,750**
Estimate 2,000 more automatic water softener rebates paid. Rebate cost estimated at $200 for each rebate based on best professional judgment. $\$2{,}000\ rebates * \frac{\$200}{rebate} = \$400{,}000$	$0	$400,000.00	**$400,000**
Estimate 2,000 more automatic water softener rebates paid. Estimate at $120 in plumber costs for each rebate paid based on best professional judgment. $\$2{,}000\ rebates * \frac{\$120}{rebate} = \$240{,}000$	$0	$240,000.00	**$240,000**
Total	**$618,223**	**$926,762**	**$1,544,985**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.2 Backup

Developed Initial Documents, Prepared Letter Packages for Residents, Mailed Letters to Residents, and Processed Rebate Applications and Questionnaires Returned From August 2011 Resident Letters

SubTask 10.2 Backup **Developed Initial Documents, Prepared Letter Packages for Residents, Mailed Letters to Residents, and Processed Rebate Applications and Questionnaires Returned From August 2011 Resident Letters**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Actual cost for Sanitation District staff (with overhead and benefits) from October 18, 2010 to February 29, 2012. Actual cost from Sanitation District's General Ledger obtained on February 14, 2013.	$38,003.38	$0	**$38,003**
Total	**$38,003**	**$0**	**$38,003**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.3 Backup
Public Outreach Program

SubTask 10.3 Backup **Public Outreach Program**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Actual cost spent on public outreach from October 18, 2010 to December 31, 2012. Actual cost from Sanitation District's General Ledger obtained on February 14, 2013. Actual cost includes Sanitation District staff (with overhead and benefits) plus cost for advertisements in The Signal newspaper, addresses for new homeowners so the Sanitation District could send letters to these residents, and special envelopes purchased for the August 2011 mailer. Cost also includes an estimate of postage for the August 2011 mailer.	$28,738.12	$0	**$28,738**
Estimate of public outreach cost from January 1, 2013 to September 30, 2013. Estimate based on estimate for the purchase of two advertisements in The Signal ($6,292.00), staff time needed to revise the advertisement from the pilot scale advertisement and design door hangers ($1,000.00), and purchase of 2,000 door hangers that will be delivered during the home inspection program ($1,125.00).	$8,417.00	$0	**$8,417**
Estimate of cost of public outreach program for years 2014, 2015, and 2016 was based on actual amount spent on public outreach consultant O'Rorke from January through June 2009. Actual O'Rorke cost for community-wide outreach program from January through June 2009 was $95,413.45 based on invoices paid. During this time the Sanitation District engaged in a multimedia public outreach campaign as described on page 4-12 of the 2010 Annual Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan. The Sanitation District estimates that a lower amount of effort will be needed in the future since most of the automatic water softeners have been removed. Assume 30% of the amount spent from January through June 2009 based on best professional judgment. Also assume two mailers per year. Based on recent proposals assume 1 letter will cost $25,830 and 1 postcard per year will cost $18,075. Assume increase of staff cost and public outreach materials of 3% per year based on best professional judgment. $\$95{,}413.45 * 30\% * 1.03 * 1.03 * 1.03 * 1.03 * 1.03 + \$25{,}830 + \$18{,}075 = \$77{,}088.10$ $(\$95{,}413.45 * 30\% * 1.03 * 1.03 * 1.03 * 1.03 * 1.03 + \$25{,}830 + \$18{,}075) * 1.03 = \$79{,}400.74$ $(\$95{,}413.45 * 30\% * 1.03 * 1.03 * 1.03 * 1.03 * 1.03 + \$25{,}830 + \$18{,}075) * 1.03 * 1.03 = \$81{,}782.77$	$0	$238,271.61	**$238,272**
	Total	**$37,155**	**$238,272**	**$275,427**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.4 Backup
Home Inspection Program

SubTask 10.4 Backup **Home Inspection Program**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Actual cost for Sanitation District staff (with overhead and benefits) to administer the Automatic Water Softener Enforcement Program from March 1, 2012 to December 31, 2012. Actual cost from Sanitation District's General Ledger obtained on February 14, 2013.	$29,075.21	$0	**$29,075**
Estimate of Sanitation District non-inspection staff cost to administer Automatic Water Softener Enforcement Program from January 1, 2013 to September 30, 2013. Estimate based on Sanitation District actual staff cost from October 2012 ($9,216) obtained from Sanitation District's General Ledger on February 14, 2013. Estimated cost from October 2012 was used because the pilot scale inspection program took place during the month. Assume home inspections will take place during 5 months (February, March, July, August, and September) based on Sanitation District's current schedule. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$9{,}216}{month} * 1.03 * 5\ months = \$47{,}462.40$	$47,462.40	$0	**$47,462**
Estimate of Sanitation District non-inspection staff cost to administer Automatic Water Softener Enforcement Program from October 1, 2013 to December 31, 2013. Estimate based on Sanitation District actual staff cost from October 2012 ($9,216) obtained from Sanitation District's General Ledger on February 14, 2013. Estimated cost from October 2012 was used because the pilot scale inspection program took place during the month. Assume home inspections will take place during all three months based on Sanitation District's current schedule. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$9{,}216}{month} * 1.03 * 3\ months = \$28{,}477.44$	$0	$28,477.44	**$28,477**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.4 Backup **Home Inspection Program**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate of Sanitation District non-inspection staff cost to administer Automatic Water Softener Enforcement Program during 2014, 2105, and 2016. Estimate based on Sanitation District actual staff cost from October 2012 ($9,216) obtained from Sanitation District's General Ledger on February 14, 2013. Estimated cost from October 2012 was used because the pilot scale inspection program took place during the month. Assume home inspections will take place during all months based on Sanitation District's current schedule. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$9{,}216}{month} * 1.03 * 1.03 * 12\ months = \$117{,}327.05$ $\frac{\$9{,}216}{month} * 1.03 * 1.03 * 1.03 * 12\ months = \$120{,}846.86$ $\frac{\$9{,}216}{month} * 1.03 * 1.03 * 1.03 * 1.03 * 12\ months = \$124{,}472.27$	$0	$362,646.19	**$362,646**
Estimate of Sanitation District staff inspection cost for the Automatic Water Softener Enforcement Program from January 1, 2013 to September 30, 2013. Estimate based on best professional judgment (see memo entitled *Estimate of Annual Industrial Waste Inspection Labor Cost for SRWS Home Inspections in the SCV*, dated January 15, 2013 – Reference SCVSD-1.3). Assume home inspections will take place during 5 months (February, March, July, August, and September) based on Sanitation District's current schedule. $\frac{\$115{,}188.48}{12\ months} * 5\ months = \$47{,}955.20$	$47,995.20	$0	**$47,995**
Estimate of Sanitation District staff inspection cost for the Automatic Water Softener Enforcement Program from October 1, 2013 to December 31, 2013. Estimate based on best professional judgment (see Reference SCVSD-1.3). Assume home inspections during all three months based on Sanitation District's current schedule. $\frac{\$115{,}188.48}{12\ months} * 3\ months = \$28{,}797.12$	$0	$28,797.12	**$28,797**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.4 Backup **Home Inspection Program**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate of Sanitation District staff inspection cost for the Automatic Water Softener Enforcement Program during 2014, 2105, and 2016. Estimate based on best professional judgment (see Reference SCVSD-1.3). Assume home inspections will take place during all months based on Sanitation District's current schedule. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$115{,}188.48}{12\ months} * 12\ months * 1.03 = \$118{,}644.13$ $\frac{\$115{,}188.48}{12\ months} * 12\ months * 1.03 * 1.03 = \$122{,}203.46$ $\frac{\$115{,}188.48}{12\ months} * 12\ months * 1.03 * 1.03 * 1.03 = \$125{,}869.56$	$0	$366,717.16	**$366,717**
Total	**$124,533**	**$786,638**	**$911,171**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.5 Backup
Monitoring

SubTask 10.5 Backup Monitoring	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Actual cost for Sanitation District staff (with overhead and benefits) to conduct quarterly influent monitoring at the Saugus and Valencia WRPs from October 18, 2010 to December 31, 2012. Actual cost from Sanitation District's General Ledger obtained on February 14, 2013.	$16,179.68	$0	**$16,179**
Estimate of Sanitation District staff cost to conduct quarterly influent monitoring at the Saugus and Valencia WRPs from January 1, 2013 to September 30, 2013. Estimate based on best professional judgment of cost approximately $4,000 per sampling event. $\frac{\$4{,}000}{sampling\ event} * 3\ sampling\ events = \$12{,}000.00$	$12,000.00	$0	**$12,000**
Estimate of Sanitation District staff cost to conduct quarterly influent monitoring at the Saugus and Valencia WRPs from October 1, 2013 to December 31, 2013. Estimate based on best professional judgment of cost approximately $4,000 per sampling event. $\frac{\$4{,}000}{sampling\ event} * 1\ sampling\ events = \$4{,}000.00$	$0	$4,000.00	**$4,000**
Estimate of Sanitation District staff cost to conduct quarterly influent monitoring at the Saugus and Valencia WRPs during 2014, 2105, and 2016. Estimate based on best professional judgment of cost approximately $4,000 per sampling event. Assume increase of staff cost of 3% per year based on best professional judgment. $\frac{\$4{,}000}{sampling\ event} * 4\ sampling\ events * 1.03 = \$16{,}480.00$ $\frac{\$4{,}000}{sampling\ event} * 4\ sampling\ events * 1.03 * 1.03 = \$16{,}974.40$ $\frac{\$4{,}000}{sampling\ event} * 4\ sampling\ events * 1.03 * 1.03 * 1.03 = \$17{,}483.63$	$0	$50,938.03	**$50,938**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.5 Backup Monitoring	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate of cost in 2014 to sample six neighborhoods that were sampled in 2001 (see the Santa Clarita Valley Joint Sewerage System Chloride Source Report, October 2002, pages 4-42 to 4-46). Assume hourly sample collection for four days at each neighborhood. Assume samplers are set up in one location for each neighborhood. Assume four samplers can be set up per day. Cost of chloride analysis in 2013 is $12.79 per sample per Maria Pang (Assistant Manager of Sanitation Districts' Laboratories). Assume sampling equipment cost (depreciation, maintenance, etc.) is estimated at $40 per sample set (assume 24 bottles per sample set). Assume monitoring crew hourly rate (Tech III-Step 5) in 2013 with overhead and benefits is $43.65 per hour *1.4 benefit rate = $61.11 per hour. Assume time needed to setup and dismantle sampling equipment. Assume staff needs to visit sites daily to collect sample bottles. Assume increase of staff, chloride analysis, and equipment cost of 3% per year based on best professional judgment. Analysis and Equipment Cost for 24 Samples: $\frac{\$12.79}{chloride\ analysis} * 24\ samples + \$40\ for\ equipment\ costs = \$346.96$ Daily Monitoring Labor Cost: $\frac{\$61.11}{hour} * 8\ \frac{hours}{day} = \$488.88$ Estimated Monitoring Cost: $6\ neighborhoods * \frac{4\ days}{neighborhood} * \frac{\$346.96}{day} * 1.03 + 5\ days\ labor * \frac{\$488.88}{day} * 1.03 = \$11{,}094.58$	$0	$11,094.58	**$11,095**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.5 Backup Monitoring	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate cost in 2014 for canvas sampling of 4 neighborhoods. Assume hourly sample collection for four days at each neighborhood. Assume samplers are set up in one location for each neighborhood. Assume four samplers can be set up per day. Cost of chloride analysis in 2013 is $12.79 per sample per Maria Pang (Assistant Manager of Sanitation Districts' Laboratories). Assume sampling equipment cost (depreciation, maintenance, etc.) is estimated at $40 per sample set (assume 24 bottles per sample set). Assume monitoring crew hourly rate (Tech III-Step 5) in 2013 with overhead and benefits is $43.65 per hour *1.4 benefit rate = $61.11 per hour. Assume time needed to setup and dismantle sampling equipment. Assume staff needs to visit sites daily to collect sample bottles. Assume increase of staff, chloride analysis, and equipment cost of 3% per year based on best professional judgment. Analysis and Equipment Cost for 24 Samples: $\frac{\$12.79}{chloride\ analysis} * 24\ samples + \$40\ for\ equipment\ costs = \$346.96$ Daily Monitoring Labor Cost: $\frac{\$61.11}{hour} * 8\ \frac{hours}{day} = \$488.88$ Estimated Monitoring Cost: $4\ neighborhoods * \frac{4\ days}{neighborhood} * \frac{\$346.96}{day} * 1.03 + 5\ days\ labor * \frac{\$488.88}{day} * 1.03 = \$8{,}235.63$	$0	$8,235.63	**$8,236**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.5 Backup Monitoring	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate cost for target sampling of 4 neighborhoods in 2014, 12 neighborhood in 2015, and 12 neighborhoods in 2016. Assume hourly sample collection for four days at each neighborhood. Assume samplers are set up in one location only for each neighborhood. Assume four samplers can be set up per day. Cost of chloride analysis in 2013 is $12.79 per sample per Maria Pang (Assistant Manager of Sanitation Districts' Laboratories). Assume sampling equipment cost (depreciation, maintenance, etc.) is estimated at $40 per sample set (assume 24 bottles per sample set). Assume monitoring crew hourly rate (Tech III-Step 5) in 2013 with overhead and benefits is $43.65 per hour *1.4 benefit rate = $61.11 per hour. Assume time needed to setup and dismantle sampling equipment. Assume staff needs to visit sites daily to collect sample bottles. Assume increase of staff, chloride analysis, and equipment cost of 3% per year based on best professional judgment. Analysis and Equipment Cost for 24 Samples: $\frac{\$12.79}{chloride\ analysis} * 24\ samples + \$40\ for\ equipment\ costs = \$346.96$ Daily Monitoring Labor Cost: $\frac{\$61.11}{hour} * 8\ \frac{hours}{day} = \$488.88$ Estimated Monitoring Cost: $4\ neighborhoods * \frac{4\ days}{neighborhood} * \frac{\$346.96}{day} * 1.03 + 5\ days\ labor * \frac{\$488.88}{day} * 1.03 = \$8{,}235.63$ $12\ neighborhoods * \frac{4\ days}{neighborhood} * \frac{\$346.96}{day} * 1.03 * 1.03 + 15\ days\ labor * \frac{\$488.88}{day} * 1.03 * 1.03 = \$25{,}448.11$ $12\ neighborhoods * \frac{4\ days}{neighborhood} * \frac{\$346.96}{day} * 1.03 * 1.03 * 1.03 + 15\ days\ labor * \frac{\$488.88}{day} * 1.03 * 1.03 * 1.03 = \$26{,}211.55$	$0	$59,895.29	**$59,895**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.5 Backup Monitoring	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate cost for target sampling of 4 homes in 2014, 20 homes in 2015, and 80 homes in 2016. Assume hourly sample collection for four days at each neighborhood. Assume samplers are set up in one location for each home. Assume four samplers can be set up per day. Cost of chloride analysis in 2013 is $12.79 per sample per Maria Pang (Assistant Manager of Sanitation Districts' Laboratories). Assume sampling equipment cost (depreciation, maintenance, etc.) is estimated at $40 per sample set (assume 24 bottles per sample set). Assume monitoring crew hourly rate (Tech III-Step 5) in 2013 with overhead and benefits is $43.65 per hour *1.4 benefit rate = $61.11 per hour. Assume time needed to setup and dismantle sampling equipment. Assume staff needs to visit sites daily to collect sample bottles. Assume increase of staff, chloride analysis, and equipment cost of 3% per year based on best professional judgment. Analysis and Equipment Cost for 24 Samples: $\frac{\$12.79}{chloride\ analysis} * 24\ samples + \$40\ for\ equipment\ costs = \$346.96$ Daily Monitoring Labor Cost: $\frac{\$61.11}{hour} * 8\ \frac{hours}{day} = \$488.88$ Estimated Monitoring Cost: $4\ homes * \frac{4\ days}{home} * \frac{\$346.96}{day} * 1.03 + 5\ days\ labor * \frac{\$488.88}{day} * 1.03 = \$8{,}235.63$ $20\ homes * \frac{4\ days}{home} * \frac{\$346.96}{day} * 1.03 * 1.03 + 25\ days\ labor * \frac{\$488.88}{day} * 1.03 * 1.03 = \$42{,}413.51$ $80\ homes * \frac{4\ days}{home} * \frac{\$346.96}{day} * 1.03 * 1.03 * 1.03 + 100\ days\ labor * \frac{\$488.88}{day} * 1.03 * 1.03 * 1.03$ $= \$174{,}743.66$	$0	$225,392.80	**$225,392**
Total	**$28,180**	**$359,556**	**$387,736**

Santa Clarita Valley Sanitation District's
Automatic Water Softener Rebate and Public Outreach Program

SubTask 10.6 Backup
Commercial Inspections

SubTask 10.6 Backup **Commercial Inspections**	**Estimated Expenditure from 10/18/2010 to 9/30/13**	**Estimated Expenditure 10/1/2013 to 12/31/2016**	**Total**
Estimate District staff time to inspect each retailer that sold salt, potassium chloride, and/or automatic water softeners once a year. Estimate 1.5 hours per retailer and estimate visiting 32 retailers per year. Assume 4 retailers per 8 hour day to allow for driving time. Assume inspector hourly rate (Inspector II-Step 5) in 2013 with overhead and benefits is $46.78 per hour *1.4 benefit rate = $65.49 per hour. Assume increase of staff cost of 3% per year based on best professional judgment. $32\ retailers * \frac{1\ day}{4\ retailers} * \frac{\$65.49}{hour} * 8\ \frac{hours}{day} * 1.03 = \$4{,}317.23$ $32\ retailers * \frac{1\ day}{4\ retailers} * \frac{\$65.49}{hour} * 8\ \frac{hours}{day} * 1.03 * 1.03 = \$4{,}446.75$ $32\ retailers * \frac{1\ day}{4\ retailers} * \frac{\$65.49}{hour} * 8\ \frac{hours}{day} * 1.03 * 1.03 * 1.03 = \$4{,}580.15$	$0	$13,344.13	**$13,344**
Total	**$0**	**$13,344**	**$13,344**

Attachment 4 - Budget
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)
Summary and Back-up

Project Name: SC-1/BCN-1 USCR Arundo/Tamarisk Removal Program (SCARP) Implementation

	Budget Category	Requested Grant Amount	Cost Share: Non-State Fund Source (Funding Match)*	Cost Share: Other State Fund Source*	Total Cost	% Funding Match
(a)	Direct Project Administration Costs	$0	$27,700	$0	$27,700	100%
(b)	Land Purchase/Easement	$0	$0	$0	$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	$60,000	$2,275	$0	$62,275	4%
(d)	Construction/Implementation	$260,750	$118,500	$0	$379,250	31%
(e)	Environmental Compliance/ Mitigation/Enhancement	$13,300	$4,700	$0	$18,000	26%
(f)	Construction Administration	$40,000	$0	$0	$40,000	0%
(g)	Other Costs	$0	$0	$0	$0	0%
(h)	Construction/Implementation Contingency	$45,000	$0	$0	$45,000	0%
(i)	**Grand Total, (a) through (h)**	**$419,050**	**$153,175**	**$0**	**$572,225**	**27%**

*** List sources of funding:**

1 *City of Santa Clarita Stormwater Utility Fund.*

Attachment 4 - Budget
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)
Summary and Back-up

(a) Direct Project Administration

Task	Cost
Task 1: Administration	$22,700
Task 2: Labor Compliance Program	$5,000
Task 3: Reporting	Cost included in Task 1
Total	$27,700

Back-up Calculations						
# of hours	**$/hr for administrator**	**OR**	**% of Total Project Cost**	**Total Project Cost**	**Justification for %**	
333	60	**plus**	4%	$72,225	% of Total Project Cost	
83	60					

(b) Land Purchase/ Easement

	ROW Agent/Surveyor/Appraiser	Land Purchase	Total	Cost Assumptions and Basis
Task 4: Land Purchase/Easement	$ -		NA	
	$/Acre	**Acres**	**Land Cost**	**Cost Assumptions and Basis**
Permanent Easement Cost			$ NA	

(c) Planning / Design/ Engineering/ Environmental Documentation

	Cost	Back-up Calculations
Task 5: Assessment and Evaluation	$ 2,275	Previous Costs already spent.
Task 6: Design	NA	
Task 7: Environmental Documentation	NA	
Task 8: Permitting	$ 60,000	Engineer's estimate
Total	**$ 62,275**	

Attachment 4 - Budget
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)
Summary and Back-up

(d) Construction/ Implementation

Item	Cost	Back-up Calculations
Task 9: Construction Management	$0	NA
Construction/Implementation Task:		
SubTask 10.1 Mobilization and Site Preparation		See **Reference SC-1.7**: 2012 Contractor's Bid Proposal to complete arundo/tamarisk removal for a portion of Area E of the SCARP Site Specific Plan — including a total of 43 acres – that has already had two rounds of cuttings in 2009 and 2010. These cost estimates are also included.
SubTask 10.2 Project Construction	$289,250	
SubTask 10.3 Resprouts	$90,000	City's estimate based on past experience is that resprouts cost approximately $30k per round. So 3 rounds of resprouts = $90k.
Task 10: Construction	**$379,250**	

(e) Environmental Compliance/ Mitigation / Enhancement

Item	Cost	Wage	Hours	Description of Work Performed
SubTask 11.1: Biological Monitoring	$14,800	80/hr.	185	Monitoring Abatement Activites
SubTask 11.2: Pre-Surveys	$3,200	80/hr.	40	Botanical and Wildlife Surveys
Total	**$18,000**			

(f) Construction Administration

Item	Cost	Justification for Amount
Task 12: Construction Admin	$ 40,000	Engineer's Estimate
Total	$ 40,000	

(g) Other Costs

Item	Cost
Task 13: PMP	Cost included in Task 12 (Admin)

Attachment 4 - Budget
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)
Summary and Back-up

(h) Construction/Implementation Contingency

Item	Cost	% of Total Project Cost	Total Project Cost	Justification for %
Task 14 Construction contingency	$ 45,000	15%	$300,000	Engineer's rule of thumb.
Total	$ 45,000			

Grand Total

Item	Cost
(f) Construction Administration	$40,000
(g) Other Costs	Cost included in Task 12 (Admin)
(h) Construction/Implementation Contingency	$45,000
Total	**$85,000**

Introduction

A detailed schedule for the Proposal and each of the individual projects is provided as Table 5-1. The schedule is consistent with the categories provided in the Guidelines. The schedule shows the sequence and timing of work items presented in the Proposal and assumes the effective date of the grant agreement to be October 1, 2013. The schedule shows the start dates, end dates, and milestones for each work item contained in the Attachment 3 Work Plan, and when applicable, dependence on predecessors is also shown. Projects in this Proposal are numbered as follows:

1. Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)
2. Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
3. Foothill Feeder Connection (CLWA-8)
4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)
5. Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)
6. Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Consistency With Work Plan

Both the Attachment 3 Work Plan and Proposal schedule provide discussions of the work items under the general categories outlined in the budget and are thus consistent with each other and the budget. The general categories for the work items are as follows:

a) Direct Project Administration Costs
b) Land Purchase/Easement
c) Planning/Design/Engineering/Environmental Documentation
d) Construction/Implementation
e) Environmental Compliance/Mitigation/Enhancement
f) Construction Administration
g) Other Costs
h) Construction/Implementation Contingency

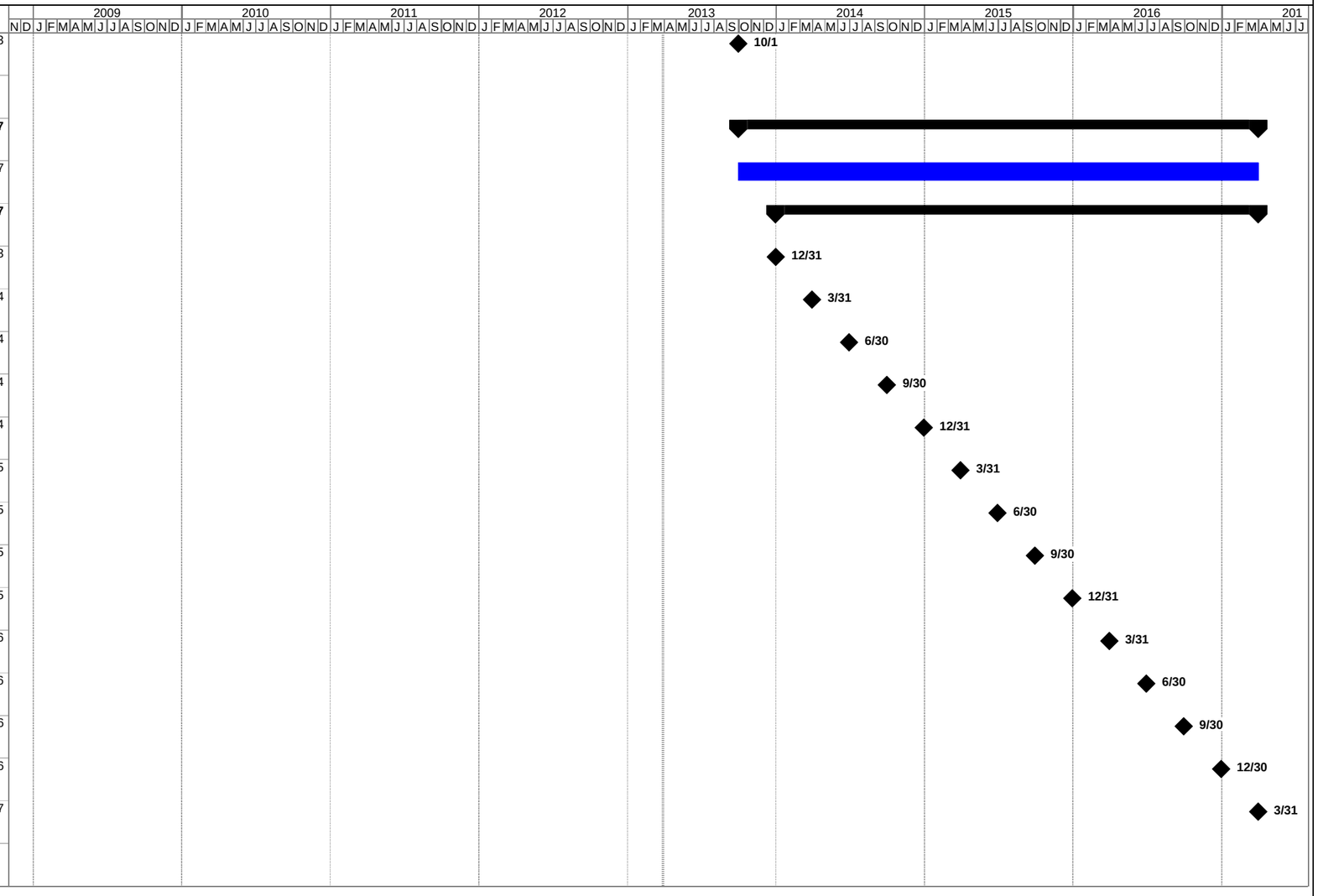
Earliest Start Date Of Construction Identified For The Proposal

Five of the six proposed projects in the Application are ready to begin implementation in October 2013. These five projects include the following:

1. Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)
2. Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
3. Foothill Feeder Connection (CLWA-8)
4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)
5. Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
1	**Effective Date of Grant Agreement**	Tue 10/1/13	Tue 10/1/13
2			
3	**Grant Administration**	**Tue 10/1/13**	**Fri 3/31/17**
4	Grant Administration	Tue 10/1/13	Fri 3/31/17
5	**Combined Project Quarterly Reports**	**Tue 12/31/13**	**Fri 3/31/17**
6	Submit Combined Quarterly Report	Tue 12/31/13	Tue 12/31/13
7	Submit Combined Quarterly Report	Mon 3/31/14	Mon 3/31/14
8	Submit Combined Quarterly Report	Mon 6/30/14	Mon 6/30/14
9	Submit Combined Quarterly Report	Tue 9/30/14	Tue 9/30/14
10	Submit Combined Quarterly Report	Wed 12/31/14	Wed 12/31/14
11	Submit Combined Quarterly Report	Tue 3/31/15	Tue 3/31/15
12	Submit Combined Quarterly Report	Tue 6/30/15	Tue 6/30/15
13	Submit Combined Quarterly Report	Wed 9/30/15	Wed 9/30/15
14	Submit Combined Quarterly Report	Thu 12/31/15	Thu 12/31/15
15	Submit Combined Quarterly Report	Thu 3/31/16	Thu 3/31/16
16	Submit Combined Quarterly Report	Thu 6/30/16	Thu 6/30/16
17	Submit Combined Quarterly Report	Fri 9/30/16	Fri 9/30/16
18	Submit Combined Quarterly Report	Fri 12/30/16	Fri 12/30/16
19	Grant Project Completion Report	Fri 3/31/17	Fri 3/31/17
20			

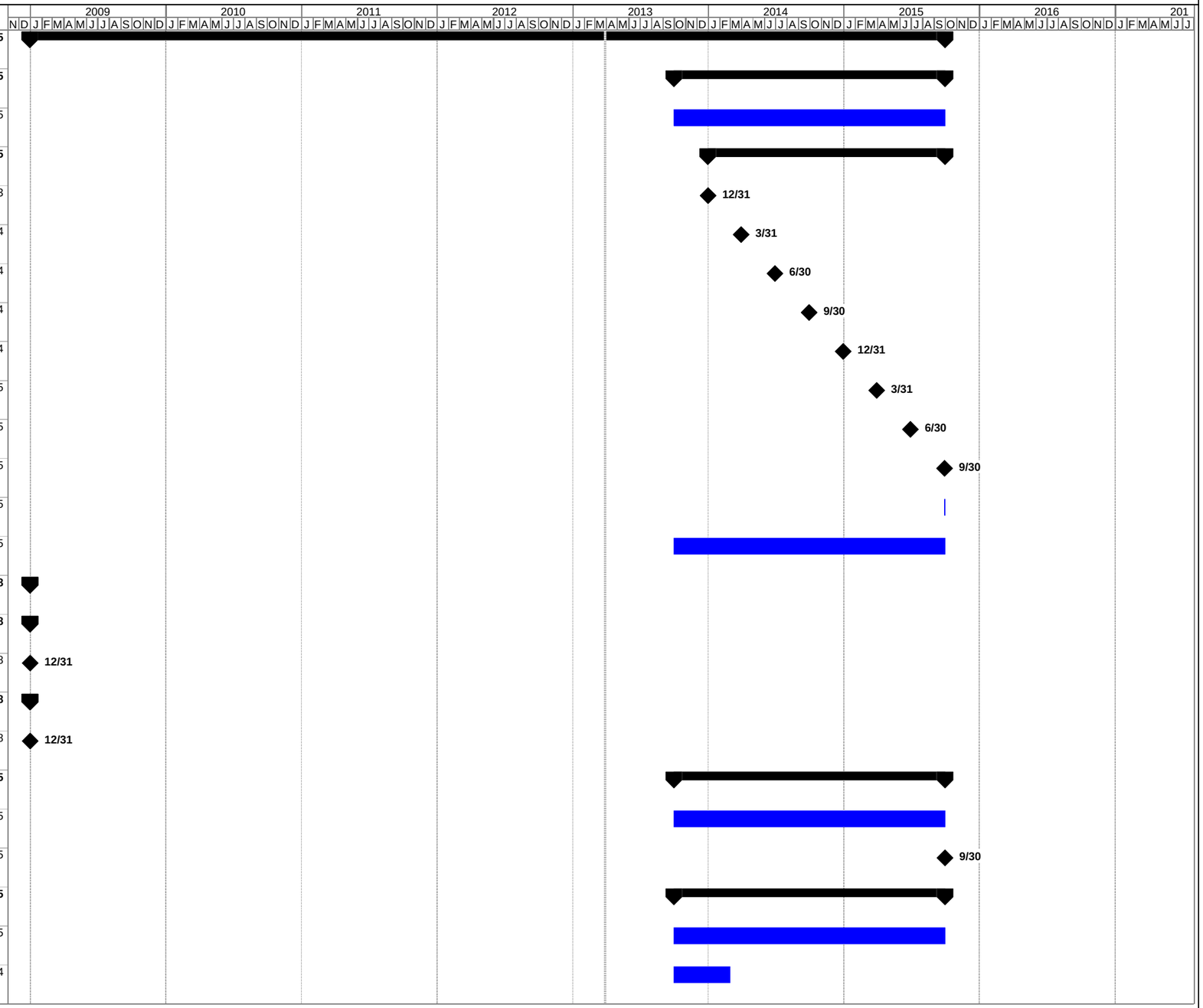


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
21	**CLWA3 - Santa Clarita Valley Water Use Efficiency Strategic Plan Programs**	**Wed 12/31/08**	**Wed 9/30/15**
22	**Direct Project Administration**	**Tue 10/1/13**	**Wed 9/30/15**
23	Administration	Tue 10/1/13	Wed 9/30/15
24	**Reporting**	**Tue 12/31/13**	**Wed 9/30/15**
25	Quarterly Report	Tue 12/31/13	Tue 12/31/13
26	Quarterly Report	Mon 3/31/14	Mon 3/31/14
27	Quarterly Report	Mon 6/30/14	Mon 6/30/14
28	Quarterly Report	Tue 9/30/14	Tue 9/30/14
29	Quarterly Report	Wed 12/31/14	Wed 12/31/14
30	Quarterly Report	Tue 3/31/15	Tue 3/31/15
31	Quarterly Report	Tue 6/30/15	Tue 6/30/15
32	Quarterly Report	Wed 9/30/15	Wed 9/30/15
33	Final Report Project Completion	Wed 9/30/15	Wed 9/30/15
34	**Labor Compliance Program**	Tue 10/1/13	Wed 9/30/15
35	**Planning/Design/Engineering/Environmental Documentation**	**Wed 12/31/08**	**Wed 12/31/08**
36	**Assessment and Evaluation**	**Wed 12/31/08**	**Wed 12/31/08**
37	Preliminary Design Report - Completed	Wed 12/31/08	Wed 12/31/08
38	**Design**	**Wed 12/31/08**	**Wed 12/31/08**
39	100% Complete	Wed 12/31/08	Wed 12/31/08
40	**Construction/Implementation**	**Tue 10/1/13**	**Wed 9/30/15**
41	SCV WUE Programs Implementation	Tue 10/1/13	Wed 9/30/15
42	Final Implementation Summary Report	Wed 9/30/15	Wed 9/30/15
43	**Other Costs**	**Tue 10/1/13**	**Wed 9/30/15**
44	Public Outreach	Tue 10/1/13	Wed 9/30/15
45	Performance Monitoring Plan (PMP)	Tue 10/1/13	Fri 2/28/14

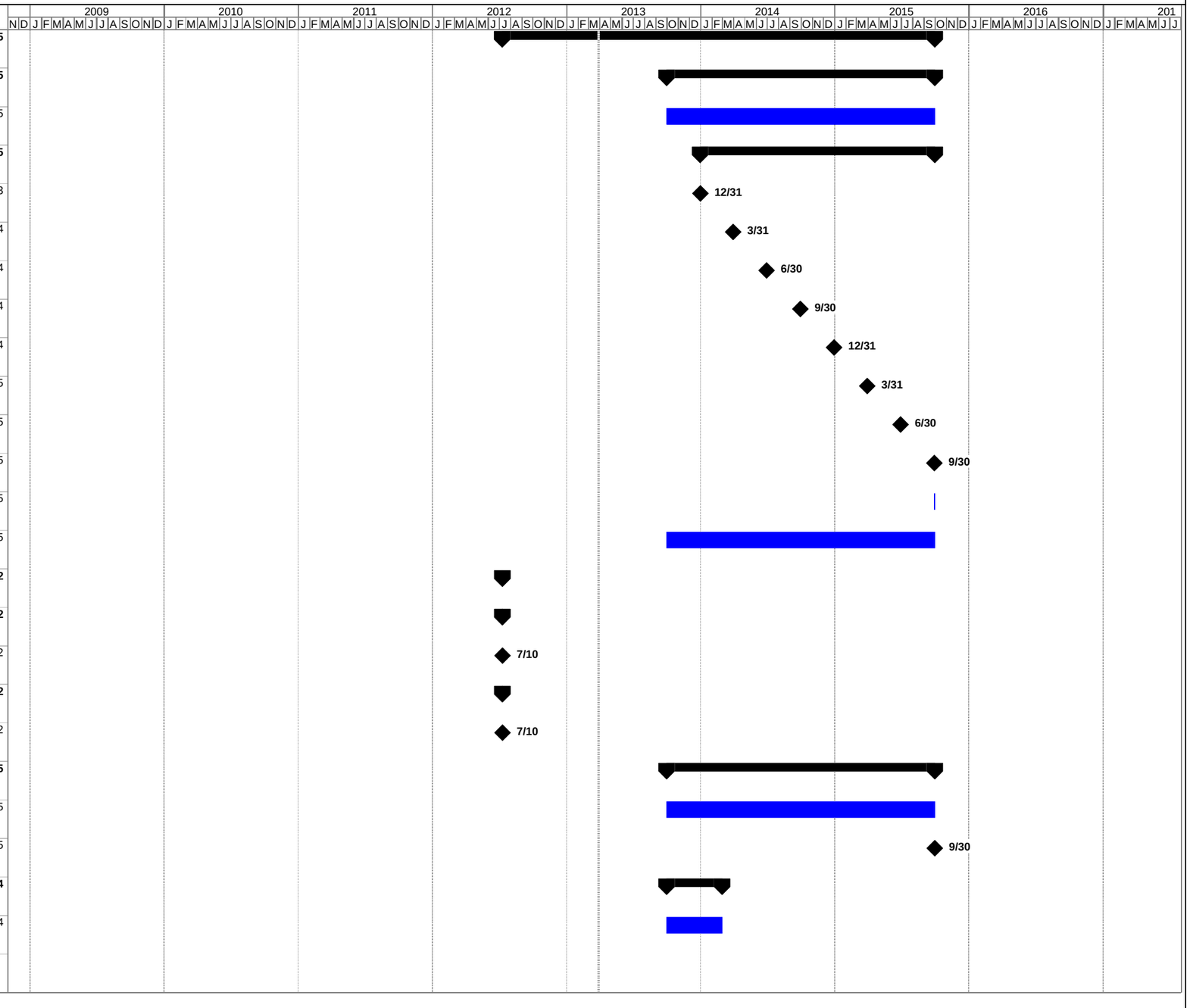


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
46	**SCWD2 - Santa Clarita Water Division Water Use Efficiency Programs**	**Tue 7/10/12**	**Wed 9/30/15**
47	**Direct Project Administration**	**Tue 10/1/13**	**Wed 9/30/15**
48	Administration	Tue 10/1/13	Wed 9/30/15
49	**Reporting**	**Tue 12/31/13**	**Wed 9/30/15**
50	Quarterly Report	Tue 12/31/13	Tue 12/31/13
51	Quarterly Report	Mon 3/31/14	Mon 3/31/14
52	Quarterly Report	Mon 6/30/14	Mon 6/30/14
53	Quarterly Report	Tue 9/30/14	Tue 9/30/14
54	Quarterly Report	Wed 12/31/14	Wed 12/31/14
55	Quarterly Report	Tue 3/31/15	Tue 3/31/15
56	Quarterly Report	Tue 6/30/15	Tue 6/30/15
57	Quarterly Report	Wed 9/30/15	Wed 9/30/15
58	Final Report Project Completion	Wed 9/30/15	Wed 9/30/15
59	**Labor Compliance Program**	Tue 10/1/13	Wed 9/30/15
60	**Planning/Design/Engineering/Environmental Documentation**	**Tue 7/10/12**	**Tue 7/10/12**
61	**Assessment and Evaluation**	**Tue 7/10/12**	**Tue 7/10/12**
62	Preliminary Design Report - Completed	Tue 7/10/12	Tue 7/10/12
63	**Design**	**Tue 7/10/12**	**Tue 7/10/12**
64	100% Complete	Tue 7/10/12	Tue 7/10/12
65	**Construction/Implementation**	**Tue 10/1/13**	**Wed 9/30/15**
66	SCWD WUE Programs Implementation	Tue 10/1/13	Wed 9/30/15
67	Final Implementation Summary Report	Wed 9/30/15	Wed 9/30/15
68	**Other Costs**	**Tue 10/1/13**	**Fri 2/28/14**
69	Performance Monitoring Plan (PMP)	Tue 10/1/13	Fri 2/28/14
70			

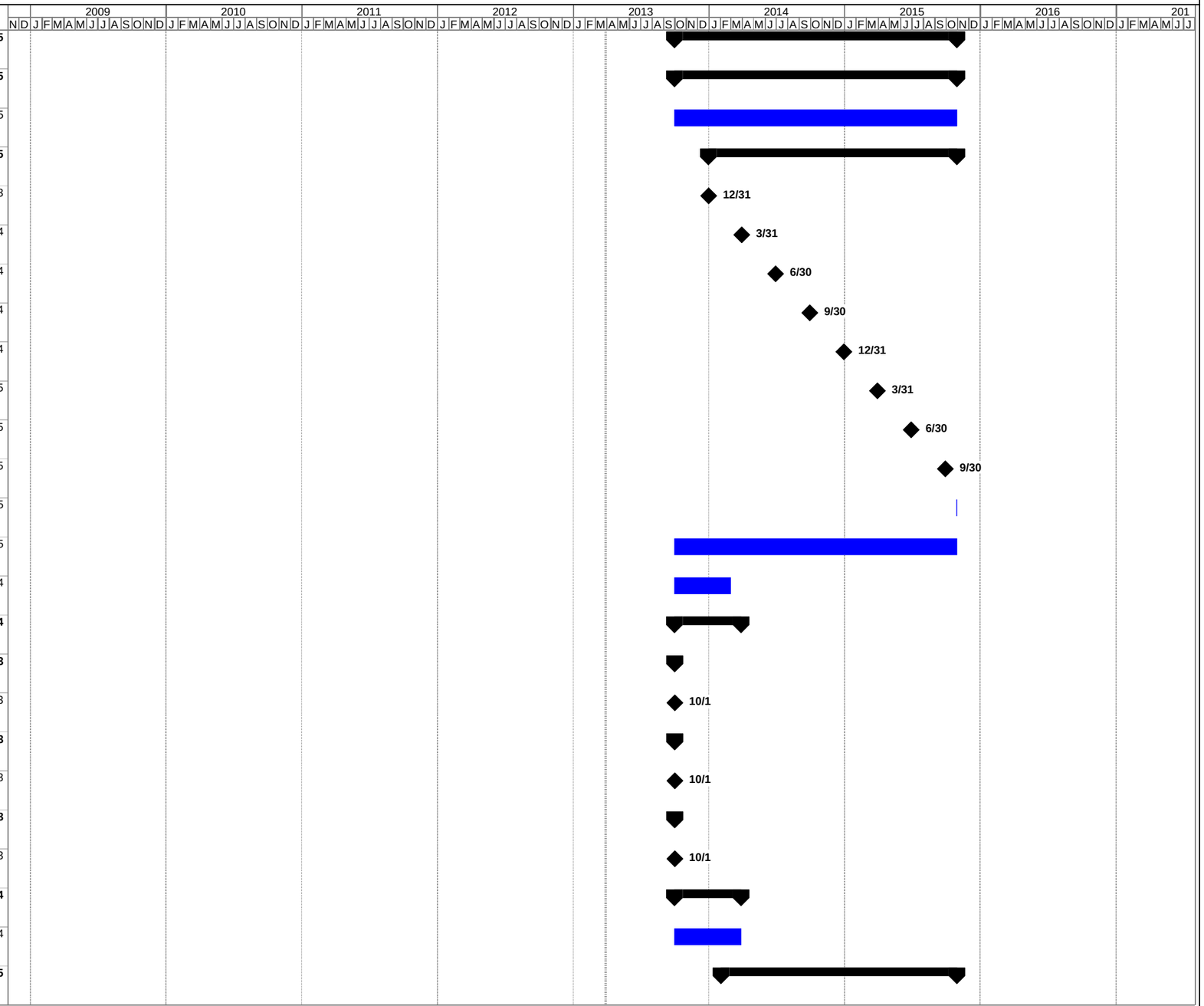


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
71	**CLWA8 - Foothill Feeder Connection Project**	**Tue 10/1/13**	**Fri 10/30/15**
72	**Direct Project Administration**	**Tue 10/1/13**	**Fri 10/30/15**
73	Administration	Tue 10/1/13	Fri 10/30/15
74	**Reporting**	**Tue 12/31/13**	**Fri 10/30/15**
75	Quarterly Report	Tue 12/31/13	Tue 12/31/13
76	Quarterly Report	Mon 3/31/14	Mon 3/31/14
77	Quarterly Report	Mon 6/30/14	Mon 6/30/14
78	Quarterly Report	Tue 9/30/14	Tue 9/30/14
79	Quarterly Report	Wed 12/31/14	Wed 12/31/14
80	Quarterly Report	Tue 3/31/15	Tue 3/31/15
81	Quarterly Report	Tue 6/30/15	Tue 6/30/15
82	Quarterly Report	Wed 9/30/15	Wed 9/30/15
83	Final Report Project Completion	Fri 10/30/15	Fri 10/30/15
84	**Labor Compliance Program**	Tue 10/1/13	Fri 10/30/15
85	**Land Purchase/Easement**	Tue 10/1/13	Fri 2/28/14
86	**Planning/Design/Engineering/Environmental Documentation**	**Tue 10/1/13**	**Fri 3/28/14**
87	**Assessment and Evaluation**	**Tue 10/1/13**	**Tue 10/1/13**
88	Preliminary Design Report - Completed	Tue 10/1/13	Tue 10/1/13
89	**Design**	**Tue 10/1/13**	**Tue 10/1/13**
90	100% Complete	Tue 10/1/13	Tue 10/1/13
91	**Environmental Documentation**	**Tue 10/1/13**	**Tue 10/1/13**
92	CEQA Complete	Tue 10/1/13	Tue 10/1/13
93	**Permitting**	**Tue 10/1/13**	**Fri 3/28/14**
94	CALOSHA, County of Los Angeles, City of Santa Clarita, SWPPP Permit, N	Tue 10/1/13	Fri 3/28/14
95	**Construction/Implementation**	**Mon 2/3/14**	**Fri 10/30/15**

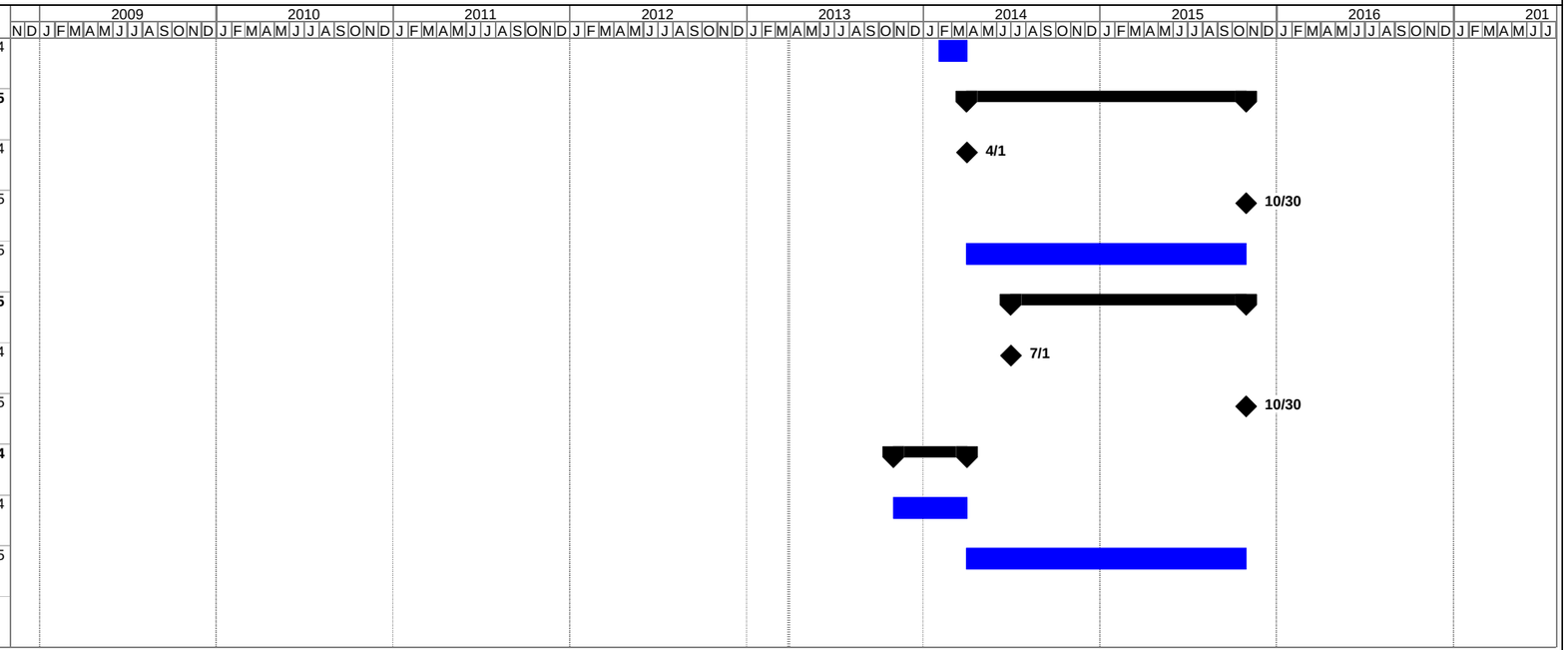


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
96	Construction Contracting	Mon 2/3/14	Tue 4/1/14
97	**Project Construction**	**Tue 4/1/14**	**Fri 10/30/15**
98	Notice to Proceed	Tue 4/1/14	Tue 4/1/14
99	Notice of Completion	Fri 10/30/15	Fri 10/30/15
100	**Environmental Compliance/Mitigation/Enhancement**	Tue 4/1/14	Fri 10/30/15
101	**Construction Administration**	**Tue 7/1/14**	**Fri 10/30/15**
102	Quarterly Construction Report	Tue 7/1/14	Tue 7/1/14
103	Final Construction Report	Fri 10/30/15	Fri 10/30/15
104	**Other Costs**	**Fri 11/1/13**	**Tue 4/1/14**
105	Performance Monitoring Plan (PMP)	Fri 11/1/13	Tue 4/1/14
106	**Construction Contingency**	Tue 4/1/14	Fri 10/30/15
107			

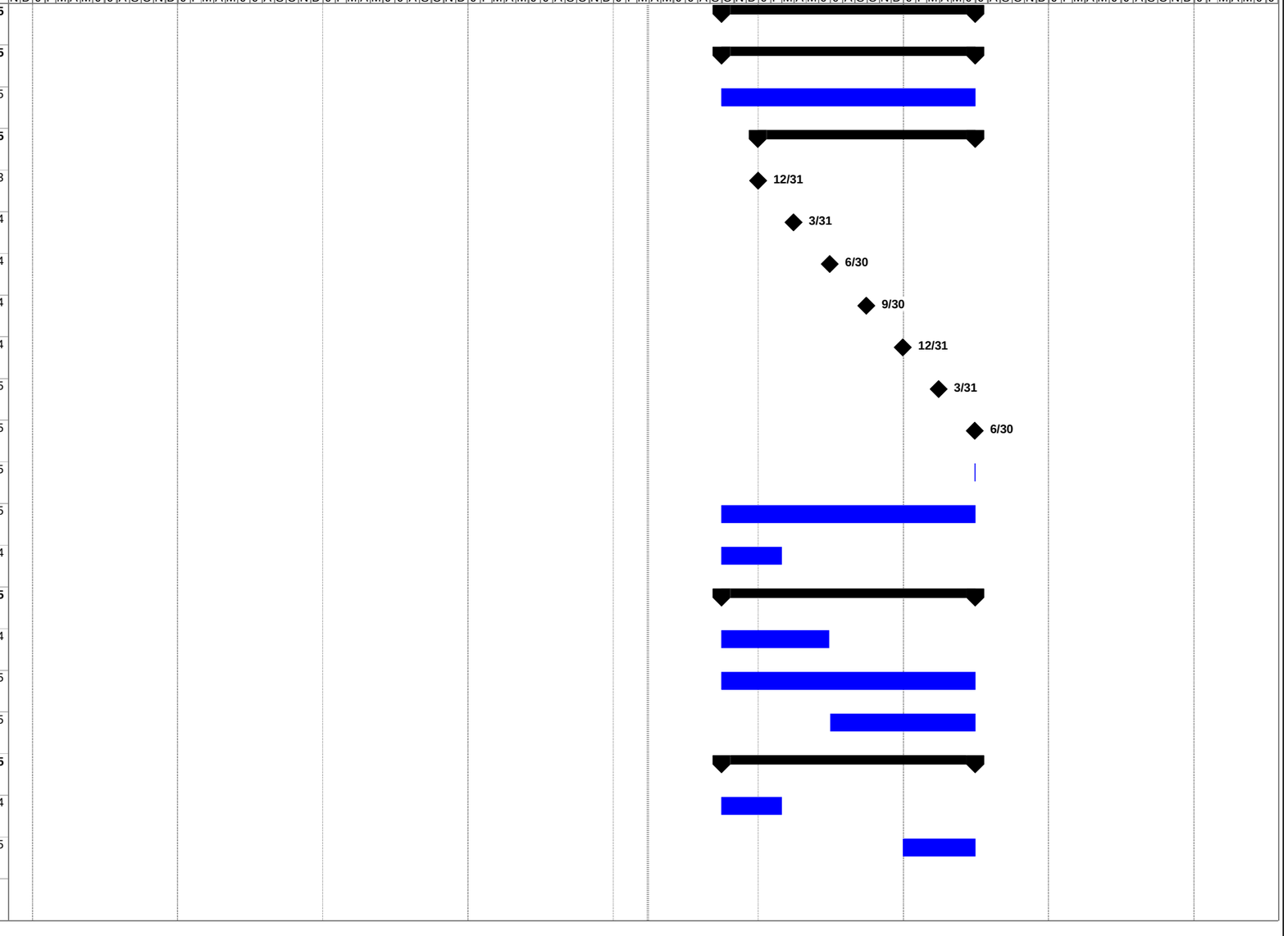


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
108	**NCWD2 - Pellet Water Softening Treatment Plant - Phase 1**	**Tue 10/1/13**	**Tue 6/30/15**
109	**Direct Project Administration**	**Tue 10/1/13**	**Tue 6/30/15**
110	Administration	Tue 10/1/13	Tue 6/30/15
111	**Reporting**	**Tue 12/31/13**	**Tue 6/30/15**
112	Quarterly Report	Tue 12/31/13	Tue 12/31/13
113	Quarterly Report	Mon 3/31/14	Mon 3/31/14
114	Quarterly Report	Mon 6/30/14	Mon 6/30/14
115	Quarterly Report	Tue 9/30/14	Tue 9/30/14
116	Quarterly Report	Wed 12/31/14	Wed 12/31/14
117	Quarterly Report	Tue 3/31/15	Tue 3/31/15
118	Quarterly Report	Tue 6/30/15	Tue 6/30/15
119	Final Report Project Completion	Tue 6/30/15	Tue 6/30/15
120	**Labor Compliance Program**	Tue 10/1/13	Tue 6/30/15
121	**Land Purchase/Easement**	Tue 10/1/13	Fri 2/28/14
122	**Planning/Design/Engineering/Environmental Documentation**	**Tue 10/1/13**	**Tue 6/30/15**
123	Assessment and Evaluation	Tue 10/1/13	Fri 6/27/14
124	Design/Engineering	Tue 10/1/13	Tue 6/30/15
125	Environmental Documentation	Wed 7/2/14	Tue 6/30/15
126	**Other Costs**	**Tue 10/1/13**	**Tue 6/30/15**
127	Performance Monitoring Plan (PMP)	Tue 10/1/13	Fri 2/28/14
128	Budgetary Impact Reports	Thu 1/1/15	Tue 6/30/15
129			

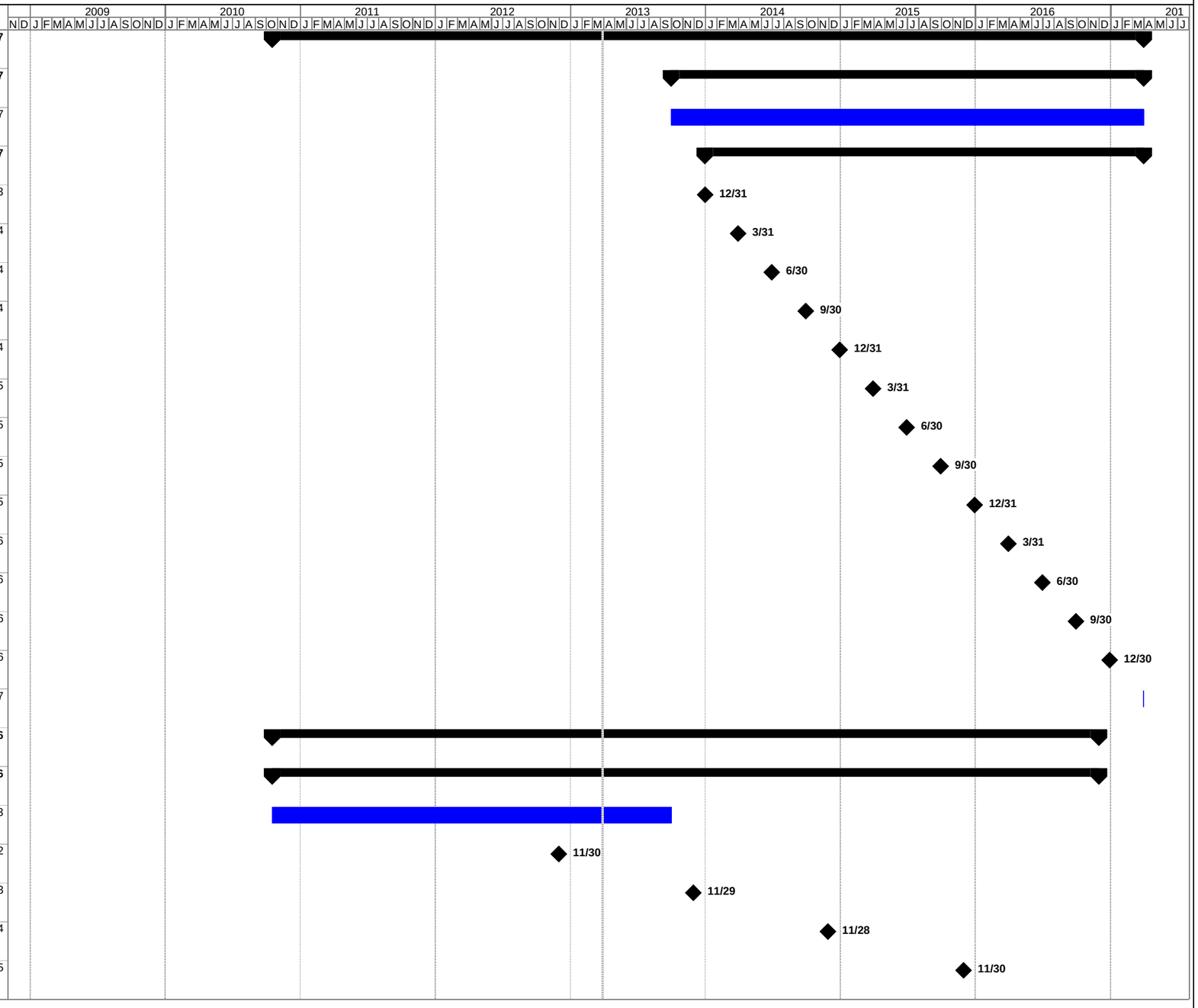


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
130	**SCVSD1 - Automatic Water Softener Rebate and Public Outreach Program, Enforce**	**Mon 10/18/10**	**Fri 3/31/17**
131	**Direct Project Administration**	**Tue 10/1/13**	**Fri 3/31/17**
132	Administration	Tue 10/1/13	Fri 3/31/17
133	**Reporting**	**Tue 12/31/13**	**Fri 3/31/17**
134	Quarterly Report	Tue 12/31/13	Tue 12/31/13
135	Quarterly Report	Mon 3/31/14	Mon 3/31/14
136	Quarterly Report	Mon 6/30/14	Mon 6/30/14
137	Quarterly Report	Tue 9/30/14	Tue 9/30/14
138	Quarterly Report	Wed 12/31/14	Wed 12/31/14
139	Quarterly Report	Tue 3/31/15	Tue 3/31/15
140	Quarterly Report	Tue 6/30/15	Tue 6/30/15
141	Quarterly Report	Wed 9/30/15	Wed 9/30/15
142	Quarterly Report	Thu 12/31/15	Thu 12/31/15
143	Quarterly Report	Thu 3/31/16	Thu 3/31/16
144	Quarterly Report	Thu 6/30/16	Thu 6/30/16
145	Quarterly Report	Fri 9/30/16	Fri 9/30/16
146	Quarterly Report	Fri 12/30/16	Fri 12/30/16
147	Final Report Project Completion	Fri 3/31/17	Fri 3/31/17
148	**Planning/Design/Engineering/Environmental Documentation**	**Mon 10/18/10**	**Wed 11/30/16**
149	**Assessment and Evaluation**	**Mon 10/18/10**	**Wed 11/30/16**
150	Annual Chloride Source Public Outreach Plan	Mon 10/18/10	Tue 10/1/13
151	2012 Annual Chloride Source Public Outreach Plan	Fri 11/30/12	Fri 11/30/12
152	Submit Annual Chloride Source Public Outreach Plan	Fri 11/29/13	Fri 11/29/13
153	Submit Annual Chloride Source Public Outreach Plan	Fri 11/28/14	Fri 11/28/14
154	Submit Annual Chloride Source Public Outreach Plan	Mon 11/30/15	Mon 11/30/15

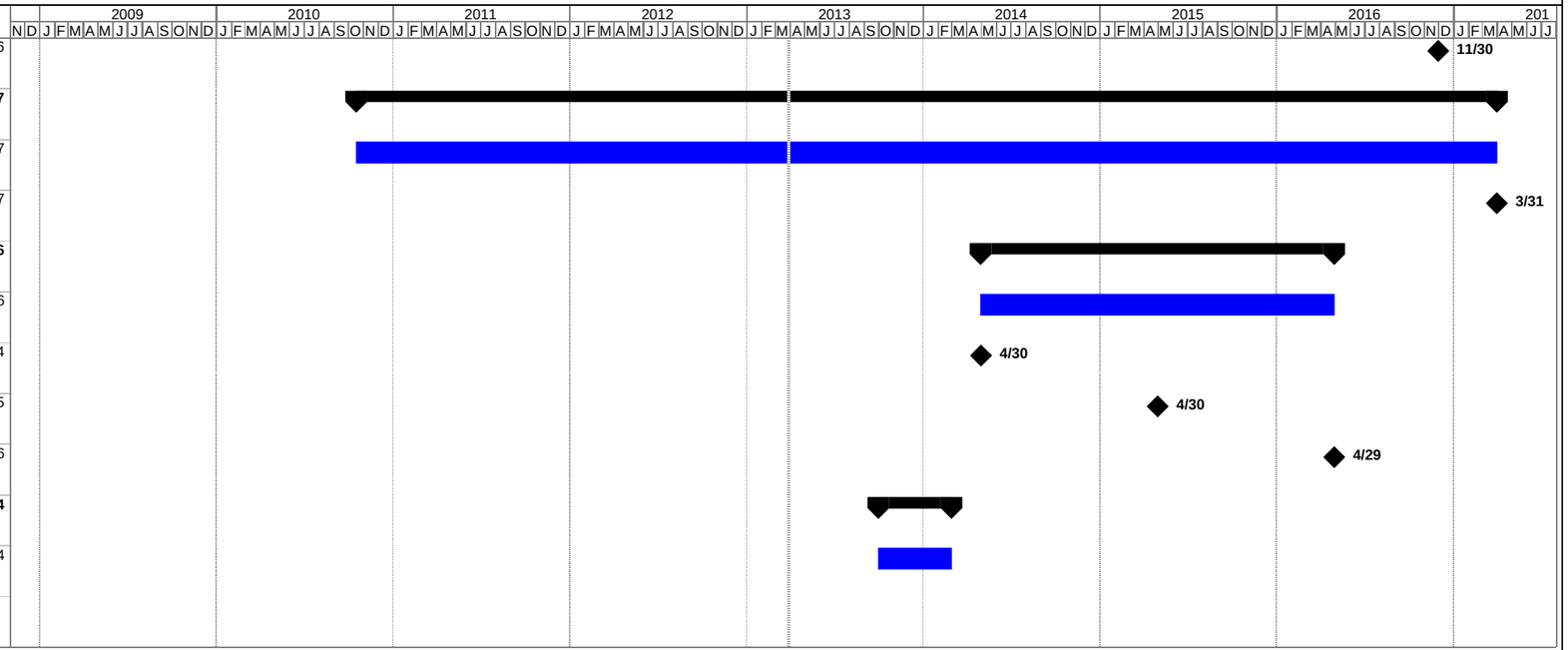


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
155	Submit Annual Chloride Source Public Outreach Plan	Wed 11/30/16	Wed 11/30/16
156	**Construction/Implementation**	**Mon 10/18/10**	**Fri 3/31/17**
157	SCVSD Program Implementation	Mon 10/18/10	Fri 3/31/17
158	Final Implementation Summary Report	Fri 3/31/17	Fri 3/31/17
159	**Environmental Compliance/Mitigation/Enhancement**	**Wed 4/30/14**	**Fri 4/29/16**
160	Submit Saugus and Valencia WRPs Annual Monitoring Reports to the Regional	Wed 4/30/14	Fri 4/29/16
161	Submit Annual WRPs Report to Regional Board	Wed 4/30/14	Wed 4/30/14
162	Submit Annual WRPs Report to Regional Board	Thu 4/30/15	Thu 4/30/15
163	Submit Annual WRPs Report to Regional Board	Fri 4/29/16	Fri 4/29/16
164	**Other Costs**	**Tue 10/1/13**	**Fri 2/28/14**
165	Performance Monitoring Plan (PMP)	Tue 10/1/13	Fri 2/28/14
166			

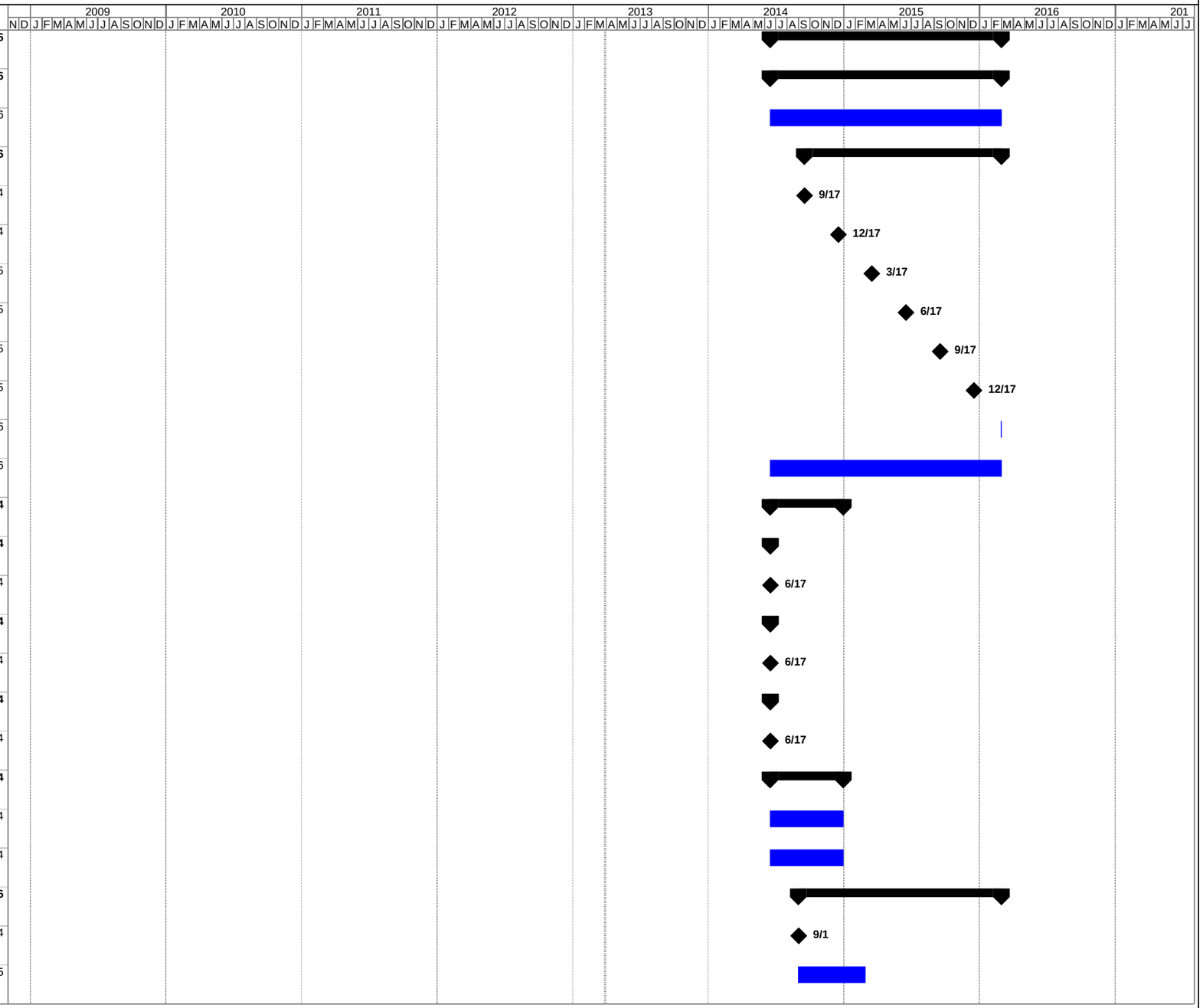


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
167	**SC1/BCN1 - UCSR Arundo/Tamarisk Removal Program (SCARP) Implementation**	**Tue 6/17/14**	**Mon 2/29/16**
168	**Direct Project Administration**	**Tue 6/17/14**	**Mon 2/29/16**
169	Administration	Tue 6/17/14	Mon 2/29/16
170	**Reporting**	**Wed 9/17/14**	**Mon 2/29/16**
171	Quarterly Report	Wed 9/17/14	Wed 9/17/14
172	Quarterly Report	Wed 12/17/14	Wed 12/17/14
173	Quarterly Report	Tue 3/17/15	Tue 3/17/15
174	Quarterly Report	Wed 6/17/15	Wed 6/17/15
175	Quarterly Report	Thu 9/17/15	Thu 9/17/15
176	Quarterly Report	Thu 12/17/15	Thu 12/17/15
177	Final Report Project Completion	Mon 2/29/16	Mon 2/29/16
178	**Labor Compliance Program**	Tue 6/17/14	Mon 2/29/16
179	**Planning/Design/Engineering/Environmental Documentation**	**Tue 6/17/14**	**Tue 12/30/14**
180	**Assessment and Evaluation**	**Tue 6/17/14**	**Tue 6/17/14**
181	Preliminary Design Report - Completed	Tue 6/17/14	Tue 6/17/14
182	**Design**	**Tue 6/17/14**	**Tue 6/17/14**
183	100% Complete	Tue 6/17/14	Tue 6/17/14
184	**Environmental Documentation**	**Tue 6/17/14**	**Tue 6/17/14**
185	CEQA Complete	Tue 6/17/14	Tue 6/17/14
186	**Permitting**	**Tue 6/17/14**	**Tue 12/30/14**
187	ACOE 404/RWQCB 401	Tue 6/17/14	Tue 12/30/14
188	CDFG	Tue 6/17/14	Tue 12/30/14
189	**Construction/Implementation**	**Mon 9/1/14**	**Mon 2/29/16**
190	Notice to Proceed	Mon 9/1/14	Mon 9/1/14
191	Construction Tasks 10.1 -10.2	Mon 9/1/14	Fri 2/27/15

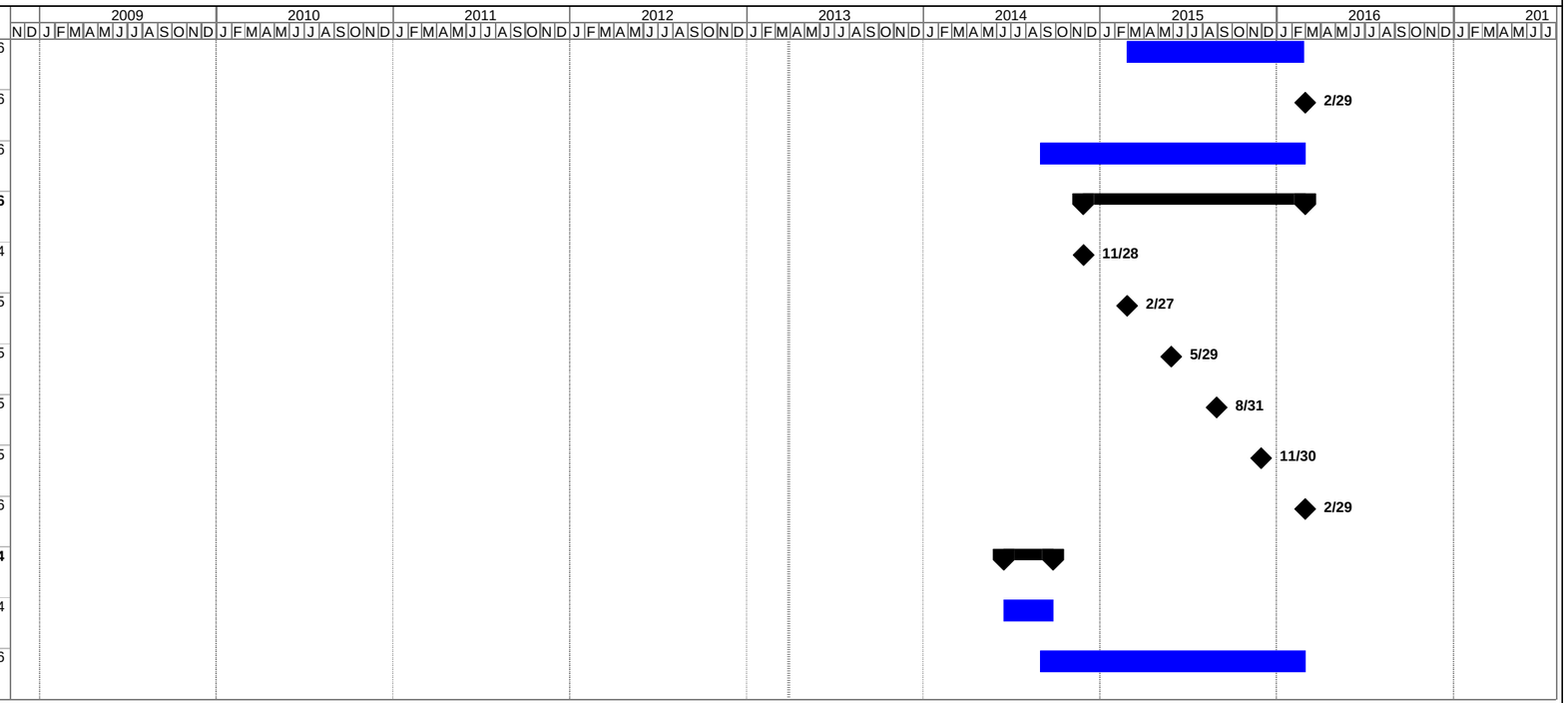


Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Table 5-1
USCR IRWM Plan Grant Application
Proposed Schedule

ID	Task Name	Start	Finish
192	Construction Task 10.3 - Manage Resprouts	Fri 2/27/15	Fri 2/26/16
193	Notice of Completion	Mon 2/29/16	Mon 2/29/16
194	**Environmental Compliance/Mitigation/Enhancement**	Mon 9/1/14	Mon 2/29/16
195	**Construction Administration**	**Fri 11/28/14**	**Mon 2/29/16**
196	Quarterly Construction Report	Fri 11/28/14	Fri 11/28/14
197	Quarterly Construction Report	Fri 2/27/15	Fri 2/27/15
198	Quarterly Construction Report	Fri 5/29/15	Fri 5/29/15
199	Quarterly Construction Report	Mon 8/31/15	Mon 8/31/15
200	Quarterly Construction Report	Mon 11/30/15	Mon 11/30/15
201	Final Construction Report	Mon 2/29/16	Mon 2/29/16
202	**Other Costs**	**Tue 6/17/14**	**Fri 9/26/14**
203	Performance Monitoring Plan (PMP)	Tue 6/17/14	Fri 9/26/14
204	**Construction Contingency**	Mon 9/1/14	Mon 2/29/16



Project: USCR IRWMP Grant Application
Date: Thu 3/28/13

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

Monitoring, Assessment, and Performance Measures

Project Name

Santa Clarita Valley (SCV) WUE Strategic Plan Programs (CLWA-3)

Project Overview

The SCV WUE Strategic Plan Programs (CLWA-3) Project identifies programs that will most effectively reduce per capita water use in the Santa Clarita Valley. The goal of the Project is to achieve a long-term reduction in water demand of at least 10 percent over the next 20 years. Newly passed State legislation, Senate Bill 7 of Special Extended Session 7 (SBX7-7), signed into law in November 2009, calls for progress towards a 20 percent reduction in per capita water use by 2020. This CLWA-3 Project will implement five programs identified in the SCV WUE Strategic Plan to help meet these goals.

The five programs being implemented by CLWA-3 are:

1. Santa Clarita Valley Large Landscape Audit and Incentive Program
2. Santa Clarita Valley Commercial, Industrial and Institutional (CII) Audit and Customized Incentive Program
3. Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program
4. High-Efficiency Clothes Washer (HECW) Machine Program
5. Cash for Grass Rebate Program

The programs have already had three successful years of implementation and now seek the expansion recommended in the Strategic Plan. Full project benefits will accrue beginning in 2015. At this time, water conservation resulting from the five programs will yield avoided SWP imports of 380 acre-feet per year (AFY).

Performance Measures

The primary goal of the SCV WUE Strategic Plan Programs (CLWA-3) is to reduce water demand by at least 10 percent over the next 20 years. Newly passed State water conservation requirements calls for progress towards a 20 percent reduction in per capita water use by 2020. The goal will in turn reduce runoff and improve water quality.

CLWA-3 will also help meet the Upper Santa Clara River (USCR) IRWM Plan's objectives of **reducing water demand** and **improving water quality**. This is accomplished by decreasing demand and the need to convey and treat imported water and by reducing runoff from irrigation to local channels.

By improving indoor and outdoor water use efficiency and conserving water, this Project will reduce water demand, avoid costs for purchase of imported water, increase water supply reliability for the CLWA customers, and improve operational flexibility for CLWA. The programs have already had three successful years of implementation and now seek the expansion recommended in the Strategic Plan.

The Project's water savings of 308 AFY will meet the IRWM Plan objective **Reduce Water Demand**, and measurable target of 10 percent reduction in projected urban water demand through the Region through implementation of water conservation measures.

The SCV WUE Strategic Plan Programs Project performance measures are summarized in Table 6-1 and include: reduced water demand; improved water supply reliability; improved water quality; public education on water conservation; reduced greenhouse gas emissions; and reduced wastewater treatment. The project will be implemented within the CLWA service area and a monitoring plan will be identified when the PMP is developed. Hence, specific monitoring locations are not shown on the detailed project map (Figure CLWA-3).

The SCV WUE Strategic Plan Programs Project will reduce dependence on imported water by reducing overall water demand that will otherwise be met with imported SWP water. The amount of imported water avoided as a result of the project is quantified as the reduction in water demand (in AFY) in comparison to previous years and is monitored through customer meters.

By decreasing the amount of water used for irrigation and indoor use, the SCV WUE Programs Strategic Plan Project results in an overall decrease in runoff caused by over-irrigation and thus the loading-rate of pollutants into groundwater. To **Improve Water Quality**, an IRWM Plan objective is measured as the decrease in runoff which is proportional to the reduction in irrigation demand resulting from the project. The reduction in indoor use decreases the total volume of effluent requiring treatment at local water reclamation plants.

This project will allow for an improvement of water quality by contributing to the reduction in the import of salts to the Basin. The improvement in water quality is the mass of salt that is not brought into the Basin and is measured as the avoided chloride treatment required by local wastewater treatment plant and the reduction in outdoor water demand multiplied by the concentration of salts.

By offsetting imported water demands with reduced water usage, the Project avoids emissions of CO_2 (a greenhouse gas) generated by transporting imported SWP water to the Valley and from hot water use associated with clothes washers. The long-distance transport of water in conveyance systems is a major element of California's total demand for electricity. In addition, CLWA-3 will also avoid energy use to heat water and associated CO_2 emissions through the HECW machine program. The reduction in CO_2 emissions is measured as the avoided import of SWP to the Region and the avoided energy use to heat water through the HECW machine program versus "without-project" condition improvements, assuming no WUE programs are completed. This is part of the performance measure and determines the reduction in energy requirements resulting from this project.

Water savings achieved through the HECW rebate program are the only savings attributable to indoor water use. In addition to preventing 82 AFY of SWP water from being imported, HECWs incentivized through this program will prevent the equivalent amount of water from passing through the Santa Clarita Valley Sanitation District, where it would be treated and then discharged into the Santa Clara River.

1. **Are the identified monitoring targets appropriate for the benefits?**

   Yes, the identified monitoring targets for the SCV WUE Strategic Plan Programs Project are appropriate for the identified benefits. The monitoring targets vary depending on the project and are logical for each of the various WUE Programs. For example, the monitoring target for the project goal of reducing the water demand is to verify/track the installation of the WBICs, record the number of rebates distributed for the HECW machines, and verify the square footage of turf removal. These verifications can then be used to calculate the estimated water savings and compare it to the measured water savings, discussed below.

2. **Will the measurement tools and methods effectively monitor project performance and target progress?**

   Yes, the proposed measurement tools and methods for the SCV WUE Strategic Plan Programs will effectively monitor project performance and target progress. The measurement tools as identified in Table 6-1, are straight-forward and easily obtainable. There are two types of measuring tools used for this project – the first a simple water meter comparison of before the project and after the project to determine the water savings from the project. The second measuring tool is an actual document record of (a) a rebate being used, (b) a nozzle being installed, or (c) turf being removed. Both measurement types are effective in monitoring the progress and performance of the SCV WUE Strategic Plan Programs Project.

3. **Is it feasible to meet the targets within the life of the project(s)?**

The feasibility and success of each of the Best Management Practices (BMPs) to be implemented by CLWA-3 is documented in the SCV WUE Strategic Plan, provided as Reference CLWA-3.1. The five selected programs have already had three successful years of implementation and now seek expansion consistent with the SCV WUE Strategic Plan. These conservation projects will be (or are already) underway regardless of this specific funding opportunity since they are an important part of helping the Region to achieve a balanced water portfolio, and are necessary in order to meet regulatory requirements affecting demand. Based on existing literature as well as documentation provided for this project, it is feasible for this project to meet the identified targets.

Table 6-1: Santa Clarita Valley (SCV) WUE Strategic Plan Programs (CLWA-3) Project Performance Measures

Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Reduce dependence on imported water and improve water supply reliability.	Decreased outdoor water use and overall water demand in the Region.	Reduction of water demand and water dependence by 380 AFY.	Quantification of the decrease in water demand compared to previous years.	Comparison of actual water usage vs. historical usage.
	Interest in utilization of 1,700 WBICs and 5,000 high-efficiency clothes washer (HECW) machines.	Distribution of 1,700 WBICs, 5,000 HECW machines.	Quantification of 1,700 WBICs and 5,000 HECW machines distributed.	Tracking/Monitoring of 1,700 WBICs installed and 5,000 HECW machine rebates distributed.
	Rebate 300,000 sq. ft. of turf removal.	300,000 sq. ft. of turf removal.	Quantification of rebates of 300,000 sq. ft. of turf removal.	Tracking/Monitoring for 300,000 sq. ft. of turf removal.
Improve Water Quality	Reduced import of chlorides into the Watershed.	Reduction in ~37 metric tons of chloride per year.	Monitoring chlorides concentrations in SWP water.	Part of standard monitoring data collected by CLWA.
Reduce landscape irrigation water use	Improved landscape irrigation efficiency. Reduced water demand.	Reduce landscape irrigation water use by 20 percent for program participants.	Volume of irrigation water saved as a result of the project.	Compare participating customers' water billing data before and after Program implementation.
Educate public on water conservation	Decreased outdoor water use and overall water demand in the Region.	Distribution of 1,700 WBICs, 5,000 HECW machines to manage water usage.	Quantification of increase in WBICs and HECW machines purchased.	Record number of WBICs and HECW machines purchased.
Reduced GHG emissions	Reduced emissions of CO_2.	Reduction in the emission of 210 metric tons of CO_2 per year.	Quantification of existing imported water use avoided as a result of the project.	Volume delivered to water customers per customer flow meters; comparison of actual water usage vs. historical usage.
Avoided Sanitation Treatment	Decreased volume of wastewater to be treated at water reclamation plants (WRPs).	Reduction of water demand and water dependence by 84 AFY.	Quantification of reduced wastewater treatment volume from indoor water use of HECW.	Volume delivered to SCVSD WRPs; comparison of actual wastewater volume vs. historical usage.

Table 6-1: Santa Clarita Valley (SCV) WUE Strategic Plan Programs (CLWA-3) Project Performance Measures (continued)

Monitoring System: CLWA will obtain water meter data for each targeted customer, as appropriate, from each of the participating agencies. In addition, the vendor selected to provide both customer audits and irrigation system adjustments/improvements will provide a report summarizing their installations for each customer as well as the aggregate for the program on a periodic basis. As part of the reporting task for this grant, collected data will be compiled and analyzed, and results will be used to assess progress toward project objectives, as described in Attachment 3 – Work Plan. The data will also be presented as part of the IRWM Grant quarterly and/or final report.

Data Management and Analyses: As discussed above, CLWA will use water meter and water purchase data from each participating agency and will also collect customer audit and irrigation system adjustments/improvements data by customer. Data will be maintained and conveyed in spreadsheets, hard-copy, and/or PDFs. Customer water meter data will be analyzed before and after the audit and adjustments/improvements have been conducted to assess water use reductions. Water meter data and lists of the irrigation adjustments/improvements that were implemented will also be reviewed to evaluate which measures may have been most effective at reducing water use.

Monitoring for IRWM Plan Goals and Objectives: The Data Management and Analyses findings will be compared against the goals and objectives of the USCR IRWM Plan, as denoted below:

- ☑ **Reduce water demand**
- ☑ **Improve Operational Efficiency**
- ☑ **Increase Water Supply**
- ☑ **Improve Water Quality**
- ☑ **Promote Resource Stewardship**

Project Name

Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

Project Overview

The elements identified in this program originate in SCWD's 2012 WUE Strategic Plan (SCWD Strategic Plan). The SCWD Strategic Plan was developed in July 2012 to identify, analyze and provide a roadmap for implementing programs that will allow SCWD to achieve its SBX7-7 requirements and reduce dependence on imported water sources. The SCWD Strategic Plan specifies ten water use efficiency incentive programs. Combining the implementation efforts with supporting outreach and education programs will allow SCWD to achieve its goals. SCWD-2 is requesting funding to implement three of the ten programs identified in the SCWD Strategic Plan: (1) High-Efficiency Irrigation Nozzle Distribution, (2) High-Efficiency Clothes Washer (HECW) Machine Rebate Program as part of the Residential and Commercial Rebate Program, and (3) Large Landscape Water Budgets. The first two programs are already being implemented and SCWD would like to expand these efforts based on their success to date and the recommendations made in their Strategic Plan. The large landscape program represents a new effort and the focus on irrigation, which is significant in inland communities. Full project benefits will accrue beginning in 2015. At this time, water conservation resulting from the three programs will yield avoided SWP imports of 156 AFY.

Performance Measures

The SCWD WUE Programs (SCWD-2) identifies programs that will reduce dependence on imported water sources and most effectively reduce per capita water use in the SCWD service area. This SCWD-2 Project implements three programs identified in the SCWD WUE Strategic Plan to help meet these goals.

SCWD-2 also helps meet the USCR IRWM Plan objectives of **reducing water demand** and **improving water quality**. This is accomplished by decreasing demand and the need to convey and treat imported water and by reducing runoff from irrigation to local channels.

By improving indoor and outdoor water use efficiency and conserving water, this Project reduces water demand, avoids costs for purchase of imported water, increases water supply reliability for the SCWD customers, and improves operational flexibility for SCWD. Two of the three programs have already had one successful year of implementation and now seek expansion consistent with the Strategic Plan. The third proposed program (Large Landscape Water Budgets) will begin in 2014 assuming grant funding.

The SCWD WUE Programs Project performance measures are summarized in Table 6-2 and include: improved water supply reliability; improved water quality; public education on water conservation; reduced greenhouse gas emissions; and reduced wastewater treatment. The project will be implemented within the SCWD service area and a monitoring plan will be identified when the PMP is developed. Hence, specific monitoring locations are not shown on the detailed project map (Figure SCWD-2).

The SCWD WUE Programs Project reduces dependence on imported water by reducing overall water demand that will otherwise be met with imported SWP water. The amount of imported water avoided as a result of the project is quantified as the reduction in water demand (in AFY) in comparison to previous years and will be monitored through customer meters.

By decreasing the amount of water used for irrigation and indoor use, the SCWD WUE Programs Project results in an overall decrease in runoff caused by over-irrigation and thus the loading-rate of pollutants into groundwater. To **Improve Water Quality**, an IRWM Plan objective is measured as the decrease in runoff which is proportional to the reduction in irrigation demand resulting from the project. The reduction in indoor use decreases the total volume of effluent requiring treatment at local water reclamation plants.

This project allows for an improvement of water quality by contributing to the reduction in the import of salts to the Basin. The improvement in water quality is the mass of salt that is not brought into the Basin and is measured as the avoided chloride treatment that is required by local wastewater treatment plant and the reduction in outdoor water demand multiplied by the concentration of salts.

By offsetting imported water demands with reduced water usage, the Project avoids emissions of CO_2 (a greenhouse gas) generated by transporting imported SWP water to the Valley and from hot water use associated with clothes washers. The long-distance transport of water in conveyance systems is a major element of California's total demand for electricity. In addition, SCWD-2 will also avoid energy use to heat water and associated CO_2 emissions through the HECW machine program. The reduction in CO_2 emissions is measured as the avoided import of SWP to the Region and the avoided energy use to heat water through the HECW machine program versus "without-project" condition improvements, assuming no WUE programs are completed. This is part of the performance measure and determines the reduction in energy requirements resulting from this project.

Water savings achieved through the HECW rebate program are the only savings attributable to indoor water use. In addition to preventing 22 AFY of SWP water from being imported, HECWs incentivized through this program will prevent the equivalent amount of water from passing through the Santa Clarita Valley Sanitation District, where it would be treated and then discharged into the Santa Clara River.

1. **Are the identified monitoring targets appropriate for the benefits?**

   Yes, the identified monitoring targets for the SCWD WUE Programs Project are appropriate for the identified benefits. The monitoring targets vary depending on the project and are logical for each of the various WUE Programs. For example, the monitoring target for the project goal of reducing the water demand is to verify the distribution of the rebate program for the high-efficiency washing machines, and large landscapes. These rebates can then be used to calculate the estimated water savings and compare it to the measured water savings, discussed below.

2. **Will the measurement tools and methods effectively monitor project performance and target progress?**

   Yes, the proposed measurement tools and methods for the SCWD WUE Programs Project will effectively monitor project performance and target progress. The measurement tools as identified in Table 6-2, are straight-forward and easily obtainable. There are two types of measuring tools used for this project – the first a simple water meter comparison of before the project and after the project to determine the water savings from the project. The second measuring tool is an actual document record of (a) a rebate being used or (b) a nozzle being distributed. Both measurement types are effective in monitoring the progress and performance of the SCWD WUE Programs Project.

3. **Is it feasible to meet the targets within the life of the project(s)?**

   The feasibility and success of each of the Best Management Practices (BMPs) to be implemented by SCWD-2 is documented in the 2012 SCWD WUE Strategic Plan, provided as Reference SCWD-2.1. Two of the three programs have already had one successful year of implementation and now seek expansion consistent with the Strategic Plan. These conservation projects will be (or are already) underway regardless of this specific funding opportunity since they are an important part of helping the Region to achieve a balanced water portfolio, and are necessary in order to meet regulatory requirements affecting demand. Based on existing literature as well as documentation provided for this project, it is feasible for this project to meet the identified targets.

Table 6-2: Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2) Project Performance Measures

Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Reduce dependence on imported water and improve water supply reliability.	Decreased water use and overall water demand in the Region.	Reduction of water demand and water dependence by 156 AFY.	Quantification of the decrease in water demand compared to previous years.	Comparison of actual water usage vs. historical usage.
	Interest in utilization of 15,000 High-Efficiency Irrigation Nozzles.	Distribution of 15,000 High-Efficiency Irrigation Nozzles.	Quantification of 15,000 High-Efficiency Irrigation Nozzles distributed.	Tracing/Monitoring of 15,000 High-Efficiency Irrigation Nozzles.
	Rebate 1,000 high-efficiency clothes washer (HECW) machines purchases and 20 large landscape sites for landscape modifications.	Distribution of 1,000 rebates for HECW machines and 20 rebates to large landscape sites.	Quantification of rebates to 1,000 rebates for HECW machines and 20 rebates to large landscape sites for modifications.	Record of rebates to 1,000 HECW machines and verification of 20 large landscape sites for modifications.
Improve Water Quality	Reduced import of chlorides into the Watershed.	Reduction in ~15 metric tons of chlorides per year.	Monitoring chlorides concentrations in SWP water.	Part of standard monitoring data collected by CLWA.
Reduce landscape irrigation water use	Improved landscape irrigation efficiency. Reduced water demand.	Reduce landscape irrigation water use by 20 percent for program participants.	Volume of irrigation water saved as a result of the project.	Compare participating customers' water billing data before and after Program implementation.
Educate public on water conservation	Decreased outdoor water use and overall water demand in the Region.	Distribution of 15,000 High-Efficiency Irrigation Nozzles to manage water usage.	Quantification of increase in High-Efficiency Irrigation Nozzles purchased.	Record number of High-Efficiency Irrigation Nozzles purchased.
Reduced GHG emissions	Reduced emissions of CO_2.	Reduction in the emission of 88 metric tons of CO_2 per year.	Quantification of existing imported water use avoided as a result of the project.	Volume delivered to water customers per customer flow meters; comparison of actual water usage vs. historical usage.
Avoided Sanitation Treatment	Decreased volume of wastewater to be treated at water reclamation plants (WRPs).	Reduction of water demand and water dependence by 22 AFY.	Quantification of reduced wastewater treatment volume from indoor water use of HECW	Volume delivered to SCVSD WRPs; comparison of actual wastewater volume vs. historical usage.

Table 6-2: Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2) Project Performance Measures (continued)

Monitoring System: SCWD will obtain water meter data for each targeted customer, as appropriate. In addition, the vendor selected to provide the large landscape irrigation system adjustments/improvements will provide a report summarizing their installations for each customer as well as the aggregate for the program on a periodic basis. As part of the reporting task for this grant, collected data will be compiled and analyzed, and results will be used to assess progress toward project objectives, as described in Attachment 3 – Work Plan. The data will also be presented as part of the IRWM Grant quarterly and/or final report.

Data Management and Analyses: As discussed above, SCWD will use water meter and water purchase data from their records and will also collect customer landscape irrigation system adjustments/improvements data by customer. Data will be maintained and conveyed in spreadsheets, hard-copy, and/or PDFs. Customer water meter data will be analyzed before and after the adjustments/improvements have been conducted to assess water use reductions. Water meter data and lists of the irrigation adjustments/improvements that were implemented will also be reviewed to evaluate which measures may have been most effective at reducing water use.

Monitoring for IRWM Plan Goals and Objectives: The Data Management and Analyses findings will be compared against the goals and objectives of the USCR IRWM Plan, as denoted below:

- ☑ **Reduce water demand**
- ☑ **Improve Operational Efficiency**
- ☑ **Increase Water Supply**
- ☑ **Improve Water Quality**
- ☑ **Promote Resource Stewardship**

Project Name

Foothill Feeder Connection (CLWA-8)

Project Overview

CLWA's Foothill Feeder Connection (CLWA-8) Project will provide initially 6 million gallons per day (MGD) of additional capacity to CLWA's potable water system (up to a maximum of 30 MGD additional capacity when the Rio Vista Water Treatment Plant (RVWTP) is expanded in the future), consequently improving operational efficiency and reliability. The project will replace the current connection, which is undersized for the recently expanded RVWTP, and thus allow CLWA to utilize the full treatment plant capacity. Also, the current connection was designed as a temporary structure so a permanent connection will also increase infrastructure reliability.

The Project conveys untreated surface water from the terminus of the State Water Project (SWP) - Castaic Lake - to the Metropolitan Water District's (MWD's) Jensen Water Filtration Treatment Plant (Jensen Plant) and the Foothill Feeder Connection to CLWA's 240-feet long, 42-inch diameter connection linked to CLWA's 102-inch raw water pipeline, which conveys water to CLWA's RVWTP. Approximately 200 feet of 48-inch piping from the Raw Water Pipeline to the existing Foothill Feeder will be required for the construction.

Performance Measures

The Foothill Feeder Connection (CLWA-8) Project performance measures are summarized in Table 6-3 and include: improved operational efficiency and reliability during seismic events and for emergency shutdowns and maintenance repairs.

The RVWTP's recent expansion was designed for a 60 MGD capacity, but the actual constructed capacity of the RVWTP is 66 MGD. Future expansion from its current 66 MGD treatment capacity is planned to 90 MGD as demand for treated water increase. CLWA has an agreement with MWD, provided as Reference CLWA-8.6, stating that CLWA requested construction of a service connection with a maximum capacity of 140 cfs (90 MGD) on MWD's Foothill Feeder pipeline. For this reason, the proposed capacity of the Foothill Feeder Connection (current capacity is 60 MGD) is 90 MGD to match the planned maximum capacity of the RVWTP.

The Foothill Feeder Connection (CLWA-8) Project will provide additional capacity to CLWA's potable water system allowing CLWA to improve operational efficiency and reliably meet consumers' demands. The Project allows for an increase of up to 30 MGD (33,600 AFY) of water delivery immediately for CLWA. The CLWA-8 Project is also necessary for any future expansions of the RVWTP, which are planned in the future.

1. **Are the identified monitoring targets appropriate for the benefits?**

   Yes, the identified monitoring targets for the Foothill Feeder Connection (CLWA-8) Project are appropriate for the identified benefits. There are only two monitoring targets for this project and both are simple. The first being the ability to delivery water to the RVWTP in volumes equal to the Plant's capacity and the second being no interruption of service due to MWD (the owner of the connection) needing to shutdown the existing feeder connection (as there currently is no backup or redundancy in the system for the connection) or if there was an earthquake and the existing connection did not withstand the seismic activity and shutdown. The existing feeder connection was built to be temporary and does not meet seismic standards.

2. **Will the measurement tools and methods effectively monitor project performance and target progress?**

   Yes, the proposed measurement tools and methods for the Foothill Feeder Connection (CLWA-8) Project will effectively monitor project performance and target progress. The measurement tools as identified in Table 6-3, are straight-forward and logical. The connection will have a flow meter

installed as part of its requirements that will allow constant monitoring of the amount of flow passing through the Foothill Feeder Connection (CLWA-8) Project. As a redundant measuring tool, there is an additional existing intake flow meter at the RVWTP that will record the flow passing into the WTP. Comparing these two flow meters will confirm that the Foothill Feeder Connection is adequately working. Therefore, all measurement tools are effective in monitoring the progress and performance of the Foothill Feeder Connection (CLWA-8) Project.

3. Is it feasible to meet the targets within the life of the project(s)?

There is no question that it is possible to meet the targets of this Project within the life of the Project. This is a straight forward engineering construction project. Once the connection is constructed, the targets will be met. There will be no waiting period to determine if the project will work; only construction is required and then the water can flow through the connection to the treatment plant. The Project will follow all the necessary protocols for constructing a project in this area including CEQA, permitting, etc. Thus, it is feasible to meet the targets within the life of the Proposal.

Table 6-3: Foothill Feeder Connection (CLWA-8) Project Performance Measures

Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Improve operational efficiency and reliability by providing additional capacity to CLWA's potable water system.	Add 6 million gallons per day (MGD) initially, of additional capacity to CLWA's potable water system (and up to a maximum of 30 MGD additional capacity when the Rio Vista Water Treatment Plant (RVWTP) is expanded in the future.	Ability to delivery water to the RVWTP in volumes equal to the Plant's capacity.	Capacity to deliver raw water to RVWTP.	Foothill Feeder Connection flow meter records and RVWTP intake flow meter and supervisory control and data acquisition (SCADA) system.
	Improve water supply reliability during seismic events.	No interruption of service.	Having a connection that meets current seismic standards.	Following major seismic event, no pipe leaks or ruptures, support structures intact, valves functional and electrical controls maintained.
	Redundancy and operational flexibility by retaining the original connection for backup should the new connection be shut down for maintenance or repair.	No interruption of service.	Continued operations during emergency shutdowns or maintenance repairs.	MWD does not request CLWA to shutdown the connection for repairs.

Monitoring System: CLWA will obtain data from the RVWTP intake flow meter, necessary SCADA data for daily operations, SWP import records, and MWD flow meter records. In addition, the contractor selected to construct the connection will provide a report summarizing their progress as well as the aggregate for the program on a periodic basis. As part of the reporting task for this grant, collected data will be compiled and analyzed, and results will be used to assess progress toward project objectives, as described in Attachment 3 – Work Plan. The data will also be presented as part of the IRWM Grant quarterly and/or final report.

Data Management and Analyses: As discussed above, CLWA will use the RVWTP intake flow meter data and any necessary SCADA data to determine how much flow has passed through the flow meter installed at the connection. Data will be maintained and conveyed in spreadsheets, hard-copy, and/or PDFs. Flow meter data will be analyzed before and after the connector is expanded to assess flow use increases.

Monitoring for IRWM Plan Goals and Objectives: The Data Management and Analyses findings will be compared against the goals and objectives of the USCR IRWM Plan, as denoted below:

☐ Reduce Water Demand
☑ **Improve Operational Efficiency**
☐ Increase Water Supply
☐ Improve Water Quality
☐ Promote Resource Stewardship

Project Name

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

Project Overview

This Project is designed to improve drinking water quality by reducing calcium carbonate hardness. The focus of the project is to alleviate the number one water quality customer complaint. Over the years, NCWD has received more customer complaints about hard water than any other type of water quality concern. It remains by the far the greatest number of customer complaints received by NCWD. Many customers attempt to alleviate the problems associated with hard water by installing costly point-of-use water softeners. Some of these softeners (automatic water softener (AWS) types) contribute chloride directly into the sewer, which in turn, ends up being discharged into the Santa Clara River. Source water treatment is a more cost-effective solution compared to point-of-use systems. In addition, the pellet softening technology has benefits over more traditional softening techniques such as ion exchange and reverse osmosis. For example, pellet softening requires less energy and creates a reusable by-product unlike the high-energy demands and "brine" waste that ion exchange and reverse osmosis treatments produce.

This project includes the first phase of the construction and implementation of the three phase treatment system. This Phase 1 effort consists of completing a water quality analysis for two of NCWD groundwater wells, establishing the treatment criteria and feasibility of pellet softening technology, determining the size of the treatment plant, treatment chemicals needed, and capital and operational cost estimates as well as conceptual design and an initial environmental study. The Phase 2 project (not part of this proposed grant project) completes the CEQA requirements for the project, engineering design of the pellet treatment plant, and public outreach to community for acceptance of the necessary rate increase for pre-softened water (Prop 218) and pellet usage. The Phase 3 project (not part of this proposed grant project) will complete the construction of the pellet treatment plant and initial start-up activities. Funding is being requested for Phase 1 only, which includes the engineering and planning associated with complete water quality analysis of NCWD Wells 12 and 13 to establish the treatment criteria and feasibility of pellet softening technology.

Performance Measures

The main goals of the Pellet Water Softening Treatment Plant Project are to:

1. Improve source water quality by reducing naturally occurring calcium water hardness.
2. Reduce water demand, because hard water contributes to the inefficiency of household appliances, increases the need for additional soaps and detergents, and contributes to the increased use of point-of-use treatment devices, all of which increase water use.
3. Reduce and/or eliminate the need for costly point-of-use water softening systems. Thereby reducing water demand if the water softening systems removed are AWS.
4. By reducing and/or eliminating the need for point-of-use softening devices, the amount of chloride being discharged into the sewer system would be reduced.

The Project will eventually result in the installation of a Pellet Water Softening Treatment Plant during a future phase (Phases 2 and 3) of the project.

The Project performance measures are summarized in Table 6-4 and include: completion of the planning and design of the project; and the technical studies supporting the feasibility of the project.

For Phase 1, performance measures for the Project will focus on completing the planning, design, and engineering tasks necessary to determine the feasibility of constructing the Pellet Water Softening Treatment Plant in order to proceed to Phases 2 and 3 and complete the project. Funding is requested for water quality analysis for two of NCWD groundwater wells, establishing the treatment criteria and feasibility of pellet softening technology, determining the size of the treatment plant, treatment chemicals needed, and capital and operational cost estimates as well as conceptual design and an initial environmental study.

Specific monitoring locations are not shown on the detailed project map (Figure NCWD-2).

1. **Are the identified monitoring targets appropriate for the benefits?**

   Yes, the identified monitoring targets for the Pellet Water Softening Treatment Plant Project are appropriate for the identified benefits. The monitoring targets are what is required by NCWD to consider the Project feasible (as determined through Phase 1 activities) to move to the next Phases for implementation (Phases 2 and 3). There are three of these targets: 1). A rate payer increase not above target of $5/month, 2). Treatment Plant will fit on selected site, and 3). Groundwater quality of wells suitable for pellet type treatment.

2. **Will the measurement tools and methods effectively monitor project performance and target progress?**

   Yes, the proposed measurement tools and methods for the Pellet Water Softening Treatment Plant Project will effectively monitor project performance and target progress. The measurement tools as identified in Table 6-4, are straight-forward and easily obtainable. There are two types of measuring tools used for this project – the first is the approval from the regulatory agencies after reviewing all of the necessary engineering studies and reports from Phase 1 required to move forward onto Phase 2 and Phase 3. The second is the support and approval from not just the regulatory agencies, but from the rate payers who will benefit from the project, and also be helping to fund the future phases of the project with rate increases. Both measurement types are effective in monitoring the progress and performance of the Pellet Water Softening Treatment Plant Project.

3. **Is it feasible to meet the targets within the life of the project(s)?**

   Yes, NCWD is committed to completing the planning and design of the Project within the timeframe of the Project and within the budget proposed. The Project is structured in a phased approach so that each phase can be implemented in an efficient and practical manner, well suited to the NCWD's financial capabilities and needs of the Project.

Table 6-4: Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2) Project Performance Measures

Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Completion of planning and engineering required for project	Issuance of permits required to move forward onto Phase 2 and Phase 3 of the project	Assurances from planning studies that feasibility of project is valid from 1). A rate payer point of view (cost not over $5/month target), 2). Plant will fit on selected site, and 3). Groundwater quality suitable for pellet type treatment.	Preparation of all necessary Engineering studies, reports, and plans to begin Phase 2.	Submittal and feedback from regulatory agencies and permits issued and support from rate payers indicating approval to move forward with project.

Monitoring System: NCWD will gather each of the planning studies and reports for this Phase as they are completed and evaluate whether the completion of the Project (future phases) is feasible. As part of the reporting task for this grant, collected data will be compiled and analyzed, and results will be used to assess progress toward project objectives, as described in Attachment 3 – Work Plan. The data will also be presented as part of the IRWM Grant quarterly and/or final report.

Data Management and Analyses: As discussed above, the monitoring of Phase 1 goals will be completed to determine feasibility of treatment using pellet softening using: 1) adequacy of selected site to fit the necessary treatment plant size, 2) increased costs to rate payer not over $5/month target, and 3) groundwater quality of wells suitable for pellet type treatment..

Monitoring for IRWM Plan Goals and Objectives: The Data Management and Analyses findings will be compared against the goals and objectives of the USCR IRWM Plan, as denoted below:

- ☐ Reduce water demand
- ☐ Improve Operational Efficiency
- ☐ Increase Water Supply
- ☑ **Improve Water Quality**
- ☐ Promote Resource Stewardship

Project Name

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Project Overview

This Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) builds on a ground breaking, nationally recognized multi-pronged pollution prevention approach by the Santa Clarita Valley Sanitation District (Sanitation District) to reduce chloride sources that has targeted all customer sectors, promoted innovation, spurred three local ordinances and more. These efforts were initiated in response to the development of the USCR Chloride Total Maximum Daily Load (TMDL),which requires the Sanitation District to reduce chloride levels in the discharges from its two water reclamation plants (WRPs). The Program will focus on removing the remaining automatic water softeners in the Santa Clarita Valley through a combination of activities including: home inspections, issuing Notices of Violations to residents that still have their automatic water softeners, issuing rebates to residents that remove their automatic water softeners, chloride monitoring, and public outreach. The goal of the Program is to remove all remaining automatic water softeners in the Sanitation District's service area. The multi-faceted effort is expected to achieve an additional reduction in the chloride discharged from the WRPs of up to 5 milligrams/liter (mg/L), keep awareness of the chloride problem high in the community and prevent backsliding (residents installing and/or using illegal automatic water softeners), minimize the size of future chloride compliance facilities and help the Sanitation District comply with the USCR chloride TMDL.

The Sanitation District operates two WRPs in the Santa Clarita Valley, the Saugus and Valencia WRPs, which discharge tertiary treated wastewater into the Upper Santa Clara River (USCR). The effluent from the WRPs contains chloride in excess of the water quality objective set by the Los Angeles Regional Water Quality Control Board (RWQCB) for the USCR of 100 mg/L. In 2002, the Los Angeles RWQCB first began development of the USCR Chloride TMDL, which was subsequently revised most recently under RWQCB Resolution No. R4-2008-012, to require the Sanitation District to reduce chloride levels in the discharges from the WRPs.

Performance Measures

The Sanitation District's goal is to remove all remaining automatic water softeners in the Sanitation District's service area in order to achieve a reduction in the chloride discharged from the Saugus and Valencia WRPs of up to 5 mg/L. In addition, the publicity associated with this program is expected to prevent backsliding (residents installing and/or using illegal automatic water softeners) by keeping awareness of the chloride problem high in the community. Reducing the chloride load in the Sanitation District's WRP discharges to the river from the remaining automatic water softeners will also minimize the size of future chloride compliance facilities and help the Sanitation District comply with the USCR chloride TMDL.

1. **Are the identified monitoring targets appropriate for the benefits?**

   Yes, the identified monitoring targets for the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) are appropriate for the identified benefits. The Sanitation District has been implementing various phases of this program for multiple years and the program appears to be working well. Therefore, the monitoring targets that the Sanitation District has identified based on their experience are appropriate for the benefits.

2. **Will the measurement tools and methods effectively monitor project performance and target progress?**

   Yes, the proposed measurement tools and methods for the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) will effectively monitor program performance and target progress. The Sanitation District has already complied with the Regional Board's monitoring requirements with the annual progress report required under the USCR Chloride TMDL Implementation Plan, Task 3. Their measurement tools and methods (as detailed in Reference SCVSD-1.1) have proven effective to date for monitoring progress. The Sanitation District will

continue collection of data on industrial user chloride concentrations and flowrates, industrial user self-monitoring of chloride concentrations, quantification of commercial user flowrates, tracking of treatment plant sodium hypochlorite use, tracking of volumes of wastes accepted at the Saugus Liquid Waste Disposal Station, collection of groundwater and SWP water chloride data from local water purveyors, and monitoring of chloride concentrations and flowrates at the Saugus and Valencia WRPs. The Sanitation District will also continue to conduct influent chloride studies at Saugus and Valencia WRPs and evaluate ways to improve chloride source estimates.

3. Is it feasible to meet the targets within the life of the project(s)?

The identified targets in Table 6-5 can be achieved within the life of the Program. The Sanitation District has already removed 7,763 automatic water softeners and the chloride level in the effluent at the WRPs has dropped dramatically. According to Reference SCVSD-1.1, the estimated chloride loading from self-regenerating water softeners (SRWS) peaked in 2003/2004 at about 9,000 pounds per day, representing 59 mg/L in the system effluent for the Saugus and Valencia WRPs. This coincided with enactment of the prohibition on installation of SRWS in the Sanitation District in 2003. The SRWS contribution maintained a downward trend in 2011, as the Automatic Water Softener Rebate Program Phase II, Ordinance, Ordinance Enforcement Program, and community-wide public outreach efforts convinced residents to remove existing SRWS. In 2011, the estimated chloride loading from SRWS was approximately 993 pounds per day, representing about 6 mg/L in the system effluent. Therefore, removing the SRWS has dropped the chloride levels associated with residential automatic water softeners from 59 mg/ L to approximately 6 mg/ L over the course of seven to eight years. The targets for this program are expected to be met within the life of the program.

Table 6-5: Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) Performance Measures

Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Improve water quality	Reduction in chloride discharged to the Santa Clara River by Saugus and Valencia Water Reclamation Plants (WRPs).	Achieve a reduction in the chloride discharged from the Saugus and Valencia WRPs by up to 5 mg/L.	Reduction in chloride discharged to the Santa Clara River by Saugus and Valencia Water Reclamation Plants (WRPs).	Sampling and monitoring currently being completed on the final effluent from the Saugus and Valencia WRPs by SCVSD (as detailed in Reference SCVSD-1.1)
		Remove 500 residential automatic water softeners (AWS).	Reduction in the number of residential AWS.	Number of AWS removed that have been verified by the Sanitation District.
		Rebates provided for removing residential AWS from households.	Reduction in the number of residential AWS.	Calculate the number of rebates issued.
		Approximately 7,000 home inspections conducted.	Reduction in the number of automatic water softeners.	Conduct approximately 7,000 home inspections.
Reduction in water waste/flushing by AWS.	Reduce waste of water.	Remove 500 automatic water softeners.	Literature on water waste by AWS.	Verified number of AWS removed.
Maintain improved water quality	Prevent backsliding (reinstallation of removed AWS).	No meaningful increase in estimated chloride concentration from residential AWS.	Maintenance or reduction in the number of AWS.	Residential AWS chloride concentration estimated in the annual Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan.
Reduce GHG	Reduced emissions of CO_2.	Reduction in the emission of 994 metric tons of CO_2 per year through reduction in size of future chloride treatment plant..	Quantification of size reduction in future chloride compliance facilities that otherwise are required to remove chloride from the WRP discharges.	Documented methods of measuring reduction in GHG.

Monitoring System: SCVSD will continue to monitor the effluent at the Saugus and Valencia WRPs for chloride. In addition, the Regional Board requires the Sanitation District to provide an annual report on the update of chloride sources, which will be used to assess the progress toward the objectives. As part of the reporting task for this grant, collected data will be compiled and analyzed, and results will be used to assess progress toward project objectives, as described in Attachment 3 – Work Plan. The data will also be presented as part of the IRWM Grant quarterly and/or final report.

Data Management and Analyses: As discussed above, SCVSD will continue to monitor the effluent at the Saugus and Valencia WRPs for chloride. Data will be maintained and conveyed in spreadsheets, hard-copy, and/or PDFs. Monitoring data will be analyzed at regular time intervals to assess chloride reductions.

Monitoring for IRWM Plan Goals and Objectives: The Data Management and Analyses findings will be compared against the goals and objectives of the USCR IRWM Plan, as denoted below:

- ☑ **Reduce water demand**
- ☐ Improve Operational Efficiency
- ☐ Increase Water Supply
- ☑ **Improve Water Quality**
- ☑ **Promote Resource Stewardship**

Project Name

Upper Santa Clara River (USCR) Arundo/Tamarisk Removal Program (SCARP) Implementation (SC 1/BCN-1)

Project Overview

The USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC 1/BCN-1) Project is the implementation of site specific arundo and tamarisk removal projects within the City of Santa Clarita and portions in the USCR watershed of Los Angeles County along the San Francisquito Creek and the Bouquet Canyon Creek (both tributaries to the Santa Clara River). One of the areas is a three acre site that is highly visible along Central Park that can demonstrate a natural resource management project to the public, improve habitat, and increase surface water. Due to the nature of arundo and tamarisk, it is necessary to undertake removal and restoration of these invasive plant species, some of which have colonized in large extents in the USCR watershed, to prevent "re-seeding" of the noxious weed in the lower river reaches.

Performance Measures

The goals of this project are at minimum to successfully eradicate arundo and tamarisk from within the specific sites described in the work plan. The USCR Arundo/Tamarisk Removal Program (SCARP) Implementation Project will result in increased river flows via elimination of water loss from evapotranspiration as arundo consumes almost three times the amount of water used by native species, and studies of arundo in the Santa Clara River have shown transpiration of about 10 acre-feet per acre. One adult tamarisk tree can consume approximately four acre-feet of groundwater annually. With an assumed restoration of approximately 42 acres of arundo to be removed from the two tributaries of the Santa Clara River, Bouquet Canyon Creek and San Francisquito Creek, the project will save at least 840 AFY. The project meets the IRWM Plan objective to **Promote Resource Stewardship** and will contribute to the target of reducing invasive species to 40 percent or less cover of the understory and canopy in years 1 to 5. The Project's water savings will help to meet the IRWM Plan objective **Reduce Water Demand** and will be applied to the measurable target to reduce overall water demand by 20 percent throughout the region by 2020.

The USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC 1/BCN-1) Project Performance Measures are summarized in Table 6-6 and include: eliminating arundo and tamarisk from the two tributaries of the Santa Clara River, Bouquet Canyon Creek and San Francisquito Creek upper; improved water quality within the River; and prevention of future reinfestations of the invasive species.

The project sites will be frequently monitored to ensure that any changes, such as additional arundo resprouts, will be treated in a timely manner. Previous restoration efforts have shown that this after treatment monitoring and maintenance program is essential to the success of the restoration effort. The monitoring and maintenance program is backed by the Santa Clara River Invasive Weeds Task Force (Task Force) and funded through an endowment that the US Fish and Wildlife Service developed specifically to fund-long term management of previously cut arundo infestation areas. The City of Santa Clarita has been in discussions with US Fish and Wildlife Service to continue the life of this program. Potential monitoring locations are shown on the detailed project map, Figure SC-1/ BCN-1.

1. **Are the identified monitoring targets appropriate for the benefits?**

   Yes, the identified monitoring targets for the USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC 1/BCN-1) Project are appropriate for the identified benefits. The monitoring targets are very clear cut for this project; either there is 100% removal of arundo/tamerisk or not. This also applies to the reinfestation target of *Zero reinfestation for five consecutive years during monitoring*. These targets are being used on a similar project that is being funded in a different location on the Santa Clara River and they are working adequately.

2. **Will the measurement tools and methods effectively monitor project performance and target progress?**

Yes, the proposed measurement tools and methods for the USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC 1/BCN-1) Project will effectively monitor project performance and target progress. The measurement tools as identified in Table 6-6 are direct observation and routine sampling of the Santa Clara River to be completed by the City of Santa Clarita. As long as proper documentation and protocols are followed, the measuring tools for this project should be effective in monitoring performance and progress for the Project.

3. **Is it Feasible to Meet the Targets within the Life of the Proposal?**

The identified targets in Table 6-6 can be achieved within the life of the Project. Restoration efforts at the City of Santa Clarita's 297-acre site were first implemented in 2006 and 75 acres of arundo and tamarisk were successfully removed. A lapse in funding resulted in a hold on the project, however it did allow for gauging how much restoration could be done with what funds and with what resources. Given the commitment to post eradication monitoring, it is with high certainty that the targets are feasible.

Table 6-6: USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1) Project Performance Measures

Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Remove high water consuming invasive plants.	Reduce water use by invasive plants.	Save 840 AFY of water.	Scientific studies on water use by arundo.	Measurement of arundo acreage removed.
Eliminate Arundo from two tributaries of the upper Santa Clara River; Bouquet Canyon Creek and San Francisquito Creek.	Complete eradication from project area sites.	Removal of 42 acres arundo and 100 percent eradication of Arundo from project area sites.	Percent decrease in Arundo cover.	Direct observation and monitoring records of the Task Force and US Fish and Wildlife Service.
Eliminate Tamarisk from two tributaries of the upper Santa Clara River; Bouquet Canyon Creek and San Francisquito Creek.	Complete eradication from project area sites.	100 percent eradication of Tamarisk from the project area sites.	Percent decrease in Tamarisk cover.	Direct observation and monitoring records of the Task Force and US Fish and Wildlife Service.
Reduced GHG emissions	Reduced emissions of CO_2.	Reduction in the emission of 214 metric tons of CO_2 per year.	Quantification of existing imported water use avoided as a result of the project.	Volume delivered to water customers per customer flow meters; comparison of actual water usage vs. historical usage.
Improve Santa Clara River Water Quality	Reduced import of chlorides into the Watershed.	Reduction in ~41 metric tons of chloride per year.	Monitoring chlorides concentrations in SWP water.	Part of standard monitoring data collected by CLWA.
Prevent reinfestation of Arundo and Tamarisk.	Five years of continuous monitoring with zero infestations.	Zero reinfestation for five consecutive years during monitoring.	Percent recurrence with observed transition to pre-infestation conditions.	Direct observation and monitoring records of the Task Force and US Fish and Wildlife Service.

Monitoring System: City of Santa Clarita will complete direct observation and monitoring records on the progress of the project. In addition, the contractor selected to implement the project will provide a report to summarize their removal process at each site as well as the aggregate for the program on a periodic basis. As part of the reporting task for this grant, collected data will be compiled and analyzed, and results will be used to assess progress toward project objectives, as described in Attachment 3 – Work Plan. The data will also be presented as part of the IRWM Grant quarterly and/or final report.

Data Management and Analyses: As discussed above, City of Santa Clarita will complete direct observation and monitoring records on the progress of the project. In addition, the contractor selected to implement the project will provide a report to summarizing their removal process at each site as well as the aggregate for the program on a periodic basis. Data will be maintained and conveyed in spreadsheets, hard-copy, and/or PDFs.

Monitoring for IRWM Plan Goals and Objectives: The Data Management and Analyses findings will be compared against the goals and objectives of the USCR IRWM Plan, as denoted below:

- ☑ **Reduce water demand**
- ☐ Improve Operational Efficiency
- ☑ **Increase Water Supply**
- ☑ **Improve Water Quality**
- ☑ **Promote Resource Stewardship**

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

Introduction

This attachment presents the technical justification for the Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan (SP) Programs Project (CLWA-3). A project abstract and general discussion of the without-project baseline are followed by a discussion of each physically quantified benefit, and a summary of physically quantified benefits claimed.

Project Abstract

The SCV WUE SP identifies several programs to achieve WUE goals for the Region. The proposed CLWA-3 Project focuses on the following five water conservation programs, four of which are currently being implemented and have been partially funded through a Round 1 Implementation Grant from DWR:

- Santa Clarita Valley Large Landscape Audit and Incentive Program

  This program offers $25 rebates to large dedicated irrigation sites for weather-based irrigation controllers (WBICs) at active sites, as well as $300 per acre-foot saved rebates for water-saving landscape modifications.

- Santa Clarita Valley Commercial, Industrial, and Institutional (CII) Audit and Customized Incentive Program

  This program offers WBIC and landscape modification rebates identical to those in the Large Landscape Audit and Incentive Program to CII customers within the SCV.

- Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program

  This program offers training workshops in classrooms, online, and in the field to both residents and landscape contractors in the valley. Recipients of the program learn about WUE, installing WBICs, hydrozoning, and high distribution uniformity. Recipients are also eligible for free WBICs, as well as free inspections after self-installation. This program has been modified from previous versions to include cheaper, more accessible online educational classes, and it focuses primarily on residential customers.

- High-Efficiency Clothes Washer (HECW) Machine Program

  This program offers $100 rebates to single- and multi-family residences for HECWs, with an additional $100 rebate per household available through retailers.

- Cash-for-Grass (C4G) Rebate Program

  This is a new program that uses Long Beach Water Department's "Lawn to Garden" program as a model. It creates an online application and online class during which residents are able to apply for turf-replacement funds and train in water-saving landscaping practices.

Each of these programs is currently being implemented, except for the C4G Rebate Program. Grant funding would cover a portion of implementation cost of all individual programs from October 1, 2013 to September 30, 2015.

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

Without-Project Baseline Conditions

The SCV is the fastest growing area in Northwest Los Angeles County because of an influx of both residential and commercial customers. Since 1980, water wholesalers have relied on additional imported water from the State Water Project (SWP) and other sources to supplement local groundwater supplies and recycled water (Kennedy/Jenks Consultants et al., 2011).

The Castaic Lake Water Agency (CLWA), the region's imported water wholesale, provides over half of the total potable water supply for Santa Clarita, in part by importing SWP water from the Sacramento-San Joaquin Delta (the Delta) and other sources. CLWA provides water to four retail suppliers in the SCV: Los Angeles County Waterworks #36, Newhall County Water District, Santa Clarita Water Division, and the Valencia Water Company. CLWA imports SWP water from the Delta to Castaic Lake through SWP facilities.

CLWA has a contractual SWP Table A amount of 95,200 acre-feet per year (AFY). However, the marginal source of SWP water for CLWA is the water purchased from the Buena Vista-Rosedale Rio-Bravo Water Districts (BV/RRB) in Kern County. CLWA typically receives part of Buena Vista's Kern River entitlements through exchange of BV/RRB's SWP supplies (Kennedy/Jenks Consultants et al., 2011).

Without the water conservation programs, CLWA will continue to import roughly 3,960 acre-feet (AF) of water over 14 years (total water savings achieved over the expected benefits lifetime of this project) to meet the water demands to be eliminated by this project. Without this project, the four retail water providers would continue to supply imported water to meet irrigation demands at approximately 1,700 residential landscaping sites proposed for irrigation efficiency hardware improvements and 300,000 ft^2 of residential turf slated for landscape modification. Eighty large landscaping sites and 20 CII sites projected for irrigation hardware and turf modification would also continue to use imported water from the retailers. In addition, retailers would continue to provide imported water to approximately 5,000 homes for use in non-HECWs.

Without this project, irrigation in excess of actual water requirements will continue. Runoff from inefficient urban irrigation systems increases the flow of pollutants such as pesticides, fertilizers, and bacteria through storm drains that eventually drain into the Santa Clara River. Additionally, water imports to meet current demand introduce additional chlorides into the watershed with import of SWP water.

Relationship of Project to Other Projects Included in the Proposal

There are two water conservation projects included in the Upper Santa Clara River grant proposal: this project (CLWA-3), based on the SCV WUE SP, is being implemented by CLWA, while another project (SCWD-2), based on the Santa Clarita Water Division's WUE SP, is being implemented by the Santa Clarita Water Division. The CLWA-3 and SCWD-2 are independent of each other in that neither program depends on the other to achieve water conservation benefits. However, the programs outlined in the CLWA-3 project are closely aligned with those identified in SCWD-2. Many of the programs share the same basic plan and are designed to achieve regional water goals.

Description of Expected Physical Benefits

- Water Supply

  Annual water savings of 380 AFY are expected as a result of the project, once peak annual benefits are achieved. This means that total water savings of 3,960 AF due to increased efficiency enables an equivalent reduction in imported water over the 14-year span during which this project achieves water savings benefits.

Annual sanitation treatment reductions of 82 AF are expected from indoor water use savings with the HECW rebate program. In total, the project will avoid wastewater treatment costs associated with approximately 990 AF wastewater influent to the Valencia and Saugus Water Reclamation Plants (WRPs).

- Water Quality

  Annual avoided chloride imports of 37 metric tons (MT) per year are expected as a result of the imported water savings from the project once the water conservation actions are fully implemented. The CLWA-3 project will prevent the introduction of a total of 384 MT of chlorides imported from outside the Region over the 14-year lifespan during which this project produces water quality benefits.

- Greenhouse Gas Reduction

  Annual carbon emission reductions of 179 MT and 31 MT are expected during peak benefit years from avoided SWP imports and HECW energy savings, respectively. These savings will prevent the release of 1,872 MT of carbon dioxide (CO_2) emissions from SWP water transportation and 377 MT of CO_2 emissions from outdated clothes washers over the lifespan of the program's benefits.

Each benefit is discussed in further detail below.

Benefit: Water Conservation Totaling 380 AFY

Water conservation incentivized through the CLWA-3 programs will save approximately 3,960 AF of water over the benefits lifetime of the project. This will allow CLWA to avoid importing an equivalent amount SWP water from the Delta. Because water efficiency benefits are realized as soon as controllers are installed, landscape is modified, and clothes washers are replaced, project benefits will accrue to beneficiaries beginning with project implementation (October 1, 2013 to September 30, 2015).

The Large Landscape and CII Incentive Programs both have expected benefits lifetimes of 10 years based on the lives of irrigation controllers (A&N Technical Services, 2008). The Landscape and Residential WBIC Program's benefits lifetime is similarly constrained by the 10-year lifespan of hardware (MWDOC, 2011). The C4G Program has an estimated water savings lifespan of 10 years based on the lives of the drought-resistant plants replacing turf (A&N Technical Services, 2008). Because benefits are phased in during the beginning of project implementation and benefits phase out at the end of the program lifetime, some benefits will accrue over a 12-year span for all of the above programs. Similarly, since HECWs have an estimated life of 12 years, benefits of this overall project will extend over 14 years, into 2026 (A&N Technical Services, 2008).

Project implementation costs are expected to be distributed evenly over the two-year project implementation period. Since project implementation will begin in the last quarter of 2013, some benefits will start to be realized that year. The following calendar year will include a full year of project implementation, resulting in additional benefits phasing in. The final calendar year of implementation, 2015, will see water conservation benefits reach the full annual amount as all programs are fully phased in.

The Large Landscape and CII Incentive Programs both have expected benefits lifetimes of 10 years based on the lives of irrigation controllers (A&N Technical Services, 2008). The Landscape and Residential WBIC Program's benefits lifetime is similarly constrained by the 10-year lifespan of hardware (MWDOC, 2011). The C4G Program has an estimated water savings lifespan of 10 years based on the lives of the drought-resistant plants replacing turf (A&N Technical Services, 2008). Because benefits are phased in during the beginning of project implementation and benefits phase out at the end of the program lifetime, some benefits will accrue over a 12-year span for all of the above programs. Similarly, since HECWs have an estimated life

of 12 years, benefits of this overall project will extend over 14 years, into 2026 (A&N Technical Services, 2008).

Background and Historical Conditions

According to 2006 customer profiles provided by all of the major water suppliers, single- and multi-family residences account for nearly two-thirds of all water use in Santa Clarita Valley, while dedicated landscape and CII sites comprise approximately 14% and 19% of water use respectively (A&N Technical Services, 2008). Residential and business outdoor water use combined makes up nearly 70% of all water use in the SCV.

Without-project Baseline Conditions

The four retail water suppliers compiled water use statistics between January 2007 and August 2012 for dedicated irrigation sites (both large landscape and CII sites) as well as single family residences. Large landscape and CII sites eligible for the project averaged approximately 6.1 AFY of water use per site, providing a total baseline water use of approximately 605 AFY (CLWA, 2013), which is projected to continue without water conservation incentivized through the CLWA-3 program. Without this project, 1,332 AF of water will continue to be used inefficiently at large landscape sites, and 33 AF of water will not be conserved at CII sites over the 12-year benefits lifespans of those specific programs.

Single-family residential water use data between 2007 and 2012 suggest that sites eligible for the Landscape Contractor Certification and WBIC Program will continue to use an average 1,088 AF annually without project implementation, and approximately 1,023 AF of water will not be conserved (CLWA, 2013).

The 300,000 ft^2 of residential turf eligible for replacement has a baseline water use of 40 AFY, and based on 2011–2012 non-HECW commercial data, households eligible for HECW rebates have an annual baseline water demand of approximately 162 AFY (CLWA, 2013). Baseline water use for both of these programs is projected to continue if WUE is not incentivized through the CLWA-3 project. Approximately 990 AF of water will not be conserved if the HECW program is not implemented, and 283 AF of water will not be saved if the C4G program is not instituted.

Methods Used to Estimate Benefits

Large Landscape and CII Audit and Incentive Programs

The SCV Large Landscape Audit and Incentive and CII Audit and Customized Incentive Programs will provide 40 rebates per year and 10 rebates per year, respectively, for WBIC installation and turf replacement over the two-year implementation period. Modifications require both a pre-inspection of existing controllers and an inspection of newly-installed WBICs, as well as an educational component to train recipients on use and expectations of WBICs.

According to an evaluation of Smart Timer rebates conducted by the Metropolitan Water District of Orange County, WBICs provide approximately 27.5% water savings over previous systems at dedicated irrigation sites (MWDOC, 2011). Based on customer data between January 2007 and August 2012, dedicated irrigation sites average 6.05 AFY of water use per site. Large landscape sites will therefore save approximately 16.6 AFY in 2013 and 83.2 AFY in 2014, and achieve maximum water savings of 133 AFY by 2015 (80 sites x 6.05 AFY per site x 27.5% savings). WBIC installation and turf replacement at large landscape sites will save approximately 1,332 AF of water over the assumed 12-year lifetime of the installations.

CII customers who install WBICs are expected to receive the same 27.5% reduction in water use that large landscape customers will achieve. CII sites will realize 4.2 AFY in total water savings in 2013 and 21 AFY in

2014, and achieve the maximum annual water savings benefit of 33 AFY by the end of project implementation in 2015 (20 sites x 6.05 AFY per site x 27.5% savings). This project will result in approximately 333 AF of water savings for CII customers over the entire assumed 10 years that the program produces benefits.

Landscape Contractor and Residential WBIC Program

The SCV Landscape Contractor Certification and WBIC Program will provide 850 free WBICs per year over two years to landscapers and (primarily) residents of the SCV who take classes on WBICs and general WUE principles. The program includes an inspection of newly installed WBICs and an opportunity for residents to ask further questions about the controllers and efficient irrigation practices.

Based on previous evaluation of smart controllers installed at residential sites, residents will see an approximate water savings of 9.4% per year (MWDOC, 2011). Residential customer data between January 2007 and August 2012 shows that average baseline water use is 0.64 AFY per household. WBICs will produce 13 AFY in water savings for all residential sites in 2013 and 64 AFY in 2014, and achieve the full water savings benefit of 102 AFY by 2015 (1,700 rebates x .64 AFY per site x 9.4% savings). The residential WBIC program will save approximately 1,023 AF of potable water over the assumed 10 years that the 1700 controllers incentivized through this program produce benefits.

High-efficiency Clothes Washer Program

The HECW Program will provide 2,500 $100 rebates per year of project implementation to single- and multi-family households who replace old washers with high-efficiency machines that have a water factor of 4.0 or less (that is, the ratio of gallons used to cubic feet of laundry is 4:1 or smaller). The SCWD retailer will provide an additional $100 rebate, for a total savings of $200 per household.

High-efficiency machines rebated in a similar 2012 HECW program averaged approximately 13.3 gallons per load (CLWA, 2013). According to clothes washer statistics analyzed by Vickers, non-high-efficiency machines use 27 gallons/load, and households average approximately 392 loads per household per year (Vickers, 2001). Based on these figures, installing high-efficiency machines will save approximately 5,375 gallons per household per year [(27 gallons per load – 13.3 gallons per load) x 392 loads per year]. This program will achieve approximately 10.3 AFY in water savings in 2013 and 52 AFY in savings in 2014, and achieve the maximum annual water savings benefit of 82.5 AFY by 2015 (5,000 machines x 5,375 gallons per year / 325,851 gallons per acre-foot). Replacing 5,000 clothes washers with high-efficiency machines will result in approximately 990 AF of water savings over the assumed 12-year total benefits lifetime of the HECWs.

Cash-for-Grass Rebate Program

The C4G Rebate Program will provide rebates of $\$1.50/ft^2$ for replacement of 300,000 ft^2 of residential turf with water-saving plants. The program uses an online class and online application process to train residents in basic water-saving practices and receive funds for replanting their landscapes.

This project assumes that rebates will incentivize residents to replace a mix of cool- and warm-season species turfgrass with low-water-use plants. Assuming a 71% irrigation efficiency from the AB 1881 Model Ordinance, and a crop coefficient of 0.7 for mixed turf from the AB 1881 Model Ordinance, results in approximately 12,898,732 gallons used to irrigate 300,000 ft^2 of turf (University of California Cooperative Extension, 2000). Replacing turf with low-water-use plants reduces the crop coefficient to 0.2 (University of California Cooperative Extension, 2000), requiring only 3,685,352 gallons to irrigate the same area. Replacing 300,000 ft^2 of mixed turf with low-water-use plants will provide approximately 3.5 AFY in water savings in 2013 and 17.7 AFY in 2014, and will achieve the maximum annual water savings benefit of

28.3 AFY by 2015. This rebate program will provide a total of approximately 283 AF in water savings over the assumed 10-year lifetime of the low-water-use plants.

Avoided Wastewater Treatment

Water savings achieved through the HECW rebate program are the only savings attributable to indoor water use. In addition to reducing imported water by 990 AF, HECWs installed through this program will prevent the equivalent amount of water from passing through the Santa Clarita Valley Sanitation District, where it would be treated and then discharged into the Santa Clara River.

Benefit Uncertainty

Actual savings over the life of the Large Landscape and CII WBICs and landscape modifications will likely be higher, as this estimate does not factor in water savings from the latter aspect of the program. Similarly, the estimate of benefits resulting from the Landscape Contractor and Residential WBIC Program are based solely on water savings from single-family residential WBICs, and do not include the potential benefits from landscaping contractors improving their WUE.

Landscape modifications rebated under the C4G program have an estimated benefits lifespan of 10 years. This appears to be a conservative estimate for the lifespan of native drought-resistant plants, in that some studies have assumed 15- to 20-year lifespans (e.g., Gregg et al., 1994; Addink, 2005), and savings will likely accrue to residents over a period longer than the 10 years assumed for this analysis.

New Facilities Required to Achieve Benefits

No new facilities or any expansion of current facilities are required in order to achieve water supply benefits for any of the CLWA-3 programs.

Potential Adverse Physical Effects

Approximately 733 acres of agriculture classified as irrigated cropland and improved pasture land are located along the Santa Clara River from Saugus WRP to the Los Angeles/Ventura County line (Southern California Association of Governments, 2008). The Saugus and Valencia WRPs contribute to flow in the Santa Clara River, which is a *supplemental* water source for this agricultural use. The Santa Clara River is ephemeral downstream of the treatment plants, until an upwelling far downstream in Ventura County forces groundwater to the surface (United Water Conservation District, 2012). The Santa Clara River downstream of the treatment plants is dry or nearly dry during most of the irrigation season. Therefore, surface water use is not counted on as a main source for agriculture.

Even if the water was being counted on as a main agricultural source, most of the decrease in effluent from the WRPs would be offset by the projected increase in influent volume to the plants that is projected into the future, leaving the net effluent volume similar to what it is projected under the without-project condition. Without the project, WRP discharge is projected to grow from 19.6 million gallons per day (mgd) in 2010 to 22.6 mgd in 2020 and 27.8 mgd in 2035 (Santa Clarita Valley Sanitation District, 2013). This growth in wastewater flow from 2010 to 2020 is 3 mgd, or approximately 3,300 AF total, or 330 AF per year, and is expected to continue at the same rate indefinitely. The water saved from CLWA-3 and SCWD-2 combined is 476 AF per year over an approximately 10-year period (380 AF per year from CLWA-3 and 88 AF per year from SCWD-2).

Considering that downstream agriculture takes only a small fraction of its total water use from surface flows, and that most of the reduction in effluent from both water conservation projects in this proposal will be offset

by the growth in influent volume projected over time, it is estimated that no harm to agricultural production downstream is likely, due to water conservation savings expected from these projects.

Summary of Benefit

Through five WUE programs, the SCV will reduce potable water consumption, and therefore imports of SWP water, by approximately 3,960 AF over the 14 years during which savings will be realized from this project. The Large Landscape and CII programs will provide 1,332 AF and 33 AF of this savings, respectively; the Landscape Contractor and Residential WBIC program will achieve 1,023 AF of this benefit; HECW rebates will provide 990 AF of savings, as well as the same amount in avoided wastewater treatment; and residential turf replacements through the C4G program will provide the remaining 283 AF of water savings. Total water savings is summarized in Table 7-1. Savings of AF of wastewater treatment from indoor water use conservation savings is shown in Table 7-2.

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3) **Type of Benefit Claimed: Avoided SWP Water Imports** **Measure of Benefit Claimed (Name of Units): Acre-Feet**			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2013	0	47	47
2014	0	237	237
2015	0	380	380
2016	0	380	380
2017	0	380	380
2018	0	380	380
2019	0	380	380
2020	0	380	380
2021	0	380	380
2022	0	380	380
2023	0	342	342
2024	0	194	194
2025	0	72	72
2026	0	31	31
Comments:			

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3) **Type of Benefit Claimed: Avoided Sanitation Treatment** **Measure of Benefit Claimed (Name of Units): Acre-Feet** **Additional Information About this Measure: savings due to indoor water conservation from high efficiency clothes washers**			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2013	-	10	10
2014	-	52	52
2015	-	82	82
2016	-	82	82
2017	-	82	82
2018	-	82	82
2019	-	82	82
2020	-	82	82
2021	-	82	82
2022	-	82	82
2023	-	82	82
2024	-	82	82
2025	-	72	72
2026	-	31	31
Comments:			

Benefit: Avoided Import of 37 MT per Year of Chlorides into the Watershed

Water conservation incentivized through the CLWA-3 programs will save approximately 3,960 AF of SWP imports over the 14-year benefits lifetime of the project. All of these savings will directly offset imported water, which is supplied through the SWP from the Delta. This reduction in nonlocal water will also reduce the introduction of approximately 385 MT of salts into the watershed over that same period..

Background and Historical Conditions

Some of the soils, surface water, and groundwater in the Upper Santa Clara River Watershed contain high levels of chloride. Primary sources of chlorides in surface water and groundwater include soil salinity, imported surface water (i.e., SWP supplies) and discharges from wastewater plants (i.e., Valencia and Saugus WRPs). Since the 1970s, growth in the SCV has increased the demand for water and led to chloride levels in treated effluent that exceeded the water quality objectives (WQOs) for chloride, and impair beneficial uses for agricultural supply, as well as groundwater recharge. To help address these factors, a total maximum daily load (TMDL) for chlorides has been established for the watershed.

Without-Project Conditions

Imported SWP water will contribute to the level of total dissolved solids, specifically chlorides, in the watershed. If the CLWA-3 project is not implemented, 3,960 AF of imported water containing will continue

to be imported over the 14-year span of benefits estimated for this project, as will approximately 384 MT of chlorides.

Methods Used to Estimate Benefits

A 2009 water quality table developed by the Metropolitan Water District of Southern California (Metropolitan, 2010) estimates that SWP water contains an average chloride concentration of 79 mg/L, or 0.097 MT/AFY.1, 2 This project avoids 380 AF of imported water use per year, and therefore avoids 37 MT of chloride imports per year (380 AFY * 0.097 MT/AFY). Because 3,960 AF of imported water will, through this project, be prevented from entering the watershed through irrigation, runoff, or wastewater discharge, the avoided imports will also prevent 384 MT of chlorides from entering the basin over the project lifetime.

Benefit Uncertainty

Chloride concentrations in SWP water vary both by year and by time of year. The chloride concentration in SWP water used for calculating avoided chloride imports is an average value. Actual chloride concentrations in any one year could be higher or lower than this value.

New Facilities Required to Achieve Benefits

No new facilities or any expansion of current facilities are required to achieve water quality benefits for any of the CLWA-3 programs.

Potential Adverse Physical Effects

There are no adverse physical effects that could potentially arise from the proposed project.

Summary of Benefit

Increasing WUE through the five programs will reduce the amount of salts and other undesirable nutrients that brought into the watershed, because the project will reduce water imports containing these substances. As is shown in Table 7-3, reducing the SWP imports by approximately 3,960 AF over the benefits lifespan of this project will prevent the introduction of roughly 384 MT of additional chlorides.

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)			
Type of Benefit Claimed: Avoided Chloride Imports			
Measure of Benefit Claimed (Name of Units): Metric Tons			
Additional Information About this Measure: Avoided SWP chloride imports			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2013	-	5	5
2014	-	23	23
2015	-	37	37

[1]. 1 acre-foot = 1,233,482 liters; 79 mg/L = 97,445,078 mg per acre-foot 0.097 MT per acre-foot.
[2]. This is the highest rolling average value at Metropolitan Water District of Southern California's Jensen Filtration Plant, which is the closest measurement point to CLWA for which data were available. Chloride concentrations in SWP water have ranged from about 28 mg/L to 128 mg/L over the past 30 years (LARWQCB, 2008).

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)			
Type of Benefit Claimed: Avoided Chloride Imports			
Measure of Benefit Claimed (Name of Units): Metric Tons			
Additional Information About this Measure: Avoided SWP chloride imports			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2016	-	37	37
2017	-	37	37
2018	-	37	37
2019	-	37	37
2020	-	37	37
2021	-	37	37
2022	-	37	37
2023	-	33	33
2024	-	19	19
2025	-	7	7
2026	-	3	3
Comments:			

Benefit: Avoided Annual CO_2 Emissions of 179 MT due to Avoided SWP Imports, and Avoided Annual CO_2 Emissions of 31 MT due to HECW Energy Savings

The CLWA-3 project will reduce energy consumption through reduced imports, and reduce residential energy demand for hot water in clothes washers. Switching from standard clothes washers to high-efficiency machines provides water savings, as well as the benefit of avoiding energy costs associated with heating the equivalent amount of saved water. The HECW program is the only program in CLWA-3 that provides reduced energy consumption through avoided water heating.

In addition to electricity saved directly through more efficient clothes washers, avoided water imports will save additional energy used to transport and treat water from the Delta.

Abating energy production associated with the transportation of imported water has the benefit of reducing CO_2 emissions. Similarly, energy saved through HECWs prevents the carbon emissions associated with unnecessary energy production.

Background and Historical Conditions

California depends on a variety of energy production sources, both in and out of state, to meet electricity demand. The SCV WUE SP outlines reducing water-related energy demand as a major regional goal, stating that it currently requires a “tremendous” amount of energy to produce and deliver enough water to meet demand (A&N Technical Services, 2008). The SCV WUE SP identifies reducing water-related energy demand as a major goal because of the large carbon footprint that the energy production creates.

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

Without-project Conditions

Without WUE improvements that could be achieved through the CLWA-3 project, approximately 5,762.1 megawatt hours (MWh) of electricity will be produced to transport 3,960 AF of SWP water to Castaic Lake, where it is stored for wholesale distribution. Additionally, residents will continue to use approximately 1,160.9 MWh of electricity to heat additional water for use in non-HECWs.

Without project implementation, approximately 1,873 MT of CO_2 will continue to be emitted through the energy produced for supplying and conveying SWP water to Castaic Lake over the benefits lifetime of the project. Over the same span, 377 MT of CO_2 emissions will be produced to heat water for use in non-HECWs if the HECW Rebate program is not employed.

Methods Used to Estimate Benefits

The Alliance for Water Efficiency estimates that switching to a HECW saves 0.0036 kilowatt hour (kWh)/gallon in electricity use (Alliance for Water Efficiency, 2011). Over the 12-year assumed lifetimes of residential HECWs rebated through this project, the HECW program will result in approximately 989.7 AF of water savings, providing approximately 1,160.9 MWh of total electricity savings for HECWs.

The California Energy Commission (CEC) estimates that transporting one acre-foot of water from the Delta to Castaic Lake requires 1.17 MWh of electricity (CEC, 2010), while CLWA estimates that an additional 0.285 MWh per acre-foot is required for treatment, for a total energy expenditure of 1.455 MWh per acre-foot for imported water. With approximately 3,960 AF of expected water savings, the equivalent reduction in SWP imports will save approximately 5,762 MWh of electricity over the 14-year benefit lifetime of the project.

Energy used to transport SWP water to Castaic Lake, where it is stored for wholesale purposes, comes from a variety of sources internal and external to the State of California, including coal-fired power plants and natural-gas plants. Based on 2011 CEC data (CEC, 2011), approximately 70% of electricity generation was produced by California power sources, while 10% was imported from the Pacific Northwest and 20% was imported form the Desert Southwest. Given emissions rates of 858.68 lbs/MWh, 819.21 lbs/MWh, and 1,191.35 lbs/MWh, respectively, for the electricity sources above (U.S. EPA, 2012), we use a weighted emissions rate of 780.513 lbs/MWh, or 0.35 MT per MWh. With 1.455 MWh of electricity required for transporting and treating 1 acre-foot of SWP water, roughly 0.509 MT of CO_2 is produced for every acre-foot of water that is transported from the Delta to Castaic Lake and subsequently treated. With an estimated water savings of 3,960 AF for the entire project, avoiding the equivalent amount of imported water will prevent approximately 1,873 MT of CO_2 emissions.

Reduced greenhouse emissions result from the HECW program as well. With approximately 1,161 MWh of electricity savings due to this particular program, and applying the U.S. Environmental Protection Agency (EPA) emissions rate identified above, roughly 377 MT of corresponding CO_2 emissions are also avoided.

Benefits Uncertainty

Energy required to heat water for residential washing machines varies depending on the number of loads per household, the type of high-efficiency washing machine purchased, and the individual machine settings used for each household. The estimate for energy consumption per gallon is based on participants' energy use from previous conservation programs (Alliance for Water Efficiency, 2011), which were subject to these same uncertainties, and is a standard estimate of household energy use that can be applied to the CLWA-3 project.

The projected carbon emissions benefit resulting from avoided water imports is subject to the same uncertainty as energy savings estimates. Any variation in the energy savings from avoided imports based on SWP water sources would have a direct impact on the amount of avoided carbon emissions.

New Facilities Required to Achieve Benefits

No new facilities or any expansion of current facilities are required to achieve energy conservation benefits for any of the CLWA-3 programs.

Potential Adverse Physical Effects

No adverse physical effects are expected to arise from the project.

Summary of Benefit

Energy conservation will save a total of 2,250 MT of CO_2 emissions over the 14-year benefits lifespan of the CLWA-3 project. As is shown in Table 7-4, the 5,762 MWh of energy saved through the avoided transportation of imported water will prevent approximately 1,873 MT of CO_2 emissions. Table 7-5 shows that 1,161 MWh of energy conserved by reducing hot water used by clothes washers will avoid another 377 MT of CO_2 emissions.

TABLE 7-4: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)			
Type of Benefit Claimed: Avoided CO_2 Emissions			
Measure of Benefit Claimed (Name of Units): Metric Tons			
Additional Information About this Measure: Avoided SWP water transportation emissions			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2013	0	24	24
2014	0	121	121
2015	0	193	193
2016	0	193	193
2017	0	193	193
2018	0	193	193
2019	0	193	193
2020	0	193	193
2021	0	193	193
2022	0	193	193
2023	0	174	174
2024	0	99	99
2025	0	37	37
2026	0	16	16
Comments:			

TABLE 7-5: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)			
Type of Benefit Claimed: Avoided CO_2 Emissions			
Measure of Benefit Claimed (Name of Units): Metric Tons			
Additional Information About this Measure: Avoided emissions from hot water use by clothes washers			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2013	-	4	4
2014	-	21	21
2015	-	34	34
2016	-	34	34
2017	-	34	34
2018	-	34	34
2019	-	34	34
2020	-	34	34
2021	-	34	34
2022	-	34	34
2023	-	34	34
2024	-	34	34
2025	-	30	30
2026	-	13	13
Comments:			

Summary of Annual Project Physical Benefits

Full project benefits will accrue beginning in 2015. At this time, water conservation resulting from the five programs will yield avoided SWP imports of 380 AFY and avoided wastewater treatment of 82 AF of water per year. Avoided water imports will result in 552 MWh/year in energy savings, and reduction in hot water demand due to HECWs will save 96,744 kWh/year. Energy savings from avoided transportation of imported water will prevent roughly 179 MT of carbons emissions each year, and avoided energy production due to HECW water savings will save approximately 31 MT of CO_2 emissions per year. Finally, avoiding 380 AFY of SWP imports will also prevent 37 MT of salts from infiltrating the Upper Santa Clarita River Watershed annually.

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Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

Introduction

This attachment presents the technical justification for the Santa Clarita Water Division (SCWD) Water Use Efficiency (WUE) Programs Project (SCWD-2). A project abstract and general discussion of the without-project baseline are followed by a discussion of each physically quantified benefit, and a summary of physically quantified benefits claimed.

Project Abstract

The SCWD WUE SP identifies 10 programs to achieve WUE goals for the SCWD's service area within Santa Clarita Valley (SCV). The proposed SCWD-2 Project focuses on the following three water conservation programs, two of which are currently being implemented:

- High-Efficiency Irrigation Nozzle Distribution

  This program will expand the existing FreeSprinklernozzles.com distribution website to offer a greater variety of high-efficiency irrigation nozzles to residential, commercial, industrial, and institutional (CII) customers.

- High-Efficiency Washing Machine Rebate Residential and Commercial Rebate Program, (the high-efficiency washing machine rebate portion only, due to SCWD staffing limitations)

  SCWD will expand an existing program, which incentivizes high-efficiency toilets and weather-based irrigation controllers, to include rebates for high-efficiency clothes washers (HECWs). Two other sub-programs incentivizing ultra-low flow and zero-water urinals have not been implemented previously, nor are they part of this expansion, due to staffing and monetary restrictions.

- Large Landscape Water Budgets

This is a new program that targets large landscaping sites with dedicated irrigation meters. The SCWD will educate customers and encourage water-saving practices specific to their landscaping sites.

Without-Project Baseline

SCWD is one of four water retailers in the SCV, providing 41% of all water supply to the SCV. The SCV is the fastest growing area in Northwest Los Angeles County because of an influx of both residential and commercial customers. Since 1980, water wholesalers have relied on additional imported water from the State Water Project (SWP) and other sources to supplement local groundwater supplies (Kennedy/Jenks Consultants et al., 2011). The Castaic Lake Water Agency (CLWA), a wholesale water agency, provides over half of the total potable water supply for Santa Clarita (including SCWD's service area), in part by importing SWP water from the Sacramento-San Joaquin Delta (the Delta) and other sources. CLWA imports SWP water from the Delta to Castaic Lake through SWP facilities.

CLWA has a contractual SWP Table A amount of 95,200 AFY. However, the marginal source of SWP water for CLWA is the water purchased from the Buena Vista-Rosedale Rio-Bravo Water Districts (BV/RRB) in Kern County. CLWA typically receives part of Buena Vista's Kern River entitlements through exchange of BV/RRB's SWP supplies (Kennedy/Jenks Consultants et al., 2011).

Without the SCWD-2 project, customers will continue to use 1,064 AF of potable water through inefficient landscape practices, irrigation nozzles, and clothes washers over the 14 years that these programs will realize water supply benefits. SCWD customers will therefore continue to import the same amount of water from the SWP through CLWA.

Without this project, SCWD will keep supplying imported water to meet irrigation demands at approximately 20 dedicated irrigation sites designated for landscape budgets and residential, CII parcels containing 30,000 inefficient nozzles. SCWD will also continue to provide imported water to 1,000 inefficient clothes washers, and the Santa Clarita Valley Sanitation District (SCVSD) will subsequently have to treat that water.

In addition to the water conservation that would not happen without the SCWD-2 programs, the continued import of SWP water will result in higher levels of energy production and carbon dioxide emissions.

Without this project, over-irrigation at residential and commercial sites will continue. Runoff from inefficient urban irrigation systems will continue to increase the flow of pollutants such as pesticides, fertilizers, and bacteria through storm drains that eventually drain into the Santa Clara River. Additionally, water imports to meet current demand introduce additional chlorides into the watershed.

Relationship of Project to Other Projects Included in the Proposal

There are two water conservation projects included in the Upper Santa Clara River grant proposal: this project (SCWD-2) based on the SCWD WUE Strategic Plan (SP) is being implemented by the SCWD, while another project (CLWA-3) based on the SCV WUE SP is being implemented by the Region's wholesaler, CLWA. The SCWD-2 and CLWA-3 projects are independent of each other in that neither program depends on the other to achieve water conservation benefits. However, the programs outlined in the SCWD-2 project are closely aligned with programs identified in CLWA-3. Many of the programs share the same basic plan and are designed to achieve regional water goals. Also, some of the programs build on each other so the consumer gets to take advantage of more incentives to conserve water. A good example is the high-efficiency washing machines programs, where both programs are contributing to the rebate program so the consumer gets a $200 rebate instead of a $100 rebate.

Description of Expected Physical Benefits

The following (quantifiable) physical benefits are expected from this project:

- Water Supply

  Annual water savings of 156 AFY[3] are expected as a result of this project, once benefits all programs are fully phased-in. This means that total water savings of 1,064 AF due to increased efficiency enables an equivalent reduction in imported water over the 14-year life of the programs' benefits.

  Annual wastewater treatment savings of 22 AF are expected from indoor water use savings from high-efficiency washing machines, once benefits from that program have been fully phased-in. Costs associated with approximately 264 AF of wastewater treatment will be avoided in SCVSD's facilities over the 14-year span of project benefits.

- Water Quality

  Annual avoided chloride imports of 15 metric tons (MT) per year are expected as a result of the imported water savings from the project once the water conservation measures are fully implemented. This will result in a reduction of 103 MT of chlorides imported from outside the Region over the 14-year lifespan of the programs' benefits.

- Greenhouse Gas Reduction

[3] Peak water savings, change in chloride loading avoided, and GHG reduction benefits are achieved from 2015 to 2017. Annual benefits are less in subsequent years, and vary depending on the lifetimes of projects and projected savings.

Annual reductions of 88 MT of carbon dioxide emissions are expected due to energy savings from avoided water imports and HECWs, once project benefits are fully implemented. Over the 14-year benefits lifespan, this project will avoid 542 MT of CO_2 emissions from SWP water transportation and 108 MT of CO_2 emissions from hot water use associated with clothes washers.

Each benefit is discussed in further detail below.

Benefit: Annual Water Conservation Savings of 156 AFY

Water conservation incentivized through the SCWD-2 programs will save approximately 1,064 AF of water over the benefits lifetime of the project. This will allow CLWA to avoid importing an equivalent amount of SWP water from the Delta.

The High-Efficiency Nozzle and HECW Programs will be implemented over a two-year period from October 2013 to September 2015, while the Large Landscape Water Budget Program will be implemented over a one-year period from October 2014 to September 2015. Since project implementation will begin in 2013 for the High-Efficiency Nozzle and HECW programs, benefits for those programs will start in that initial calendar year. Project benefits will continue to phase-in during the following calendar year for the High-Efficiency Nozzle and HECW Programs, and as the Large Landscape Water Budget program begins. Full annual project benefits are reached in 2015 as all programs have been fully implemented.

Large landscape budgets have an estimated water savings lifespan of 10 years (Kennedy/Jenks Consultants, 2012). Because benefits phase in during one year at the beginning of project implementation and phase out at the end of the program lifetime, benefits will accrue over 11-year span in total. High-efficiency nozzles last approximately five years (Kennedy/Jenks Consultants, 2012), but their benefits extend over a seven-year period because project benefits phase in over two years of project implementation. Likewise, HECWs have an estimated life of 12 years (Kennedy/Jenks Consultants, 2012), so benefits of this project will extend over 14 years, into 2026.

Background and Historical Conditions

Residential water use currently accounts for 70% of total water demand within the project area. Of all single-family residential water demand, an estimated 69% comes from outdoor landscape irrigation (Kennedy/Jenks Consultants, 2012). Residential water use trends show a much higher consumption rate in hot summer months, when outdoor plants have a high evapotranspiration rate. Based on previous programs implemented to achieve water conservation goals, there are over 430,000 single-family residential irrigation nozzles and 174,000 dedicated irrigation nozzles available to be retrofitted with high-efficiency varieties.

Dedicated irrigation sites at large landscape areas, which account for 17% of water demand in the project area, have concentrated water usage among a relatively small number of locations. With regard to multi-family residences with dedicated irrigation sites, the 10 biggest sites comprise nearly 40% of total multi-family landscape water demand.

Without-Project Conditions

Without implementing the SCWD-2 WUE programs, dedicated irrigation sites will continue to use 260 AF of water over a 11-year period. Dedicated irrigation sites averaged 6 AFY per meter in 2012, according to customer data compiled by SCWD.

Residential and commercial customers will continue to use 540 AF of water over a seven-year period because of inefficient nozzles. Commercial customers in particular are likely to continue a baseline water usage of 1.29 AFY per meter, as current nozzle programs do not offer the variety of nozzle types required for CII customers.

Residential customers use an average of 0.74 AFY per meter, based on data compiled by SCWD (SCWD, 2013). If the HECW program is not implemented, those customers will continue to use 264 AF of water over a 14-year span, which will also need to be treated by the SCVSD.

Without conservation measures incentivized through high-efficiency nozzle, HECW, and large landscape budget programs, SCWD will continue to import 1,064 AF of water over 14 years.

Methods Used to Estimate Benefits

Sub-Task 10.1 Large Landscape Budgets

The Santa Clarita Water District WUE SP estimates that landscape budgets for dedicated irrigation sites produce roughly 15% water savings (Kennedy/Jenks Consultants et al., 2011). Based on 2011 billing data, this results in a per-budget savings of 1.3 AFY. The Large Landscape Budget Program aims to develop 20 landscape budgets, yielding a maximum annual savings of 26 AFY (20 landscapes x 1.3 AFY per landscape) and a total water savings of approximately 260 AF over the 10-years that the program produces benefits.

Sub-Task 10.2 High-Efficiency Nozzles

According to the SCWD WUE SP, 266,400 nozzles distributed over nine years would yield approximately 4,791 AF of total water savings. High-efficiency nozzles last for five years, so each device saves, on average, approximately 0.00359 AFY (Kennedy/Jenks Consultants et al., 2011). Given that the budget allows for distribution of 30,000 high-efficiency nozzles, this program will yield water savings of approximately 108 AFY (0.00359 AFY * 30,000 high-efficiency nozzles), and 540 AF over the 5 years that the program produces benefits.

Sub-Task 10.3 High-Efficiency Clothes Washers

Water savings from high-efficiency washing machines vary depending on single-family residential, multi-family residential, and commercial usage. While HECWs can achieve at least 0.08 AFY of water savings when replacing standard washers in multi-family residences or commercial entities, single-family residential HECWs conserve roughly 0.02 AFY (Kennedy/Jenks Consultants, 2012). HECWs last approximately 12 years, so 1,000 machines rebated through this program will achieve an annual water savings of approximately 22 AFY and a total water savings of 264 AF over the 12 years that the program produces benefits.

Water savings achieved through the HECW rebate program are the only indoor water savings for the project. In addition to reducing imported water by 264 AF , HECWs installed through this program will prevent the equivalent amount of water from needing wastewater treatment by the SCVSD, where it would be treated and then discharged into the Santa Clara River.

Benefit Uncertainty

Water savings stemming from large landscape budgets vary depending on the individual site's current water usage and potential for improvements. The Metropolitan Water District of Orange County estimates even higher water savings from water budgets, at 20% of total consumption (MWDOC, 2011). The amount of water savings per site provided in this attachment is based on recent billing data, and is likely to be a conservative estimate because the program targets dedicated irrigation sites with the greatest potential for water conservation improvements. Additionally, the lifetime expectancy of 10 years is a lower-bound estimate – if SCWD continues to calculate water budgets annually and continues to implement the program, the effect can last longer than 10 years.

While multi-family and commercial machines average shorter lifetime (about 2/3 of single-family machines), they still produce more water savings over the entire benefits lifetime. The HECW aspect of the Residential &

Commercial Rebate Program focuses primarily on single-family households, but any additional water savings due to multi-family residential HECW rebates are not factored into this water savings estimate. Despite the shorter benefits lifetime, the multi-family HECWs still provide additional overall savings compared to the savings being accounted for in this estimate.

New Facilities Required to Achieve Benefit

No new facilities or expansion of current facilities are required to achieve water supply benefits for any of the SCWD-2 programs.

Potential Adverse Physical Effects

Approximately 733 acres of agriculture classified as irrigated cropland and improved pasture land are located along the Santa Clara River from the Saugus Water Reclamation Plant (WRP) to the Los Angeles/Ventura County line (Southern California Association of Governments, 2008). The Saugus and Valencia WRPs contribute to flow in the Santa Clara River, which is sometimes used as a *supplemental* water source to local groundwater used for agriculture. The Santa Clara River is ephemeral downstream of the treatment plants until an upwelling far downstream in Ventura County forces groundwater to the surface. Because the Santa Clara River downstream of the treatment plants is dry or nearly dry during most of the irrigation season, the surface water is not counted on as a main water source for agriculture.

Even if the water were being counted on as a main agricultural source, most of the decrease in effluent from the WRPs would be offset by the projected increase in influent volume to the plants that is projected into the future, leaving the net effluent volume similar to what is projected under the without-project condition. Without the project, WRP discharge is projected to grow from 19.6 million gallons per day (mgd) in 2010 to 22.6 mgd in 2020 and 27.8 mgd in 2035 (SCVSD, 2013). This growth in wastewater flow from 2010 to 2020 is 3 mgd, or approximately 3,300 AF total, or 330 AF per year, and this is expected to continue at the same rate into the future. The water saved from CLWA-3 and SCWD-2 combined is 476 AF per year over an approximately 10-year period (380 AF per year from CLWA-3 and 88 AF per year from SCWD-2).

Downstream agriculture takes only a small fraction of its total water from surface flows, and most of the reduction in effluent from both water conservation projects in this proposal will be offset by the growth in influent volume projected over time. Thus it is estimated that no harm to agricultural production downstream is likely due to the water conservation savings expected from these projects.

Summary of Benefit

The SCWD-2 WUE programs will conserve a total of 1,064 AF of water over a 14-year span between 2013 and 2026, and consequently avoid importing the equivalent amount of water from the SWP, the marginal source of water for SCWD. Large landscape budgets will save approximately 260 AF of water over 11 years, high-efficiency nozzles will conserve roughly 540 AF of water over seven years, and HECWs will save about 264 AF of water (and save the same amount of water from being treated as wastewater) over 14 years. Total water savings is summarized in Table 7-1. Savings of acre-feet of wastewater treatment from indoor water use conservation savings is shown in Table 7-2.

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)			
Type of Benefit Claimed: Avoided SWP Imports			
Measure of Benefit Claimed (Name of Units): Acre-Feet			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2013	0	16.25	16.25
2014	0	87.75	87.75
2015	0	156	156
2016	0	156	156
2017	0	156	156
2018	0	142.5	142.5
2019	0	88.5	88.5
2020	0	48	48
2021	0	48	48
2022	0	48	48
2023	0	48	48
2024	0	41.5	41.5
2025	0	19.25	19.25
2026	0	8.25	8.25
Comments:			

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)			
Type of Benefit Claimed: Avoided Wastewater Treatment From HECW Water Savings			
Measure of Benefit Claimed (Name of Units): Acre-Feet			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2013	0	2.75	2.75
2014	0	13.75	13.75
2015	0	22	22
2016	0	22	22
2017	0	22	22
2018	0	22	22
2019	0	22	22
2020	0	22	22
2021	0	22	22
2022	0	22	22
2023	0	22	22
2024	0	22	22
2025	0	19.25	19.25
2026	0	8.25	8.25
Comments:			

Benefit: Avoided Imports of 15 MT of Chlorides into the Watershed Annually

WUE measures promoted by the SCWD-2 project will yield approximately 1,064 in water savings over a 14-year span. All of these savings will directly offset imported water, which is supplied through the SWP from the Delta. Because of the higher salinity levels present in this marginal supply source, avoiding 1,064 AF of water prevents approximately 103 MT of chlorides from infiltrating the watershed over that same period.

Background and Historical Conditions

Some of the soils, surface water, and groundwater in the Upper Santa Clara River Watershed contain high levels of chloride. Primary sources of chlorides in surface water and groundwater include soil salinity, imported surface water (i.e., SWP supplies) and discharges from wastewater plants (i.e., Valencia and Saugus WRPs). Since the 1970s, growth in the SCV has increased the demand for water. Also, chloride levels in the USCR treated effluent and in nearby groundwater basins have varied significantly based on hydrologic conditions and have at times exceeded the water quality objectives (WQOs) for chloride, and impair beneficial uses for agricultural supply as well as groundwater recharge. As a result of these factors, a total maximum daily load (TMDL) for chlorides has been established for the watershed.

Without-Project Conditions

If the SCWD-2 project is not implemented, the area will continue to meet demand through SWP imports. The 1,064 AF of water that would have been conserved with the project will be imported, along with approximately 103.2 MT of chlorides.

Methods Used to Estimate Benefits

A 2009 water quality table developed by the Metropolitan Water District of Southern California (Metropolitan) estimates that SWP water contains an average chloride concentration of 79 mg/L, or 0.097 MT/acre-foot.[4,5] Because all water conserved through this program will eventually enter the watershed through landscape infiltration, runoff, or wastewater discharge, avoiding 1,064 AF of water imports will prevent approximately 103 MT of chlorides from entering the basin during the project lifetime.

Benefit Uncertainty

Chloride concentrations in SWP water vary by both year and time of year. The chloride concentration in SWP water used for calculating avoided chloride imports is an average value. Actual chloride concentrations in any one year could be higher or lower than this value.

New Facilities Required to Achieve Benefit

No new facilities or expansion of current facilities are required to achieve water quality benefits for any of the SCWD-2 programs.

Potential Adverse Physical Effects

No adverse physical effects are expected as a result of the project.

[4]. 1 acre-foot = 1,233,482 liters; 79 mg/L = 97,445,078 mg per acre-foot = 0.097 MT per acre-foot.
[5]. This is the highest rolling average value at Metropolitan Water District of Southern California's Jensen Filtration Plant, which is the closest measurement point to CLWA for which data were available. Chloride concentrations in SWP water have ranged from about 28 mg/L to 128 mg/L over the past 30 years (LARWQCB, 2008).

Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

Summary of Benefit

Water conservation achieved through the SCWD-2 program has an additional benefit of increasing water quality in the Upper Santa Clarita River Watershed. As is shown in Table 7-3, by reducing water demand by 1,064 AF over a 14-year period, SCWD is able to avoid importing the equivalent amount of water, as well as avoid introducing approximately 103.2 MT of chlorides into the watershed.

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)			
Type of Benefit Claimed: Avoided Chloride Imports From Avoided SWP Imports			
Measure of Benefit Claimed (Name of Units): Metric Tons			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2013	0	1.58	1.58
2014	0	8.51	8.51
2015	0	15.13	15.13
2016	0	15.13	15.13
2017	0	15.13	15.13
2018	0	13.82	13.82
2019	0	8.58	8.58
2020	0	4.66	4.66
2021	0	4.66	4.66
2022	0	4.66	4.66
2023	0	4.66	4.66
2024	0	4.03	4.03
2025	0	1.87	1.87
2026	0	0.80	0.80
Comments:			

Benefit: Avoided Annual CO_2 Emissions of 79 MT from Avoided Water Imports, and 9 MT from High-efficiency Washing Machine Energy Savings

The SCWD-2 programs will promote energy conservation through reduced imports and reduced residential energy demand. Switching from standard clothes washers to HECWs provides water savings, as well as the benefit of avoiding energy costs associated with heating the equivalent amount of saved water.

In addition to the electricity saved directly through more efficient clothes washers, avoided water imports will save the additional energy used to transport and treat water from the Delta.

The SCWD-2 project will reduce carbon dioxide emissions through reducing water imports from the SWP and avoiding the energy used to pump this water from northern California and treat it. In addition, SCWD-2 will also avoid energy use to heat water and associated CO_2 emissions through the HECW machine program.

Background and Historical Conditions

The SCWD-2 programs will promote energy conservation through reduced imports and reduced residential energy demand. Reducing water-related energy consumption and greenhouse gas emissions are long-term

goals of both the state and SCV. The SCWD WUE SP describes previous water conservation measures in the context of electricity savings that are in part due to benefits from reduced carbon dioxide emissions.

Without-Project Conditions

Without WUE improvements achieved through the SCWD-2 project, approximately 1,548.1 megawatt hours (MWh) of electricity will be produced to transport 1,064 AF of SWP water to Castaic Lake, where it is stored and eventually transported to SCWD and other retailers for distribution. Additionally, residents will continue to use approximately 310 MWh of electricity to heat additional water for use in non-HECWs.

If the SCWD-2 programs are not implemented, 650 MT of CO_2, will continue to be created because of water-related energy demand. 542 MT of CO_2 emissions will continue to be produced in order to transport and treat 1,064 AF of SWP imports, and 108 MT of CO_2 will be emitted due to water use in non-HECWs.

Methods Used to Estimate Benefits

The Alliance for Water Efficiency estimates that switching to a HECW saves 0.0036 kilowatt hour (kWh)/gallon in electricity use (Alliance for Water Efficiency, 2011). Over the 12-year assumed lifetime of high-efficiency machines rebated through this project, the HECW program will result in approximately 264 AF of water savings, providing approximately 310 MWh of total electricity savings for HECWs.

The California Energy Commission (CEC) estimates that transporting one acre-foot of water from the Delta to Castaic Lake requires 1.17 MWh, while CLWA estimates that an additional 0.285 MWh/acre-foot is required for treatment, for a total energy expenditure of 1.455 MWh/acre-foot for imported water (CEC, 2010). With approximately 1,064 AF of expected water savings, the equivalent reduction in SWP imports will save approximately 1,548 MWh of electricity over the 14-year benefits lifetime of the project.

Energy used to transport SWP water to Castaic Lake comes from a variety of sources internal and external to the State of California, including coal-fired power plants and natural-gas plants. Based on 2011 CEC data (CEC, 2011), approximately 70% of electricity generation was produced by California power sources, while 10% was imported from the Pacific Northwest and 20% was imported from the Desert Southwest. Given emissions rates of 858.68 lbs/MWh, 819.21 lbs/MWh, and 1,191.35 lbs/MWh, respectively, for the electricity sources above (U.S. EPA, 2009), we use a weighted emissions rate of 780.513 lbs/MWh, or 0.35 MT per MWh. With 1.455 MWh of electricity required for transporting and treating 1 acre-foot of SWP water, roughly 0.472 MT of CO_2 is produced for every acre-foot of water that is transported from the Delta to Castaic Lake and subsequently treated. With an estimated water savings of 1,064 AF for the entire project, avoiding the equivalent amount of imported water will prevent approximately 542 MT of CO_2 emissions.

Reduced greenhouse gases can be calculated for energy savings stemming from the HECW program as well, using the EPA emissions estimate listed above. With approximately 310 MWh of electricity savings due to this particular program, roughly 108 MT of corresponding CO_2 emissions are also avoided.

Benefit Uncertainty

The energy required to heat water for residential washing machines varies depending on the number of loads per household, the type of high-efficiency machine purchased, and the individual machine settings used for each household. The estimate for energy consumption per gallon is based on participants' energy use from previous conservation programs, which were subject to these same uncertainties, and is a standard estimate of household energy use for the SCWD-2 project. Commercial machines are expected to see much higher use, and higher energy consumption as a result. Actual energy savings will therefore be higher if any of the rebated machines are used in a commercial setting.

The estimate of avoided energy use through reduced use of SWP supplies does not include energy required to transport water from Castaic Lake to SCWD for retail distribution, so the energy associated with imports is a conservative estimate.

The projected carbon emissions benefit resulting from avoided water imports is subject to the same uncertainty as the energy savings estimates. Any variation in the energy savings from avoided imports based on SWP water sources would have a direct impact on the amount of avoided carbon emissions.

Similarly, HECW energy savings are dependent upon user variability. Given that data exist for both baseline water use and savings from previous HECW programs, actual benefits will likely be very close to the estimate used in this analysis.

New Facilities Required to Achieve Benefit

No new facilities or expansion of current facilities are required to achieve water quality benefits for any of the SCWD-2 programs.

Potential Adverse Physical Effects

No adverse physical effects are expected from the project.

Summary of Benefit

Avoided energy use will save a total of 650 MT of CO_2 emissions over the 14-year benefits lifespan of the SCWD-2 project. As is shown in Table 7-4, 1,548 MWh of energy saved through avoided transportation of imported water will avoid approximately 542 MT of CO_2 emissions. Table 7-5 shows that 310 MWh of energy conserved by reducing hot water used by clothes washers will avoid another 108 MT of CO_2 emissions.

TABLE 7-4: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)			
Type of Benefit Claimed: Reduced Carbon Dioxide Emissions From Avoided SWP Imports			
Measure of Benefit Claimed (Name of Units): Metric Tons			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2013	0	8.28	8.28
2014	0	44.69	44.69
2015	0	79.44	79.44
2016	0	79.44	79.44
2017	0	79.44	79.44
2018	0	72.57	72.57
2019	0	45.07	45.07
2020	0	24.44	24.44
2021	0	24.44	24.44
2022	0	24.44	24.44
2023	0	24.44	24.44
2024	0	21.13	21.13
2025	0	9.80	9.80
2026	0	4.20	4.20

Comments:

TABLE 7-5: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)			
Type of Benefit Claimed: Reduced Carbon Dioxide Emissions From HECW Energy Savings			
Measure of Benefit Claimed (Name of Units): Metric Tons			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2013	0	1.13	1.13
2014	0	5.65	5.65
2015	0	9.03	9.03
2016	0	9.03	9.03
2017	0	9.03	9.03
2018	0	9.03	9.03
2019	0	9.03	9.03
2020	0	9.03	9.03
2021	0	9.03	9.03
2022	0	9.03	9.03
2023	0	9.03	9.03
2024	0	9.03	9.03
2025	0	7.90	7.90
2026	0	3.39	3.39
Comments:			

Summary of Annual Project Physical Benefits

Full project benefits will accrue beginning in 2015. At this time, water conservation resulting from the three programs will yield avoided SWP imports of 156 AFY and avoided wastewater treatment of 22 AF of water per year. Avoided water imports will result in 227 MWh/year in energy savings, and reduction in hot water demand due to HECWs will save 26 MWh/year. Energy savings from avoided transportation of imported water will prevent roughly 79 MT of carbons emissions each year, and avoided energy production due to HECW water savings will avoid approximately 9 MT of CO_2 emissions per year. Finally, avoiding 156 AF/year of SWP imports will also prevent 15 MT of chlorides from entering the Upper Santa Clarita River Watershed annually.

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Foothill Feeder Connection (CLWA-8)

Introduction

This attachment presents the technical justification for the Foothill Feeder Connection Project. A project abstract and general discussion of the without project baseline are followed by a discussion of the physically quantified benefit, and a summary of the physically quantified benefit claimed.

Project Abstract

The purpose of this project is to increase the amount of imported water that the Castaic Lake Water Agency (CLWA) can process through its recently expanded Rio Vista Water Treatment Plant (RVWTP). Before it is used by CLWA, the imported water moves through Castaic Lake to the Metropolitan Water District of Southern California's Foothill Feeder Pipeline. Water taken by CLWA from the Foothill Feeder is sent to CLWA's 102-inch raw water pipeline that feeds CLWA's Rio Vista Water Treatment Plant. This connection was intended to be a temporary structure. Construction of this permanent Foothill Feeder connection will include installation of approximately 200 feet, 48-inch diameter pipeline; a 140 cubic feet per second (cfs)/90 MGD turnout structure, valve vault, and meter vault; and installation of electrical and supervisory control and data acquisition (SCADA) equipment.

The current water connection that conveys water from the Foothill Feeder to the RVWTP can only supply 60 million gallons per day (MGD), even though, after a recent expansion, the RVWTP is capable of treating 66 MGD (Kennedy/Jenks Consultants, 2012). Moreover, the 60 MGD connection, built in 1996, was meant to be temporary. This project will create a new, permanent connection to the RVWTP so that the plant can obtain its capacity of 66 MGD, an increase of 6 MGD, or 6,720 AFY, over its current capacity.[6] The new connection will have a maximum capacity of 90 MGD, so that it can accommodate planned expansions of the RVWTP. The new connection will have a design life of 50 years.

Without Project Baseline

Without the project, the RVWTP can only process 60 MGD as that is the capacity of the connection that moves water flowing through the Foothill Feeder to the RVWTP. Thus, when demand is greater than 60 MGD, groundwater, CLWA's other main water source, must be pumped at a higher rate than normal to meet users' needs. Currently, demand is only greater than 60 MGD on the highest use days. On a short-term basis, pumping groundwater at a higher rate than normal is feasible. On days when demand is lower than 60 MGD, groundwater pumping can be relaxed and the RVWTP can process more water, allowing the total amount of groundwater pumped over a time period to remain constant.

However, as the water demand CLWA increases over time (due to population increases), there will be more days when demand is above 60 MGD, forcing more groundwater pumping. Over the long-term, pumping groundwater at a higher rate than normal is not feasible. Prolonged pumping of groundwater above natural recharge rates is not sustainable as it will lead to long-term groundwater level declines, resulting in increased pumping costs and decreased groundwater quality.

When CLWA reaches this juncture, it will rely on the marginal sources of the alternative supplies it has identified to obtain water, namely recycled water and water conservation (A&N Technical Services, 2008). In this analysis, it is assumed that each of these methods would contribute half towards CLWA's water needs in the without-project condition. Thus, of the additional 2,240 AFY of water that the RVWTP would process with the project, without the project this water would come from transmitting and distributing an additional 1,120 AFY of recycled water and reducing demand by an additional 1,120 AFY through water conservation measures.

[6] One MGD is approximately 1,120 acre-feet per year.

Recycled water can be used for needs that do not require water to meet potable water standards. By using recycled water for needs such as irrigation that do not require potable water, CLWA can use the potable water that its customers had previously been using for irrigation for needs that actually require water to meet potable water standards. CLWA currently projects expansion of recycled water use by its retailers to grow by 7,775 AF by 2030 and by 20,975 AF by 2050 over current recycled water use (Kennedy/Jenks et al., 2011).

Without the project, CLWA will need to construct a pump station, reservoir, and transmission and distribution pipelines in order to obtain an additional 1,120 AFY of recycled water. This infrastructure would need to be operational by approximately 2020, the first year that CLWA projects in current planning discussions that demand would be too great to simply pump more groundwater to cover peaks in demand.

Likewise, the water conservation measures that would reduce demand by 1,120 AFY would need to be in place by 2020. Water conservation measures that CLWA could implement in its service area include new standards for plumbing fixtures, landscape irrigation, and buildings. During an average water year, CLWA projects that water conservation measures will reduce water demand by 39,518 AF by 2030 and 46,149 AF by 2050 that would otherwise be demanded (Kennedy/Jenks et al., 2011).

Relationship of Project to Other Projects Included in the Proposal

This project is not directly related to any of the other projects in the proposal for the Upper Santa Clara River region.

Description of Expected Physical Benefits

The following (quantifiable) physical benefit is expected from this project:

- Due to an increase in the capacity enabled by the Foothill Feeder Connection, the RVWTP will be able to treat 66 MGD instead of the 60 MGD it currently can, an increase of 6 MGD.

This benefit is discussed in further detail below.

Benefit: the RVWTP will be able to treat 66 MGD instead of the 60 MGD it currently can when the Foothill Feeder Connection is expanded

With the project, the capacity of the Foothill Feeder Connection will increase, allowing the RVWTP to process an additional 6 MGD. The additional 6 MGD of water that can be processed by the RVWTP will eliminate the need to construct additional facilities for recycled water and implement additional water conservation measures.

Background and Historical Conditions

In 2010, the RVWTP expanded from 30 MGD to 66 MGD. However, the connection off of the Foothill Feeder leading to the plant continues to have a capacity of 60 MGD. As the size of the connection is smaller than the operating capacity of the RVWTP, the RVWTP cannot currently operate at full capacity. The new Foothill Feeder connection will have a maximum capacity of 90 MGD, so that it can accommodate planned expansions of the RVWTP.

Without-Project Condition

Without the project, the RVWTP will only be able to process 60 MGD due to the capacity of the Foothill Feeder Connection. As the demand for water increases over time with population growth, by 2020, CLWA projects that it will not be able to meet this demand with the amount of imported water and groundwater sources it currently can process.

In order to meet demand, without the project CLWA will need to construct a pump station, reservoir, and transmission and distribution pipelines in order to obtain an additional 1,120 AFY of recycled water. The recycled water will be able to be used for activities that do not require the water to meet potable standards. By using the recycled water for certain activities, the water meeting potable standards can be used for activities that require higher water quality standards.

In addition, CLWA will need to implement water conservation measures that will reduce water demand by 1,120 AFY. Water conservation measures could include new standards for plumbing fixtures, landscape irrigation, and buildings.

Methods Used to Estimate Benefits

The increased size of the Foothill Feeder Connection, allowing for the RVWTP to process an additional 6 MGD of water (Kennedy/Jenks Consultants, 2012), will eliminate the need for CLWA to construct recycled water infrastructure and implement water conservation measures. Attachment 8 states the cost for the recycled water infrastructure and water conservation measures.

Benefit Uncertainty

With the project, there is no uncertainty about the increase in the size of the Foothill Feeder Connection. The capacity of the connection will increase, allowing the RVWTP to process an additional 6 MGD of water. The size of the connection itself will actually increase from 60 MGD to 90 MGD, not just to 66 MGD.

The future year in which CLWA will need additional imported water supplied by the Foothill Feeder is uncertain. CLWA currently projects in planning discussions that this point will be reached 5 to 10 years into the future. We have assumed this point will be reached by the year 2020, assuming a relative midpoint between 5 and 10 years.

New Facilities Required to Achieve Benefits

The connection itself is the only new facility needed to achieve this benefit. However, the expansion of the RVWTP in 2010 made this project possible, as without a larger water treatment plant there would be no benefit from increasing the capacity of the connection.

Potential Adverse Physical Effects

There are no potential adverse physical effects from increasing the size of the Foothill Feeder Connection.

Summary of Benefits

This project will increase the size of the Foothill Feeder Connection, allowing the RVWTP to process an additional 6 MGD of water. The additional water processed will prevent the need for CLWA to construct recycled water infrastructure and implement water conservation measures. The physical benefit associated with increasing the capacity of the Foothill Feeder Connection by 6 MGD claimed for the project is shown in Table 7-1.

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Foothill Feeder Connection Project			
Type of Benefit Claimed: Water processed through the Rio Vista Water Treatment Plant			
Measure of Benefit Claimed (Name of Units): Million Gallons per Day			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012			
2013			
2014			
2015	60	66	6
2016	60	66	6
2017	60	66	6
2018	60	66	6
2019	60	66	6
2020	60	66	6
2021	60	66	6
2022	60	66	6
2023	60	66	6
2024	60	66	6
2025	60	66	6
2026	60	66	6
2027	60	66	6
2028	60	66	6
2029	60	66	6
2030	60	66	6
2031	60	66	6
2032	60	66	6
2033	60	66	6
2034	60	66	6
2035	60	66	6
2036	60	66	6
2037	60	66	6
2038	60	66	6
2039	60	66	6
2040	60	66	6
2041	60	66	6
2042	60	66	6
2043	60	66	6
2044	60	66	6
2045	60	66	6

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Foothill Feeder Connection Project			
Type of Benefit Claimed: Water processed through the Rio Vista Water Treatment Plant			
Measure of Benefit Claimed (Name of Units): Million Gallons per Day			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2046	60	66	6
2047	60	66	6
2048	60	66	6
2049	60	66	6
2050	60	66	6
2051	60	66	6
2052	60	66	6
2053	60	66	6
2054	60	66	6
2055	60	66	6
2056	60	66	6
2057	60	66	6
2058	60	66	6
2059	60	66	6
2060	60	66	6
2061	60	66	6
2062	60	66	6
2063	60	66	6
2064	60	66	6

Comments: With the project, the new Foothill Feeder Connection will allow the Rio Vista Water Treatment Plant to process 66 million gallons per day of water. Without the project, the Rio Vista Water Treatment Plant would only be able to process 60 million gallons per day, the maximum capacity of the current connection.

The new connection has an expected life of 50 years, from 2015 to 2054.

Summary of Annual Project Physical Benefits

The physical benefit claimed for this project is the increased capacity of the RVWTP to process an additional 6 MGD of water due to an increase in the capacity of the Foothill Feeder Connection.

References

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Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

Introduction

This attachment presents the technical justification for Newhall County Water District's Pellet Water Softening Treatment Plant – Phase 1. A project abstract and general discussion of the without project baseline are followed by a discussion of each physically quantified benefit, and a summary of physically quantified benefits claimed.

Project Abstract

This project is Phase 1 of a proposal by the Newhall County Water District (NCWD) to build a pellet water softening treatment plant. The purpose of this plant would be to improve drinking water quality for 3,800 of NCWD's connections by an estimated 182 mg/L reduction in hardness in drinking water. Phase 1 of the project involves three studies. First, a water quality analysis is necessary to determine the area's suitability for a pellet softener treatment plant. Next, these results will be incorporated into a conceptual design, which will determine appropriate sizing, chemical and input needs, land requirements and capital, and operations and maintenance (O&M) costs. Finally, a rate study and consumer demand analysis is needed to determine consumers' reaction to potential rate increases involved with the project.

Because the benefits of this project will not be realized until construction of the plant is completed under a later phase of the overall project, benefits for this portion of the project have been apportioned using ratios of cost estimates. The present value of the Phase 1 budget is $177,620, and it is estimated that the entire plant would cost roughly $5.9 million for construction and O&M costs over the project lifetime. Therefore, expected benefits assigned to this portion of the project are $177,620 / $5,918,812 = 3% of the total benefits from the completion of the plant.

Without Project Baseline

NCWD is one of four water retail water purveyors in the Santa Clarita Valley. Local groundwater produced in the Santa Clarita Valley contains high concentrations of naturally occurring minerals such as calcium and magnesium – two ions that when in water are commonly referred to as "hardness". The hardness of water delivered by NWCD is currently 355 mg/L, and is generally considered hard to very hard according to standard rating scales [e.g. Sawyer and McCarty (1967) as presented in Bookman Edmonston Engineering, 1999]. Customers have addressed these problems by installing in-home water softening devices at their own expense. Many people find hard water unpleasant. Excessive hardness causes scale formation, which can shorten the useful lives of water heaters, pipes and other water using appliances, and reacts with soap to form a scum which prohibits lathering and leaves spots and grime on glass dishes (Bookman Edmonston Engineering Inc., 1999).

One type of water softener commonly installed by residents is the Automatic Water Softeners (AWS), which automatically regenerates the unit, and discharges salts to the wastewater system. These salts end up in the collection system for the Santa Clarita Valley Sanitation District (Sanitation District), and in the effluent of the Valencia and Saugus Water Reclamation Plants (WRPs). The other option is a canister-based softening system, which does not discharge chlorides, but is more expensive for the customer to own because they must hire a service to replace the canisters.

One of the salts discharged by AWS is chloride. These chlorides end up in effluent of the WRPs and are discharged to the Santa Clara River. The river then percolates into groundwater or flows downstream occasionally during high flow events. Groundwater, and water from the river as a supplemental source, are used to irrigate downstream crops, including avocados and strawberries, which are both highly chloride sensitive.

These discharges are a serious environmental concern and salt-based in-home self-regenerating water softening devices are one of the largest sources of chlorides discharged to the river. As a result, the Los

Angeles Regional Water Quality Control Board (LARWQCB) established Total Maximum Daily Loads (TMDLs) for discharge of chlorides to the Santa Clara River. A Total Maximum Daily Load (TMDL) for chloride in the Upper Santa Clara River (USCR) (Reaches 5 and 6) was adopted by the LARWQCB and became effective on May 5, 2005. The Basin Plan Amendment for the chloride TMDL in the USCR was unanimously adopted by the LARWQCB on December 11, 2008 (LARWQCB, 2008). The TMDL established waste load allocations of 100 milligrams/liter (mg/L) for the WRPs.

To help meet the goal of reducing chloride loads in the Santa Clara River, the Sanitation District passed an ordinance in 2003 banning the installation of all new AWS. Passage of this Ordinance gave the Sanitation District authority to remove all AWSs remaining in the Santa Clarita Valley that were installed prior to 2003 (Sanitation Districts of Los Angeles County, 2012).

This Pellet Water Softening Treatment Plant - Phase 1 Project, when all phases are completed, will provide residents with a central treatment option for dealing with the effects of hardness in drinking water. In the absence of the proposed pellet based water softening plant, residents can either accept hard water and its effects— including reduced water using appliance lifetime, staining, and residue on glassware—or they can use a personal, point-of-use water softener that is not self-regenerating.

Relationship of Project to Other Projects Included in the Proposal

This project is related to the AWS Rebate Program being conducted by the Sanitation District. That project aims to remove an estimated 500 automatic water softeners among the Sanitation District's 70,000 customers. The proposed NCWD pellet water softening treatment plant will provide a water softening alternative to some of the customers in the Santa Clarita Valley and help dampen the impacts of the AWS removal for homes affected. NCWD's 3,800 customers are about 5% of the customers served by the Sanitation District.

Description of Expected Physical Benefits

The following (quantifiable) physical benefits are expected from this phase of the project:

- When operational, the pellet water softening treatment plant will reduce water hardness by approximately 50%, from approximately 355 mg /L to approximately 173 mg/L, for a total reduction of approximately 182 mg/L. Apportioning this quantity component costs, Phase 1 is responsible for 5.46 mg/L of this reduction.

- The plant's byproducts take the form of crystallized sand-calcium carbonate "pellets", which can be beneficially reused in a variety of applications. When running, the plant will produce an estimated 4.5 cubic yards of pellets per day. When apportioning the pellets produced by operation of the treatment plant using the ratio of cost of Phase 1 of the project to the full treatment plant, Phase 1 accounts for 0.135 cubic yards a day, or about 49 cubic yards annually.

Each benefit is discussed in further detail below.

Benefit: Reduced Hardness in Drinking Water

The primary benefit of the NWCD pellet water softening treatment plant will be to decrease water hardness by approximately 50%, from the range of 355 mg/L to the range of 173 mg/L for 3,800 homes.

Background and Historical Conditions

NCWD is one of four retail water purveyors in the Santa Clarita Valley. Local groundwater produced in the Santa Clarita Valley contains high concentrations of naturally occurring minerals such as calcium and magnesium – the two ions that are referred to as "hardness". The hardness of water delivered by NCWD is

currently in the range of 355 mg/L and is generally considered hard to very hard. Customers have addressed these problems by installing in-home water softening devices at their own expense. Many people find hard water unpleasant. Excessive hardness causes scale formation which can shorten the useful lives of water heaters, pipes and other water using appliances, and reacts with soap to form a scum which prohibits lathering and leaves spots and grime on glass dishes (Bookman Edmonston Engineering Inc., 1999).

Without-Project Conditions

Historically, residents have dealt with the hard water in part by installing Automatic Water Softeners in their homes. However, the high-chloride effluent produced by the WRPs put the Sanitation District in violation of the 100 mg/L limit set by the LARWQCB and AWS were banned in 2003. Since then, law-abiding residents of NCWD have been forced either to deal with the consequences of hard water or install an ion exchange system involving canisters that must be replaced every month. The Sanitation District estimates that approximately 500 AWS remain in the Santa Clarita Valley.

Without the project, customers of NWCD would not have a central treatment alternative to deal with effects of hardness in water served to them. Because AWSs are banned, their alternatives are to pay for non-self regenerating water softeners or to accept the effects of hard water.

Methods Used to Estimate Benefits

Estimates of hardness concentration reductions come from a similar plant constructed at the Valencia Water Company (VWC), as well as the typical experience in the Netherlands, where pellet based softening plants are more common. Once the plant is operational after construction in Phase 3, total hardness is expected to be 182 mg/L, which is a reduction of 173 mg/L from current hardness of hardness range of 355 mg/L. This is based on water quality results from NCWD. Phase 1 costs are estimated at $178,000, which is 3% of the present value estimated $5.9 million in costs for all three phases of the treatment plant combined. Therefore, the benefit claimed for this project is a reduction in hardness of 5.46 mg/L as calcium carbonate (3% of 182 mg/L).

Benefit Uncertainty

Estimating a reduction in hardness involves some uncertainty, although much of it will be resolved once the water quality portion of Phase 1 is complete. Much of the experience with these plants comes from projects built in the Netherlands, which faces a potentially different set of hydrological conditions. The VWC – whose service area is adjacent to NCWD's – built a similar pellet treatment demonstration plant nearby, although these plants differ somewhat, particularly in terms of capacity. This uncertainty is partly mitigated by the fact current NCWD staff has experience working on the VWC demonstration plant, and a detailed understanding of how these two projects differ. In addition, much of this uncertainty will be resolved in Phase 1 after the groundwater study provides a more precise estimate of changes.

New Facilities Required to Achieve Benefits

Ultimately, the overall project involves constructing a pellet-based water softening treatment plant. No facilities are constructed in the phase under current consideration.

Potential Adverse Physical Effects

No adverse physical effects are anticipated.

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

Summary of Benefit

As is shown in Table 7-1, completion of the pellet treatment plant will result in an estimated 173 mg/L reduction in total hardness, primarily through reductions in calcium. NCWD residents without existing personal water softening systems will see their hardness levels go from a range of 355 mg/L to an estimated range of 182 mg/L. Residents with existing ion-replacement canister systems will no longer have to spend their time or money maintaining their systems and changing the canisters. In addition, they may see a slight increase in hardness levels that may be preferable (e.g., less slimy).

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Pellet Water Softening Treatment Plant (NCWD-2)			
Type of Benefit Claimed: Reduction in Hardness of Drinking Water Due to Pellet Treatment Plant			
Measure of Benefit Claimed (Name of Units): milligrams per liter (mg/L)			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012			
2013			
2014			
2015			
2016			
2017			
2018	355	173	182
2019	355	173	182
2020	355	173	182
2021	355	173	182
2022	355	173	182
2023	355	173	182
2024	355	173	182
2025	355	173	182
2026	355	173	182
2027	355	173	182
2028	355	173	182
2029	355	173	182
2030	355	173	182
2031	355	173	182
2032	355	173	182
2033	355	173	182
2034	355	173	182
2035	355	173	182
2036	355	173	182
2037	355	173	182
2038	355	173	182

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Pellet Water Softening Treatment Plant (NCWD-2)			
Type of Benefit Claimed: Reduction in Hardness of Drinking Water Due to Pellet Treatment Plant			
Measure of Benefit Claimed (Name of Units): milligrams per liter (mg/L)			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2039	355	173	182
2040	355	173	182
2041	355	173	182
2042	355	173	182
2043	355	173	182
2044	355	173	182
2045	355	173	182
2046	355	173	182
2047	355	173	182
2048	355	173	182
2049	355	173	182
2050	355	173	182
2051	355	173	182
2052	355	173	182
2053	355	173	182
2054	355	173	182
2055	355	173	182
2056	355	173	182
2057	355	173	182
2058	355	173	182
2059	355	173	182
2060	355	173	182
2061	355	173	182
2062	355	173	182
2063	355	173	182
2064	355	173	182
2065	355	173	182
2066	355	173	182
2067	355	173	182
Comments:			

Benefit: Production of 49 cubic yards per year of sand-calcium carbonate pellets

Background and Historical Conditions

The pellet softening process utilizes chemical precipitation methods for removing calcium hardness. The calcium removed through a pellet softener treatment plant ends up crystallizing with grains of sand to form calcium carbonate "pellets", which are easily removed. When the pellets are removed, they are typically 1 mm in size and are easy to dewater. The dewatered pellets are the only waste stream from the pellet softener treatment plant. These pellets can be beneficially used as a soil amendment, as construction fill, in agriculture as an animal feed additive, manufacturing of textiles, and for industrial uses including steel making. If no beneficial users are found, the pellets can also be sent to landfill. (Kennedy/Jenks Consultants, 2009). Pellets from the nearby VWC demonstration plant were used by construction materials firms, but those entities did not pay for them other than trucking costs.

Without-Project Conditions

Without the project, residents that are interested in softening their water would need to purchase softeners that do not automatically regenerate the unit. Without the pellet softening plant, calcium carbonate pellets will not be produced.

Methods Used to Estimate Benefits

Estimates of the amount of pellets produced as a byproduct of the pellet softening process come from experience with similar plants, both in the Netherlands as well as in Valencia. Once the plant is up and running, operators expect 1,642.5 cubic yards of pellets to be produced annually (Kennedy/Jenks Consultants, 2009). After apportioning the amount of pellets to be produced by the full plant based on the ratio of cost for Phase 1 compared to cost to make the full treatment plant operational, the physical benefit claimed is 49.28 cubic yards annually (1,642.5 cubic yards multiplied by 3%).

Benefit Uncertainty

The estimate of cubic yards of pellets produced is based on the experience of softener treatment plants potentially facing different sets of water quality and other conditions, which could be a source of uncertainty. This is partly mitigated by the fact current NCWD staff has experience working on the VWC plant and a detailed understanding of how these two projects differ. In addition, much of this uncertainty will be resolved partway through this project after the groundwater study gives management a more precise estimate of changes.

New Facilities Required to Achieve Benefits

Ultimately, the full project involves constructing a pellet-based water softening treatment plant. No facilities are constructed in the project phase under current consideration.

Potential Adverse Physical Effects

No adverse physical effects anticipated.

Summary of Benefit

Unlike point-of-use alternatives, pellet water softener plants produce by-products can be used in many different uses including the production of textiles, blasting for steel manufacturing and agriculture. As is

shown in Table 7-2, the portion of calcium carbonate pellets claimed in this portion of the project is 49 cubic yards annually for 2018 - 2067.

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Pellet Water Softening Treatment Plant (NCWD-2)			
Type of Benefit Claimed: Amount of Pellets Produced Per Year That Can Be Beneficially Reused			
Measure of Benefit Claimed (Name of Units): Cubic Yards			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012			
2013			
2014			
2015			
2016			
2017			
2018	0	49	49
2019	0	49	49
2020	0	49	49
2021	0	49	49
2022	0	49	49
2023	0	49	49
2024	0	49	49
2025	0	49	49
2026	0	49	49
2027	0	49	49
2028	0	49	49
2029	0	49	49
2030	0	49	49
2031	0	49	49
2032	0	49	49
2033	0	49	49
2034	0	49	49
2035	0	49	49
2036	0	49	49
2037	0	49	49
2038	0	49	49
2039	0	49	49
2040	0	49	49
2041	0	49	49
2042	0	49	49
2043	0	49	49

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Pellet Water Softening Treatment Plant (NCWD-2)			
Type of Benefit Claimed: Amount of Pellets Produced Per Year That Can Be Beneficially Reused			
Measure of Benefit Claimed (Name of Units): Cubic Yards			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2044	0	49	49
2045	0	49	49
2046	0	49	49
2047	0	49	49
2048	0	49	49
2049	0	49	49
2050	0	49	49
2051	0	49	49
2052	0	49	49
2053	0	49	49
2054	0	49	49
2055	0	49	49
2056	0	49	49
2057	0	49	49
2058	0	49	49
2059	0	49	49
2060	0	49	49
2061	0	49	49
2062	0	49	49
2063	0	49	49
2064	0	49	49
2065	0	49	49
2066	0	49	49
2067	0	49	49
Comments:			

Based on VWC's demonstration project, approximately 1 cubic yard of pellets was generated for every million gallons of water treated.

Summary of Annual Project Physical Benefits

The physical benefits claimed for this project include 182 mg/L reduction in total hardness and 49 cubic yards/year of calcium-carbonate pellets.

References

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Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Introduction

This attachment presents the technical justification for Santa Clarita Valley Sanitation District's (Sanitation District's) Automatic Water Softener Rebate and Public Outreach Program. A project abstract and general discussion of the without project baseline are followed by a discussion of each physically quantified benefit, and a summary of physically quantified benefits claimed.

Project Abstract

The Sanitation District operates two water reclamation plants (WRPs) in the Santa Clarita Valley, the Saugus and Valencia WRPs. The Saugus and Valencia WRPs discharge treated wastewater into the Upper Santa Clara River, which contains chloride in excess of the water quality objective for the Upper Santa Clara River of 100 mg/L. Because residential automatic water softeners (AWS) have been the largest controllable source of chloride, the source control efforts have focused on the removal of these units. To help reduce contributions from this source, the Sanitation District has been implementing an Automatic Water Softener Public Outreach Program since February 2003. Phases I and II of this program have removed 7,900 AWS, reducing chloride concentrations by more than 50 mg/L. Despite these gains, chloride concentrations in 2011 were about 18 mg/L over the 100 mg/L water quality objective, in part due to an estimated 500 remaining active AWS. This project will implement the final phase of the Automatic Water Softener Rebate and Public Outreach Program, which will remove the remaining AWS. The program will consist of home inspections, issuing Notices of Violations to residents that still have their AWS, issuing rebates to residents that remove their AWS, chloride monitoring, and public outreach. The Sanitation District estimates removing these remaining AWS will reduce chloride concentrations by approximately 5 mg/L.

Without Project Baseline

In 2011, the flow-weighted average chloride concentration in the final effluent discharged from the Saugus and Valencia WRPs was 118 mg/L (Sanitation Districts of Los Angeles County, 2012). In the absence of this project, the Sanitation District estimates 500 AWS may remain active. In 2011, these AWS were estimated to be responsible for 5 mg/L of the 18 mg/L of the remainder over the chloride concentration limit. The Sanitation District has discussed with the Los Angeles Regional Water Quality Control Board the options for achieving required chloride concentration reductions. These discussions have indicated that, whether the remaining rebate program goes into effect or not, the Sanitation District will likely need to build a microfiltration / reverse osmosis (MF/RO) plant to reach the chloride limits. The rebate program will allow the Sanitation District to reduce the size of the advanced wastewater treatment (MF/RO) processes required to remove chloride. The additional MF/RO treatment required without the project would use more energy, emitting more greenhouse gases. In addition, because each automatic water softener consumes on average more than 4,400 gallons of water per year when it regenerates the softener, water use without the project will be higher than it will be with the project.

Relationship of Project to Other Projects Included in the Proposal

This project is one of two projects in the Upper Santa Clara River region proposal that directly are related to high levels of different salts in drinking water in the Santa Clarita Valley. This project addresses the remaining AWS, which are used to lower hardness in drinking water, with the aim of eliminating their contribution to chloride loading in effluent from the Valencia and Saugus WRPs. The other related project is the Newhall County Water District's (NCWD's) proposed Pellet Water Softening Treatment Plant – Phase 1. The Sanitation District as a whole serves about 83,000 households; the proposed NCWD treatment plant would provide about 3,800 (or about 5%) of these customers with an alternative to water softening/conditioning. Although these projects are related, neither project depends on the other in order to generate benefits.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Description of Expected Physical Benefits

The following (quantifiable) physical benefits are expected from this phase of project:

- Reduce chloride concentrations in the Upper Santa Clara River by approximately 5 mg/L
- Reduce potable water demand by approximately 6.78 acre feet/year (AFY)
- Avoid approximately 994 MT CO_2 equivalent emissions annually through reduction in size of future chloride treatment plant

Each benefit is discussed in further detail below.

Benefit: Reduce chloride concentrations in the Upper Santa Clara River by 5 mg/L

The Sanitation District estimates about 500 remaining AWS are actively discharging chlorides that ultimately are discharged to the Santa Clara River. The removal of these as part of this project will reduce chloride concentrations in Saugus and Valencia WRP effluent by approximately 5 mg/L.

Background and Historical Conditions

Most of the soils, surface water, and groundwater in the Upper Santa Clara River Watershed contain high levels of chloride. Primary sources of chlorides in surface water and groundwater include imported surface water (i.e., SWP supplies) and discharges from wastewater plants (i.e., Valencia and Saugus WRPs). Since the 1970s, growth in the SCV has increased the demand for imported water. Also, chloride levels in the USCR and in nearby groundwater basins have varied significantly based on hydrologic conditions and have at times exceeded the water quality objectives (WQOs) for chloride, and may impair beneficial uses for agricultural supply as well as groundwater recharge. As a result of these factors, a total maximum daily load (TMDL) for chlorides has been established for the Santa Clara River.

In order to help meet chloride concentration reduction goals, the Sanitation District adopted the Santa Clara River Chloride Reduction Ordinance of 2008, which required the removal and disposal by June 30, 2009 of all existing AWS installed in the Sanitation District's service area. Prior to their ban, residential AWS were the single largest controllable source of chloride that entered the Santa Clara River. Since the Sanitation District implemented the Automatic Water Softener Rebate and Outreach Program in 2003, it has removed more than 7,900 AWS, reducing chloride concentrations by more than 50 mg/L (Sanitation Districts of Los Angeles County, 2012). Despite these gains, the chloride concentration in effluent from the treatment plants is still higher than the state mandated limit of 100 mg/L. In order to meet the 100 mg/L limit, it will most likely be necessary to build a MF/RO plant. By removing approximately 5 mg/L of chloride concentration attributed to the remaining discharging AWS, the rebate program allows the Sanitation District to build a relatively smaller (and less expensive) MF/RO plant.

Without-Project Conditions

Without the final phase of the Automatic Water Softener Rebate Program, the Sanitation District estimates 500 AWS may remain operational. In 2011, these AWS were responsible for an estimated 5 mg/L of the 118 mg/L chloride concentration in final effluent from the Saugus and Valencia WRPs. The Sanitation District needs to reduce the chloride concentration in treatment plant effluent to 100 mg/L, and will likely do so through construction of a MF/RO treatment plant. Thus without this program, the advanced wastewater treatment processes for chloride removal required to meet this mandate will need to be larger.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Methods Used to Estimate Benefits

The 2012 Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan estimated that approximately 6 mg/L was discharged during 2011 from residential AWS (Sanitation Districts of Los Angeles County, 2012). The chloride loading contributed from residential AWS was estimated using a differential method, whereby all other chloride loadings were subtracted from the total chloride loading and the difference was assumed to be contributed by residential AWS. The other sources of chloride estimated in the analysis included potable water supply, non-residential AWS, disinfection at the WRPs, the industrial sector, the commercial sector, and hauled waste.

While the method provides a good estimate of the contribution from remaining residential AWS, the Sanitation District has rounded the 6 mg/L estimate from the 2012 Chloride Report to 5 mg/L in order to recognize the uncertainty associated with this estimate. Please also note that the chloride data per source in 2012 Chloride Report are estimates based on numerous assumptions and best professional judgment. Many inputs are difficult to quantify and the analysis represents the best available information at this time.

Benefit Uncertainty

The Sanitation District reports that there is significant uncertainty in the data used for the calculations of the chloride contribution from the remaining residential AWS. The results of sampling vary over time and therefore the result of the calculations changes over time. Chloride contributions from AWS are expected to vary over time due to changes in household water use, changes in source water quality over time and changes in the water quality of those sources, and other factors. To reflect that uncertainty associated with this estimate, the Sanitation District has rounded the 6 mg/L estimate from the 2012 Chloride Report to 5 mg/L.

New Facilities Required to Achieve Benefits

No new facilities are needed to achieve this benefit.

Potential Adverse Physical Effects

No adverse physical effects anticipated due to reduction in chloride concentrations water demand.

Summary of Benefit

Despite their substantial reduction in numbers as a result of Phases I and II of the Automatic Water Softener Rebate and Public Outreach Program, residential AWS remain a significant issue for the Sanitation District as it attempts to meet the state chloride mandate of 100 mg/L. As is shown in Table 7-1, by removing the remaining 500 operational AWS, the Sanitation District estimates it will be able to reduce chloride concentrations in Valencia and Saugus WRP effluent by approximately 5 mg/L.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)			
Type of Benefit Claimed: Reduction in Chloride Concentration in Water Reclamation Plant Effluent Due to AWS Removal			
Measure of Benefit Claimed (Name of Units): milligrams per liter (mg/L)			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2012			
2013			
2014			
2015			
2016			
2017	0	5	5
2018	0	5	5
2019	0	5	5
2020	0	5	5
2021	0	5	5
2022	0	5	5
2023	0	5	5
2024	0	5	5
2025	0	5	5
2026	0	5	5
2027	0	5	5
2028	0	5	5
2029	0	5	5
2030	0	5	5
2031	0	5	5
2032	0	5	5
2033	0	5	5
2034	0	5	5
2035	0	5	5
2036	0	5	5
2037	0	5	5
2038	0	5	5
2039	0	5	5
2040	0	5	5
2041	0	5	5
Comments:			

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Benefit: Reduce potable water demand by 6.78 AFY

A single automatic water softener uses approximately 50 gallons of water per 4.13 day regeneration cycle, or more than 4,400 gallons per year. Assuming the Sanitation District removes 500 operational AWS, this will save a total of more than 6.78 AFY.

Background and Historical Conditions

AWS soften water through ion exchange, which involves replacing the hard elements of water, calcium and magnesium ions, with sodium or potassium ions. These sodium or potassium ions are replenished in a process known as regeneration, which consumes significant amounts of water – 50 gallons every 4.13 days on average.

Water savings will accrue to water retailers served by the Castaic Lake Water Agency (CLWA) which is a wholesale water provider in the Santa Clarita Valley. CLWA imports State Water Project (SWP) water from the Sacramento-San Joaquin Delta to Castaic Lake through SWP facilities. CLWA currently provides about 43,000 AFY of SWP water (imported via CLWA) to four water purveyors within the watershed (Kennedy/Jenks et al., 2011). This amounts to roughly one-half of total service area potable water demands. The balance of potable demand within the service area is met through local groundwater sources.

Without-Project Conditions

Without the project, 500 AWS may remain operational. In 2011, these AWS were responsible for an estimated 5 mg/L of the 118 mg/L concentrations of chloride in the Santa Clara River. The Sanitation District needs to reduce chloride concentrations in wastewater plant effluent to 100 mg/L. Thus without this program, the chloride treatment plant required to meet this mandate will be larger; it will need to be able to reduce concentrations by up to an additional 5 mg/L.

Methods Used to Estimate Benefits

According to the Santa Clarita Valley Joint Sewerage System Chloride Source Report, an AWS regenerates every 4.13 days on average (Sanitation Districts of Los Angeles County, 2002). Bruursema (2002) finds that the average regeneration cycle uses 50 gallons for a typical three-bedroom single family home. Therefore, it is estimated that the 500 actively discharging AWS waste 2.2 million gallons annually (500 AWS*50 gallons*365 days/4.13 day regeneration cycle = 2.2 million gallons annually). This quantity divided by 325,851 gallons per acre foot gives a total of 6.78 AFY.

Benefit Uncertainty

The 6.78 AFY reduction involves some uncertainty. First, although the Sanitation District has estimated 500 actively discharging AWS remaining, it is not known for sure exactly how many AWS remain in operation. Second, quantities of water consumed by an AWS can vary with household water use, pre-treated water quality, AWS model, and other factors. It is also possible that customers replace their confiscated AWS with water consuming alternatives. Finally, it is also possible that as water hardness increases once their AWS are removed, households may change their water use habitats. For example, residents may use less water if they perceive their newfound hard water as inferior to their formerly treated soft water, making the water savings greater than 6.78 AFY.

New Facilities Required to Achieve Benefits

No new facilities are needed to achieve this benefit.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Potential Adverse Physical Effects

No adverse physical effects anticipated due to reduction in potable water demand.

Summary of Benefit

Residential AWS are regenerated about every four days on average and consume significant amounts of water. As is shown in Table 7-2, by removing the remaining 500 operational AWS, the Sanitation District estimates it will be able to reduce potable water demand by 6.78 AFY.

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)			
Type of Benefit Claimed: Reduced Water Loss From AWS Regeneration			
Measure of Benefit Claimed (Name of Units): Acre-Feet			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012			
2013			
2014			
2015			
2016			
2017	6.78	0	6.78
2018	6.78	0	6.78
2019	6.78	0	6.78
2020	6.78	0	6.78
2021	6.78	0	6.78
2022	6.78	0	6.78
2023	6.78	0	6.78
2024	6.78	0	6.78
2025	6.78	0	6.78
2026	6.78	0	6.78
2027	6.78	0	6.78
2028	6.78	0	6.78
2029	6.78	0	6.78
2030	6.78	0	6.78
2031	6.78	0	6.78
2032	6.78	0	6.78
2033	6.78	0	6.78
2034	6.78	0	6.78
2035	6.78	0	6.78
2036	6.78	0	6.78

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)			
Type of Benefit Claimed: Reduced Water Loss From AWS Regeneration			
Measure of Benefit Claimed (Name of Units): Acre-Feet			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2037	6.78	0	6.78
2038	6.78	0	6.78
2039	6.78	0	6.78
2040	6.78	0	6.78
2041	6.78	0	6.78
Comments:			

Benefit: Avoid 994 MT CO_2 equivalent greenhouse gas emissions annually by reducing size of future chloride treatment plant.

The Sanitation District anticipates an approximate 5 mg/L reduction in chloride concentrations from this portion of the rebate program, which will allow them to build their eventual MF/RO treatment plant smaller. Removing chloride via the MF/RO plant is an energy intensive endeavor, and the reduction in plant size is estimated to save the equivalent of 994 MT CO_2 per year.

Background and Historical Conditions

The Sanitation District will likely need to build a MF/RO plant to reach the chloride limits. Current desalination technologies are energy intensive. In the RO process, water from a pressurized saline solution is separated from the dissolved salts by flowing through a water-permeable membrane. The major energy requirement is for the initial pressurization of the feed water. Use of fossil fuels to generate the electricity needed to power the plant can result in emissions of carbon dioxide and other greenhouse gases, along with local air pollution where the energy is generated.

Without-Project Conditions

Without the approximate 5 mg/L reduction in chloride associated with this rebate project, the Sanitation District will need to build and operate a larger sized MF/RO facility to handle the increased treatment. This excess energy results in an equivalent of 994 MT CO_2 equivalent emissions each year.

Methods Used to Estimate Benefits

Although exact sizing of the MF/RO plant is uncertain at this point, the Sanitation District estimates that energy use by the plant without the project will be 13.4 million kWh per year, and the energy use without the project is expected to be reduced 2.2 million kWh per year, to 11.2 million kWh per year (Santa Clarita Valley Sanitation Districts, 2013). Energy use is estimated based on typical energy usage for the size of plant projected.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

The Sanitation District estimates that reducing energy use at the plant by 2.2 million kWh per year will save 994 MT of CO_2 equivalent emission per year. Emission rates are taken from the 2012 eGRID database for the WECC California subregion (USEPA, 2012). In addition to CO_2, methane and nitrous oxide emissions are included, and converted to CO_2 equivalent using their global warming potentials. Thus $2.2*10^3$ MWh of energy savings is multiplied by [993.89 lb CO_2/MWhr + 33.52 lb CH_4/GWhr*21/1000 + 4.07 lb N_2O/GWhr*310/1000]*4.536*10-4MT/lb to give 994 MT of CO_2 equivalent.

Benefit Uncertainty

There are several uncertainties associated with the projected reduction in energy emissions. First the sizing of the plant and thus the reduction in energy use due to the 5 mg/L reduction in chloride concentrations from AWS could ultimately be different than currently estimated. Second, the emission rates used were from 2009. Use of a different year and version of the eGRID database would likely mean use of slightly different emission rates. These emission rates are assumed to hold for future years, but this is unlikely to remain the same over time (e.g. the ratio of kWh to CO_2 could go down with the development of cleaner, less greenhouse gas intensive energy sources).

New Facilities Required to Achieve Benefits

Construction of the MF/RO plant is needed in order to achieve the CO_2 equivalent emissions reduction. However, this facility is expected to be constructed with or without the project.

Potential Adverse Physical Effects

No adverse physical effects anticipated due to reduction in greenhouse gas emissions.

Summary of Benefit

Implementing the rest of this rebate program will allow the Sanitation District to build a MF/RO plant that uses approximately 2.2 million kWh per year less energy than it would otherwise. As shown in Table 7-3, this results in a savings of 994 MT CO_2 equivalent emissions per year.

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)			
Type of Benefit Claimed: Reduced Carbon Dioxide Equivalent Emissions Due to Reduced Size of MF/RO Plant Due to Project			
Measure of Benefit Claimed (Name of Units): Metric Tons of CO_2 Equivalent			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012			
2013			
2014			
2015			
2016			
2017	0	994	994
2018	0	994	994

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)			
Type of Benefit Claimed: Reduced Carbon Dioxide Equivalent Emissions Due to Reduced Size of MF/RO Plant Due to Project			
Measure of Benefit Claimed (Name of Units): Metric Tons of CO_2 Equivalent			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2019	0	994	994
2020	0	994	994
2021	0	994	994
2022	0	994	994
2023	0	994	994
2024	0	994	994
2025	0	994	994
2026	0	994	994
2027	0	994	994
2028	0	994	994
2029	0	994	994
2030	0	994	994
2031	0	994	994
2032	0	994	994
2033	0	994	994
2034	0	994	994
2035	0	994	994
2036	0	994	994
2037	0	994	994
2038	0	994	994
2039	0	994	994
2040	0	994	994
2041	0	994	994
Comments:			

Summary of Annual Project Physical Benefits

The physical benefits claimed for this project include reducing chloride concentrations by approximately 5 mg/L in the Upper Santa Clara River, reducing potable water demand by approximately 6.78 AFY, and avoiding approximately 994 MT CO_2 equivalent greenhouse gas emissions annually through reducing the size of a future MF/RO plant.

References

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USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Introduction

This attachment presents the technical justification for the Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation Project. A project abstract and general discussion of the without project baseline are followed by a discussion of each physically quantified benefit, and a summary of physically quantified benefits claimed.

Project Abstract

This project proposes an invasive weed control (especially Arundo donax, or arundo) and habitat restoration program in the Upper Santa Clara River watershed in two locations. One is near the City of Santa Clarita at the confluences of San Francisquito Creek and Bouquet Canyon Creek with the Santa Clara River (project SC-1). The second project site is on private land owned by a group of homeowners along the upper reaches of Bouquet Canyon Creek (project BCN-1). Two other invasive plant species – tamarisk and tree tobacco – will be controlled along with arundo when the plants are co-located. The Santa Clara River and its upper watersheds are some of the last watershed in Southern California in a relatively natural state. These riparian areas have one of the most extensive and diverse riparian habitats in the area and are critical wildlife migration corridors for the region. Arundo is the most problematic weed in southern California coastal rivers where it causes extensive flood damage, increases fire risk, and uses substantially more water than native vegetation.

This project expands off the Santa Clara River Arundo and Tamarisk Removal Program (SCARP). SCARP is a long-term eradication, monitoring, and maintenance plan to guide and facilitate the implementation of arundo and/or tamarisk removal projects within the upper Santa Clara River watershed. The SCARP Site Specific Plan is shown in Figure 1 and is a 297-acre site along the main stem of the Santa Clara River centered under the McBean Parkway Bridge, and includes a portion of two major tributaries: the South Fork and San Francisquito Creek. This program has consisted of demonstration projects, permitting, and educational programs as well as low impact removal. An EIR prepared in 2006 showed the impacts of removal of arundo and tamarisk to the Santa Clara River and its tributaries (VCRCD, 2006a). The findings showed that without removal, the plants would continue to spread and decrease the current water resources and cause a decline in native habitats. The project found that herbicide application with the proposed approach will not impact groundwater quality. Education programs for landowners and stakeholders further expanded the efforts to remove these species. Portions of the SCARP Site Specific Plan were funded with a Department of Water Resources Round 1 Implementation Grant. The Round 1 Implementation Grant included removal of the invasive plants in Areas D, E, F, and G (as shown in Figure 1) in its request for funding.

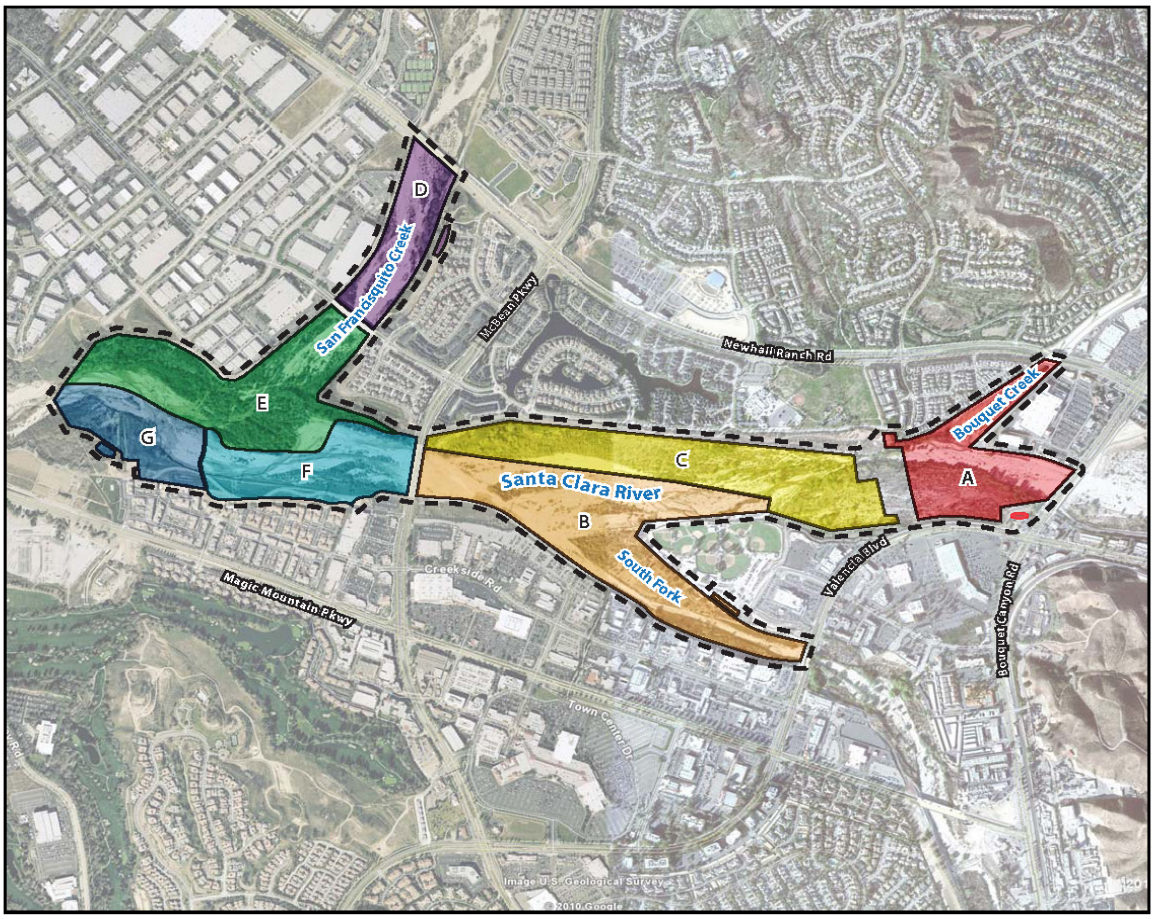
This project expands beyond the SCARP Site Specific Plan boundaries further into the USCR as the Long-Term Implementation Plan for SCARP had planned.

Without-Project Baseline

The San Francisquito Creek sub-watershed, outside of the Angeles National Forest, is approximately 21.7 miles long and 1,464 acres. A previous grant funded arundo and tamarisk removal for the City of Santa Clarita for approximately 150 acres at the confluence of San Francisquito Creek and the Santa Clara River (sites D, E, F, and G in Figure 1 below). The project will extend this work to the 100 acres of currently infested areas along the upper San Francisquito Creek (as shown on Figure 2) and the Bouquet Canyon Creek/Santa Clara River confluence (a portion of site A as shown on Figure 2).

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

FIGURE 1: SANTA CLARA RIVER, SAN FRANCISQUITO CREEK ARUNDO & TAMARISK REMOVAL PROJECT AREA



LEGEND:

- Project & Staging Area A
- Project & Staging Area B
- Project & Staging Area C
- Project & Staging Area D
- Project & Staging Area E
- Project & Staging Area F
- Project & Staging Area G

N

Sources:
1. Upper Santa Clara River Watershed Arundo and Tamarisk Removal Project (SCARP), Site-Specific Implementation Project (SSIP) Area, Wildscape Restoration, November 2008
2. Google Earth - Image U.S. Geological Survey

FIGURE 1 OF SC-1/BCN-1
Santa Clara River, San Francisquito Creek Arundo & Tamarisk Removal Project .

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The Bouquet Canyon Creek watershed is approximately 25 miles long and 885 acres. In conjunction with the City of Santa Clarita, a group of homeowners along Bouquet Canyon Creek have decided to engage in an arundo eradication project on their private land, which intermingles with county, city, and USFS land. This 3.5 mile section of upper Bouquet Canyon Creek is only treatable because of the initiative of local homeowners and their partnership with the City. This area is currently infested by arundo and tree tobacco, and this BCN-1 portion of the overall project will treat 5 infested acres. Because both SC-1 and BCN-1 are elements of SCARP implementation, they have been combined into a single implementation project SC-1/BCN-1.

As previously stated, the Santa Clara River is the largest river system in Southern California that is still in a relatively natural state. The river originates on the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean between the cities of San Buenaventura (Ventura) and Oxnard. Municipalities within the Watershed include Santa Clarita, Newhall, Fillmore, Santa Paula, and Ventura (LARWQCB, 2006).

Extensive patches of high-quality riparian habitat exist along the length of the river and its tributaries. Two endangered fish, the unarmored stickleback and the steelhead trout, are resident in the river (LARWQCB, 2006). One of the Santa Clara River's largest tributaries, Sespe Creek, is designated a Wild Trout Stream by the State of California and a Wild and Scenic River by the U.S. Forest Service. Piru and Santa Paula Creeks, tributaries to the Santa Clara River, also support steelhead habitat. In addition, the river serves as an important wildlife corridor. The Santa Clara River drains to the Pacific Ocean through a lagoon that supports a large variety of wildlife.

Since the 1970s, growth in the SCV has increased the demand for imported water. Also, chloride levels in the USCR and in nearby groundwater basins have varied significantly based on hydrologic conditions and have at times exceeded the water quality objectives (WQOs) for chloride, and impaired beneficial uses for agricultural supply as well as groundwater recharge.

A total maximum daily load (TMDL) for chlorides has been established for the Watershed. In 2004, the reach of the river affected by this project was also listed for nutrient impairment. Algae problems resulting from excess nutrients have been documented throughout the watershed. Segments of Santa Clara River and its tributaries are also impaired by ammonia, nitrate and nitrite and are included on the California 2002 303(d) list of water quality limited segments. Additionally, one segment of the Santa Clara River is included on the State Monitoring List for organic enrichment/low dissolved oxygen. Two segments of the Santa Clara River are included on the State Enforceable Programs list for ammonia with one of those segments also listed for nitrite as nitrogen (LARWQCB, 2003).

Estimates for the broader Santa Clarita Site Specific Plan (SSP) project area indicate that infestation by arundo, and to a lesser extent tamarisk and tree tobacco, is pervasive, extending throughout the site. Arundo infestations are particularly dense in the site's western (downstream) and central reaches, where large areas of the main stem exhibit historic infestation levels of 51 to 75% cover. While arundo historically tends to exhibit lower density infestation levels in the site's upstream areas, large areas are still infested, with significant areas of 26 percent to 50 percent arundo cover. Tamarisk infestations are concentrated in the east (upstream) portions of the SSP project area. These infestations typically range from 1 percent to 50 percent cover. The SC-1 project is located within the western portion of the SSP project area. Arundo and tamarisk consume large amounts of water, which negatively affects both instream and groundwater availability.

Reduced water availability also adversely affects water-dependent plants and wildlife, and reduces the water available for beneficial municipal and agricultural uses. Although native riparian plants have similar transpiration rates per unit of surface area to arundo and tamarisk, arundo and tamarisk have approximately two or more times greater leaf surface area. Therefore, they transpire more water than native plants (Kelly

2003). Water consumption by these species is so high that dense infestations can desiccate riparian areas (seeps, springs, rivers) in arid habitats (VCRCD 2006b from Egan and Walker 2000; Dudley 2000).

The Castaic Lake Water Agency (CLWA) is a wholesale water provider in the watershed. CLWA imports State Water Project (SWP) water from the Sacramento-San Joaquin Delta to Castaic Lake through SWP facilities. CLWA currently provides about 30,850 AFY of SWP water (imported via CLWA) to four water purveyors within the watershed (Ludhorff & Scalmanini, 2012). This amounts to roughly one-half of total service area potable water demands. The balance of potable demand within the service area is met through local groundwater sources.

The availability of imported water is subject to a number of natural and human forces, ranging from increased population growth (and accompanying increased demands on the SWP system), to drought and earthquakes, to environmental regulations and water rights determinations. Reduced demand for imported water will improve water supply reliability within the CLWA service area.

Furthermore, frequent flooding of the roadway along Bouquet Canyon Creek has been a consistent problem. Unlike native willows, which lay down flat during a flood, arundo remains standing, forming bottlenecks that cause overflow of the creek bed and flooding of the roadway. The 2005 El Nino season is a case in point. Statements from road maintenance responders during the 2005 El Nino season flooding state, " large amounts of water and debris on roadway caused pavement wash out and damage, …, culverts clogged , trees killed and downed. Culvert completed clogged forcing stream onto road." While flooding events on Bouquet Canyon Road are not wholly attributable to invasive weed "bottlenecks" they have contributed to road damages exceeding $2,047,000 (Los Angeles County Department of Public Works, 2013).

Arundo also presents a significant fire hazard. Arundo is very tall – facilitating the spread of fire, and it burns green, reducing the ability to use the river as a firebreak even during the wet season. For example, the near-by 2007 Ranch Fire burned 58,000 acres, destroyed one home and nine outbuildings at a cost of $9 million (CalFire, 2007a). It was reported that firefighters pushed the fire towards the Santa Clara River, anticipating using the river as a fire break. Unfortunately, due to arundo infestations, the fire spread quickly along the river, which acted as a vector to spread the fire much more quickly than anticipated. Similar problems exist along Bouquet Canyon Creek, where the 2007 Buckweed fire burned 38,000 acres, destroyed 63 structures, and damaged an additional 30 structures at a cost of $7.4 million (CalFire, 2007b). Again, arundo played an important role in allowing the fire to spread quickly.

Without the project, arundo, tamarisk, and tree tobacco will continue to spread, covering a greater percentage of the watershed – including the possibility of re-infesting areas treated under Phase 1 of SCARP. Due to their high rate of water consumption and transpiration, the expansion of these species will have a negative impact on groundwater supply and surface water flows downstream. Thus, if the project is not implemented, reliance on imported SWP water will not decrease.

Relationship of Project to Other Projects Included in the Proposal

The proposed work is not dependent on any other projects in the proposal for the Upper Santa Clara River region.

Description of Expected Physical Benefits

The following (quantifiable) physical benefits are expected from this project:

- Reduced groundwater losses by replacing arundo with native vegetation: By replacing arundo and tamarisk, which consume large amounts of water, with native vegetation, more stream water will

recharge local groundwater aquifers. CLWA purveyors will use the groundwater made available by this project in lieu of imported SWP water, which will save substantial monetary resources.

- Avoided introduction of additional chlorides into the watershed via imported SWP water. The avoided introduction of chlorides into the Watershed will improve water quality for beneficial uses.
- Avoided CO_2 emissions: By offsetting imported water demands with groundwater use, the project will avoid emissions of CO_2 (a greenhouse gas) generated by the production of energy required to transport SWP water to the CLWA service area.

Each benefit is discussed in further detail below.

Benefit: Water Savings of 840 AFY from Arundo Removal

By replacing arundo and tamarisk, which consume large amounts of water, with native vegetation, more stream water will recharge local groundwater aquifers. CLWA purveyors will use some of the groundwater made available by this project in lieu of imported SWP water, which will save substantial monetary resources.

Background and Historical Conditions

Arundo donax (arundo) has successfully invaded many rivers in Southern California, including the Santa Clara, forming extensive monocultures and altering physical and biological processes (Coffman, 2007). In California, infestations of arundo are known to increase risks of flooding, create unnatural fire hazards, outcompeting indigenous riparian species for scarce water resources, and reduce the value of riparian habitat for most wildlife (Bell 1997, DiTomaso 1998, Dudley, 2000).

Estimates for the broader Santa Clarita Site Specific Plan (SSP) project area indicate that infestation by arundo, and to a lesser extent tamarisk and tree tobacco, is pervasive, extending throughout the site. As was indicated in the Without-Project Baseline section above, arundo infestations in western and central reaches of the SSP are at 51 to 75% cover. In areas further upstream, arundo cover is approximately 26 to 50%. Tamarisk infestations are concentrated in the east (upstream) portions of the SSP project area. These infestations typically range from 1 to 50% cover. The SC-1 project is located within the western portion of the SSP project area, while the BCN-1 project is located within the eastern portion of the SSP project area and north of that as well.

Arundo, tamarisk, and tree tobacco consume large amounts of water, which negatively affects both instream and groundwater availability. Reduced water availability also adversely affects water-dependent plants and wildlife, and reduces the water available for beneficial municipal and agricultural uses. Although native riparian plants have similar transpiration rates per unit of surface area to arundo and tamarisk, arundo and tamarisk have approximately two or more times greater leaf surface area. Therefore, they transpire more water than native plants (VCRCD 2006b from Kelly 2003). Water consumption by these species is so high that dense infestations can desiccate riparian areas (seeps, springs, rivers) in arid habitats (VCRCD 2006b from Egan and Walker 2000; Dudley 2000).

FIGURE 2: ARUNDO REMOVAL

Photo Credit: Arundo Distribution and Impact Report.

Without-Project Conditions

An EIR prepared in 2006 showed the impacts of removal of arundo and tamarisk to the Santa Clara River and its tributaries. The findings showed that without removal, the plants would continue to spread and decrease the current water resources and cause a decline in native habitats. Reliance of SWP water would likely increase as arundo desiccated local surface and groundwater sources. Consequently costs for water supply would increase with increasing reliance on imported SWP water. Specifically, without this project approximately 100 acres of riparian zone in the Upper Santa Clara watershed will not be treated for arundo removal.

Methods Used to Estimate Benefits

This project will treat a total of 100 acres for arundo in the SC-l project area. The density of arundo coverage ranges from 25% to 50% in this area (Resource Conservation District of Ventura County, 2005). Assuming the midpoint density of 37.5 % coverage, there will be 37.5 acres of arundo removal in SC-1 (100 acres containing arundo * 37.5% density of coverage). Tamarisk coverage is assumed to be 2%, and so it is assumed that 2 acres of tamarisk will be removed by SC-1.

The treatment area includes 5 acres from the BCN-1 project. About 90% of the BCN-1 acres are infested with arundo, or 4.5 acres (Resource Conservation District of Ventura County, 2005). The other 0.5 acres are infested with tree tobacco. Because tamarisk and tree tobacco acreage and water savings are much less than that for arundo, we include water supply benefits only from arundo removal here. Total arundo removal is expected to be 42 acres (37.5 acres in SC-1 and 4.5 acres in BCN-1).

The study *Arundo Distribution and Impact Report*, conducted by the California Invasive Plant Council (California Invasive Plant Council, 2011), which reviews recent studies and literature, as well as regional field data, was conducted to develop a geographically specific value for the water loss resulting from arundo invasion. One of the research sites was the Santa Clara River watershed.

In the Executive Summary of the Arundo Distribution and Impact Report, the authors conclude:

Removing Arundo from one acre would result in a net gain of 20 ac/ft per year of water. This estimate includes adjustments for replacement vegetation, as well as a reduction of Arundo water use to bring it into alignment with other forms of vegetation that consume large amounts of water. This is a large potential water use reduction that could have significant implications for both the ecosystem and human water use. Spatial data, used in conjunction with stand leaf area measurements and published leaf transpiration rates, generated an Arundo stand-based water use value that was extremely high (40 mm/day) compared to most other plants.

In order to be conservative, the researchers assumed that the arundo stand-based water use value was 20 mm/day, instead of 40 mm/day. The researchers concluded that removing arundo from one acre will result in a net gain of 20 AF per year of water compared to water use by native vegetation. Arundo was estimated use 24 AF per year per acre, while native vegetation was estimated to use 4 AF per year per acre (California Invasive Plant Council, 2011).

Using the estimated amount net gain of arundo control of 20 AFY/acre, we calculate average savings of 840 AFY for the collective treatment of SC-1 and BCN-1. It is estimated that on average about 50% of the water saved as a result of this project will be recovered from the regional groundwater aquifer. The remaining water will be available as surface flows downstream. CLWA purveyors will use the groundwater made available by this project in lieu of imported SWP water, because groundwater is a much less expensive source of supply. Therefore, 420 AFY of imported SWP water can be avoided with the implementation of this project.

Benefit Uncertainty

There are some uncertainties in this calculation, which come mainly from the following assumptions:

1. The exact number of acres that will be treated will not be finalized until the GIS assessment is complete. This estimate is based on work completed as part of a previous DWR Prop 84 Round 1 Implementation grant for certain areas within the SCARP SSP.

2. The net water supply gain from arundo control is 20 AFY/acre. This assumption is a very conservative estimate from the March 2011 *Arundo Distribution and Impact Report*, and likely understates the benefits of arundo control.

3. Other invasive species to be removed by the project include tamarisk, tree tobacco, and other species. By not calculating any water savings from removal of these species, we are again making a conservative estimate of total water savings per acre treated.

New Facilities Required to Achieve Benefit

No new facilities are required.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Potential Adverse Physical Effects

No adverse physical effects from this project are anticipated. An EIR prepared in 2006 showed the impacts of using herbicide for arundo control would not impact ground water quality (VCRCD, 2006a). Further precautions are taken about the timing and methods of herbicide application to minimize any potential adverse environmental impacts.

Summary of Benefit

As is summarized in Table 7-1, the project will reduce the uptake of valuable groundwater resources from non-native species by 840 AFY, or a total of 42,000 AF over the 50-year project lifetime. Half of this water savings will be withdrawn by retail water utilities in the area, and will reduce use of more expensive SWP imports.

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)			
Type of Benefit Claimed: Water Savings from Arundo Removal Compared to Native Vegetation Water Use			
Measure of Benefit Claimed (Name of Units): AFY			
Additional Information About this Measure: Total water savings from arundo removal is shown. Savings per acre was determined to be 20 AF/acre of arundo removal, and there are a total of 42 acres of arundo removal in the project.			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012	0	0	0
2013	0	0	0
2014	0	592	592
2015	0	810	810
2016	0	840	840
2017	0	840	840
2018	0	840	840
2019	0	840	840
2020	0	840	840
2021	0	840	840
2022	0	840	840
2023	0	840	840
2024	0	840	840
2025	0	840	840
2026	0	840	840
2027	0	840	840
2028	0	840	840
2029	0	840	840
2030	0	840	840

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Type of Benefit Claimed: Water Savings from Arundo Removal Compared to Native Vegetation Water Use

Measure of Benefit Claimed (Name of Units): AFY

Additional Information About this Measure: Total water savings from arundo removal is shown. Savings per acre was determined to be 20 AF/acre of arundo removal, and there are a total of 42 acres of arundo removal in the project.

(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2031	0	840	840
2032	0	840	840
2033	0	840	840
2034	0	840	840
2035	0	840	840
2036	0	840	840
2037	0	840	840
2038	0	840	840
2039	0	840	840
2040	0	840	840
2041	0	840	840
2042	0	840	840
2043	0	840	840
2044	0	840	840
2045	0	840	840
2046	0	840	840
2047	0	840	840
2048	0	840	840
2049	0	840	840
2050	0	840	840
2051	0	840	840
2052	0	840	840
2053	0	840	840
2054	0	840	840
2055	0	840	840
2056	0	840	840
2057	0	840	840
2058	0	840	840
2059	0	840	840
2060	0	840	840

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 7-1: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)			
Type of Benefit Claimed: Water Savings from Arundo Removal Compared to Native Vegetation Water Use			
Measure of Benefit Claimed (Name of Units): AFY			
Additional Information About this Measure: Total water savings from arundo removal is shown. Savings per acre was determined to be 20 AF/acre of arundo removal, and there are a total of 42 acres of arundo removal in the project.			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2061	0	840	840
2062	0	840	840
2063	0	840	840
2064	0	248	248
2065	0	30	30
Comments:			

Benefit: Avoided Introduction of 41 MT of Chlorides into the Watershed per Year

Imported SWP water brings along with it significant amounts of chlorides. The avoided introduction of chlorides into the Watershed will help improve water quality for beneficial uses.

Background and Historical Conditions

Since the 1970s, growth in the SCV has increased the demand for imported water. Also, chloride levels in the USCR and in nearby groundwater basins have varied significantly based on hydrologic conditions and have at times exceeded the water quality objectives (WQOs) for chloride, and impaired beneficial uses for agricultural supply as well as groundwater recharge.

As a result of these factors, a total maximum daily load (TMDL) for chlorides has been established for the Watershed. In 2004, the reach of the river affected by this project was also listed for nutrient impairment. Algae problems resulting from excess nutrients have been documented throughout the watershed. Segments of Santa Clara River and its tributaries are also impaired by ammonia, nitrate and nitrite and are included on the California 2002 303(d) list of water quality limited segments. Additionally, one segment of the Santa Clara River is included on the State Monitoring List for organic enrichment/low dissolved oxygen. Two segments of the Santa Clara River are included on the State Enforceable Programs list for ammonia with one of those segments also listed for nitrite as nitrogen (LARWQCB 2003).

Many millions of dollars have been spent to reduce the chloride level in the Santa Clara River so far. Any additional chloride salts in the river will need to be offset by additional mechanical removal at the sewage treatment plants, including cost to build and operate a reverse osmosis plant to remove chlorides. The community has also spent many millions of dollars removing water softeners that were adding chlorides to the sewage treatment plants' recycled water quality effluent (Sanitation Districts of Los Angeles County, 2012).

In addition, removal of tamarisk will also contribute to salt removal in the watershed. Tamarisk deposits concentrated salt from its leaves to the soil. This salt originates from the soil and from deeper aquifers, as its taproot can bring up water from 100 feet deep. When these leaves drop, increased soil salinity and salts are deposited into adjacent creeks due to salt transport during runoff. Native plant species are further impacted because they generally cannot tolerate tamarisk's contribution to soil salinity, while arundo can. While the amount of salt content is small from individual tamarisk trees, adding even small amounts of salt is compounding an already difficult situation.

Without-Project Conditions

Without the project, CLWA will continue to import 420 AFY of SWP water that will contribute to the level of total dissolved solids, and specifically chlorides, in the watershed. Thus, without the project an additional 2,037 MT of chloride importation will accumulate over the assumed 50-year lifetime of the project.

Methods Used to Estimate Benefits

A 2009 water quality table developed by the Metropolitan Water District of Southern California (Metropolitan, 2010) estimates that SWP water contains an average chloride concentration of 79 mg/L, or 0.097 MT/AFY.[7, 8] This project avoids 420 AF of imported water use per year, and therefore avoids 41 MT of chloride imports per year (420 AFY * 0.097 MT/AFY). The project will avoid a total of 21,000 AF of SWP water imports over the assumed 50-year project lifetime. As a result 2,037 MT of chlorides will be prevented from entering the watershed through irrigation, runoff, or wastewater discharge over the project lifetime.

Benefit Uncertainty

Chloride concentrations in SWP water vary both by year and by time of year. The chloride concentration in SWP water used for calculating avoided chloride imports is an average value. Actual chloride concentrations in any one year could be higher or lower than this value.

New Facilities Required to Achieve Benefit

No new facilities are required.

Potential Adverse Physical Effects

No adverse physical effects from this project are anticipated.

Summary of Benefit

As is shown in Table 7-2, the project will avoid the introduction of about 41 MT of chlorides into the Watershed each year. Over the 50-year project life the project will reduce the introduction of 2,037 MT of chlorides.

[7]. 1 acre-foot = 1,233,482 liters; 79 mg/L = 97,445,078 mg per acre-foot 0.097 MT per acre-foot.
[8]. This is the highest rolling average value at Metropolitan Water District of Southern California's Jensen Filtration Plant, which is the closest measurement point to CLWA for which data were available. Chloride concentrations in SWP water have ranged from about 28 mg/L to 128 mg/L over the past 30 years (LARWQCB, 2008).

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Type of Benefit Claimed: Reduction in Chloride Loadings from Imported SWP water

Measure of Benefit Claimed (Name of Units): Metric Tons (MT) per year

(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2012	0	0	0
2013	0	0	0
2014	0	29	29
2015	0	39	39
2016	0	41	41
2017	0	41	41
2018	0	41	41
2019	0	41	41
2020	0	41	41
2021	0	41	41
2022	0	41	41
2023	0	41	41
2024	0	41	41
2025	0	41	41
2026	0	41	41
2027	0	41	41
2028	0	41	41
2029	0	41	41
2030	0	41	41
2031	0	41	41
2032	0	41	41
2033	0	41	41
2034	0	41	41
2035	0	41	41
2036	0	41	41
2037	0	41	41
2038	0	41	41
2039	0	41	41
2040	0	41	41
2041	0	41	41
2042	0	41	41
2043	0	41	41
2044	0	41	41

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 7-2: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)			
Type of Benefit Claimed: Reduction in Chloride Loadings from Imported SWP water			
Measure of Benefit Claimed (Name of Units): Metric Tons (MT) per year			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2045	0	41	41
2046	0	41	41
2047	0	41	41
2048	0	41	41
2049	0	41	41
2050	0	41	41
2051	0	41	41
2052	0	41	41
2053	0	41	41
2054	0	41	41
2055	0	41	41
2056	0	41	41
2057	0	41	41
2058	0	41	41
2059	0	41	41
2060	0	41	41
2061	0	41	41
2062	0	41	41
2063	0	41	41
2064	0	12	12
2065	0	1	1
Comments:			

Benefit: Reduced CO_2 Emissions of 214 MT Per Year

By offsetting imported water demands with use of local groundwater, the project will avoid emissions of CO_2 (a greenhouse gas) generated by the production of energy required to transport SWP water to the CLWA service area.

Background and Historical Conditions

The SWP was constructed to transport water from Northern California to arid areas, both agricultural and urban, in central and southern California. A significant amount of energy is used to pump SWP over mountain ranges on its way to southern California. Locally supplied or saved water that avoids SWP water imports can avoid a significant amount of energy associated with SWP pumping.

Without-Project Conditions

Without reduction in SWP water imports as a result of the project, approximately 30,555 megawatt hours (MWh) of electricity will be produced to transport 3,960 AF of SWP water to Castaic Lake, where it is stored for wholesale distribution. As a result, approximately 10,689 MT of CO_2 will continue to be emitted through the energy produced for supplying and conveying SWP water to Castaic Lake over the benefits lifetime of the project.

Methods Used to Estimate Benefits

To calculate energy savings associated with the project, we first identify the amount of energy required to transport and treat 1 acre-foot of imported water by the amount of imported water that will be avoided as a result of the project. The California Energy Commission estimates that the electricity required for the conveyance of 1 AF of SWP water imported to Castaic Lake is 1.17 MWh (CEC, 2010). CLWA estimates energy requirements for treatment to be 0.285 MWh/AF. When energy requirements for treatment are taken into account, the total amount of energy required for every AF of water delivered to CLWA amounts to 1.455 MWh.[9]

Energy used to transport SWP water to Castaic Lake, where it is stored for wholesale purposes, comes from a variety of sources internal and external to the State of California, including coal-fired power plants and natural-gas plants. Based on 2011 CEC data (CEC, 2011), approximately 70% of electricity generation was produced by California power sources, while 10% was imported from the Pacific Northwest and 20% was imported form the Desert Southwest. Given emissions rates of 858.68 pounds/MWh, 819.21 pounds/MWh, and 1,191.35 pounds/MWh, respectively, for the electricity sources above (U.S. EPA, 2012), we use a weighted emissions rate of 780.513 pounds/MWh, or 0.35 MT per MWh. With 1.455 MWh of electricity required for transporting and treating 1 acre-foot of SWP water, roughly 0.509 MT of CO_2 is produced for every acre-foot of water that is transported from the Delta to Castaic Lake and subsequently treated. With 420 AFY of SWP imports saved as result of the project, this means that approximately 214 MT of CO_2 emissions will be offset per year. With an estimated avoided imported water use of 21,000 AF for the entire project, project will prevent approximately 10,689 MT of CO_2 emissions.

Benefit Uncertainty

Avoided CO_2 emissions will be offset to a small extent by CO_2 emissions from pumping newly available groundwater within the project area. The energy required to pump groundwater is unknown, thus, net avoided emissions cannot be calculated. However, due to the high energy requirements associated with importing water, the project will result in substantial net avoided emissions of CO_2.

The energy mix and emissions rates associated with energy needed to transport SWP water will change over time. The energy mix and emission rates used in this analysis are historical averages.

New Facilities Required to Achieve Benefit

No new facilities are required.

Potential Adverse Physical Effects

No adverse physical effects from this project are anticipated.

[9]. Energy required to transmit treated water from CLWA treatment plants to CLWA retail water purveyors is not included in this analysis due to unavailable data.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Summary of Benefit

As is shown in Table 7-3, by reducing the need to import 420 AFY from the SWP the project reduces net emissions of CO_2 from the energy required to transport the water by 214 MT per year. Over the 50-year project lifetime CO_2 emissions will be reduced by 10,689 MT.

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)			
Type of Benefit Claimed: Reduction CO_2 emission from transport of imported SWP water			
Measure of Benefit Claimed (Name of Units): Metric Tons (MT) per year			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2012	0	0	0
2013	0	0	0
2014	0	151	151
2015	0	206	206
2016	0	214	214
2017	0	214	214
2018	0	214	214
2019	0	214	214
2020	0	214	214
2021	0	214	214
2022	0	214	214
2023	0	214	214
2024	0	214	214
2025	0	214	214
2026	0	214	214
2027	0	214	214
2028	0	214	214
2029	0	214	214
2030	0	214	214
2031	0	214	214
2032	0	214	214
2033	0	214	214
2034	0	214	214
2035	0	214	214
2036	0	214	214
2037	0	214	214
2038	0	214	214
2039	0	214	214

TABLE 7-3: ANNUAL PROJECT PHYSICAL BENEFITS

Project Name: Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)			
Type of Benefit Claimed: Reduction CO_2 emission from transport of imported SWP water			
Measure of Benefit Claimed (Name of Units): Metric Tons (MT) per year			
(a)	**(b)**	**(c)**	**(d)**
	Physical Benefits		
Year	**Without Project**	**With Project**	**Change Resulting from Project (b) – (c)**
2040	0	214	214
2041	0	214	214
2042	0	214	214
2043	0	214	214
2044	0	214	214
2045	0	214	214
2046	0	214	214
2047	0	214	214
2048	0	214	214
2049	0	214	214
2050	0	214	214
2051	0	214	214
2052	0	214	214
2053	0	214	214
2054	0	214	214
2055	0	214	214
2056	0	214	214
2057	0	214	214
2058	0	214	214
2059	0	214	214
2060	0	214	214
2061	0	214	214
2062	0	214	214
2063	0	214	214
2064	0	63	63
2065	0	8	8
Comments:			

Summary of Annual Project Physical Benefits

By reducing the use of water by non-native plants the project will create a water savings of 840 AFY. Assuming 50% of water savings are available to off-set imported water needs from the SWP, this project will result in a total imported water savings of 420 AFY and 21,000 AF over the 50-year project life.

A reduction in the need for imported water from the SWP will reduce imported chloride loadings in the region by 41 MT per year and 2,037 MT over the 50-year project life and improve local water quality for beneficial uses.

By reducing the need to import 420 AFY from the SWP, the project reduces emissions of CO_2 from the energy required to transport the water by 214 of CO_2 per year. Over the 50 year project life the project will reduce emissions by 10,689 MT.

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Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

Summary

The Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan (SP) identifies several programs to achieve WUE goals for the region. The CLWA-3 plan focuses on the following five water conservation programs, four of which are currently being implemented and have been partially funded through a Round 1 Implementation Grant from DWR:

- Santa Clarita Valley Large Landscape Audit and Incentive Program

  This program offers $25 rebates to large dedicated irrigation sites for weather-based irrigation controllers (WBICs) at active sites, as well as $300 per acre-foot saved rebates for water-saving landscape modifications.

- Santa Clarita Valley Commercial, Industrial, and Institutional (CII) Audit and Customized Incentive Program

  This program offers WBIC and landscape modification rebates identical to those in the Large Landscape Audit and Incentive Program to CII customers within the SCV.

- Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program

  This program offers training workshops in classrooms, online, and in the field to both residents and landscape contractors in the valley. Recipients of the program learn about WUE, installing WBICs, hydrozoning, and high distribution uniformity. Recipients are also eligible for free WBICs, as well as free inspections after self-installation. This program has been modified from previous versions to include cheaper, more accessible online educational classes, and it focuses primarily on residential customers.

- High-Efficiency Clothes Washer (HECW) Machine Program

  This program offers $100 rebates to single- and multi-family residences for HECWs, with an additional $100 rebate per household available through retailers.

- Cash-for-Grass (C4G) Rebate Program

  This is a new program that uses Long Beach Water Department's "Lawn to Garden" program as a model. It creates an online application and online class during which residents are able to apply for turf-replacement funds and train in water-saving landscaping practices.

Each of these programs is currently being implemented, except for the C4G Rebate Program. Grant funding would cover a portion of implementation cost of all individual programs from October 1, 2013 to September 30, 2015. A summary of all benefits and costs of the project are provided in Table 8-1. Monetized benefits and non-monetized benefits are presented in this attachment, while physically quantified (but not monetized) benefits are described in Attachment 7.

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Costs – Total Capital and O&M	**$2,194,116**
Monetizable Benefits	
Avoided Imported Water Supply Costs	$2,647,683
Avoided Clothes Washer Energy Costs	$113,201
Avoided Wastewater Treatment	$419,455
Total Monetizable Benefits	**$3,180,339**
Physically Quantified Benefit or Cost (Not Monetized)	**Project Life Total**
Avoided SWP Import Carbon Emissions	2,016 MT
Avoided Clothes Washer Carbon Emissions	377 MT
Avoided Introduction of Chlorides into the Watershed	384 MT
Qualitative Benefit or Cost	**Qualitative Indicator***
Provides Education Benefits	+
Provides Technology Benefits	+
Helps Meets State Water Conservation Mandate	+ +
Improved Social Health and Safety	+
Avoided Water Quality Impacts of Urban Runoff	+
Avoided Disinfection By-Product Precursors	+
Reduced Demand for Net Diversions from the Delta	+
Improved Water Supply Reliability	+
Avoided Street Maintenance	+
Improved Operational Flexibility for CLWA	+

* Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease net benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

CLWA = Castaic Lake Water Agency.
O&M = operations and maintenance.
SWP = State Water Project.

Non-monetized Benefits Analysis (Section D2)

Table 8-2 shows the non-monetized benefits checklist for the project. Narrative descriptions of the benefit categories marked "Yes" in the following the table are provided in the narrative description of qualitative benefits section after the table.

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Community/Social Benefits	
	Will the proposal	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test, or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	
2	**Provide social recreation or access benefits?**	No
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	
3	**Help avoid, reduce, or resolve various public water resources conflicts?**	Yes
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management? - Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	
4	**Promote social health and safety?**	Yes
	Examples are not limited to, but may include: - Increase urban water supply reliability for firefighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	
5	**Have other social benefits?**	No
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	
	Environmental Stewardship Benefits:	
	Will the proposal	
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	No

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	
7	**Improve water quality in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Reduce net production of greenhouse gases? - Reduce net emissions of other harmful chemicals into the air or water?	
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3 or D4?**	No
	Sustainability Benefits: **Will the proposal**	
10	**Improve the overall, long-term management of California groundwater resources?**	No
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	
11	**Reduce demand for net diversions for the regions from the Delta?**	Yes
12	**Provide a long-term solution in place of a short-term one?**	No
13	**Promote energy savings or replace fossil fuel based energy sources with renewable energy and resources?**	No
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable practices with recognized sustainable practices?	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
14	**Improve water supply reliability in ways not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
15	**Other: Avoided Street Maintenance and Increased Operational Efficiency for CLWA.**	Yes

Narrative Description of Qualitative Benefits

Descriptions of the non-monetized benefits marked "Yes" from the checklist in Table 8-2 are described below.

Provide Education or Technology Benefits

Provides Education Benefits

All of the programs that comprise the CLWA-3 Water Conservation Project have a mandatory educational component, except for the HECW Rebate program. The Large Landscape and CII programs include training for customers on use and expectations for WBICs, and the C4G program offers an online class during which residents learn about water-saving landscaping practices and how to replant with low-water use landscapes. The Landscaper Contractor Certification and WBIC program has expanded to include online classes, which discuss weather-based irrigation use, installation and programming, and overall landscape management practices. Information regarding efficient water use practices will provide benefits as long as the participant employs them, and may also increase the likelihood of that customer to participate in future water conservation initiatives.

Provides Technology Benefits

The Large Landscape, CII, and residential WBIC programs also have the potential to implement and test the effectiveness of new smart controller technology. Approximately half of the WBICs that will be installed through the Large Landscape Program will be fitted for this technology, which uses centralized information and planning to irrigate large, dedicated urban landscapes. With this technology, multiple "satellite" controllers are controlled through a centralized computer system, which allows for monitoring and control of multiple irrigation system parameters, including flow rates, pressures, pumps, and master valve operation, from a single location.

Helps Avoid, Reduce, or Resolve Public Water Resources Conflicts

Water conservation measures implemented under this project allow CLWA to comply with state water conservation mandates. The Water Conservation Act of 2009, or Senate Bill X7-7 (SBX7-7), outlines statewide water conservation targets for both urban and agricultural water customers. Water savings achieved through the CLWA-3 project will help CLWA and its retail agencies to meet state targets (outlined in SBX7-7) of a 10% reduction in potable water demand by the end of 2015, and a 20% reduction in potable water consumption by 2020.

Promotes Social Health and Safety

Additional safety benefits accrue to residents who use public areas that receive new WBICs. Because WBICs control irrigation based on temperature, the public walkways and bikeways, such as those in city and county parks, do not ice over due to irrigation during freezing temperatures.

Improves Water Quality in Ways That Were Not Quantified in Attachment 7

Avoided Water Quality Impacts of Urban Runoff

In addition to reducing total chloride levels, water conservation directly reduces watershed pollution due to urban runoff. Urban irrigation runoff can include pollutants such as chemicals and bacteria, which can flow from urban landscapes into existing water bodies. Given that SCV is a densely populated area with high usage of chemicals such as fertilizers and pesticides for residential and commercial landscaping, these substances can easily flow into the Santa Clara River.

Avoided Disinfection By-Product Precursors

The reduction in SWP imports as a result of these WUE initiatives will also reduce levels of bromide and total organic carbon (TOC), two substances that combine with treatment chemicals to form harmful disinfection by-products such as trihalomethanes. While secondary standards for bromide and TOC in drinking water have not been set, importing water with high levels of both makes it more difficult for CLWA to treat water to meet federal standards for disinfection by-products. Increased levels of disinfection by-products require additional operational costs to control concentrations of by-products in treated water.

Reduces Demand for Net Diversions from the Delta

By reducing the use of imported SWP water, the CLWA-3 will augment in-stream flows in the Delta, or will offset other diversions that may otherwise reduce flows. Reduced demands on Delta supplies will also help reduce the overall salinity of the Delta and improve Delta habitat.

Maintaining the Delta's environmental condition is vital to maintaining and improving the viability of the region. The Delta provides drinking water to 25 million people, supports thousands of industries and irrigation of 750,000 acres of agriculture, and serves as home to hundreds of plant, animal, and fish species – some of which are listed as threatened or endangered. The Delta's 1,600 square miles of marshes, islands, and sloughs support at least half of migratory water birds on the Pacific Flyway; 80% of California's commercial fisheries; and recreational uses, including boating, fishing, and windsurfing.

Delta resources are in a state of crisis. Fish populations, including salmon and Delta smelt, have declined dramatically in recent years. The levee system is aging, and vulnerability of the Delta to flooding, sea level rise, or a major earthquake has contributed to concerns about possible levee collapse. In addition, water quality problems continue, and there is little consensus on how to manage water resources through storage.

Improves Water Supply Reliability in Ways Not Quantified in Attachment 7

The reliability of a water supply refers to its ability to meet water demands on a consistent basis, even in times of drought or other constraints on source water availability. The proposed project will help address reliability issues for Los Angeles County Waterworks #36, Newhall County Water District, Santa Clarita Water Division, and the Valencia Water Company by offsetting the use of imported water delivered by the SWP. As noted above, the reliability of imported water is subject to a number of natural and human forces, ranging from increased population growth (and the accompanying increased demands), to drought and earthquakes, to environmental regulations and water rights determinations.

Although interest in water supply reliability is increasing (e.g., due to increasing water demands and concerns about climate-related events), only a few studies have directly attempted to quantify its value (i.e., through nonmarket valuation studies; see for example Carson and Mitchell, 1987, CUWA, 1994, Griffen and Mjelde, 2000, Raucher et al., 2013). The results from these studies indicate that residential and industrial (i.e., urban) customers seem to value supply reliability quite highly. Stated preference studies find that water customers are willing to pay approximately $100 to over $500 per household per year in 2012 dollars for total reliability (i.e., a 0% probability of their water supply being interrupted in times of drought).

The challenge in applying these values to determine a value of increased reliability as a result of the CLWA-3 project is in recognizing how to reasonably interpret these survey-based household monetary values. The values noted above reflect a willingness to pay per household to ensure complete reliability (zero drought-related use restrictions in the future), whereas the CLWA-3 project only enhances overall reliability and does not guarantee 100% reliability. Thus if applied directly to the number of households within the CLWA service area, the dollar values from the studies would overstate the reliability value provided by the project.

A simple way to roughly adjust for this "whole versus part" problem is to attribute a portion of the total value of reliability to the portion of the problem that is solved by the project. To adjust for the partial improvement in reliability from the CLWA-3, it is assumed that household willingness to pay for improved reliability is directly proportional to the amount of conserved water, as a percentage of the total potable water supply. This represents the percentage of total supply that has been improved in terms of overall reliability (i.e., by offsetting imported water demand with local sources).

For example, the project will offset more than 379 acre-feet per year (AFY) of imported water beginning in 2015. In 2020, roughly halfway through the lifetime of the project's benefits, total water demand within CLWA's service area will be about 71,908 AFY (without the project) (Kennedy/Jenks Consultants et al., 2011). Thus about 0.5% of total potable demand will eliminated as a result of the project. To obtain a lower bound estimate for the value of improved reliability associated with this water, it is assumed that households within the CLWA service area are willing to pay about $0.50 per year ($100 multiplied by 0.5%). Applying this dollar value per household to the approximately 96,133 households within the collective service areas would result in $48,067 of benefits in 2020. Taking into account increasing population and changing demands, this calculation could be completed for each year of the project's useful life.

Because of the uncertainty involved in applying these numbers to this situation, this benefit estimate is not included in the tables. However, it is provided here to give an idea of the potential magnitude of this benefit.

Other: Avoided Street Maintenance

Over-irrigation caused by inefficient urban systems has additional impacts on roadways. Reducing over-irrigation will prevent water from carrying trash into streets, as well as damaging roads by infiltrating cracks and undermining the integrity of the pavement.

Other: Increased Operational Efficiency for CLWA

As total water demand reduction increases water supply reliability, it also allows water agencies to have additional operational flexibility. By avoiding water imports, which fluctuate in consistency, water retailers can plan shutdowns and maintenance operations more efficiently.

Monetized Benefits Analysis (Section D3)

Several monetized benefits are expected to accrue over the expected 14-year life of the project. Those include avoided costs due to imported marginal water supply from SWP, avoided clothes washer energy costs, and avoided wastewater treatment costs.

Avoided Imported Water Supply Costs

Water savings through more efficient irrigation controllers, practices, turf, and HECWs is expected to be approximately 3,960 acre-feet (AF) over the 14-year benefits lifetime of this project. Actual savings over the lifetimes of each program will likely be higher, as this estimate does not factor in water savings from the landscape modifications of the Large Landscape and CII programs or water savings from landscaping contractors improving their WUE through the Landscape Contractor and Residential WBIC program. The HECW and C4G programs also use conservative estimates in water consumption and program benefit lifetime, respectively. Where applicable, estimates were based on findings and consumption data from similar, previously implemented programs.

The estimated water savings will result in an equivalent amount of avoided imported water, which currently costs $800 per acre-foot for CLWA's marginal source of SWP water (CLWA, 2013). Given the recent and projected rate of change of SWP supplies, this cost is expected to increase in real terms over the benefits lifetime of the project. We estimate that the cost of SWP imports will rise at a real rate (above inflation) of 3.5% annually through 2020, after which prices will likely escalate at a rate of 1.5% annually. Assuming this rise in rates, we approximate the present value of all future benefits of avoided water imports over the 14-year life of project benefits to be $2,647,683.

Avoided Clothes Washer Energy Costs

Switching from standard clothes washers to high-efficiency machines provides water savings, as well as the benefit of avoiding energy costs associated with heating the equivalent amount of saved water. The HECW program is the only program in this project that provides avoided water heating benefit associated with water conservation savings.

The energy required to heat water for residential washing machines varies depending on the number of loads per household, the type of high-efficiency machine purchased, and the individual machine settings used for each household. The Alliance for Water Efficiency estimates that switching to a HECW saves 0.0036 kWh/gallon in electricity use (Alliance for Water Efficiency, 2011). This estimate for energy consumption per gallon is based on participants' energy use from previous conservation programs, which were subject to these same uncertainties, and is most likely a reasonable estimate of household energy use for the CLWA-3 project.

Using the average 2012 retail electricity price for California of $0.15/kWh (Energy Information Administration, 2013), we estimate that the 1,160.9 megawatt hour (MWh) of electricity saved by reducing water demand by 990 AF will save single-family residential customers approximately $14,511 per year. The present value of all future benefits over the 14-year lifespan of the project is $113,201.

Avoided Wastewater Treatment Costs

Water savings achieved through HECWs has an additional benefit of preventing the equivalent amount of wastewater treatment at the Santa Clarita Valley Sanitation District's (SCVSD's) Water Reclamation Plants (WRPs). The HECW program is projected to save approximately 990 AF of water over the project benefits lifetime. Using the SCVSD's average cost of wastewater treatment of $652 per acre-foot, we estimate that HECW rebates will avoid approximately $53,771 per year in sanitation expenses over the 14-year lifetime of the project benefits, in 2012 dollars (CLWA, 2013). The present value of these future benefits is $419,455.

Table 8-3 summarizes the annual monetized benefits from the project.

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

TABLE 8-3: ANNUAL BENEFIT

(All benefits in 2012 dollars) Project: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2012	Avoided SWP Water Imports					$800			
2013	Avoided SWP Water Imports	AF	0	47.44	47.44	$828	$39,281	0.943	**$ 37,058**
	HECW Energy Savings	kWH	0	12,093.03	12,093.03	$0.15	$1,814	0.943	**$1,711**
	Avoided Wastewater Treatment	AF	0	10.31	10.31	$652	$6,721	0.943	**$6,341**
2014	Avoided SWP Water Imports	AF	0	237.20	237.20	$857	$203,279	0.890	**$ 180,918**
	HECW Energy Savings	kWH	0	60,465.15	60,465.15	$0.15	$9,070	0.890	**$8,072**
	Avoided Wastewater Treatment	AF	0	51.54	51.54	$652	$33,607	0.890	**$29,910**
2015	Avoided SWP Water Imports	AF	0	379.53	379.53	$887	$336,630	0.840	**$282,641**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.840	**$12,184**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.840	**$45,147**
2016	Avoided SWP Water Imports	AF	0	379.53	379.53	$918	$348,412	0.792	**$275,975**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.792	**$11,495**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.792	**$42,592**
2017	Avoided SWP Water Imports	AF	0	379.53	379.53	$950	$360,607	0.747	**$269,466**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.747	**$10,844**

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

TABLE 8-3: ANNUAL BENEFIT

(All benefits in 2012 dollars) Project: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.747	**$40,181**
2018	Avoided SWP Water Imports	AF	0	379.53	379.53	$983	$373,228	0.705	**$263,111**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.705	**$10,230**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.705	**$37,907**
2019	Avoided SWP Water Imports	AF	0	379.53	379.53	$1,018	$386,291	0.665	**$256,906**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.665	**$9,651**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.665	**$35,761**
2020	Avoided SWP Water Imports	AF	0	379.53	379.53	$1,053	$399,811	0.627	**$250,846**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.627	**$9,105**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.627	**$33,737**
2021	Avoided SWP Water Imports	AF	0	379.53	379.53	$1,069	$405,808	0.592	**$240,197**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.592	**$8,589**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.592	**$31,827**
2022	Avoided SWP Water Imports	AF	0	379.53	379.53	$1,085	$411,895	0.558	**$230,000**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.558	**$ 8,103**

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

TABLE 8-3: ANNUAL BENEFIT

(All benefits in 2012 dollars) Project: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.558	**$30,026**
2023	Avoided SWP Water Imports	AF	0	342.39	342.39	$1,102	$377,171	0.527	**$198,689**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.527	**$7,645**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.527	**$28,326**
2024	Avoided SWP Water Imports	AF	0	193.87	193.87	$1,118	$216,761	0.497	**$107,724**
	HECW Energy Savings	kWH	0	96,744.24	96,744.24	$0.15	$14,512	0.497	**$7,212**
	Avoided Wastewater Treatment	AF	0	82.47	82.47	$652	$53,771	0.497	**$26,723**
2025	Avoided SWP Water Imports	AF	0	72.16	72.16	$1,135	$81,894	0.469	**$38,395**
	HECW Energy Savings	kWH	0	84,651.21	84,651.21	$0.15	$12,698	0.469	**$5,953**
	Avoided Wastewater Treatment	AF	0	72.16	72.16	$652	$47,050	0.469	**$22,059**
2026	Avoided SWP Water Imports	AF	0	30.93	30.93	$1,152	$35,624	0.442	**$15,757**
Last Year of Project Life	HECW Energy Savings	kWH	0	36,279.09	36,279.09	$0.15	$5,442	0.442	**$2,407**
	Avoided Wastewater Treatment	AF	0	30.93	30.93	$652	$20,164	0.442	**$8,919**
					Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)				**$3,180,339**

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

Project Economic Costs

Initial costs for the project total $2,499,620, including direct administration costs of $124,620 of the total project budget, and comprise administration and reporting. The budget also includes implementation of the water conservation programs, at $2,175,000. This expense includes the costs of WBIC, landscape modification, and HECW rebates, as well as costs for the educational components of each program. The remainder of the total budget comprises contingency implementation costs, which account for extra inspections or unforeseen expenses regarding the rebates. There are no expected operational or maintenance costs expected after the two-year implementation, which begins on October 1, 2013 and ends on September 30, 2015, and all costs are expected to be distributed evenly over this time period. Table 8-4 summarizes the economic costs of the project.

Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Santa Clarita Valley Water Use Efficiency Strategic Plan Program (CLWA-3)										
	Initial Costs Grand Total Cost from Table 4-2 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
Year	(a)	(b)	Admin (c)	Operation (d)	Maintenance (e)	Replacement (f)	Other (g)	Total Costs (a) +…+ (g) (h)	Discount Factor (i)	Discounted Project Costs (h) x (i) (j)
2013	$312,453							$312,453	0.943	**$294,767**
2014	$1,249,810							$1,249,810	0.890	**$1,112,326**
2015	$937,358							$937,358	0.840	**$787,023**
2016										
2017										
…..										
Last Year of Project Life - 2026									…	
								Total Present Value of Discounted Costs (Sum of column (j)) Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		**$2,194,116**
Comments:										

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project.

Project Benefits and Cost Summary

Benefits from all five programs will accrue to beneficiaries beginning with project implementation on October 1, 2013. Avoided SWP water costs, as well as avoided residential electricity expenditures and avoided wastewater treatment costs stemming from HECW replacement, will produce at least some benefits over the 14-year lifespan of benefits, from 2013 to 2016. The present value of all benefits, in 2012 dollars, is $3,180,339. The present value of the total project cost, to be incurred between October 1, 2013 and September 30, 2015, is $2,194,116. The project is expected to yield a positive present value net benefit of $986,223.

This analysis of costs and benefits is based on available data and some assumptions. As a result, there may be some omissions, uncertainties, and possible biases. In this analysis, the main uncertainties are associated with avoided costs due to SWP imports and avoided clothes washer energy usage. These issues are listed in Table 8-5.

TABLE 8-5: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided SWP Imports	+	Water savings estimates for each program are based on conservative benefit lifetime and baseline usage figures. Actual water savings, and costs associated with importing SWP water, will likely be higher.
Avoided Clothes Washer Energy Costs	U	Estimates of energy savings due to HECW replacement are based on several factors that vary between households. Water consumption and energy savings due to HECWs is based off of a similar 2012 program, so the variation is likely to be small.

*Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

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Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

Summary

The Santa Clarita Water Division (SCWD) Water Use Efficiency (WUE) Strategic Plan (SP) identifies 10 programs to achieve WUE goals for the SCWD's service area within Santa Clarita Valley (SCV). The SCWD-2 plan focuses on the following three water conservation programs, two of which have been implemented previously:

- High-Efficiency Irrigation Nozzle Distribution

  This program will expand the existing FreeSprinklernozzles.com distribution website to offer a greater variety of high-efficiency irrigation nozzles to residential, commercial, industrial, and institutional customers.

- Residential and Commercial Rebate Program

  SCWD will expand an existing program, which incentivizes high-efficiency toilets and weather-based irrigation controllers, to include rebates for high-efficiency clothes washers (HECWs). Two other sub-programs incentivizing ultra-low flow and zero-water urinals have not been implemented previously, nor are they part of this expansion, due to staffing and monetary restrictions.

- Large Landscape Water Budgets

  This is a new program that targets large landscaping sites with dedicated irrigation meters. The SCWD will educate customers and encourage water-saving practices specific to their landscaping sites.

A summary of all benefits and costs of the project are provided in Table 8-1. Monetized benefits and non-monetized benefits are presented in this attachment, while physically quantified (but not monetized) benefits are described in Attachment 7.

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Costs – Total Capital and O&M	**$281,081**
Monetizable Benefits	
Avoided Imported Water Supply Costs	$735,244
Avoided Clothes Washer Energy Costs	$30,197
Avoided Wastewater Treatment Costs	$111,894
Total Monetizable Benefits	**$877,335**
Physically Quantified Benefit or Cost (Not Monetized)	**Project Life Total**
Avoided Carbon Emissions from Imported Water	541.8 MT
Avoided Import of Chlorides	103.2 MT
Avoided Clothes Washer Carbon Emissions	108.4 MT
Qualitative Benefit or Cost	**Qualitative Indicator***
Increased Education Benefits	+
Improved Ability to Meet State Water Conservation Mandate	+
Increased Public Safety	+
Reduced Water Quality Impacts from Urban Irrigation Runoff	+
Avoided Disinfection By-Product Precursors	+

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Reduced Net Diversions from the Delta	+
Improved Water Supply Reliability	+
Avoided Street Maintenance	+
Improved Operational Efficiency for CLWA	+

* Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease net benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

CLWA = Castaic Lake Water Agency.
MT = metric tons.
O&M = operations and maintenance.
SWP = State Water Project.

Non-monetized Benefits Analysis (Section D2)

Table 8-2 shows the non-monetized benefits checklist for the project. Narrative descriptions of the benefit categories marked "Yes" in the following table are provided in the narrative description of qualitative benefits section after the table.

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Community/Social Benefits **Will the proposal**	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	
2	**Provide social recreation or access benefits?**	No
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
3	**Help avoid, reduce or resolve various public water resources conflicts?**	Yes
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management? - Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	
4	**Promote social health and safety?**	Yes
	Examples are not limited to, but may include: - Increase urban water supply reliability for fire-fighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	
5	**Have other social benefits?**	No
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	
	Environmental Stewardship Benefits: **Will the proposal**	
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian, or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	
7	**Improve water quality in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Reduce net production of greenhouse gases? - Reduce net emissions of other harmful chemicals into the air or water?	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3, or D4?**	No
	Sustainability Benefits: **Will the proposal**	
10	**Improve the overall, long-term management of California groundwater resources?**	No
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	
11	**Reduce demand for net diversions for the regions from the Delta?**	Yes
12	**Provide a long-term solution in place of a short-term one?**	No
13	**Promote energy savings or replace fossil fuel-based energy sources with renewable energy and resources?**	No[1]
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable practices with recognized sustainable practices?	
14	**Improve water supply reliability in ways not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
15	**Other (if the above listed categories do not apply, provide non-monetized benefit description)?**	Yes

[1] This benefit category is marked as no because it was already described as a physically quantified benefit in Attachment 7.

Narrative Description of Qualitative Benefits

Descriptions of the non-monetized benefits marked "Yes" from the checklist in Table 8-2 are described below.

Provides Education or Technology Benefits

Through the Large Landscape Budget program, customers with large, dedicated irrigation sites are taught about more efficient water use practices and devices that they can use on their property. For this project, water savings from large landscape budgets are calculated over a 10-year lifetime, but knowledge of the benefits of efficient water use methods can last much longer. Customers who augment their practices to

achieve water savings can employ the same practices elsewhere, and the education provided through this program can encourage people to participate in other water conservation programs.

Helps Avoid, Reduce, or Resolve Public Water Resources Conflicts

Water conservation measures implemented under this project allow SCWD to comply with state water conservation mandates. The Water Conservation Act of 2009, or Senate Bill X7-7 (SBX7-7), outlines statewide water conservation targets for both urban and agricultural water customers. Water savings achieved through the SCWD WUE programs will help SCV to meet the state targets outlined in SBX7-7: a 10% reduction in potable water demand by the end of 2015, and a 20% reduction in potable water consumption by 2020.

Promotes Social Health or Safety

The High-Efficiency Irrigation Nozzle Distribution Program provides additional safety benefits for the public in the SCWD service area. high-efficiency nozzles decrease urban irrigation runoff onto public bike paths and walkways, therefore reducing icing hazards in sub-freezing temperatures.

Improves Water Quality in Ways That Were Not Quantified in Attachment 7

Reduced Water Quality Impacts of Urban Irrigation Runoff

Water quality benefits derived from reduced import of chlorides into the SCV are quantified and described in Attachment 7. The SCWD-2 programs provide additional water quality benefits through reduced urban irrigation runoff. Pollutants such as bacteria and man-made chemicals are carried into existing bodies of water through runoff caused by over-irrigation. SCV is a densely populated area and likely has a high rate of fertilizer and pesticide application for residential and commercial landscaping purposes. Over-irrigation causes these contaminants to flow from urban settings and eventually infiltrate the Santa Clara River.

Avoided Disinfection By-Product Precursors

The reduction in SWP imports as a result of these WUE initiatives will also reduce levels of bromide and total organic carbon (TOC), two substances that combine with treatment chemicals to form harmful disinfection by-products such as trihalomethanes. While secondary standards for bromide and TOC in drinking water have not been set, importing water with high levels of both makes it more difficult for CLWA to treat water to meet federal standards for disinfection byproducts. Increased levels of disinfection byproducts require additional operational costs in order to control concentrations of byproducts in treated water.

Reduces Demand for Net Diversions from the Delta

By reducing the use of imported SWP water, the CLWA-3 will augment in-stream flows in the Bay-Delta or will offset other diversions that may otherwise reduce flows. Reduced demands on Delta supplies will also help to reduce the overall salinity of the Delta and improve Delta habitat.

Maintaining the Delta's environmental condition is vital to maintaining and improving the viability of the region. The Delta provides drinking water to 25 million people, supports thousands of industries and irrigation of 750,000 acres of agriculture, and serves as home to hundreds of plant, animal, and fish species – some of which are listed as threatened or endangered. The Delta's 1,600 square miles of marshes, islands, and sloughs support at least half of migratory water birds on the Pacific Flyway; 80% of California's commercial fisheries; and recreational uses including boating, fishing, and windsurfing.

Delta resources are in a state of crisis. Fish populations, including salmon and Delta-smelt, have declined dramatically in recent years. The levee system is aging, and vulnerability of the Delta to flooding, sea level

rise, or a major earthquake has contributed to concerns about possible levee collapse. In addition, water quality problems continue, and there is little consensus on how to manage water resources through storage.

Improves Water Supply Reliability in Ways Not Quantified in Attachment 7

The reliability of a water supply refers to its ability to meet water demands on a consistent basis, even in times of drought or other constraints on source water availability. This project will help address reliability issues for SCWD by offsetting the use of imported water delivered from the SWP. As noted above, the reliability of imported water is subject to a number of natural and human forces, ranging from increased population growth (and the accompanying increased demands), to drought and earthquakes, to environmental regulations and water rights determinations.

Although interest in water supply reliability is increasing (e.g., due to increasing water demands and concerns about climate-related events), only a few studies have directly attempted to quantify its value (i.e., through nonmarket valuation studies). The results of these studies indicate that residential and industrial (i.e., urban) customers seem to value supply reliability quite highly. Stated preference studies find that water customers are willing to pay approximately $100 to $535 per household per year in 2012 dollars for total reliability (i.e., a 0% probability of their water supply being interrupted in times of drought).

The challenge in applying these values to determine a value of increased reliability as a result of the SCWD-2 project is in recognizing how to reasonably interpret these survey-based household monetary values. The values noted above reflect a willingness to pay per household to ensure complete reliability (zero drought-related use restrictions in the future), whereas the SCWD-2 project only enhances overall reliability and does not guarantee 100% reliability. Thus if applied directly to the number of households within the SCWD service area, the dollar values from the studies would overstate the reliability value provided by the project.

A simple way to roughly adjust for this “whole versus part” problem is to attribute a portion of the total value of reliability to the portion of the problem that is solved by the project. To adjust for the partial improvement in reliability from the SCWD-2 project, it is assumed that household willingness to pay for improved reliability is directly proportional to the amount of conserved water that will offset imported water, as a percentage of the total potable water supply. This represents the percentage of total supply that has been improved in terms of overall reliability (i.e., by offsetting imported water demand with local sources).

For example, the project will offset approximately 1,064 AF of imported water over a total of 14 years, averaging 76 AFY. In 2020, total water demand within SCWD’s service area is projected to be about 27,757 AFY (without the project) (Kennedy/Jenks Consultants et al., 2011). Thus about 0.27% of yearly potable demand will be reduced by conservation incentives available as a result of the project (76 AF divided by 27,757 AF). To obtain a lower-bound estimate for the value of improved reliability associated with this water, it is assumed that households within the SCWD’s service area are willing to pay about $0.27 per year ($100 multiplied by 0.27%). Applying this dollar value per household to the approximately 40,444 households within the SCWD service area would result in $10,920 of benefits in 2020. Taking into account increasing population and changing demands, this calculation could be completed for each year of the project’s useful life.

Due to the uncertainty involved in applying these numbers to this situation, this benefit estimate is not included in the tables. However, it is provided here to give an idea of the potential magnitude of this benefit.

Other: Avoided Street Maintenance

Over-irrigation caused by inefficient urban systems has impacts on roadways. Reducing over-irrigation will prevent water from carrying trash into streets, as well as damaging roads by infiltrating cracks and undermining the integrity of the pavement.

Other: Improved Operational Efficiency for CLWA

Full implementation of the project will offset the use of 613 AFY of imported SWP water. This will help wholesale imported water provider CLWA directly in their supply operations, allowing for longer shutdowns and improving system reliability. The value of this increased operational flexibility is not monetized in the benefit tables.

Monetized Benefits Analysis (Section D3)

Several monetized benefits are expected to accrue over the expected 14-year life of the project. Those include avoided imported water costs, avoided energy costs for clothes washers, and avoided wastewater treatment costs.

Avoided Imported Water Supply Costs

Water savings through more efficient irrigation controllers, practices, and HECWs is expected to be approximately 1,064 AF over the 14-year benefits lifetime of this project. The estimated water savings will result in an equivalent amount of avoided imported water, which currently costs $800 per acre-foot for CLWA's marginal source of SWP water (CLWA, 2013). Given the recent and projected rate of change of SWP supplies, this cost is expected to increase in real terms over the benefits lifetime of the project. We estimate that the cost of SWP imports will rise at a real rate (above inflation) of 3.5% annually through 2020, after which prices will likely escalate at a rate of 1.5% annually. The total present value benefit of avoided water imports is calculated to be $735,244 over the 14-year life of all project benefits.

Avoided Clothes Washer Energy Costs

Switching from standard clothes washers to HECWs provides water savings, as well as the benefit of avoiding energy costs associated with heating the equivalent amount of saved water. Because outdoor irrigation rarely, if ever, uses heated water, this benefit applies solely to water saved through the HECW program.

Energy required to heat water for residential and commercial washing machines varies depending on the type of HECW purchased and user preferences. The Alliance for Water Efficiency estimates that switching to a HECW saves 0.0036 kilowatt hour (kWh)/gallon in electricity use (Alliance for Water Efficiency, 2011). This estimate for energy consumption per gallon is based on residential participants' energy use from previous conservation programs, which were subject to these same uncertainties, and is most likely a reasonable estimate of residential household energy use for the SCWD-2 HECW program. If any rebated machines are used for commercial purposes, energy costs would likely increase because the average retail electricity price for commercial customers is 85% that of residential customers, but each machine is likely to see much more than a 17% increase in use over residential users.

Using the average 2012 retail electricity price for California of $0.15/kWh (Energy Information Administration, 2013), we estimate that the 309.7 MWh of electricity saved by reducing water demand by 264 AF will save customers approximately $30,198.

Avoided Wastewater Treatment Costs

Water savings achieved through HECWs have secondary benefits of preventing the equivalent amount of water from having to be treated by the Santa Clara Valley Sanitation District (SCVSD). The HECW program is projected to save approximately 264 AF of water over the project benefits lifetime. Using the SCVSD's average cost to treat wastewater of 652 per acre-foot, we estimate that HECW rebates will prevent approximately $111,894 in sanitation expenses over the 14-year lifetime of the project benefits, in 2012 dollars (CLWA, 2013).

Table 8-3 summarizes the annual benefits from the project.

Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

TABLE 8-3: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

(All benefits should be in 2012 dollars)									
Project: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2012	Avoided SWP Imports					$800			
2013	Avoided SWP Imports	AF	0	16.25	16.25	$828	$13,455	0.943	**$12,693**
	HECW Energy Savings	MWh	0	3.23	3.23	$150	$484	0.943	**$456**
	Avoided Wastewater Treatment	AF	0	2.75	2.75	$652	$1,793	0.943	**$1,692**
2014	Avoided SWP Imports	AF	0	87.75	87.75	$857	$75,200	0.890	**$66,928**
	HECW Energy Savings	MWh	0	16.13	16.13	$150	$2,419	0.890	**$2,153**
	Avoided Wastewater Treatment	AF	0	13.75	13.75	$652	$8,965	0.890	**$7,979**
2015	Avoided SWP Imports	AF	0	156	156.00	$887	$138,368	0.840	**$116,176**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.840	**$3,250**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.840	**$12,043**
2016	Avoided SWP Imports	AF	0	156	156.00	$918	$143,211	0.792	**$113,436**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.792	**$3,066**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.792	**$11,362**

Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

TABLE 8-3: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

(All benefits should be in 2012 dollars)									
Project: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2017	Avoided SWP Imports	AF	0	156	156.00	$950	$148,223	0.747	**$110,761**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.747	**$2,893**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.747	**$10,719**
2018	Avoided SWP Imports	AF	0	142.5	142.50	$983	$140,135	0.705	**$98,790**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.705	**$2,729**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.705	**$10,112**
2019	Avoided SWP Imports	AF	0	88.5	88.50	$1,018	$90,077	0.665	**$59,907**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.665	**$2,575**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.665	**$9,540**
2020	Avoided SWP Imports	AF	0	48	48.00	$1,053	$50,565	0.627	**$31,725**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.627	**$2,429**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.627	**$9,000**

Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)

TABLE 8-3: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

(All benefits should be in 2012 dollars)									
Project: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2021	Avoided SWP Imports	AF	0	48	48.00	$1,069	$51,324	0.592	**$30,379**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.592	**$2,291**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.592	**$8,490**
2022	Avoided SWP Imports	AF	0	48	48.00	$1,085	$52,094	0.558	**$29,089**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.558	**$2,162**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.558	**$8,010**
2023	Avoided SWP Imports	AF	0	48	48.00	$1,102	$52,875	0.527	**$27,854**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.527	**$2,039**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.527	**$7,556**
2024	Avoided SWP Imports	AF	0	41.5	41.50	$1,118	$46,401	0.497	**$23,060**
	HECW Energy Savings	MWh	0	25.81	25.81	$150	$3,871	0.497	**$1,924**
	Avoided Wastewater Treatment	AF	0	22.00	22.00	$652	$14,344	0.497	**$7,129**

TABLE 8-3: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

(All benefits should be in 2012 dollars)									
Project: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2025	Avoided SWP Imports	AF	0	19.25	19.25	$1,135	$21,846	0.469	**$10,242**
	HECW Energy Savings	MWh	0	22.58	22.58	$150	$3,387	0.469	**$1,588**
	Avoided Wastewater Treatment	AF	0	19.25	19.25	$652	$12,551	0.469	**$5,884**
2026	Avoided SWP Imports	AF	0	8.25	8.25	$1,152	$9,503	0.442	**$4,203**
Last Year of Project Life	HECW Energy Savings	MWh	0	9.68	9.68	$150	$1,452	0.442	**$642**
	Avoided Wastewater Treatment	AF	0	8.25	8.25	$652	$5,379	0.442	**$2,379**
					Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)				**$877,335**

Project Economic Costs

Total project costs amount to $295,500 for full implementation of this project. Costs for the HECW Program are distributed evenly over the two-year project implementation period, which runs from October 1, 2013 to September 30, 2015. This includes both distribution and processing costs for 1,000 rebates. Costs to distribute high-efficiency nozzles are distributed evenly over the two-year project life, but an additional $30,000 is required in the first quarter of the first year for website development. Large landscape budgets will be developed only in the second year of the project, but program costs are distributed evenly over that year. Administration and reporting costs total $15,000. Maintenance costs are shown for the Large Landscape Water Budget program to provide a follow-up annual report written to Large Landscape Water Budget program participants to show the change in water consumption at their properties. This expense is expected to last over the first 5 years of the program, by which time participants are expected to be very familiar with the program and follow-up to be no longer needed. The present value of all project costs is $281,081. Table 8-4 summarizes the economic project costs.

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)										
	Initial Costs		Annual Costs [2]						Discounting Calculations	
	Grand Total Cost from Table 4-3 (row (i), column (d))	Adjusted Grant Total Cost[1]	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2013	$60,688							$60,688	0.94340	**$57,252**
2014	$127,750							$127,750	0.89000	**$113,697**
2015	$107,063				$710			$107,773	0.83962	**$90,488**
2016					$5,680			$5,680	0.79209	**$4,499**
2017					$5,680			$5,680	0.74726	**$4,244**
2018					$5,680			$5,680	0.70496	**$4,004**
2019					$5,680			$5,680	0.66506	**$3,778**
2020					$4,970			$4,970	0.62741	**$3,118**
2021								$0	0.59190	**$0**
2022								$0	0.55839	**$0**
2023								$0	0.52679	**$0**
2024								$0	0.49697	**$0**
2025								$0	0.46884	**$0**
2026								$0	0.44230	**$0**
								Total Present Value of Discounted Costs (Sum of column (j))		**$281,081**
								Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		

Comments: Maintenance costs are shown for the Large Landscape Water Budget program to provide a follow-up annual report written to Large Landscape Water Budget program participants to show the change in water consumption at their properties. This expense is expected to last over the first 5 years of the program, by which time participants are expected to be very familiar with the program and follow-up to be no longer needed.

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project

Project Benefits and Cost Summary

The present value of avoided SWP imports, HECW energy savings, and avoided wastewater treatment is $877,335. The present value of total project costs is approximately $281,081, yielding a net project benefit of $596,254. The SCWD-2 project will also provide 1,548.1 MWh of electricity savings, 541.8 MT of reduced carbon emissions, and a 103.2 MT reduction in imported chlorides, all due to foregone water imports over the 14-year span of benefits. HECWs will additionally prevent 108.4 MT of carbon emissions over the same span.

This project will provide additional benefits that have not yet been quantified. Large landscape budget development will promote water conservation education, and all programs will help to achieve statewide potable water demand reduction goals. Efficient irrigation will provide public safety in the form of less icing of public walkways and roads. These WUE measures will reduce urban irrigation runoff, thus helping to prevent pollutants from contaminating local water bodies, and reduce overall demand for diversions from scarce water sources.

Energy savings achieved through the residential and commercial HECW program and by avoiding imported water will reduce carbon dioxide emissions. Finally, water savings achieved through all programs will result in a more stable water supply by preventing reliance on imported water, and will allow for greater operational flexibility of water management facilities.

This analysis of costs and benefits is based on available data and some assumptions. As a result, there may be some omissions, uncertainties, and possible biases. In this analysis, the main uncertainties are associated with imported water and avoided energy costs. These issues are listed in Table 8-5.

TABLE 8-5: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided Imported Water Supply Costs	+	Water savings estimates for each program are based on conservative benefit lifetime and baseline usage figures. Actual water savings, and costs associated with importing SWP water, will likely be higher.
Avoided Clothes Washer Energy Costs	U	Estimates of energy savings due to HECW replacement are based on several factors that vary among households. Water consumption and energy savings due to HECWs is based off of a similar 2012 program, so the variation is likely to be small.

*Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

References

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Foothill Feeder Connection (CLWA-8)

Summary

The purpose of this project is to increase the amount of imported water that the Castaic Lake Water Agency (CLWA) can process through its recently expanded Rio Vista Water Treatment Plant (RVWTP). Before it is used by CLWA, the imported water moves through Castaic Lake to the Metropolitan Water District of Southern California's Foothill Feeder Pipeline. Water taken by CLWA from the Foothill Feeder is sent to CLWA's 102-inch raw water pipeline that feeds CLWA's Rio Vista Water Treatment Plant (RVWTP). The connection was intended to be a temporary structure. Construction of this permanent Foothill Feeder connection will include installation of approximately 200 feet, 48-inch diameter pipeline; a 140 cubic feet per second (cfs)/90 million gallons per day (MGD) turnout structure, valve vault, and meter vault; and installation of electrical and supervisory control and data acquisition (SCADA) equipment.

The current water connection that conveys water from the Foothill Feeder to the RVWTP can only supply 60 MGD, even though, after a recent expansion, the RVWTP is capable of treating 66 MGD (Kennedy/Jenks Consultants, 2012). Moreover, the 60 MGD connection, built in 1996, was meant to be temporary. This project will create a new, permanent connection to the RVWTP so that the plant can obtain its capacity of 66 MGD, an increase of six MGD, or 6,720 AFY, over its current capacity.[1] The new connection will have a maximum capacity of 90 MGD, so that it can accommodate planned expansions of the RVWTP. The new connection will have a design life of 50 years.

A summary of all benefits and costs of the project are provided in Table 8-1. Monetized benefits and non-monetized benefits are presented in this attachment, while physically quantified benefits are described in Attachment 7.

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Costs – Total Capital and O&M	**$41,273,114**
Monetizable Benefits	
Avoided Future Marginal Recycled Water Expansion Costs	$43,371,149
Avoided Future Marginal Water Conservation Program Costs	$11,675,955
Total Monetizable Benefits	**$55,047,104**
Qualitative Benefit or Cost	**Qualitative Indicator***
Increased Water Education Programming	+
Increased Safety Due to Improved Seismic Stability	+
Increased Water Supply System Reliability	+
Increased Greenhouse Gas Emissions	–
Increased Operational Flexibility and Treatment Reliability for CLWA	+ +

* Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease net benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

CLWA = Castaic Lake Water Agency
O&M = operations and maintenance

[1] One MGD is approximately 1,120 acre-feet per year.

Non-monetized Benefits Analysis (Section D2)

Table 8-2 shows the non-monetized benefits checklist for the project. Narrative descriptions of the benefit categories marked "Yes" in the following the table are provided in the narrative description of qualitative benefits section after the table.

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Community/Social Benefits	
	Will the proposal	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	
2	**Provide social recreation or access benefits?**	No
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	
3	**Help avoid, reduce or resolve various public water resources conflicts?**	No
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management? - Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	
4	**Promote social health and safety?**	Yes
	Examples are not limited to, but may include: - Increase urban water supply reliability for fire-fighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	
5	**Have other social benefits?**	No
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	
	Environmental Stewardship Benefits:	
	Will the proposal	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian, or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	
7	**Improve water quality in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	Neg
	Examples are not limited to, but may include: - Reduce net production of greenhouse gases? - Reduce net emissions of other harmful chemicals into the air or water?	
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3, or D4?**	No
	Sustainability Benefits:	
	Will the proposal	
10	**Improve the overall, long-term management of California groundwater resources?**	No
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	
11	**Reduce demand for net diversions for the regions from the Delta?**	No
12	**Provide a long-term solution in place of a short-term one?**	No
13	**Promote energy savings or replace fossil fuel-based energy sources with renewable energy and resources?**	No
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable practices with recognized sustainable practices?	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
14	**Improve water supply reliability in ways not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
15	**Other: Increased Operational Flexibility and Treatment Reliability for CLWA?**	Yes

[1] This benefit category is marked as no because it was already described as a physically quantified benefit in Attachment 7.

Narrative Description of Qualitative Benefits

Descriptions of the non-monetized benefits marked "Yes" from the checklist in Table 8-2 are described below.

Provide Education or Technology benefits

The project will provide education benefits to local school children. CLWA has an ongoing water education program with Bridgeport Elementary School, which is a short walk from where the new connection will be built. The water education program focuses on the science and practice of water resources, water treatment, and water conservation. The CLWA Board of Directors places a high priority on instilling conservation in young children as a means of reducing the amount of water required to meet future community demand. The proximity of the project to this school presents a unique opportunity for the teachers and the project manager to take students and teachers to the project site where they can observe firsthand how water is conveyed and how infrastructure projects are carried out.

Promote Social Health and Safety

The new connection will provide improved seismic stability, thereby better protecting human lives, infrastructure, and property (Flow Science Incorporated, 2009). Seismic stability will be improved in five ways:

1. The new connection will be a single riser pipe rather than three separate risers. This will provide better stability and protection against pipe rupture should a seismic event occur.
2. Moreover, in the event of a pipe rupture, the new turnout can be isolated from the Foothill Feeder by a motor operated conical plug valve that can be closed by Metropolitan Water District's Supervisory Control and Data Acquisition system, rather than the currently used manually operated butterfly valve. This will reduce the consequences of flooding.
3. The new meter will be a magnetic flow meter, which will provide more stable and accurate flow measurements than the existing Venturi Meter.
4. Both the plug valve and the meter will be installed inside separate vaults designed to current seismic codes, replacing the existing meter within a vault designed to previous seismic codes.

5. Two manually operated butterfly valves will be installed downstream of the meter instead of the current setup of just one butterfly valve. This will provide better protection from potential flooding caused by a ruptured pipe.

Improve Water Quality in Ways That Were Not Quantified in Attachment 7

The project will help improve water quality. CLWA operates a perchlorate treatment facility that processes 3.5 MGD of groundwater. In addition to perchlorate, the groundwater contains detectable levels of the volatile organic compounds trichloroethylene (TCE) and tetrachloroethylene (PCE). The concentrations of these compounds are below the maximum contaminant level, but the perchlorate treatment does not remove them. Instead, CLWA blends the groundwater with imported water in order to reduce the TCE and PCE concentrations to non-detectable levels. Usually this goal is met, but sometimes trace levels are still detected. The additional capacity provided by the new connection would allow for more imported water to be blended with the groundwater, thereby reducing the concentrations of TCE and PCE to undetectable levels.

Increase Net Emissions in Ways That Were Not Quantified in Attachment 7

With the project, CLWA will purchase imported water. The imported water will come from CLWA's marginal source of water, which is water purchased from the Buena Vista-Rosedale Rio-Bravo Water Districts (BV/RRB) in Kern County. CLWA typically receives part of Buena Vista's Kern River entitlements through exchange of BV/RRB's SWP supplies (Kennedy/Jenks Consultants et al., 2011). In contrast, without the project, CLWA will obtain half of the additional supply they need from recycled water and half by reducing their demand for water (through water conservation measures). In comparing the with- and without-project conditions in terms of energy requirements, the with-project requires more energy. Consequently, the with-project condition will result in more greenhouse gas emissions relative to the without-project condition.

Improve Water Supply Reliability in Ways Not Quantified in Attachment 7

The project will increase the reliability of CLWA's water system. This occurs for three reasons:

1. The new connection will allow 90 MGD of water to pass through, not just the 66 MGD that the RVWTP can currently process. When planned expansions of RVWTP are made in the future, the connection will already be large enough to process up to 90 MGD of water.
2. The new connection is meant to be a permanent structure, rather than the current connection which was meant to be temporary when constructed in 1996.
3. Without the project, CLWA would need to produce recycled water and implement water conservation measures. While recycled water and demand reduction (through water conservation measures) are generally believed to increase reliability relative to obtaining more imported water, recycled water and demand reduction have limitations. In particular, recycled water is only available during the irrigation season without adding expensive storage. And there are water quality and geographic constraints on using recycled water, while further gains from water conservation become increasingly difficult to obtain over time.

   Even so, the reliability improvements from undertaking the project are at least partially diminished compared to a fully reliable source with the project because the project increases CLWA's dependence on imported water. The reliability of imported water via the State Water Project (SWP) has a projected average future reliability of 60%, as this water is subject to a number of natural and human forces, ranging from increased population growth (and accompanying increased demands), to drought and earthquakes, to environmental regulations and water rights determinations (AECOM, 2012).

Other: Increased Operational Flexibility and Treatment Reliability for CLWA

With the new connection, the RVWTP can treat more water, providing CLWA with operational flexibility between RVWTP and the Earl Schmidt Filtration Plant;[2] CLWA's other water treatment facility. In particular, the increased capacity of the RVWTP to treat water makes it easier to perform annual maintenance at the Earl Schmidt Plant, as CLWA can completely shut-down the Earl Schmidt Plant for multiple weeks during periods of low water demand due to RVWTP's increased capacity to process water.

Monetized Benefits Analysis (Section D3)

Two monetized benefits are expected to accrue over the expected 50 year life of the project. These include: (1) Avoided Transmission and Distribution of Recycled Water and (2) Avoided Water Conservation Measures.

Avoided Future Marginal Recycled Water Expansion Costs

Based on CLWA's latest projections from planning discussions, the first year projected by CLWA that demand would be too great to simply pump more groundwater to cover demand during the June through September period would be 2020. Thus, of the additional 6,720 AFY that the new connection could deliver to the plant, only 2,240 AFY (6,720 AFY * 1/3 of the year) will actually be delivered with the project starting in 2020.

If this project does not occur, CLWA plans to meet half of the expanded base demand by 2020 with expanded recycled water deliveries, and half through expanded conservation. Thus, for the recycled water potion of the without-project baseline, CLWA will need to construct a pump station, reservoir, and transmission and distribution pipelines in order to process an additional 1,120 AF of recycled water per year, or half of the increase in water quantity that the RVWTP could produce if the project occurred.

A similar CLWA recycled water project that transmits and distributes 500 AFY of water had capital costs of $27,025,000 (Castaic Lake Water Agency, 2012). Scaling these capital costs to 1,120 AF of recycled water per year, the amount needed without the project, would cost $60,536,000 [(1,120 AF/500 AF)*$27,025,000]. The capital costs are for a pump station, reservoir, and transmission and distribution pipelines. Besides the capital costs, there are also operations and maintenance (O&M) costs of transmitting and distributing 1,120 AF of recycled water per year. Based on transmitting and distributing recycled water at CLWA's Valencia and Saugus Water Reclamation Plants, O&M costs are assumed to be 0.5% of the capital costs, or $302,680 per year.

However, with the project, CLWA will not need additional recycled water, and so will not need to expend the capital and operations and maintenance costs associated with the recycled water. Because of this, these costs are avoided, creating a benefit if the project is undertaken.

The present value of this benefit over the 50 year expected useful life of the project is $43,371,149.

Avoided Future Marginal Water Conservation Program Costs

Without the project, CLWA would meet the other half of the expected demand by 2020 with expanded water conservation programs. The water conservation measures that would reduce demand by 1,120 AFY (the other half of the water quantity produced with the project) would need to be in place by 2020. Water conservation measures that CLWA could implement in its service area include new standards for plumbing fixtures, landscape irrigation, and buildings.

2 The Earl Schmidt Filtration Plant has a treatment capacity of 56 MGD.

Foothill Feeder Connection (CLWA-8)

CLWA has a water conservation program already in place. The costs of this water conservation program, which conserves 986 AFY, are $1,000,000 per year (A&N Technical Services, 2008). It is important to note that the cost per acre-foot conserved in this program is likely an underestimate of the cost per acre-foot conserved in the future as the costs for additional conservation programs not already undertaken has been shown in the water use efficiency strategic plan to increase significantly (A&N Technical Services, 2008). Even so, scaling the already in place program in order to conserve 1,120 AF would cost $1,135,903 per year [(1,120 AF/986 AF)*$1,000,000]. This cost would be avoided in the with-project condition because the RVWTP would be able to process enough water to meet the demands of CLWA's customers without implementing additional water conservation measures.

The present value of this benefit over the 50 year expected useful life of the project is $11,675,956. Table 8-3 shows the avoided costs from the project.

TABLE 8-3: ANNUAL COSTS OF AVOIDED PROJECTS

(All avoided costs should be in 2012 dollars)						
Project: Foothill Feeder Connection Project						
	Costs				Discounting Calculations	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Alternative (Avoided Project Names): Future Marginal Recycled Water Expansion Costs and Future Marginal Water Conservation Program Costs					
Year	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives (b) + (c) + (d)	Discount Factor	Discounted Costs (e) x (f)
2010				$0	1.00000	**$0**
2011				$0	1.00000	**$0**
2012				$0	1.00000	**$0**
2013				$0	0.94340	**$0**
2014				$0	0.89000	**$0**
2015				$0	0.83962	**$0**
2016				$0	0.79209	**$0**
2017				$0	0.74726	**$0**
2018				$0	0.70496	**$0**
2019	$60,536,000			$60,536,000	0.66506	**$40,259,897**
2020			$1,438,583	$1,438,583	0.62741	**$902,585**
2021			$1,438,583	$1,438,583	0.59190	**$851,495**
2022			$1,438,583	$1,438,583	0.55839	**$803,297**
2023			$1,438,583	$1,438,583	0.52679	**$757,827**
2024			$1,438,583	$1,438,583	0.49697	**$714,931**
2025			$1,438,583	$1,438,583	0.46884	**$674,464**

TABLE 8-3: ANNUAL COSTS OF AVOIDED PROJECTS

(All avoided costs should be in 2012 dollars)						
Project: Foothill Feeder Connection Project						
	Costs				Discounting Calculations	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Alternative (Avoided Project Names): Future Marginal Recycled Water Expansion Costs and Future Marginal Water Conservation Program Costs					
Year	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives (b) + (c) + (d)	Discount Factor	Discounted Costs (e) x (f)
2026			$1,438,583	$1,438,583	0.44230	**$636,286**
2027			$1,438,583	$1,438,583	0.41727	**$600,270**
2028			$1,438,583	$1,438,583	0.39365	**$566,293**
2029			$1,438,583	$1,438,583	0.37136	**$534,238**
2030			$1,438,583	$1,438,583	0.35034	**$503,998**
2031			$1,438,583	$1,438,583	0.33051	**$475,470**
2032			$1,438,583	$1,438,583	0.31180	**$448,557**
2033			$1,438,583	$1,438,583	0.29416	**$423,167**
2034			$1,438,583	$1,438,583	0.27751	**$399,214**
2035			$1,438,583	$1,438,583	0.26180	**$376,617**
2036			$1,438,583	$1,438,583	0.24698	**$355,299**
2037			$1,438,583	$1,438,583	0.23300	**$335,188**
2038			$1,438,583	$1,438,583	0.21981	**$316,215**
2039			$1,438,583	$1,438,583	0.20737	**$298,316**
2040			$1,438,583	$1,438,583	0.19563	**$281,430**
2041			$1,438,583	$1,438,583	0.18456	**$265,500**
2042			$1,438,583	$1,438,583	0.17411	**$250,472**

Foothill Feeder Connection (CLWA-8)

TABLE 8-3: ANNUAL COSTS OF AVOIDED PROJECTS

(All avoided costs should be in 2012 dollars)						
Project: Foothill Feeder Connection Project						
	Costs				Discounting Calculations	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Alternative (Avoided Project Names): Future Marginal Recycled Water Expansion Costs and Future Marginal Water Conservation Program Costs					
Year	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives (b) + (c) + (d)	Discount Factor	Discounted Costs (e) x (f)
2043			$1,438,583	$1,438,583	0.16425	**$236,294**
2044			$1,438,583	$1,438,583	0.15496	**$222,919**
2045			$1,438,583	$1,438,583	0.14619	**$210,301**
2046			$1,438,583	$1,438,583	0.13791	**$198,397**
2047			$1,438,583	$1,438,583	0.13011	**$187,167**
2048			$1,438,583	$1,438,583	0.12274	**$176,573**
2049			$1,438,583	$1,438,583	0.11579	**$166,578**
2050			$1,438,583	$1,438,583	0.10924	**$157,149**
2051			$1,438,583	$1,438,583	0.10306	**$148,254**
2052			$1,438,583	$1,438,583	0.09722	**$139,862**
2053			$1,438,583	$1,438,583	0.09172	**$131,945**
2054			$1,438,583	$1,438,583	0.08653	**$124,477**
2055			$1,438,583	$1,438,583	0.08163	**$117,431**
2056			$1,438,583	$1,438,583	0.07701	**$110,784**
2057			$1,438,583	$1,438,583	0.07265	**$104,513**
2058			$1,438,583	$1,438,583	0.06854	**$98,597**
2059			$1,438,583	$1,438,583	0.06466	**$93,016**

TABLE 8-3: ANNUAL COSTS OF AVOIDED PROJECTS

(All avoided costs should be in 2012 dollars)						
Project: Foothill Feeder Connection Project						
	Costs				Discounting Calculations	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Alternative (Avoided Project Names): Future Marginal Recycled Water Expansion Costs and Future Marginal Water Conservation Program Costs					
Year	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives (b) + (c) + (d)	Discount Factor	Discounted Costs (e) x (f)
2060			$1,438,583	$1,438,583	0.06100	**$87,751**
2061			$1,438,583	$1,438,583	0.05755	**$82,784**
2062			$1,438,583	$1,438,583	0.05429	**$78,098**
2063			$1,438,583	$1,438,583	0.05122	**$73,678**
2064			$1,438,583	$1,438,583	0.04832	**$69,507**
				Total Present Value of Discounted Costs (Sum of Column (g))		**$55,047,104**
				(%) Avoided Cost Claimed by Project		**100%**
				Total Present Value of Discounted Avoided Project Costs Claimed by Alternative Project (Total Present Value of Discounted Costs x % Avoided Cost Claimed by Project)		**$55,047,104**

Comments: The avoided capital cost is the cost of constructing a tertiary-treated wastewater treatment plant capable of producing 1,120 acre-feet of recycled water each year.

The avoided operations and maintenance costs in a given year consist of two items: (1) the operations and maintenance costs associated with producing 1,120 acre-feet of recycled water each year and (2) the operations and maintenance costs associated with implementing water conservation measures that reduce water demand by 1,120 AFY.

Project Economic Costs

The Foothill Feeder Connection Project has both initial and annual costs.

There are two sources of initial costs for this project:

1. The cost for the connection itself, including costs for pipes, meters, and interconnection valves. The interconnection valves link the Foothill Feeder to the Foothill Feeder Connection to CLWA's infrastructure, leading to the RVWTP. In addition, there are costs associated with obtaining easements from the City of Santa Clarita.
2. A portion of the cost associated with expanding the RVWTP plant (and pipeline connected to the plant). This cost will be included in this economic analysis because without the expanded plant (and pipeline) there would be no benefits from installing the new connection. In 2010, RVWTP's capacity increased from being able to process 30 MGD to 66 MGD; this cost $45,000,000. Thus, the portion of costs to assign to this project is $45,000,000 multiplied by the ratio of six MGD (the increase in capacity of the Foothill Feeder Connection) to 36 MGD (the increase in capacity of the RVWTP), or $7,500,000 [$45,000,000*(6 MGD/36 MGD)].

In total, the non-discounted initial costs are $11,837,305. The total discounted present value initial costs are $11,375,669 in 2012 dollars using a 6% discount rate.

There are two sources of annual costs for this project:

1. The operations and maintenance cost associated with the Foothill Feeder Connection. These costs are assumed to be $50,000 per year and begin in 2015, the first year the connection will be operational. These costs are classified as "maintenance."
2. The costs of processing an additional 2,240 AF of imported water per year, through the RVWTP. CLWA's marginal water source is water purchased from the Buena Vista-Rosedale Rio-Bravo Water Districts (BV/RRB) in Kern County. CLWA typically receives part of Buena Vista's Kern River entitlements through exchange of BV/RRB's State Water Project supplies (Kennedy/Jenks Consultants et al., 2011). The cost of obtaining this water was $800 per acre-foot in 2012; the cost is anticipated to increase, in real terms, by 3.5% per year through 2020 and by 1.5% per year from 2021 through the end of the project. It is assumed that CLWA will import the additional 2,240 AF of water per year beginning in 2020, the year that CLWA would need to be producing recycled water and implementing water conservation measures in the absence of the project, and continue to import this amount of water for the remainder of the connection's lifetime. These costs are classified as operations costs in this analysis.

The undiscounted annual costs, to be expended from 2015 through 2064, total $152,611,816 over that time period. The total discounted present value of annual costs is $30,624,585 in 2012 dollars using a 6% discount rate.

As is shown in Table 8-4, the discounted present value of initial costs and annual costs total $41,273,114. Table 8-4 summarizes the economic project costs for the project.

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Foothill Feeder Connection Project										
			Annual Costs [2]						Discounting Calculations	
Year	Initial Costs Grand Total Cost from Table 4-4 (row (i), column (d)) (a)	Adjusted Grant Total Cost[1] (b)	Admin (c)	Operation (d)	Maintenance (e)	Replacement (f)	Other (g)	Total Costs (a) +…+ (g) (h)	Discount Factor (i)	Discounted Project Costs (h) x (i) (j)
2010	$7,500,000							$7,500,000	1.00000	**$7,500,000**
2011								$0	1.00000	**$0**
2012	$13,812							$15,056	1.00000	**$15,056**
2013	$207,244							$258,919	0.94340	**$244,263**
2014	$3,302,488							$4,063,330	0.89000	**$3,616,349**
2015					$50,000			$50,000	0.83962	**$41,981**
2016					$50,000			$50,000	0.79209	**$39,605**
2017					$50,000			$50,000	0.74726	**$37,363**
2018					$50,000			$50,000	0.70496	**$35,248**
2019					$50,000			$50,000	0.66506	**$33,253**
2020				$2,359,722	$50,000			$2,409,722	0.62741	**$1,511,889**
2021				$2,395,118	$50,000			$2,445,118	0.59190	**$1,447,261**
2022				$2,431,044	$50,000			$2,481,044	0.55839	**$1,385,402**
2023				$2,467,510	$50,000			$2,517,510	0.52679	**$1,326,193**
2024				$2,504,523	$50,000			$2,554,523	0.49697	**$1,269,520**
2025				$2,542,091	$50,000			$2,592,091	0.46884	**$1,215,273**
2026				$2,580,222	$50,000			$2,630,222	0.44230	**$1,163,350**
2027				$2,618,925	$50,000			$2,668,925	0.41727	**$1,113,649**
2028				$2,658,209	$50,000			$2,708,209	0.39365	**$1,066,076**
2029				$2,698,082	$50,000			$2,748,082	0.37136	**$1,020,540**
2030				$2,738,553	$50,000			$2,788,553	0.35034	**$976,952**
2031				$2,779,632	$50,000			$2,829,632	0.33051	**$935,230**

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Foothill Feeder Connection Project										
	Initial Costs Grand Total Cost from Table 4-4 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2032				$2,821,326	$50,000			$2,871,326	0.31180	**$895,293**
2033				$2,863,646	$50,000			$2,913,646	0.29416	**$857,065**
2034				$2,906,601	$50,000			$2,956,601	0.27751	**$820,472**
2035				$2,950,200	$50,000			$3,000,200	0.26180	**$785,444**
2036				$2,994,453	$50,000			$3,044,453	0.24698	**$751,915**
2037				$3,039,370	$50,000			$3,089,370	0.23300	**$719,819**
2038				$3,084,960	$50,000			$3,134,960	0.21981	**$689,096**
2039				$3,131,235	$50,000			$3,181,235	0.20737	**$659,686**
2040				$3,178,203	$50,000			$3,228,203	0.19563	**$631,534**
2041				$3,225,876	$50,000			$3,275,876	0.18456	**$604,585**
2042				$3,274,264	$50,000			$3,324,264	0.17411	**$578,788**
2043				$3,323,378	$50,000			$3,373,378	0.16425	**$554,094**
2044				$3,373,229	$50,000			$3,423,229	0.15496	**$530,455**
2045				$3,423,827	$50,000			$3,473,827	0.14619	**$507,826**
2046				$3,475,185	$50,000			$3,525,185	0.13791	**$486,164**
2047				$3,527,313	$50,000			$3,577,313	0.13011	**$465,427**
2048				$3,580,222	$50,000			$3,630,222	0.12274	**$445,576**
2049				$3,633,926	$50,000			$3,683,926	0.11579	**$426,573**
2050				$3,688,434	$50,000			$3,738,434	0.10924	**$408,382**
2051				$3,743,761	$50,000			$3,793,761	0.10306	**$390,968**
2052				$3,799,917	$50,000			$3,849,917	0.09722	**$374,297**
2053				$3,856,916	$50,000			$3,906,916	0.09172	**$358,339**

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Foothill Feeder Connection Project										
	Initial Costs Grand Total Cost from Table 4-4 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2054				$3,914,770	$50,000			$3,964,770	0.08653	**$343,061**
2055				$3,973,491	$50,000			$4,023,491	0.08163	**$328,436**
2056				$4,033,094	$50,000			$4,083,094	0.07701	**$314,435**
2057				$4,093,590	$50,000			$4,143,590	0.07265	**$301,032**
2058				$4,154,994	$50,000			$4,204,994	0.06854	**$288,201**
2059				$4,217,319	$50,000			$4,267,319	0.06466	**$275,918**
2060				$4,280,579	$50,000			$4,330,579	0.06100	**$264,158**
2061				$4,344,787	$50,000			$4,394,787	0.05755	**$252,901**
2062				$4,409,959	$50,000			$4,459,959	0.05429	**$242,124**
2063				$4,476,109	$50,000			$4,526,109	0.05122	**$231,807**
2064				$4,543,250	$50,000			$4,593,250	0.04832	**$221,930**
								Total Present Value of Discounted Costs (Sum of column (j))		**$41,273,114**
								Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		

Comments: The initial costs consist of costs for the new Foothill Feeder Connection and a portion of the costs for the expanded Rio Vista Water Treatment Plant. The operation costs are the costs to purchase 2,240 AF of imported SWP water through the Buena Vista-Rosedale Rio-Bravo Water Districts in Kern County, beginning in 2020. The maintenance costs are the costs to maintain the Foothill Feeder Connection. These costs begin in 2015, the first year the Foothill Feeder is operational.

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project.

Foothill Feeder Connection (CLWA-8)

Project Benefits and Cost Summary

The total present value monetizable benefits from this project are $55,047,104, while total present value costs are $41,273,114. Thus, monetizable benefits are greater than costs.

There are several positive non-monetized benefits: increased operational flexibility and treatment reliability for CLWA, increased water education programming, increased safety due to improved seismic stability, and improved water quality. Increased operational flexibility and treatment reliability in particular is an important non-monetized benefit. A negative non-monetized effect of the project is recognized due to increased greenhouse gas emissions from use of additional imported SWP water compared to a combination of recycled water and conservation measures without the project.

This analysis of costs and benefits is based on available data and some assumptions. As a result, there may be some omissions, uncertainties, and possible biases. In this analysis, main uncertainties are associated with the avoided transmission and distribution of recycled water and the avoided water conservation measures. These issues are listed in Table 8-5.

TABLE 8-5: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided Transmission and Distribution of Recycled Water	U	Without the project, it is assumed that CLWA will need the additional 1,120 AF of recycled water per year beginning in 2020. However, CLWA may face greater (smaller) demand for water than expected, meaning the recycled water infrastructure would need to be in place earlier (later) than 2020.
Avoided Transmission and Distribution of Recycled Water	U	The capital and O&M costs attributed to the recycled water transmission and distribution are based on the costs for actual CLWA recycled water operations (albeit of smaller scale). However, the actual costs of constructing and operating a plant in this case may differ from previous projects.
Avoided Water Conservation Measures	+	CLWA has already implemented water conservation measures, which form the basis for the amount of avoided costs in this analysis. Presumably, the first items that CLWA targeted in their water conservation measures to reduce water demand were those that were easiest and least expensive, the proverbial "low hanging fruit." Moving into the future, reducing the same amount of water demand will be more difficult and expensive. Thus, net benefits are likely understated because the costs of the avoided water conservation measures implemented without the project would probably be higher than the analysis assumes. The 2008 Santa Clarita Valley Water Use Efficiency Strategic Plan identified but did not adopt some conservations measures with significantly higher cost per AF that could nevertheless be needed with aggressive conservation in the future (A&N Technical Services, 2008).

TABLE 8-5: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment

*Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

References

A&N Technical Services. 2008. Santa Clara Valley Water Use Efficiency Strategic Plan. Prepared for the Santa Clarita Valley Family of Water Suppliers: Castaic Lake Water Agency, Valencia Water Company, Los Angeles County Waterworks Division #36, Newhall County Water District, Santa Clarita Water Division. August.

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Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

Summary

This project is Phase 1 of a proposal by the Newhall County Water District (NCWD) to build a pellet water softening treatment plant. The purpose of this plant would be to improve drinking water quality for 3,800 of NCWD's connections by an estimated 182 mg/L reduction in hardness. Phase 1 of the project involves three studies. First, a water quality analysis is necessary to determine the area's suitability for a pellet softener treatment plant. Next, these results will be incorporated into a conceptual design, which will determine appropriate sizing, chemical and input needs, land requirements and capital, and operations and maintenance (O&M) costs. Finally, a rate study and consumer demand analysis is needed to determine consumers' reaction to potential rate increases involved with the project.

Because the benefits of this project will not be realized until construction of the plant is completed under a later phase of the overall project, benefits for this portion of the project have been apportioned using ratios of cost estimates. The present value of the Phase 1 budget is $177,620 and it is estimated that the entire plant would cost roughly $5.9 million for construction and O&M costs over the project lifetime. Therefore, expected benefits assigned to this portion of the project are $177,620 / $5,918,812 = 3% of the total benefits from the completion of the plant.

A summary of all benefits and costs of the project are provided in Table 8-1. Monetized benefits and non-monetized benefits are presented in this attachment, while physically quantified (but not monetized) benefits are described in Attachment 7.

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Costs – Total Capital and O&M	**$177,620**
Monetizable Benefits	
Avoided Costs of Personal Softeners	$531,926
Reduction in Household Costs from Reduced TDS in Drinking Water	$1,755
Total Monetizable Benefits	**$533,681**
Physically Quantified Benefit or Cost (Not Monetized)	**Project Life Total**
Production of Useful Sand-Calcium Carbonate "Pellets"	82 cubic yards annually
Qualitative Benefit or Cost	**Qualitative Indicator***
Program Is A Model for Other Districts	+
Provides An Equitable Solution, Providing Everyone With Softer Water Cheaper Than Individual Purchase	+
Fewer Alternative Canister Softener Deliveries Mean Less Greenhouse Gas Emissions	+
Long Term Solution In Place of a Short Term One	+
Option Value for Information About Full Cost of Plant	+ +

* Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease net benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

TDS = total dissolved solids

Non-monetized Benefits Analysis (Section D2)

Table 8-2 shows the non-monetized benefits checklist for the project. Narrative descriptions of the benefit categories marked "Yes" in the following the table are provided in the narrative description of qualitative benefits section after the table.

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Community/Social Benefits	
	Will the proposal	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	
2	**Provide social recreation or access benefits?**	No
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	
3	**Help avoid, reduce or resolve various public water resources conflicts?**	No
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management? - Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	
4	**Promote social health and safety?**	No
	Examples are not limited to, but may include: - Increase urban water supply reliability for fire-fighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	
5	**Have other social benefits?**	Yes
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	
	Environmental Stewardship Benefits:	
	Will the proposal	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian, or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	
7	**Improve water quality in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Reduce net production of greenhouse gases? - Reduce net emissions of other harmful chemicals into the air or water?	
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3, or D4?**	No
	Sustainability Benefits: **Will the proposal**	
10	**Improve the overall, long-term management of California groundwater resources?**	No
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	
11	**Reduce demand for net diversions for the regions from the Delta?**	No
12	**Provide a long-term solution in place of a short-term one?**	No
13	**Promote energy savings or replace fossil fuel-based energy sources with renewable energy and resources?**	No
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable practices with recognized sustainable practices?	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
14	**Improve water supply reliability in ways not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
15	**Other: Option value for full information about the cost and community support for the plant?**	Yes

[1] This benefit category is marked as no because it was already described as a physically quantified benefit in Attachment 7.

Narrative Description of Qualitative Benefits

Descriptions of the non-monetized benefits marked "Yes" from the checklist in Table 8-2 are described below.

Provide education or technology benefits

Program is one of the first of its kind, a model for other districts

Although pellet based softening plants are common in places such as the Netherlands, their adaptation has been much less widespread in the United States. The NCWD pellet water softening treatment plant will be only the second centralized softening plant in the area (the other is a demonstration plant at neighboring Valencia Water Company), and the largest to date. NCWD hopes to serve as a model for other districts on using innovative, centralized technologies for softening water.

Have other social benefits

Provides an equitable solution, providing everyone with softer water cheaper than individual purchase of systems

The NCWD pellet water softening treatment plant will address the inequitable aesthetic burdens of hard water. Based on data from nearby Valencia Water Company (VWC), currently only 52% of homes have personal, point-of-use water softeners (Kennedy/Jenks Consultants, 2009). Part of the issue is cost: personal water softener servicing can be expensive and costs run about $780 per year for a typical family of four (Culligan Water, 2013). As a centralized system, the NCWD pellet water softening treatment plant provides everyone with soft water, regardless of household income and personal resources. Further, this equality is *not* achieved by simply shifting the environmental burden amongst homes in a zero-sum game. Instead, water quality is improved for *everyone* – including homes that may already have a personal water softening system.

Reduce net emissions in ways that were not quantified in Attachment 7

Since automatic water softeners were outlawed in 2003, the most common type of personal water softening systems has been canister-based. Canister systems store the ion-exchange brine solution in tanks rather than discharging into the waste stream, and must be replaced every month on average. Typically this is done using a subscription delivery service. By eliminating the need for these canister based systems, the NCWD Pellet Water Softening Treatment Plant would also eliminate the need for these deliveries, reducing greenhouse gas emissions as a result.

Provide a Long-Term Solution in Place of a Short-Term One

With regular maintenance and upkeep, pellet water softening treatment plants can remain in operation more than 50+ years. Meanwhile, the canisters that alternative personal, point-of-use systems typically use must be replaced once a month. In addition, the non-canister portion of the unit has a relatively short lifespan compared to the proposed plant, typically 12 years.

Other – Option Value for Information About Full Cost and Community Support for the Plant

A unique aspect of this phase of the project is that it provides a lot more information going forward. In other words, one of the main benefits of this phase is the information it provides about the full cost of the plaint. Right now, the total $5.9 million present value cost of capital and O&M involves a substantial amount of uncertainty. Once this phase is complete more will be known about the true costs, and the desirability of moving forward with the project.

This information is worth something; essentially this study provides an option value. Consider: in the *worst* case, the true costs (known with more precision after Phase 1) will turn out to be higher than the benefits, and the plant will *not* be built. The downside, in other words, is bounded from below at the cost of phase one (roughly $178,000 in discounted 2012 dollars).

The *upside*, however, has no such bound. It may turn out once this phase is complete that the actual costs turn out to be lot lower than initially thought. In this case the plant will be built and NCWD customers will receive substantial benefits. This argument—the high upside, limited downside associated with resolving uncertainty—is one of the reasons this project under consideration likely has positive expected value.

Monetized Benefits Analysis (Section D3)

Several monetized benefits are expected to accrue over the expected life of the project. Those include:

Avoided Costs of Point of Use Softeners for 1,951 Households

A centralized, pellet-based treatment plant provides water preferable to personal, point-of-use systems, making them unnecessary. One of the main monetizable benefits then is that once the softener plant is operational, NCWD customers will no longer have to incur personal water softeners. Monetizing these benefits requires (1) knowing how many households currently have their own softeners, and (2) knowing how much a personal water softener costs each family each year.

A 2009 study by the neighboring VWC found 52% of their customers installed some sort of personal, point-of-use water softening system (Kennedy/Jenks Consultants, 2009). Given the 3,800 households affected by this proposed pellet water softening treatment plant in NCWD, and assuming ownership rates similar to VWC, construction of this plant will make 1,976 point-of-use water softeners unnecessary (3,800 households multiplied by 52% equals 1,976 households). We adjust this number by down by 46, which is the number of remaining AWS estimated by the Sanitation District to be remaining in the NCWD service area. Thus, the number of avoided non-self regenerating water softeners is estimated to be 1,930 (1,976 minus 46). A total of 57.9 households with avoided AWS is apportioned to this study based on the ratio of the cost of this phase of the project to the overall project cost (1,930 households multiplied by 3% is 57.9 households).

Meanwhile, households with a canister-based personal system pay an estimated $65 per month, or $780 annually on average, based on typical costs for a family of four in Newhall provided by Culligan Water. (Culligan Water, 2013). Apportioning this benefit using the ratio of cost to the full project of 3%, resulting in 57.9 households affected, results in a present value benefit of avoided point of use non-AWS softener costs of $531,926.

There are some uncertainties associated with this estimate. First, the 52% figure is estimated using data from VWC, not NCWD, although the communities are similar in terms of water quality. Second, the estimate of avoided costs is for NCWD, but is only one estimate.

Reduction in Household Costs From Reduced TDS and Hardness in Drinking Water

The NCWD pellet water softening treatment plant is meant to reduce water hardness, which is a subset of total dissolved solids (TDS). Because the valuation literature for TDS is relatively more developed compared to water hardness, reductions here are monetized in terms of TDS rather than reductions in water hardness. Under normal conditions, there is a linear relationship between TDS and hardness in SWP water (Bookman Edmonston Engineering Inc., 1999).

Although TDS levels in water are not considered to be a health issue, they are of concern for several reasons. Some level of TDS is desirable in drinking water and gives it a pleasant taste, but as levels increase beyond 500 mg/L, many people complain about the taste. For this reason, US EPA has set a secondary (aesthetic) drinking water standard for TDS of 500 mg/L.

A study by Bookman-Edmonston Engineering for the Metropolitan Water District of Southern California (MWD) and the U.S. Bureau of Reclamation (USBR) pulled together all the literature on effects from a reduction in TDS of water delivered by MWD to households in its service area (Bookman-Edmonston, 1999). The study estimated a $35 million reduction in household costs from a 100 mg/L reduction TDS levels. This means the value per household per mg/L reduction in TDS levels is $0.082 (updated to 2012 dollars). Multiplying $0.082 by 1,849 households results in $151.62 per mg/L of reduction for all households total. Apportioning that value by the 3% ratio of project costs results in $4.55 per mg/L.

This value can used to estimate the effects of a reduction in TDS on NCWD households that were not already softening their water, which is 3,800 households minus 1,951 households assumed to be softening currently, or 1,849 households. The TDS concentration reduction anticipated from the NCWD pellet water softening treatment plant is 5%, or 655 mg/L TDS multiplied by 5% is a reduction of 32.75 mg/L. Multiplying this reduction by the apportioned benefit per mg/L of $4.55 results in an annual savings of $148.96 for the affected households. The present value of this benefit over the project lifetime is $1,755. Table 8-3 summarizes the annual benefits from the project.

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

TABLE 8-3: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)									
Project: Pellet Water Softening Treatment Plant (NCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2018	a	households	57.9	0	57.9	$780.00	$45,162.00	0.70496	**$31,837**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.70496	**$105**
2019	a	households	57.9	0	57.9	$780.00	$45,162.00	0.66506	**$30,035**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.66506	**$99**
2020	a	households	57.9	0	57.9	$780.00	$45,162.00	0.62741	**$28,335**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.62741	**$93**
2021	a	households	57.9	0	57.9	$780.00	$45,162.00	0.59190	**$26,731**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.59190	**$88**
2022	a	households	57.9	0	57.9	$780.00	$45,162.00	0.55839	**$25,218**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.55839	**$83**
2023	a	households	57.9	0	57.9	$780.00	$45,162.00	0.52679	**$23,791**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.52679	**$78**
2024	a	households	57.9	0	57.9	$780.00	$45,162.00	0.49697	**$22,444**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.49697	**$74**
2025	a	households	57.9	0	57.9	$780.00	$45,162.00	0.46884	**$21,174**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.46884	**$70**
2026	a	households	57.9	0	57.9	$780.00	$45,162.00	0.44230	**$19,975**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.44230	**$66**
2027	a	households	57.9	0	57.9	$780.00	$45,162.00	0.41727	**$18,845**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.41727	**$62**
2028	a	households	57.9	0	57.9	$780.00	$45,162.00	0.39365	**$17,778**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.39365	**$59**

TABLE 8-3: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)									
Project: Pellet Water Softening Treatment Plant (NCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2029	a	households	57.9	0	57.9	$780.00	$45,162.00	0.37136	**$16,772**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.37136	**$55**
2030	a	households	57.9	0	57.9	$780.00	$45,162.00	0.35034	**$15,822**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.35034	**$52**
2031	a	households	57.9	0	57.9	$780.00	$45,162.00	0.33051	**$14,927**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.33051	**$49**
2032	a	households	57.9	0	57.9	$780.00	$45,162.00	0.31180	**$14,082**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.31180	**$46**
2033	a	households	57.9	0	57.9	$780.00	$45,162.00	0.29416	**$13,285**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.29416	**$44**
2034	a	households	57.9	0	57.9	$780.00	$45,162.00	0.27751	**$12,533**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.27751	**$41**
2035	a	households	57.9	0	57.9	$780.00	$45,162.00	0.26180	**$11,823**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.26180	**$39**
2036	a	households	57.9	0	57.9	$780.00	$45,162.00	0.24698	**$11,154**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.24698	**$37**
2037	a	households	57.9	0	57.9	$780.00	$45,162.00	0.23300	**$10,523**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.23300	**$35**
2038	a	households	57.9	0	57.9	$780.00	$45,162.00	0.21981	**$9,927**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.21981	**$33**
2039	a	households	57.9	0	57.9	$780.00	$45,162.00	0.20737	**$9,365**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.20737	**$31**

TABLE 8-3: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)									
Project: Pellet Water Softening Treatment Plant (NCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2040	a	households	57.9	0	57.9	$780.00	$45,162.00	0.19563	**$8,835**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.19563	**$29**
2041	a	households	57.9	0	57.9	$780.00	$45,162.00	0.18456	**$8,335**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.18456	**$27**
2042	a	households	57.9	0	57.9	$780.00	$45,162.00	0.17411	**$7,863**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.17411	**$26**
2043	a	households	57.9	0	57.9	$780.00	$45,162.00	0.16425	**$7,418**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.16425	**$24**
2044	a	households	57.9	0	57.9	$780.00	$45,162.00	0.15496	**$6,998**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.15496	**$23**
2045	a	households	57.9	0	57.9	$780.00	$45,162.00	0.14619	**$6,602**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.14619	**$22**
2046	a	households	57.9	0	57.9	$780.00	$45,162.00	0.13791	**$6,228**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.13791	**$21**
2047	a	households	57.9	0	57.9	$780.00	$45,162.00	0.13011	**$5,876**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.13011	**$19**
2048	a	households	57.9	0	57.9	$780.00	$45,162.00	0.12274	**$5,543**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.12274	**$18**
2049	a	households	57.9	0	57.9	$780.00	$45,162.00	0.11579	**$5,229**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.11579	**$17**
2050	a	households	57.9	0	57.9	$780.00	$45,162.00	0.10924	**$4,933**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.10924	**$16**

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

TABLE 8-3: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)									
Project: Pellet Water Softening Treatment Plant (NCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2051	a	households	57.9	0	57.9	$780.00	$45,162.00	0.10306	**$4,654**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.10306	**$15**
2052	a	households	57.9	0	57.9	$780.00	$45,162.00	0.09722	**$4,391**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.09722	**$14**
2053	a	households	57.9	0	57.9	$780.00	$45,162.00	0.09172	**$4,142**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.09172	**$14**
2054	a	households	57.9	0	57.9	$780.00	$45,162.00	0.08653	**$3,908**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.08653	**$13**
2055	a	households	57.9	0	57.9	$780.00	$45,162.00	0.08163	**$3,687**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.08163	**$12**
2056	a	households	57.9	0	57.9	$780.00	$45,162.00	0.07701	**$3,478**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.07701	**$11**
2057	a	households	57.9	0	57.9	$780.00	$45,162.00	0.07265	**$3,281**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.07265	**$11**
2058	a	households	57.9	0	57.9	$780.00	$45,162.00	0.06854	**$3,095**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.06854	**$10**
2059	a	households	57.9	0	57.9	$780.00	$45,162.00	0.06466	**$2,920**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.06466	**$10**
2060	a	households	57.9	0	57.9	$780.00	$45,162.00	0.06100	**$2,755**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.06100	**$9**
2061	a	households	57.9	0	57.9	$780.00	$45,162.00	0.05755	**$2,599**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.05755	**$9**

TABLE 8-3: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)									
Project: Pellet Water Softening Treatment Plant (NCWD-2)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2062	a	households	57.9	0	57.9	$780.00	$45,162.00	0.05429	**$2,452**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.05429	**$8**
2063	a	households	57.9	0	57.9	$780.00	$45,162.00	0.05122	**$2,313**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.05122	**$8**
2064	a	households	57.9	0	57.9	$780.00	$45,162.00	0.04832	**$2,182**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.04832	**$7**
2065	a	households	57.9	0	57.9	$780.00	$45,162.00	0.04558	**$2,059**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.04558	**$7**
2066	a	households	57.9	0	57.9	$780.00	$45,162.00	0.04300	**$1,942**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.04300	**$6**
2067	a	households	57.9	0	57.9	$780.00	$45,162.00	0.04057	**$1,832**
	b	mg/L	655	622.3	32.75	$4.55	$148.96	0.04057	**$6**
					Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)				**$533,681**
Comments:									

Note:
(1) Complete these columns if dollar value is being claimed for the benefit.

Project Economic Costs

Table 8-4 summarizes the economic project costs for the project. Budgeted costs include plant design, water quality analysis, rate study and consumer demand analysis. This portion of the project is a feasibility study, and no construction costs are included. The present value of costs for this phase of the project are expected to total $177,620 when discounted to 2012 dollars using a 6% discount rate.

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Pellet Water Softening Treatment Plant (NCWD-2)										
	Initial Costs Grand Total Cost from Table 4-5 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2012								-	1.00000	-
2013	40,000							40,000	0.94300	**$37,720**
2014	110,000							110,000	0.89000	**$97,900**
2015	50,000							50,000	0.84000	**$42,000**
2016								-	0.79209	-
2017								-	0.74726	-
…										
Last Year of Project Life									…	
								Total Present Value of Discounted Costs (Sum of column (j))		**$177,620**
								Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		
Comments:										

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project.

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

The cost for the full pellet water softening treatment plant is expected to total $5 million in total costs of the plant and associated studies. O&M costs of running the plant are expected to total $228,000. Assuming that the plant is operational by 2020, and that construction happens over the three years leading up to 2020, the present value of estimated costs associated with the full water softening treatment plant are estimated to total $5,918,812 when discounted to 2012 dollars using a 6% discount rate. The estimated costs associated with the full project are shown in Table 8-5.

TABLE 8-5: COST OF FULL PROJECT

(All costs should be in 2012 Dollars)										
Project: Pellet Water Softening Treatment Plant (NCWD-2)										
	Initial Costs Grand Total Cost from Table 4-5 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2012								-	1.00000	-
2013								-	0.94300	-
2014								-	0.89000	-
2015								-	0.84000	-
2016								-	0.79209	-
2017	1,666,667							1,666,667	0.74726	**1,245,430**
2018	1,666,667							1,666,667	0.70496	**1,174,934**
2019	1,666,667							1,666,667	0.66506	**1,108,429**
2020				228,000				228,000	0.62741	**143,050**
2021				228,000				228,000	0.59190	**134,953**
2022				228,000				228,000	0.55839	**127,314**
2023				228,000				228,000	0.52679	**120,108**
2024				228,000				228,000	0.49697	**113,309**
2025				228,000				228,000	0.46884	**106,895**
2026				228,000				228,000	0.44230	**100,845**
2027				228,000				228,000	0.41727	**95,136**
2028				228,000				228,000	0.39365	**89,751**
2029				228,000				228,000	0.37136	**84,671**
2030				228,000				228,000	0.35034	**79,878**
2031				228,000				228,000	0.33051	**75,357**
2032				228,000				228,000	0.31180	**71,091**

Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)

TABLE 8-5: COST OF FULL PROJECT

(All costs should be in 2012 Dollars)										
Project: Pellet Water Softening Treatment Plant (NCWD-2)										
	Initial Costs Grand Total Cost from Table 4-5 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
Year	(a)	(b)	Admin (c)	Operation (d)	Maintenance (e)	Replacement (f)	Other (g)	Total Costs (a) +…+ (g) (h)	Discount Factor (i)	Discounted Project Costs (h) x (i) (j)
2033				228,000				228,000	0.29416	**67,067**
2034				228,000				228,000	0.27751	**63,271**
2035				228,000				228,000	0.26180	**59,690**
2036				228,000				228,000	0.24698	**56,311**
2037				228,000				228,000	0.23300	**53,124**
2038				228,000				228,000	0.21981	**50,117**
2039				228,000				228,000	0.20737	**47,280**
2040				228,000				228,000	0.19563	**44,604**
2041				228,000				228,000	0.18456	**42,079**
2042				228,000				228,000	0.17411	**39,697**
2043				228,000				228,000	0.16425	**37,450**
2044				228,000				228,000	0.15496	**35,330**
2045				228,000				228,000	0.14619	**33,330**
2046				228,000				228,000	0.13791	**31,444**
2047				228,000				228,000	0.13011	**29,664**
2048				228,000				228,000	0.12274	**27,985**
2049				228,000				228,000	0.11579	**26,401**
2050				228,000				228,000	0.10924	**24,906**
2051				228,000				228,000	0.10306	**23,497**
2052				228,000				228,000	0.09722	**22,167**
2053				228,000				228,000	0.09172	**20,912**

TABLE 8-5: COST OF FULL PROJECT

(All costs should be in 2012 Dollars)										
Project: Pellet Water Softening Treatment Plant (NCWD-2)										
	Initial Costs Grand Total Cost from Table 4-5 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
Year	(a)	(b)	Admin (c)	Operation (d)	Maintenance (e)	Replacement (f)	Other (g)	Total Costs (a) +…+ (g) (h)	Discount Factor (i)	Discounted Project Costs (h) x (i) (j)
2054				228,000				228,000	0.08653	**19,728**
2055				228,000				228,000	0.08163	**18,612**
2056				228,000				228,000	0.07701	**17,558**
2057				228,000				228,000	0.07265	**16,564**
2058				228,000				228,000	0.06854	**15,627**
2059				228,000				228,000	0.06466	**14,742**
2060				228,000				228,000	0.06100	**13,908**
2061				228,000				228,000	0.05755	**13,120**
2062				228,000				228,000	0.05429	**12,378**
2063				228,000				228,000	0.05122	**11,677**
2064				228,000				228,000	0.04832	**11,016**
2065				228,000				228,000	0.04558	**10,393**
2066				228,000				228,000	0.04300	**9,804**
2067				228,000				228,000	0.04057	**9,249**
2068				228,000				228,000	0.03827	**8,726**
2069				228,000				228,000	0.03610	**8,232**
								Total Present Value of Discounted Costs (Sum of column (j))		**$5,918,812**
								Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		

Comments:

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project.

Project Benefits and Cost Summary

Total apportioned benefits are $533,681, while the costs for this phase of the project are $177,602. Thus, estimated benefits for the project are greater than the costs by $356,061. The project would also provide non monetized benefits. It provides educational and technology benefits, provides a long-term solution in place of a short-term one, and reduces net emission from trucks replacing canisters for water softening units. Perhaps most important is the option value of this study; the fact the potential *upside* (i.e. the costs of full construction turn out to be lower than anticipated) is so much greater than the *downside* (where the plant does not get built), means this phase of the project likely has positive expected value as a whole.

This analysis of costs and benefits is based on available data and some assumptions. As a result, there may be some omissions, uncertainties, and possible biases. In this analysis, the main uncertainties are associated with estimating the full costs of the pellet water softening treatment plant. These issues are listed in Table 8-6.

TABLE 8-6: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Option value; uncertainty about full cost of plant	+ +	Uncertainty about full cost of plant will be resolved after this phase, proponents will only build only if the community is willing to pay for the plant; large upside relative to downside
Number of homes with water softeners now	U	The benefits depend on how many homes currently have water softeners; this is an estimate with some uncertainty.
Cost of operating personal water softener	U	The estimate used for the avoided cost of softening water was provided by a Culligan Water representative in Newhall. Estimates from other providers could be greater and lower than this estimate.

*Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

References

Bookman Edmonston Engineering Inc., 1999. Salinity Management Study Final Report – Long-term Strategy and Recommended Action Plan. Technical Appendices. For the Metropolitan Water District of Southern California and the United States Bureau of Reclamation. June.

Culligan Water, 2013. Estimated annual water softener service costs for a typical family of four. Personal communication from Newhall, CA employee. March 2013.

Kennedy/Jenks Consultants, 2009. Final Report Groundwater Softening Demonstration Project. Prepared for Valencia Water Company. December.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Summary

The Santa Clarita Valley Sanitation District (Sanitation District) operates two water reclamation plants (WRPs) in the Santa Clarita Valley, the Saugus and Valencia WRPs. The Saugus and Valencia WRPs discharge treated wastewater into the Upper Santa Clara River, which contains chloride in excess of the water quality objective for the Upper Santa Clara River of 100 mg/L. Because residential automatic water softeners (AWS) have been the largest controllable source of chloride, the source control efforts have focused on the removal of these units. To help reduce contributions from this source, the Sanitation District has been implementing an Automatic Water Softener Public Outreach Program since February 2003. Phases I and II of this program have removed 7,900 AWS, reducing chloride concentrations by more than 50 mg/L. Despite these gains, concentrations in 2011 were still about 18 mg/L over the 100 mg/L water quality objective, in part due to an estimated 500 remaining active AWS. This project will implement the final phase of the Automatic Water Softener Rebate and Public Outreach Program, which will remove the remaining AWS. The program will consist of home inspections, issuing Notices of Violations to residents that still have their AWS, issuing rebates to residents that remove their AWS, chloride monitoring, and public outreach. The Sanitation District estimates removing these remaining AWS will reduce chloride concentrations by approximately 5 mg/L.

A summary of all benefits and costs of the project are provided in Table 8-1. Monetized benefits and non-monetized benefits are presented in this attachment, while physically quantified (but not monetized) benefits are described in Attachment 7.

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Costs – Total Capital and O&M	**$2,987,860**
Monetizable Benefits	
Avoided chloride treatment plant costs	$7,669,367
Reduce potable water demand	$79,016
Total Monetizable Benefits	**$7,748,383**
Physically Quantified Benefit or Cost	**Project Life Total**
Avoided greenhouse gas emissions associated with MF/RO plant	994 MT CO_2 equivalent
Qualitative Benefit or Cost	**Qualitative Indicator***
Program is one of the first of its kind, model for other districts	+
Web portal clearinghouse for information on water softeners and conditioning systems that do not discharge added chloride to the sewer system	+
Reduces water resource conflicts by reducing downstream pollutants	+
Addresses equity, fairness issues through removal of relatively small numbers of AWS that are hurting larger community	+
Households where AWS are removed may need to obtain alternatives or use harder water	–

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
* Direction and magnitude of effect on net benefits:	
+ = Likely to increase net benefits relative to quantified estimates.	
+ + = Likely to increase net benefits significantly.	
– = Likely to decrease net benefits.	
– – = Likely to decrease net benefits significantly.	
U = Uncertain, could be + or –.	
MF/RO = microfiltration / reverse osmosis.	

Non-monetized Benefits Analysis (Section D2)

Table 8-2 shows the non-monetized benefits checklist for the project. Narrative descriptions of the benefit categories marked "Yes" in the following the table are provided in the narrative description of qualitative benefits section after the table.

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Community/Social Benefits	
	Will the proposal	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	
2	**Provide social recreation or access benefits?**	No
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	
3	**Help avoid, reduce or resolve various public water resources conflicts?**	Yes
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management? - Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
4	**Promote social health and safety?**	No
	Examples are not limited to, but may include: - Increase urban water supply reliability for fire-fighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	
5	**Have other social benefits?**	Yes
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	
	Environmental Stewardship Benefits:	
	Will the proposal	
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian, or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	
7	**Improve water quality in ways that were not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	No[1]
	Examples are not limited to, but may include: - Reduce net production of greenhouse gases? - Reduce net emissions of other harmful chemicals into the air or water?	
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3, or D4?**	No
	Sustainability Benefits:	
	Will the proposal	

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
10	**Improve the overall, long-term management of California groundwater resources?**	No
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	
11	**Reduce demand for net diversions for the regions from the Delta?**	No
12	**Provide a long-term solution in place of a short-term one?**	No
13	**Promote energy savings or replace fossil fuel-based energy sources with renewable energy and resources?**	No[1]
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable practices with recognized sustainable practices?	
14	**Improve water supply reliability in ways not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
15	**Other – Social Costs**	Yes

[1] This benefit category is marked as no because it was already described as a physically quantified benefit in Attachment 7.

Narrative Description of Qualitative Benefits

Descriptions of the non-monetized benefits marked "Yes" from the checklist in Table 8-2 are described below.

Provide Educational and Technology Benefits

Program is one of the first of its kind, model for other districts

As one of the first of its kind, the Sanitation District Automatic Water Softener Rebate and Outreach program has served as a model for other water and sanitation public entities, both in California and throughout the nation. The Sanitation District has fielded calls from interested water resource managers in nearby Inland Empire, Dixon, Ventura County, and Santa Paula. This project has been particularly valuable due to its multi-faceted approach, which includes public outreach and education, rebates, localized water quality monitoring, examining AWS purchase records, home inspections and reaching out to vendors. By undertaking this comprehensive, overarching approach and documenting what works, the Sanitation District program will

continue to serve as critical resource for any cities or water/sanitation districts undertaking similar programs going forward.

Web portal clearinghouse for information on water softeners and conditioning systems that do not discharge added chloride to the sewer system

Hard water can have unpleasant aesthetic effects, and Sanitation District understands people may be looking for alternatives once their AWS are removed. To help, it has put together a comprehensive website listing with more than 50 chloride-free alternatives. The site (www.lacsd.org/chloride) contains reviews and allows users to filter and browse by brand, technology, price and rating. It also provides local installation information. This is a unique resource – groups such as Consumer Reports do not typically review whole house water softening and conditioning systems – and the site gets substantial traffic from people both in and outside of the Sanitation District.

Help Avoid, Reduce or Resolve Various Public Water Resource Conflicts

Helps meet state mandated requirements

The project will help the Sanitation District meet waste discharge requirements for chloride for the final effluent from Valencia and Saugus WRPs. The Sanitation District is firmly committed to reducing chloride sources in the sewerage system to the maximum extent technologically and economically feasible, and will continue to explore innovative and effective means to bring about this reduction. The Sanitation District has been working cooperatively with the Los Angeles Regional Water Quality Control Board towards the end of meeting chloride reduction requirements.

Have Other Social Benefits

Addresses equity, fairness issues through removal of relatively small numbers of AWS that are hurting larger community

The Sanitation District has approximately 83,000 connections. The vast majority of these are law abiding households that either removed their AWS after they were banned or never had one in the first place. Only about 500 households operating illegal AWS remain, but they are affecting the larger community, who without their removal, would end up paying for additional advanced treatment or fines imposed by the state through potential rate increases.

Other – Social Costs

Households where AWS are removed may need to obtain alternatives or use harder water and experience associated impacts

All else equal, households where AWS are removed will likely face harder water. Although they are primarily aesthetic, costs of hard water may include unpleasant taste and a residue on glass dishes. However, these adverse physical affects can be mitigated somewhat installing alternatives to AWS (e.g. a canister based systems) which do not emit chloride into the wastewater.

There are costs to installing these alternatives, both monetary and otherwise. The monetary costs are offset somewhat by the rebate, although in many cases the rebate may not cover the full cost of a non-chloride discharging alternative. The Sanitation District has done their best to reduce the non-monetary costs, largely by making researching and obtaining alternatives as easy as possible. Their website catalogs and includes consumer reviews for more than 50 whole-house water softening and conditioning systems that do not discharge added chloride to the sewer system. Each system includes contact information for local installation.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Monetized Benefits Analysis (Section D3)

Several monetized benefits are expected to accrue over the expected 25 year life of the project. Those include:

Avoided Chloride Treatment Plant Costs

Since the Sanitation District implemented the Automatic Water Softener Rebate and Outreach Program in 2003, it has removed more than 7,900 AWS, reducing chloride concentrations by more than 50 mg/L (Sanitation Districts of Los Angeles County, 2012). Despite these gains, the chloride concentration in effluent from the WRPs is still higher than the state mandated limit of 100 mg/L. In order to meet the 100 mg/L limit, it will most likely be necessary to build a MF/RO plant. By removing approximately 5 mg/L of chloride concentration attributed to the remaining AWS, the rebate program allows the Sanitation District to build a relatively smaller (and less expensive) MF/RO plant (Santa Clarita Valley Sanitation District, 2013).

Capital expenditures associated with the MF/RO plant include MF/RO treatment facilities, a permeate pipeline from Valencia WRP to Saugus WRP, a brine pipeline from Valencia WRP to the Joint Outfall System for the WRPs. All facilities were sized to reduce chloride concentration from the highest anticipated level to 100 mg/L, using non-linear calculations. Three main chloride sources in addition to the AWS component were considered in sizing: the water supply component including chloride from local groundwater and imported water; the community component including chloride from shampoos, detergents, and other factors; and chloride loading from disinfection at the WRPs. Sizing for the worst case loading consisted of using a worst case scenario for the water supply component of 85 mg/L. The reduction in facility sizing due to the rebate and public outreach program involved redoing the calculations assuming a 5 mg/L chloride reduction due to AWS removal.

The Sanitation District has estimated that approximately $2.8 million in capital is estimated to be avoided in MF/RO treatment costs at Valencia WRP. Approximately $500,000 in capital cost is estimated to be avoided for the permeate pipeline from Valencia WRP to Saugus WRP and the associated pump station. Approximately $1.5 million in capital cost is estimated to be avoided for the brine pipeline from Valencia WRP to the Joint Outfall System and associated pump stations. In total, the project is expected to avoid capital costs of approximately $5 million dollars.

The Sanitation District also estimated the reduction in operations and maintenance costs due to AWS removal. The project is estimated to reduce operation and maintenance costs for MF/RO at Valencia WRP by approximately $300,000 per year, the permeate pipeline to Saugus WRP and the pump station by approximately $20,000 per year, and brine pipeline and pump station(s) by approximately $80,000 per year. The total avoided operations and maintenance costs are estimated to be $400,000 per year.

Exact timing of construction and beginning of operation of the MF/RO plant is currently uncertain. For purposes of this analysis, the Sanitation District estimates that plant will be operational in 2018 and that construction would be accomplished in 2016 and 2017. Therefore, the assumed plant capital costs are split equally between 2016 and 2017, resulting in a $2.5 million savings each year from the project. It is assumed the $400 thousand in annual operating savings start the next year and last for 25 years.

When using DWR's standard 6% discount rate, the present value of avoided MF/RO plant capital and O&M costs is $7.67 million in 2012 dollars. Table 8-3 summarizes the avoided costs from the project.

TABLE 8-3: ANNUAL COSTS OF AVOIDED PROJECTS

(All avoided costs should be in 2012 dollars)						
Project: Automatic Water Softener Rebate and Public Outreach Program (SCVWD-1)						
	Costs				Discounting Calculations	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Alternative (Avoided Project Name): _____					
	Avoided Project Description:					
Year	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives (b) + (c) + (d)	Discount Factor	Discounted Costs (e) x (f)
2013				0	0.94340	**0**
2014				0	0.89000	**0**
2015				0	0.83962	**0**
2016	2,500,000			2,500,000	0.79209	**1,980,234**
2017	2,500,000			2,500,000	0.74726	**1,868,145**
2018			400,000	400,000	0.70496	**281,984**
2019			400,000	400,000	0.66506	**266,023**
2020			400,000	400,000	0.62741	**250,965**
2021			400,000	400,000	0.59190	**236,759**
2022			400,000	400,000	0.55839	**223,358**
2023			400,000	400,000	0.52679	**210,715**
2024			400,000	400,000	0.49697	**198,788**
2025			400,000	400,000	0.46884	**187,536**
2026			400,000	400,000	0.44230	**176,920**
2027			400,000	400,000	0.41727	**166,906**
2028			400,000	400,000	0.39365	**157,459**
2029			400,000	400,000	0.37136	**148,546**
2030			400,000	400,000	0.35034	**140,138**
2031			400,000	400,000	0.33051	**132,205**

TABLE 8-3: ANNUAL COSTS OF AVOIDED PROJECTS

(All avoided costs should be in 2012 dollars)						
Project: Automatic Water Softener Rebate and Public Outreach Program (SCVWD-1)						
	Costs				Discounting Calculations	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Alternative (Avoided Project Name): _____					
	Avoided Project Description:					
Year	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives (b) + (c) + (d)	Discount Factor	Discounted Costs (e) x (f)
2032			400,000	400,000	0.31180	**124,722**
2033			400,000	400,000	0.29416	**117,662**
2034			400,000	400,000	0.27751	**111,002**
2035			400,000	400,000	0.26180	**104,719**
2036			400,000	400,000	0.24698	**98,791**
2037			400,000	400,000	0.23300	**93,199**
2038			400,000	400,000	0.21981	**87,924**
2039			400,000	400,000	0.20737	**82,947**
2040			400,000	400,000	0.19563	**78,252**
2041			400,000	400,000	0.18456	**73,823**
2042			400,000	400,000	0.17411	**69,644**
				Total Present Value of Discounted Costs (Sum of Column (g))		**7,669,367**
				(%) Avoided Cost Claimed by Project		
			Total Present Value of Discounted Avoided Project Costs Claimed by Alternative Project (Total Present Value of Discounted Costs x % Avoided Cost Claimed by Project)			
Comments:						

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Reduce Potable Water Demand

Each AWS uses, on average, more than 4,400 gallons of water a year, and the Sanitation District anticipates removing the 500 operational AWS will result in annual reduction in potable water demand of approximately 6.78 AFY. This 6.78 AF benefit occurs as long as the removed AWS would have remained operational, assumed here as 25 years past completion of removal in 2015.

The estimated water savings will result in an equivalent amount of avoided imported water. CLWA has a contractual SWP Table A amount of 95,200 AFY of water from SWP. However, the marginal source of SWP water for CLWA is the water purchased from the Buena Vista-Rosedale Rio-Bravo Water Districts (BV/RRB) in Kern County. CLWA typically receives part of Buena Vista's Kern River entitlements through exchange of BV/RRB's SWP supplies (Kennedy/Jenks Consultants et al., 2011). This source currently costs roughly $800 per acre-foot (CLWA, 2013). Given the recent and projected rate of change of SWP supplies, this cost is expected to increase in real terms over the benefits lifetime of the project. We estimate that the cost of SWP imports will rise at a real rate (above inflation) of 3.5% annually through 2020, after which prices will likely escalate at a rate of 1.5% annually. We calculate the present value of future benefits of avoided water imports over the 25-year life of project benefits to be $79,016.

The main uncertainties associated with this benefit involve the quantity of potable water saved, which are average estimates and can vary depending on household water use, pre-treated water quality and AWS model. In addition, this benefit assumes households where AWS are removed do not replace them with other water-consuming alternatives. It is also possible that as water hardness increases once their AWS are removed, households may change their consumption habits. For example, they may use even less if they perceive hard water as inferior to their formerly treated soft water. Finally, the cost of the marginal water source is an estimate which also involves some degree of uncertainty.

Table 8-4 summarizes the annual water supply benefit from the project.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 8-4: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)

Project: Automatic Water Softener Rebate and Public Outreach Program (SCVWD-1)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2012						800.00		1.00000	
2013						828.00		0.94340	
2014						856.98		0.89000	
2015						886.97		0.83962	
2016						918.02		0.79209	
2017	Water Savings	AF	0	6.78	6.78	950.15	$6,442	0.74726	**$4,814**
2018	Water Savings	AF	0	6.78	6.78	983.40	$6,667	0.70496	**$4,700**
2019	Water Savings	AF	0	6.78	6.78	1017.82	$6,901	0.66506	**$4,589**
2020	Water Savings	AF	0	6.78	6.78	1053.45	$7,142	0.62741	**$4,481**
2021	Water Savings	AF	0	6.78	6.78	1069.25	$7,250	0.59190	**$4,291**
2022	Water Savings	AF	0	6.78	6.78	1085.29	$7,358	0.55839	**$4,109**
2023	Water Savings	AF	0	6.78	6.78	1101.57	$7,469	0.52679	**$3,934**
2024	Water Savings	AF	0	6.78	6.78	1118.09	$7,581	0.49697	**$3,767**
2025	Water Savings	AF	0	6.78	6.78	1134.86	$7,694	0.46884	**$3,607**
2026	Water Savings	AF	0	6.78	6.78	1151.88	$7,810	0.44230	**$3,454**
2027	Water Savings	AF	0	6.78	6.78	1169.16	$7,927	0.41727	**$3,308**
2028	Water Savings	AF	0	6.78	6.78	1186.70	$8,046	0.39365	**$3,167**
2029	Water Savings	AF	0	6.78	6.78	1204.50	$8,167	0.37136	**$3,033**
2030	Water Savings	AF	0	6.78	6.78	1222.57	$8,289	0.35034	**$2,904**
2031	Water Savings	AF	0	6.78	6.78	1240.91	$8,413	0.33051	**$2,781**
2032	Water Savings	AF	0	6.78	6.78	1259.52	$8,540	0.31180	**$2,663**
2033	Water Savings	AF	0	6.78	6.78	1278.41	$8,668	0.29416	**$2,550**

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 8-4: ANNUAL BENEFIT

(All benefits should be in 2012 dollars)

Project: Automatic Water Softener Rebate and Public Outreach Program (SCVWD-1)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	**Type of Benefit**	**Measure of Benefit (Units)**	**Without Project**	**With Project**	**Change Resulting from Project (e) – (d)**	**Unit $ Value [1]**	**Annual $ Value [1] (f) x (g)**	**Discount Factor [1]**	**Discounted Benefits [1] (h) x (i)**
2034	Water Savings	AF	0	6.78	6.78	1297.59	$8,798	0.27751	**$2,441**
2035	Water Savings	AF	0	6.78	6.78	1317.05	$8,930	0.26180	**$2,338**
2036	Water Savings	AF	0	6.78	6.78	1336.81	$9,064	0.24698	**$2,239**
2037	Water Savings	AF	0	6.78	6.78	1356.86	$9,200	0.23300	**$2,143**
2038	Water Savings	AF	0	6.78	6.78	1377.21	$9,338	0.21981	**$2,052**
2039	Water Savings	AF	0	6.78	6.78	1397.87	$9,478	0.20737	**$1,965**
2040	Water Savings	AF	0	6.78	6.78	1418.84	$9,620	0.19563	**$1,882**
2041	Water Savings	AF	0	6.78	6.78	1440.12	$9,764	0.18456	**$1,802**
2042	Water Savings	AF	0	0	0	1461.73	$-	0.17411	**$-**
					Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)				**$79,016**

Comments:

Note:
(1) Complete these columns if dollar value is being claimed for the benefit.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Project Economic Costs

Table 8-5 summarizes the economic project costs for the project. The total budgeted amount for the project is $3,371,563. The primary budgeted economic costs associated with this project include the rebate and removal costs, home inspections, outreach and monitoring. All money is expected to be spent (and the AWS removed) by the end of 2016. Total present value costs are estimated to be $2,987,860 when discounted to 2012 dollars using a 6% discount rate.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

TABLE 8-5: ANNUAL COSTS OF PROJECT

(All costs should be in 2012 Dollars)										
Project: Automatic Water Softener Rebate and Public Outreach Program (SCVWD-1)										
	Initial Costs Grand Total Cost from Table 4-6 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2010	$80,114							$80,114	1.00000	**$80,114**
2011	$320,457							$320,457	1.00000	**$320,457**
2012	$338,103							$338,103	1.00000	**$338,103**
2013	$434,346							$434,346	0.94300	**$409,588**
2014	$665,975							$665,975	0.89000	**$592,718**
2015	$693,153							$693,153	0.83962	**$581,985**
2016	$839,415							$839,415	0.79209	**$664,895**
								Total Present Value of Discounted Costs (Sum of column (j))		**$2,987,860**
								Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		

Comments:

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project.

Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

Project Benefits and Cost Summary

The expected benefits of the Sanitation District rebate project outweigh the costs by $4.76M, largely due to the avoided advanced wastewater treatment costs. Additional monetary benefits include the reduction of imported water through the removal of water-consuming AWS. The project also includes educational and technology benefits, improves social equity, and reduces water resource conflicts. Uncertain, more qualitative costs include the costs of hard water or alternative water softening or conditioning systems for households where AWS are removed. With an estimated 500 operational AWS, these costs are unlikely to be large, and it is expected the overall rebate project provides significant benefits.

This analysis of costs and benefits is based on available data and certain assumptions. As a result, there may be some omissions, uncertainties, and possible biases. In this analysis, the main uncertainties are associated with the avoided cost of the advanced wastewater treatment facilities and the annual benefit from the avoided water loss. These issues are listed in Table 8-6.

TABLE 8-6: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided MF/RO plant costs	U	There is some uncertainty associated with the estimate of chloride concentration reduction from AWS removal of 5 mg/L. If a different change in chloride concentration is assumed, then the avoided capital and O&M costs for the project will also be different.
Avoided MF/RO plant costs	U	The final compliance project will be considered by the Sanitation District Board in October 2013. However, the likely outcome of the Facilities Planning and EIR process is expected to be a project that includes advanced wastewater treatment and will be predicated on removal of AWS.
Annual benefit from avoided water loss	–	The project avoids water loss from avoided wasting of water during the AWS regeneration process. The savings used assumes that there will be no replacement of AWS with alternatives that use water. It is difficult to assess this possibility.

*Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

References

CLWA. 2013. IRWMP Water Savings Calcs. Excel spreadsheet with water use statistics provided to Stratus Consulting Inc., Boulder, CO.

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USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Summary

This project proposes an invasive weed control (especially Arundo donax, or arundo) and habitat restoration program in the Upper Santa Clara River watershed in two locations. One is near the City of Santa Clarita at the confluences of San Francisquito Creek and Bouquet Canyon Creek with the Santa Clara River (project SC-1). The second project site is on private land owned by a group of homeowners along the upper reaches of Bouquet Canyon Creek (project BCN-1). Two other invasive plant species – tamarisk and tree tobacco – will be controlled along with arundo when the plants are co-located. The Santa Clara River and its upper watersheds are some of the last watershed in Southern California in a relatively natural state. These riparian areas have one of the most extensive and diverse riparian habitats in the area and are critical wildlife migration corridors for the region. Arundo is the most problematic weed in southern California coastal rivers where it causes extensive flood damage, increases fire risk, and uses substantially more water than native vegetation.

This project expands off the Santa Clara River Arundo and Tamarisk Removal Program (SCARP). SCARP is a long-term eradication, monitoring, and maintenance plan to guide and facilitate the implementation of arundo and/or tamarisk removal projects within the upper Santa Clara River watershed. This program has consisted of demonstration projects, permitting, and educational programs as well as low impact removal. An EIR prepared in 2006 showed the impacts of removal of arundo and tamarisk to the Santa Clara River and its tributaries (VCRCD, 2006a). The findings showed that without removal, the plants would continue to spread and decrease the current water resources and cause a decline in native habitats. The project found that herbicide application with the proposed approach will not impact groundwater quality. Education programs for landowners and stakeholders further expanded the efforts to remove these species. Portions of the SCARP Site Specific Plan were funded with a Department of Water Resources Round 1 Implementation Grant.

A summary of all benefits and costs of the project are provided in Table 8-1. Monetized benefits and non-monetized benefits are presented in this attachment, while physically quantified (but not monetized) benefits are described in Attachment 7.

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Costs – Total Capital and O&M	$545,918
Monetizable Benefits	
Avoided imported water supply costs	$7,289,618
Physically Quantified Benefit or Cost (Not Monetized)	**Project Life Total**
Avoided Introduction of Additional Chlorides Into the Watershed	2,037 MT
Avoided CO_2 Emissions	10,689 MT
Qualitative Benefit or Cost	**Qualitative Indicator***
Provide Education/Technology Benefits	+
Reduced Fire Hazards	+ +
Reduced Flooding Impacts	+ +
Improved Wildlife Habitat	+ +
Improved Surface and Groundwater Quality	+ +
Decreased Stream Bank Erosion	+ +

TABLE 8-1: BENEFIT-COST ANALYSIS OVERVIEW

	Present Value
Improved Groundwater Resources Management	+
Reduced Demand for Net Diversion from the Delta	+
Improved Water Supply Reliability	+
Improved Operational Flexibility for CLWA	+

* Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease net benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

CLWA = Castaic Lake Water Agency
O&M = operations and maintenance
CO_2 = carbon dioxide

Non-monetized Benefits Analysis (Section D2)

Table 8-2 shows the non-monetized benefits checklist for the project. Narrative descriptions of the benefit categories marked "Yes" in the following the table are provided in the narrative description of qualitative benefits section after the table.

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Community/Social Benefits	
	Will the proposal	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	
2	**Provide social recreation or access benefits?**	No
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	
3	**Help avoid, reduce or resolve various public water resources conflicts?**	No
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management?	

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	- Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	
4	**Promote social health and safety?**	Yes
	Examples are not limited to, but may include: - Increase urban water supply reliability for fire-fighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	
5	**Have other social benefits?**	No
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	
	Environmental Stewardship Benefits: **Will the proposal**	
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian, or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	
7	**Improve water quality in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	No[1]
	Examples are not limited to, but may include: - Reduce net production of greenhouse gases? - Reduce net emissions of other harmful chemicals into the air or water?	
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3, or D4?**	No
	Sustainability Benefits:	

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 8-2: NON-MONETIZED BENEFITS CHECKLIST (PSP TABLE 12)

No.	Question	Enter "Yes", "No", or "Neg"
	Will the proposal	
10	**Improve the overall, long-term management of California groundwater resources?**	Yes
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	
11	**Reduce demand for net diversions for the regions from the Delta?**	Yes
12	**Provide a long-term solution in place of a short-term one?**	No
13	**Promote energy savings or replace fossil fuel-based energy sources with renewable energy and resources?**	No[1]
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable practices with recognized sustainable practices?	
14	**Improve water supply reliability in ways not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
15	**Other: Improved operational flexibility for CLWA**	Yes

[1] This benefit category is marked as no because it was already described as a physically quantified benefit in Attachment 7.

Narrative Description of Qualitative Benefits

Descriptions of the non-monetized benefits marked "Yes" from the checklist in Table 8-2 are described below.

Provide Education/Technology Benefits

The project will be located within the City of Santa Clarita in a highly visible area bordered by recreational trails. This will allow the City to demonstrate a natural resource management project to the public, and increase public awareness of problems associated with invasive species.

Promote Public Health and Safety

Reduced Fire Hazards

Removal of arundo in the project area will contribute to reduced fire hazard. Under natural conditions, riparian areas act as firebreaks, but as they are overcome by invasive species, they not only enable wildfires to spread more rapidly, but they can also become sites where fires may originate. Arundo, in particular, is highly flammable and burns more intensely than native riparian vegetation even when green (VCRCD 2006b from Bell 1997; Dudley 2000).

Several accounts have suggested that infestations of arundo have increased fuel loads as well as fire frequency and intensity along riparian corridors. Growing from 13 to 26 feet in height, and as fast as 4 inches per day (Coffman et. al. 2010), arundo produces abundant flammable biomass that accumulates during the summer and fall months (Coffman et. al 2010 from Rundel, 2000). Further, several researchers have suggested that fire may increase the ability of arundo to invade natural riparian systems (studies identified in Coffman et al. 2010), and that it may be part of an invasive plant-fire regime cycle, changing riparian ecosystems from primarily flood-defined to fire-defined systems (Coffman et. al. from Bell 1997).

Coffman et. al. 2010 evaluated the influence of wildfire on arundo invasion by investigating its relative rate of reestablishment versus native riparian species after the Simi/Verdale wildfire burned 300 acres of riparian woodlands along the Santa Clara River in October 2003 (upstream of the project area). Post-fire arundo growth rates and productivity were compared to those of native woody riparian species in plots established before and after the fire. The researchers found that arundo re-sprouted within days after the fire, and exhibited higher growth rates and productivity compared to native riparian plants. One year post-fire, arundo density was nearly 20 times higher and productivity was 14–24 times higher than for native woody species.

The study concludes that the greater dominance of arundo after the wildfire increased the susceptibility of riparian woodlands along the Santa Clara River to subsequent fire, potentially creating an invasive plant-fire regime cycle. Decreased moisture content and increased surface-to-volume ratio of arundo versus native vegetation may lead to altered or increased fire susceptibility or increased probability of ignition in these systems. Addition of this fuel to the riparian ecosystem has increased vertical continuity (i.e., the structure of fuel allows fire to spread from surface to crowns of shrubs and trees). Due to its tall growth form, infestations of Arundo mixed with native species may spread fire vertically into the canopy of riparian trees.

The October 2003 Simi/Verdale wildfire provides an excellent example of the invasive plant-fire regime cycle that arundo invasion has created. The wildfire reached the Santa Clara River from the north, crossed the broad riverbed through large stands of arundo, and then burned through thousands of hectares of native shrublands and non-native grasslands before again entering extensive riparian woodlands intermixed with arundo to the west along the river. Without the presence of arundo, it is believed that the Santa Clara River would have served as a better fire break, and the fire would not have burned as many acres.

Reduced Flooding Impacts

Both arundo and tamarisk are known to increase the potential for erosion of adjacent lands along the Santa Clara River. Both plants can alter stream geomorphology by trapping and stabilizing sediment, which narrows stream channels, widens floodplains, and causes increased flooding (VCRCD, 2006b). Large stands of arundo may also obstruct flows and shunt floodwaters into areas that historically have not experienced water flow. This can exacerbate bank erosion problems and lead to an unnatural increase in the loss of adjacent public and private property that is often valuable farmland (VCRCD, 2006b).

Furthermore, frequent flooding of the roadway along Bouquet Canyon Creek has been a consistent problem. Unlike native willows, which lay down flat during a flood, arundo remains standing, forming bottlenecks that

cause overflow of the creek bed and flooding of the roadway. The 2005 El Nino season is a case in point. Statements from road maintenance responders during the 2005 El Nino season flooding state, " large amounts of water and debris on roadway caused pavement wash out and damage, …, culverts clogged , trees killed and downed. Culvert completed clogged forcing stream onto road." While flooding events on Bouquet Canyon Road are not wholly attributable to invasive weed "bottlenecks", they have contributed to road damages exceeding $2,047,027 (Los Angeles County Department of Public Works, 2013).

Benefit Wildlife or Habitat in Ways That Were Not Quantified in Attachment 7

Arundo and tamarisk threaten native riparian habitats and the wildlife that depends upon these habitats by excluding native plants from water resources, growing space, and sunlight. Arundo often forms dense monocultures that exclude native vegetation by monopolizing water resources, shading, and altering flood regimes critical to the establishment of native riparian vegetation (Bell 1997; Dudley 2000). The salt-laden leaf litter of tamarisk also precludes such native understory from establishing. Both plants do not offer the same amount of shade as native vegetation (Carpenter 1998).

Both arundo and tamarisk reduce habitat quality and food supply for native wildlife, including insects and bird species (Bell 1997; Dudley 2000). Insects and other grazers are not able to use arundo as a food source due to the noxious chemicals it contains and its defensive cellular structure (Bell 1997). This is particularly important for federal and state listed species, such as least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo, which utilizes insects as a food source. Documented decreases in wildlife usage of riparian areas have occurred due to massive stands of arundo (Dudley 2000).

Based on a review of pertinent literature and of historical sensitive plant species locations identified in the California Natural Diversity Database (CDFG 2002), a total of 19 special status plant species and 21 special status wildlife species have the potential to occur within the broader SCARP project area. Of these 21 species, eight are federally listed under the Federal Endangered Species Act. Specific species of concern associated with this project include the unarmored three-spine stickleback, western pond turtle, and red legged frog.

Removal of arundo and tamarisk, and native plant reestablishment through this project will allow restoration of high quality habitat in the project area.

Improve Water Quality in Ways That Were Not Quantified in Attachment 7

Improved Surface and Groundwater Quality

Being a giant grass, arundo provides little shade along the river compared to native vegetation such as willows, sycamores, and live oaks, which have strong branches that can support wide spreading growth habitat, and/or large leaves that shade streamside habitats in the summer.

Where arundo is dominant, the lack of shade causes water temperatures in the river to increase compared to areas where native vegetation is dominant, which can ultimately lead to a reduction in dissolved oxygen, making the water unsuitable for aquatic organisms (VCRCD 2006b from Bell 1997). In addition, increased light exposure and temperature may encourage algal blooms, which can increase pH levels and severely reduce available habitat for aquatic organisms (VCRCD 2006b from Adamus et al. 1997). Increased pH also facilitates the conversion of usable ammonia to a toxic byproduct, which degrades water quality. All of these changes can adversely affect beneficial uses of the river, including habitat for rare and sensitive species.

Manipulation of water resources to benefit agriculture and urbanization has caused severe impairment of the natural flow activity of the river and may be responsible for the decline of dependent species in the watershed. Water quality in segments of the lower Santa Clara River are also impaired by several point and non-point source pollutants, including TDS (total dissolved solids), chloride, coliform, sulfate, ammonia, pH, and toxaphene (Stillwater Sciences 2008). Several reaches of the lower Santa Clara River, including the

estuary, were listed on the 2006 303(d) list of impaired waters by the Los Angeles Regional Water Quality Control Board – (LARWQCB 2007). In addition, several pollutants of concern have been identified in stormwater discharge to the river, including total and fecal coliform, mercury, polyaromatic hydrocarbons, pesticide residues including DDT, suspended solids, copper, lead, thallium, bis(2-ethylhexyl) phthalate, and phosphorous (Stillwater Sciences 2008). Poor water and introduced, invasive species may be responsible for the decline of some species in the watershed (Kelley 2004).

Decreased Stream Bank Erosion

Both arundo and tamarisk are known to increase the potential for erosion of adjacent lands along the Santa Clara River. Both plants can alter stream geomorphology by trapping and stabilizing sediment, which narrows stream channels, widens floodplains, and causes increased flooding (VCRCD, 2006b). Large stands of arundo may also obstruct flows and shunt floodwaters into areas that historically have not experienced water flow. This can exacerbate stream bank erosion problems and lead to an unnatural increase in the loss of adjacent public and private property that is often valuable farmland (VCRCD 2006b).

Improve the Overall, Long-Term Management of California Groundwater Resources

This project will reduce the uptake of scarce water resources by non-native plants, improving the overall, long-term management of California groundwater resources.

Reduce Demand for Net Diversions from the Delta

By reducing the use of imported SWP water, this project will augment in-stream flows in the Sacramento-San Joaquin Delta or will offset other diversions that may otherwise reduce flows. Reduced demands on Delta supplies also will help reduce the overall salinity of the Delta and improve Delta habitat.

Maintaining the Delta's environmental condition is vital to maintaining and improving the viability of the region. The Delta provides drinking water to 25 million people, supports irrigation of 4.5 million acres of agriculture, and serves as home to 750 plant and animal species. The Delta's 1,600 square miles of marshes, islands, and sloughs support at least half of migratory water birds on the Pacific Flyway; 80% of California's commercial fisheries; and recreational uses including boating, fishing, and windsurfing.

Delta resources are in a state of crisis. Fish populations, including salmon and Delta-smelt, have declined dramatically in recent years. The levee system is aging, and vulnerability of the Delta to flooding, sea level rise, or a major earthquake has contributed to concerns about possible levee collapse which would result in devastating impacts to both water supply and habitat.

Improve Water Supply Reliability

The project will offset 420 AFY of imported SWP water use for water retailers served by CLWA, which in total serves approximately 43,000 AF of SWP water to its retailers (Kennedy/Jenks Consultants et al., 2011). The reliability of a water supply refers to its ability to meet water demands on a consistent basis, even in times of drought or other constraints on source water availability. The reliability of imported water is subject to a number of natural and human forces, ranging from increased population growth (and accompanying increased demands on the SWP system), to drought and earthquakes, to environmental regulations and water rights determinations.

Although interest in water supply reliability is increasing (e.g., due to increasing water demands and concerns over climate-related events), only a few studies have directly attempted to quantify its value (i.e., through nonmarket valuation studies). The results from these studies indicate that residential and industrial (i.e., urban) customers seem to value supply reliability quite highly (i.e., through nonmarket valuation studies, see for example Carson and Mitchell, 1987; CUWA, 1994; Griffin and Mjelde, 2000; Wolfe, 2007; and Raucher

et al, 2013). Stated preference studies find that water customers are willing to pay $100 to $535 per household per year for total reliability (i.e., a 0% probability of their water supply being interrupted in times of drought).

Due to the uncertainty involved in applying these numbers to this situation, this benefit estimate is not monetized.

Improved Operational Flexibility for CLWA

Water savings achieved by the project will offset the use of 420 AFY of imported SWP water. This will help CLWA directly in its supply operations, allowing for longer shutdowns and improving system reliability. The value of this increased operational flexibility is not monetized in the benefit tables.

Summary of Non-Monetized Benefits

Although none of the benefits outlined above are monetizable, they serve to significantly increase the value of the proposed project. These benefits include:

- Education/technology
- Wildlife/habitat
- Improved water quality
- Improved groundwater resources management
- Reduce demand for net diversion for the region from the Delta
- Improved water supply reliability
- Reduced stream bank erosion
- Decreased fire hazard
- Improved operational flexibility for CLWA

Monetized Benefits Analysis (Section D3)

The project is expected to result in avoided imported water costs for water retailers served SWP water by CLWA. The monetization of this benefit is discussed below.

Avoided Imported Water Supply Costs

The annual benefits were calculated based on the physical change in water savings calculated in Attachment 7. Annual physical benefits were identified for water savings where every acre of arundo treated results in a water savings of 20 AFY. A total of 42 acres of arundo will be treated in this project, resulting in a water savings of 840 AFY. It is estimated that on average about 50% of the water saved as a result of this project will be recovered from the regional groundwater aquifer. The remaining water will be available as surface flows downstream. CLWA purveyors will use the groundwater made available by this project in lieu of imported SWP water, because groundwater is a much less expensive source of supply. Thus approximately 420 AFY of saved groundwater is assumed to be used every year by retailers supplied SWP water by CLWA. This will result total imported water savings of 21,000 AF over the assumed 50-year life of the project.

The estimated water savings will result in an equivalent amount of avoided imported water, which currently costs roughly $800 per acre-foot for CLWA's marginal source of SWP water (CLWA, 2013). Given the recent and projected rate of change of SWP supplies, this cost is expected to increase in real terms over the benefits lifetime of the project. We estimate that the cost of SWP imports will rise at a real rate (above inflation) of 3.5% annually through 2020, after which prices will likely escalate at a rate of 1.5% annually.

Assuming this rise in rates, we approximate the present value of all future benefits of avoided water imports over the 50-year life of project benefits to be $7,289,618. A summary of monetized benefits for this project is shown in Table 8.3.

TABLE 8-3: ANNUAL BENEFIT

(All benefits in 2012 dollars)									
Project: USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [(1)]	Annual $ Value [(1)] (f) x (g)	Discount Factor [(1)]	Discounted Benefits [(1)] (h) x (i)
2012						800.00		1.00000	
2013						828.00		0.94340	
2014	Avoided imported water	AF	0	296	296.24	856.98	$253,867	0.89000	**$225,941**
2015	Avoided imported water	AF	0	405	405.02	886.97	$359,238	0.83962	**$301,623**
2016	Avoided imported water	AF	0	420	420.00	918.02	$385,568	0.79209	**$305,406**
2017	Avoided imported water	AF	0	420	420.00	950.15	$399,063	0.74726	**$298,203**
2018	Avoided imported water	AF	0	420	420.00	983.40	$413,030	0.70496	**$291,170**
2019	Avoided imported water	AF	0	420	420.00	1,017.82	$427,486	0.66506	**$284,302**
2020	Avoided imported water	AF	0	420	420.00	1,053.45	$442,448	0.62741	**$277,597**
2021	Avoided imported water	AF	0	420	420.00	1,069.25	$449,085	0.59190	**$265,812**
2022	Avoided imported water	AF	0	420	420.00	1,085.29	$455,821	0.55839	**$254,528**
2023	Avoided imported water	AF	0	420	420.00	1,101.57	$462,658	0.52679	**$243,723**
2024	Avoided imported water	AF	0	420	420.00	1,118.09	$469,598	0.49697	**$233,376**
2025	Avoided imported water	AF	0	420	420.00	1,134.86	$476,642	0.46884	**$223,468**
2026	Avoided imported water	AF	0	420	420.00	1,151.88	$483,792	0.44230	**$213,981**
2027	Avoided imported water	AF	0	420	420.00	1,169.16	$491,048	0.41727	**$204,897**
2028	Avoided imported water	AF	0	420	420.00	1,186.70	$498,414	0.39365	**$196,199**
2029	Avoided imported water	AF	0	420	420.00	1,204.50	$505,890	0.37136	**$187,870**
2030	Avoided imported water	AF	0	420	420.00	1,222.57	$513,479	0.35034	**$179,894**
2031	Avoided imported water	AF	0	420	420.00	1,240.91	$521,181	0.33051	**$172,257**
2032	Avoided imported water	AF	0	420	420.00	1,259.52	$528,999	0.31180	**$164,944**
2033	Avoided imported water	AF	0	420	420.00	1,278.41	$536,934	0.29416	**$157,942**

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 8-3: ANNUAL BENEFIT

(All benefits in 2012 dollars)									
Project: USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2034	Avoided imported water	AF	0	420	420.00	1,297.59	$544,988	0.27751	**$151,237**
2035	Avoided imported water	AF	0	420	420.00	1,317.05	$553,162	0.26180	**$144,816**
2036	Avoided imported water	AF	0	420	420.00	1,336.81	$561,460	0.24698	**$138,669**
2037	Avoided imported water	AF	0	420	420.00	1,356.86	$569,882	0.23300	**$132,782**
2038	Avoided imported water	AF	0	420	420.00	1,377.21	$578,430	0.21981	**$127,145**
2039	Avoided imported water	AF	0	420	420.00	1,397.87	$587,106	0.20737	**$121,747**
2040	Avoided imported water	AF	0	420	420.00	1,418.84	$595,913	0.19563	**$116,579**
2041	Avoided imported water	AF	0	420	420.00	1,440.12	$604,852	0.18456	**$111,629**
2042	Avoided imported water	AF	0	420	420.00	1,461.73	$613,925	0.17411	**$106,890**
2043	Avoided imported water	AF	0	420	420.00	1,483.65	$623,133	0.16425	**$102,353**
2044	Avoided imported water	AF	0	420	420.00	1,505.91	$632,480	0.15496	**$98,008**
2045	Avoided imported water	AF	0	420	420.00	1,528.49	$641,968	0.14619	**$93,847**
2046	Avoided imported water	AF	0	420	420.00	1,551.42	$651,597	0.13791	**$89,863**
2047	Avoided imported water	AF	0	420	420.00	1,574.69	$661,371	0.13011	**$86,048**
2048	Avoided imported water	AF	0	420	420.00	1,598.31	$671,292	0.12274	**$82,395**
2049	Avoided imported water	AF	0	420	420.00	1,622.29	$681,361	0.11579	**$78,897**
2050	Avoided imported water	AF	0	420	420.00	1,646.62	$691,581	0.10924	**$75,548**
2051	Avoided imported water	AF	0	420	420.00	1,671.32	$701,955	0.10306	**$72,340**
2052	Avoided imported water	AF	0	420	420.00	1,696.39	$712,485	0.09722	**$69,269**
2053	Avoided imported water	AF	0	420	420.00	1,721.84	$723,172	0.09172	**$66,329**
2054	Avoided imported water	AF	0	420	420.00	1,747.67	$734,019	0.08653	**$63,513**
2055	Avoided imported water	AF	0	420	420.00	1,773.88	$745,030	0.08163	**$60,816**

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

TABLE 8-3: ANNUAL BENEFIT

(All benefits in 2012 dollars)									
Project: USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (e) – (d)	Unit $ Value [1]	Annual $ Value [1] (f) x (g)	Discount Factor [1]	Discounted Benefits [1] (h) x (i)
2056	Avoided imported water	AF	0	420	420.00	1,800.49	$756,205	0.07701	**$58,235**
2057	Avoided imported water	AF	0	420	420.00	1,827.50	$767,548	0.07265	**$55,762**
2058	Avoided imported water	AF	0	420	420.00	1,854.91	$779,061	0.06854	**$53,395**
2059	Avoided imported water	AF	0	420	420.00	1,882.73	$790,747	0.06466	**$51,128**
2060	Avoided imported water	AF	0	420	420.00	1,910.97	$802,609	0.06100	**$48,958**
2061	Avoided imported water	AF	0	420	420.00	1,939.64	$814,648	0.05755	**$46,879**
2062	Avoided imported water	AF	0	420	420.00	1,968.73	$826,867	0.05429	**$44,889**
2063	Avoided imported water	AF	0	420	420.00	1,998.26	$839,270	0.05122	**$42,984**
2064	Avoided imported water	AF	0	124	123.77	2,028.24	$251,025	0.04832	**$12,129**
2065	Avoided imported water	AF	0	15	14.99	2,058.66	$30,849	0.04558	**$1,406**
				Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)					**$7,289,618**

Comments: The USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1) Project will avoid the use of 420 AFY of SWP water, which is half of the total water savings calculated as a result of arundo removal. The cost of CLWA's marginal source of SWP water is $800/AF in 2012 dollars. This cost is assumed to escalate at a 3.5% real rate through 2020 and a 1.5% real rate thereafter.

Note:
(1) Complete these columns if dollar value is being claimed for the benefit.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Project Economic Costs

Initial projects costs for this project total $572,225. This covers cost of invasive species removal and initial spraying of re-sprouts. Maintenance costs for re-spraying sprouts and monitoring will also be needed to maintain invasive species removal. Annual maintenance costs for the SC-1 and BCN-1 portions of the project combined are assumed to be $6,000 per year for 6 years following project implementation. These costs are assumed to be expended after initial costs of the project have been expended, over 4 years through 2020. As shown in Table 8-4, the present value of initial and maintenance costs for the project total is $545,918.

TABLE 8-4: ANNUAL COSTS OF PROJECT

(All costs in 2012 Dollars)										
Project: USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)										
	Initial Costs Grand Total Cost from Table 4-7 (row (i), column (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2012								$ -	1.00000	**$ -**
2013	$401,869							$401,869	0.94340	**$379,121**
2014	$148,731							$148,731	0.89000	**$132,370**
2015	$17,450							$17,450	0.83962	**$14,651**
2016	$4,175							$4,175	0.79209	**$3,307**
2017					$6,000			$6,000	0.74726	**$4,484**
2018					$6,000			$6,000	0.70496	**$4,230**
2019					$6,000			$6,000	0.66506	**$3,990**
2020					$6,000			$6,000	0.62741	**$3,764**
								Total Present Value of Discounted Costs (Sum of column (j))		**$545,918**
								Transfer to Table 20, column (c), Proposal Benefits and Costs Summaries		

Notes:
(1) If any, based on opportunity costs, sunk costs and associated costs.
(2) The incremental change in O&M costs attributable to the project.

USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Project Benefits and Cost Summary

The present value of avoided SWP water imports enabled by groundwater savings as a result of the project totals $7,289,618. The present value of total costs for the project totals $549,470, for a net benefit from the project of $6,740,148.

In addition to the monetized benefit of avoided water imports, there are a wide range of important non-monetized benefits from the project. The project enables reduced fire and flooding risk, greatly improved wildlife habitat, improved water supply reliability, reduced stream bank erosion, improved water quality in the Santa Clara River and in groundwater, improved groundwater management, and improved operational flexibility for CLWA.

This analysis of costs and benefits is based on available data and some assumptions. As a result, there may be some omissions, uncertainties, and possible biases. In this analysis, the main uncertainties are associated with the amount of water savings achieved by replacing arundo with native vegetation. This issue is discussed in Table 8-5.

TABLE 8-5: OMISSIONS, BIASES, AND UNCERTAINTIES, AND THEIR EFFECT ON THE PROJECT

Benefit or Cost Category	Likely Impact on Net Benefits*	Comment
Avoided Imported Water Supply Costs	+ +	Water savings estimates are based on a very conservative assumption made by researchers on the arundo stand transpiration rate compared to the transpiration rate for native vegetation. Although transpiration rates of 40 mm/day were found, researchers conservatively used a value of 20 mm/day as their recommended estimate (California Invasive Plant Council, 2011). As a result, the savings from natural replacement of native vegetation instead of arundo is likely significantly under-estimated, and therefore the value of avoided SWP water imports is also underestimated.

*Direction and magnitude of effect on net benefits:
+ = Likely to increase net benefits relative to quantified estimates.
+ + = Likely to increase net benefits significantly.
– = Likely to decrease benefits.
– – = Likely to decrease net benefits significantly.
U = Uncertain, could be + or –.

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TABLE 20: PROPOSAL BENEFITS AND COSTS SUMMARY

Proposal: Upper Santa Clara River

Agency: Castaic Lake Water Agency

Project	Project Proponent	Total Present Value Project Costs [1]	Total Present Value Project Benefits			From Section D1 – Cost-Effectiveness Analysis, Cost Savings	From Section D2 – Briefly describe the main Non-monetized benefits
			From Section D3 – Monetized [2]	From Section D4 – Flood Damage Reduction [3]	Total		
(a)	(b)	(c)	(d)	(e)	(f) = (d) + (e)	(g)	(h)
Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)	Castaic Lake Water Agency (CLWA)	2,194,116	3,180,339	-	3,180,339		The project helps meet the state water conservation mandate, improves water supply reliability, improves operational flexibility for CLWA, promotes social health and safety, avoids water quality impacts of urban runoff, and reduces net demand on the Delta.
Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)	Santa Clarita Water District (SCWD)	281,081	877,335	-	877,335		The project helps meet the state water conservation mandate, improves water supply reliability, improves operational flexibility for CLWA, promotes social health and safety, avoids water quality impacts of urban runoff, and reduces net demand on the Delta.
Foothill Feeder Connection (CLWA-8)	Castaic Lake Water Agency (CLWA)	41,273,114	55,047,104	-	55,047,104		The project increases safety due to improved seismic stability, increases water supply system reliability and accommodates system expansion, increases operational flexibility and treatment reliability for CLWA, and increases water education programming.
Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)	Newhall County Water District (NCWD)	177,620	533,681	-	533,681		The project provides valuable information about cost and community support for a pellet-based water softening treatment plant, provides an equitable solution to hardness in drinking water, providing everyone with softer water cheaper than through individual purchase, and will result in fewer alternative canister softener deliveries meaning less greenhouse gas emissions.
Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)	Santa Clarita Valley Sanitation District (SCVSD)	2,987,860	7,748,382	-	7,748,382		The project reduces chloride levels in the discharges from its two water reclamation plants, provides a web portal clearinghouse for information on water softeners and conditioning systems that do not discharge added chloride to the sewer system, reduces water resource conflicts by reducing downstream pollutants, addresses equity and fairness issues through removal of relatively small numbers of AWS that are hurting larger community, provides a program that is one of the first of its kind and a model for other districts,
USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)	City of Santa Clarita, Bouquet Canyon Creek homeowners	545,918	7,289,618	-	7,289,618		The project reduces fire hazards by removing arundo, reduces flooding impacts, improves wildlife habitat, improves surface and groundwater quality, decreases stream bank erosion, improves groundwater resources management, reduces demand for net diversion from the Delta, improved water supply reliability, and improved operational flexibility for CLWA

The objectives of the Upper Santa Clara River IRWM Plan strongly correlate to the Proposition 84 Program Preferences, which include the Statewide Priorities. Because the proposed projects were developed in response to the objectives of the IRWM Plan, this Proposal also has a significant connection to the Program Preferences and Statewide Priorities. The following six proposed projects meet 12 of 14 of the Proposition 84 Program Preferences and Statewide Priorities as summarized in the matrix below:

1. Santa Clarita Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)
2. Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)
3. Foothill Feeder Connection (CLWA-8)
4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)
5. Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)
6. USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Program Preferences	SCV WUE Strategic Plan Programs	SCWD WUE Programs	Foothill Feeder Connection	Pellet Water Softening Treatment Plant - Phase 1	AWS Rebate & Public Outreach Program	Arundo/Tamarisk Removal Program
INCLUDE REGIONAL PROJECTS/PROGRAMS	💧	💧	💧	💧	💧	💧
INTEGRATE WATER MANAGEMENT WITHIN HYDROLOGIC REGION	💧	💧	💧	💧	💧	💧
EFFECTIVELY RESOLVE SIGNIFICANT WATER-RELATED CONFLICTS	💧	💧		💧	💧	💧
CONTRIBUTE TO ATTAINMENT OF ONE OR MORE OBJECTIVES OF CALFED	💧	💧		💧	💧	
ADDRESS CRITICAL WATER SUPPLY/QUALITY NEEDS OF A DAC						
INTEGRATE WATER MANAGEMENT WITH LAND USE PLANNING	💧	💧			💧	💧
FOR FLOOD MANAGEMENT PROJECTS THAT PROVIDE MULTIPLE BENEFITS	**Not Applicable**					
ADDRESS STATEWIDE PRIORITIES OF:						
A. DROUGHT PREPAREDNESS	💧	💧	💧			💧
B. USE AND REUSE WATER MORE EFFICIENTLY	💧	💧	💧	💧	💧	💧
C. CLIMATE CHANGE RESPONSE ACTIONS	💧	💧		💧	💧	💧
D. EXPAND ENVIRONMENTAL STEWARDSHIP	💧	💧		💧	💧	💧
E. PRACTICE INTEGRATED FLOOD MANAGEMENT						💧
F. PROTECT SURFACE WATER AND GROUNDWATER QUALITY	💧	💧		💧	💧	💧
G. IMPROVE TRIBAL WATER AND NATURAL RESOURCES						
H. ENSURE EQUITABLE DISTRIBUTION OF BENEFITS	💧	💧	💧	💧	💧	💧

Include Regional Projects or Programs

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(3) Foothill Feeder Connection (CLWA-8),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The development of the IRWM Plan and the 2013 Plan Update has provided an ongoing forum in which the Stakeholders can collaborate and develop regional partnerships and programs. The intent is to use the Proposition 84 Implementation projects to further these regional partnerships leading to regional solutions. The six projects in this Proposal not only address regional issues, but benefit the Region as a whole. The first project - Santa Clara Valley (SCV) Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3) was developed out of a collaborative process of all the public water systems in the SCV (Castaic Lake Water Agency (CLWA), Valencia Water Company, Santa Clarita Water Division, Newhall County Water District, and Los Angeles County Waterworks District 36). The SCV WUE Strategic Plan Programs will affect the entire CLWA service area, including the service areas of the four retailers. The SCV WUE Strategic Plan Programs Project will affect the demand for all but a small amount of the water delivered in the entire SCV. The Santa Clarita Water District (SCWD) WUE Programs Project addresses specific needs that are not addressed in the SCV WUE Strategic Plan Programs. SCWD serves 41 percent of the Santa Clarita Valley and has specific needs and consumption data that can be used to implement the large landscape water budgets in the Region.

The purpose of the Foothill Feeder Connection project is to bring additional capacity to CLWA's potable water system, consequently improving system reliability for the entire region.

The Pellet Water Softening Treatment Plant – Phase 1 Project develops the necessary engineering analysis to ensure the groundwater can be used to improve drinking water quality by reducing calcium carbonate hardness, which will consequently also increase the use of local groundwater and reduce demand on the imported Delta water supply, once the Project is completed. Likewise, the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) will directly address the Los Angeles Regional Water Quality Control Board (RWQCB) Basin Plan's chloride reduction goal; thereby improving the region's water quality.

The USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1) will utilize the resources and expertise of a local agency, the City of Santa Clarita as well as a group of homeowners along the Bouquet Canyon Creek to protect the most significant regional resource, the USCR. Due to the nature of arundo and tamarisk, it is necessary to undertake removal and restoration in the upper reaches of a watershed to prevent "re-seeding" of the noxious weed in lower river reaches. Therefore removal in the USCR not only benefits habitat and ecological processes in the upper watershed, it enhances and preserves arundo and tamarisk removal in the lower watershed.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

Review of the projects selected demonstrates that this Proposal includes regional projects and programs. The projects selected for this proposal are regional in many aspects. The projects address regional issues. The projects affect a large geographic area and benefit downstream users. The projects address a range of issues (water demand, water quality, water supply reliability, and environmental habitat quality). Project benefits apply to the SCV, the USCR Region, the lower SCR Region (within the Watersheds Coalition of Ventura County Region), as well as statewide.

Integrate Water Management Programs and Projects

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(3) Foothill Feeder Connection (CLWA-8),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and

(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The six projects in this Proposal, while separate and distinct from each other, together create a multifaceted approach to the fundamental issue in the SCV, water supply reliability. The projects address water supply reliability in the following ways:

- *Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3)* - reduce demands on the regional water supply.
- *Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2)* - reduce demands on the regional water supply.
- *Foothill Feeder Connection Project (CLWA-8)* – increase the capacity of CLWA's regional potable water system and improve system reliability.
- *Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2)* – the completed 3 phased project will enhance local water supplies without requiring additional imported water supplies.
- *Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)* - improves quality of recycled water discharged to local receiving waters; thereby complying with Basin Plan TMDLs for chloride.
- *USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)* - decreases loss of local water supply to noxious non-native weeds.

Conversely, because of the projects are so diverse and different in natures, they represent a complete and whole approach to water supply management in the SCV and USCR. The suite of projects addresses the need to reduce water demand, increase water supply, improve and protect water quality, and promote resource stewardship.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

This proposal takes separate projects that as a group represent a complete set of water management practices working toward improved water supply reliability.

Resolve Significant Water-Related Conflicts

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The intent of the USCR IRWM Plan is to create an ongoing framework and a collaborative process whereby conflict between different water uses can be avoided or reduced. In the past, development was not always done with due regard for habitat preservation or restoration. However increasing priority is being given to changing the process of water resource development and human use to conduct these activities in ways which will not damage natural resources and to restore damaged natural habitats so that they not only survive but thrive. In the Region, local jurisdictions are working in conjunction with habitat preservation advocacy groups, in an attempt to restore balance and improve water quality of one of the last large, natural riparian ecosystems in Southern California. The SCV WUE Strategic Plan Programs Project, the SCWD WUE Programs Project, and USCR Arundo/Tamarisk Removal Program (SCARP) Implementation Project have been promulgated from this desire to balance the different water uses in the Region. Both the two WUE Program Projects will reduce human demand on the various regional water sources. The USCR Arundo/Tamarisk Removal Program (SCARP) Implementation Project will improve the local natural riparian ecosystem of the SCR.

Another significant water related conflict in the Region is how and in what quantities, the chloride levels in the SCR should be managed. The USCR gains chlorides through the use of imported water, wastewater treatment, and the use of illegal residential self-regenerating softeners. Downstream crops may be negatively impacted by high chloride levels. Projects included in this proposal assist in lowering the chloride levels to comply with the Basin Plan TMDL. For example, the Automatic Water Softener Rebate and Public Outreach Program will remove the remaining illegal residential automatic water softeners in the Santa Clarita Valley through a combination of activities. The multi-faceted effort is expected to achieve a reduction in the chloride discharged from the water reclamation plants (WRPs) up to

approximately 5 mg/L and to prevent backsliding (residents installing and/or using illegal automatic water softeners). To complement this program, the Pellet Water Softening Treatment Plant - Phase 1 Project will accomplish the necessary engineering documentation required to complete a project that will improve drinking water quality by reducing calcium carbonate hardness.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The commitment to reducing water related conflicts in the Region is demonstrated by: (a) the ongoing participation of a broad range of stakeholders in the IRWM Plan, and (b) the selection of a suite of projects that, when implemented, reduce water related conflicts in the Region.

The magnitude by which project implementation will reduce water conflicts in the region cannot be quantified. However, these projects represent an early and important step. Over time the success of these projects will lead to similar actions and the projects in turn could have a large cumulative positive benefit.

Contribute To Attainment of Calfed Bay-Delta Program

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),

(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),

(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2), and

(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1)

The USCR Region receives imported State Water Project (SWP) water delivered through the Sacramento-San Joaquin Delta; actions to reduce water demand and to enhance local water supply would contribute to the success of the CALFED Bay-Delta Program. Implementation of all five programs will yield avoided SWP imports of 380 acre-feet per year (AFY). For the second WUE Project (SCWD-2), implementation of three (out of ten) SCWD Strategic Plan Programs will yield avoided SWP imports of 156 AFY.

There is one project in the suite of proposed projects that focuses on removing illegal residential automatic water softeners for water quality related reasons. The Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) focuses on illegal residential automatic water softeners (AWS) (also called self- regenerating water softeners) that produce a high chloride, brine discharge to the wastewater system. In addition, because this type of water softener requires water to regenerate the resin every couple days, by removing the AWS from use, this Project reduces the water demand in the Region and reduces the demand on the Delta. A second project, Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2), completes the engineering tasks required for a multi-phased project that will encourage more local groundwater supply usage and less use on the SWP imported supply. This project when all phases are completed will improve source water quality by reducing naturally occurring calcium water hardness, which will reduce water demand, because hard water contributes to the inefficiency of household appliances, increases the need for additional soaps and detergents, and contributes to the increased use of point-of-use treatment devices, all of which increase water use.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The certainty of achieving this program preference is high, assuming funding is made available for implementation. The estimates of water demand reduction are based on past experience with similar water use efficiency programs implemented in the USCR Region as analyzed in the SCV WUE Strategic Plan and the SCWD WUE Strategic Plan. Likewise, the reduction in demand resulting from the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) Project has been studied and confirmed in multiple technical studies.

Implementation of this Proposal could reduce future dependence on water imported from the Sacramento-San Joaquin Delta region by nearly 956 AFY.

Address Water Supply and Water Quality Needs of Disadvantaged Communities

During development of the adopted 2008 IRWM Plan, no communities that met the strict State definition of a Disadvantaged Community (DAC) were identified. During the 2013 IRWM Plan Update, DWR's newly developed

DAC mapping tool was used to search for DACs within the Region. DWR's mapping tool is based on American Community Service data between 2006 and 2010 and it was found that none of the communities within the Region met the defined standard for a DAC that has a median household income (MHI) of less than 80 percent of the statewide annual MHI. A MHI of less than $48,706 meets this threshold (DWR 2012). This means that all areas reported average median household incomes greater than 80 percent of the statewide annual MHI for that period. The County had a reported MHI of $55,476 and the City of Santa Clarita had a reported MHI of $82,642 during that period. The Santa Clarita Valley Planning area had a reported average annual household income of $83,900 in 2004 (City of Santa Clarita and County of Los Angeles 2004). While no disadvantaged communities that met the strict state definition were identified, both the City of Santa Clarita and the County have identified areas where particular outreach efforts are merited, due either to substandard infrastructure, substandard housing, or similar concerns.

In the spirit of providing "a safe, clean, affordable, and sufficient water supply to meet the needs of California residents, farms, and businesses" (CWC §79501(b)), an outreach effort directed at DAC members was developed during the 2008 IRWM Plan process. During this initial effort, as well as during the 2013 IRWM Plan Update with the assistance of DWR's DAC Mapping Tool, no DACs were identified within the Region. As a result, the subcommittee has not actively conducted outreach during the IRWM Plan update.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The six projects of this Proposal have broad benefits for all persons in the Region.

Effectively Integrate Water Management with Land Use Planning

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),

(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),

(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and

(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The IRWM Plan has the benefit of participation from all land use planning entities within the Upper Santa Clara watershed: the City of Santa Clarita and the County of Los Angeles.

Coordination with the land use entities has led to the determination that accommodating a growing population depends on improving water use efficiency and enhancing local supplies. The SCV WUE Strategic Plan Programs and the SCWD WUE Programs Projects are a direct response to the need to accommodate anticipated population growth. The two WUE Projects are designed to help CLWA and water retailers meet their 20 by 2020 requirements under SBX7-7. SCV and SCWD Large Landscape Audit & Incentive Program will target the City of Santa Clarita Landscape Maintenance Districts, Los Angeles County Parks and Homeowner's Associations. SCV CII Audit & Customized Incentive Program will target major non-residential users including amusements parks, colleges and universities, hotels, hospitals and other customers identified by the retail water agencies. Residential SCV Landscape Contractor Certification and Weather-Based Irrigation Controller (WBIC) Program would target all landscape contractors and maintenance companies in the SCV.

An important consideration for land use entities is providing a mix of land uses, including open space and recreational opportunities. The SCR has been designated a "Significant Ecological Area" (SEA) within the joint City of Santa Clarita and Los Angeles County land use plan, "One Valley, One Vision" (also called the Santa Clarita Area Plan). SEAs are defined as ecologically important land and water systems that are valuable as plant or animal communities, often important to the preservation of threatened or endangered species, and conservation of biological diversity. The SCR is also defined in One Valley, One Vision as a significant scenic resource for the Region. Water management can be done in a manner to enhance, rather than detract from, land use plans to protect regional resources. Both the USCR Arundo/Tamarisk Removal Program (SCARP) Implementation and the Automatic Water Softener Rebate and Public Outreach Program are projects that will contribute to the protection and enhancement of the Santa Clara River. The USCR Arundo Removal Project will eliminate approximately 42 acres of arundo from land along two tributaries of the SCR. Removal will promote the reestablishment of native habitat and native species, and improve the watershed by removing this invasive weed. In addition, removal will result in increased river flows, as arundo consumes almost three times the amount of water used by native species. Removal of the thick stands of arundo will reduce river erosion while protecting adjacent land uses from flooding. Likewise, Automatic Water Softener Rebate and Public Outreach Program

will improve the water quality of the river (by decreasing the amount of chloride put into the river from the two water reclamation plants) and thereby protect the river resource.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The certainty of achieving this program preference is high, assuming funding is made available for implementation. All projects in the Proposal are consistent with local land use plans and projects enhance land use protections contained in local land use plans.

As described earlier, implementation of this proposal could reduce future dependence on water imported from the Sacramento-San Joaquin Delta region by nearly 956 AFY.

For Flood Management - Projects That Provide Multiple Benefits

This application is not seeking Proposition 1E funding and therefore this Program Preference is not applicable.

Statewide Priorities

Drought Preparedness

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(3) Foothill Feeder Connection (CLWA-8), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The IRWM Plan focuses on drought preparedness. Three of the five objectives selected by the Stakeholder group related to drought preparedness:

- Reduce Water Demand - Implement technological, legislative and behavioral changes that will reduce use demands for water
- Improve Operational Efficiency - Maximize water system operational flexibility and efficiency, including energy efficiency.
- Increase Water Supply - Understand future regional demands and obtain necessary water supply sources.

One way to lessen the severity of a drought's effect on SCV is to prepare in advance by: (a) diversifying the various sources of supply, (b) developing a "drought-proof" supply, (c) identifying the types of water uses in the Region, and (d) reducing demand from non-essential uses.

The Foothill Feeder Connection (CLWA-8) Project will provide initially 6 million gallons per day (MGD) of additional capacity to CLWA's potable water system (and up to a maximum of 30 MGD (or 33,600 AFY) additional capacity when the Rio Vista Water Treatment Plant (RVWTP) is expanded in the future), consequently improving system reliability.

Data gathered as part of the two WUE Programs will provide a picture of various water uses in the SCV. These data will help target water demand reductions under all conditions, but could be vital in reducing non-essential uses in the event of a drought. Removal of Arundo and Tamarisk (SC-1/BCN-1), both voracious water users, preserves river flow and will improve groundwater recharge from the river that water agencies must rely on during droughts. These programs will allow for better management of the local water resources.

As described earlier, since preparation of the 2008 Plan, SBX7-7 has been enacted, mandating that urban water suppliers reduce statewide water use (in gallons per capita per day) by 20 percent by 2020. Methods of complying with SBX7-7 include enhanced water conservation, water use efficiency, and water supply reliability. The majority of the projects proposed increase the efficiency of the local and imported supply through conservation, new treatment options, and environmental stewardship. The savings from implementation of the two WUE Projects would save approximately 536 AFY.

In addition these projects compliment the Climate Change Study being undertaken as part of the 2013 IRWM Plan Update. The Climate Change Study will not only evaluate the Region's vulnerability to climate change, but will develop adaptive strategies. These strategies will be incorporated to ensure the reliability of the local supply and reduce the

dependence on imported waters. Also supporting climate change responses is the increased use of local water supplies which will reduce greenhouse gases.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The certainty of achieving this program preference is high, assuming funding is made available for implementation. As described earlier, three of five objectives selected by stakeholders relate to drought preparedness, demonstrating the high level of commitment by water agencies, local land use agencies, and environmental groups to drought preparedness. The Region has already undertaken water use efficiency programs and recycled water projects and this proposal will build upon these past successes.

The SCV WUE Strategic Plan Programs would save approximately 308 AFY of imported SWP water. The SCWD WUE Programs are estimated to save 156 AFY of imported SWP water. The Foothill Feeder Connection (CLWA-8) Project would increase CLWA's potable water supply by 33,600 AFY once it is initiated. Finally, the Arundo and Tamarisk Removal Project will create a water savings of 840 AFY. Assuming 50% of water savings is available to off-set imported water needs from the SWP, this project results in a total imported water savings of 420 AFY.

Use and Reuse Water More Efficiently

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(3) Foothill Feeder Connection (CLWA-8),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

As demonstrated above, this Proposal will implement water use efficiency, water conservation, and water treatment to improve water quality. By reducing demands and adding another local source to the water supply portfolio, this proposal is an early step towards climate change adaption. In addition, the USCR Arundo Removal project works toward re-establishment of native species, natural habitat, and natural hydrologic processes in the upper watershed, another recognized climate adaptation strategy.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The certainty of achieving this program preference is high, assuming funding is made available for implementation. The Stakeholders of the USCR IRWM Plan are committed to using and reusing water more efficiently. This is verified by the nature of the projects selected and by the Salt and Nutrient Management Plan which is being undertaken as part of the 2013 IRWM Plan Update. The Salt and Nutrient Management Plan will allow the Region to most effectively use recycled water without degrading the local groundwater supply. The plan will facilitate further expansion of recycled water projects in the future so that the most efficient use of water can occur while minimizing the impacts of salt and nutrient accumulation.

The SCV WUE Strategic Plan Programs will reduce demand by 308 AFY of water. The SCWD WUE Programs are estimated to save 156 AFY of water. The Foothill Feeder Connection (CLWA-8) Project would increase CLWA's potable water supply by 33,600 AFY once it is initiated. Finally, the Arundo and Tamarisk Removal Project is anticipated to save over 840 AFY.

Climate Change Response Actions

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and

(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

As described above, this proposal includes projects that address adaptation to climate change. Implementation of this proposal would diversify the supply sources available in the Region, promote water use efficiency, and result in increased use of local groundwater supply thus reducing the demand on the Delta supply. Importantly, the improved quality of the local groundwater supply source will require less energy and result in fewer greenhouse gas emissions than a like amount of imported water (see Attachment 8 for the full analysis). Energy savings (and greenhouse gas emission reductions) are enhanced by the reduced water demands. The two WUE Program Projects have specific water saving projects that will reduce not only water demand, but wastewater loads as well.

The goal of the Automatic Water Softener Rebate and Public Outreach Program is to remove the remaining illegal residential automatic water softeners in the Sanitation District's service area, and thereby reduce the chloride load in the Sanitation District's final effluent and recycled water at the Saugus and Valencia Water Reclamation Plants (WRPs) by up to 5 mg/L, and prevent backsliding (residents installing and/or using illegal automatic water softeners). This program will reduce greenhouse gas emissions by minimizing the size of future chloride compliance facilities that would otherwise be required to remove chloride from the WRP discharges.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

Review of the projects selected demonstrates that this Proposal will benefit climate change response. These projects are an early step in climate change response that will be enhanced by the Climate Change Study which is being prepared as part of the 2013 Update IRWM Plan. The Climate Change Study will identify vulnerability of the Region to climate change, evaluate potential climate change impacts, identify and evaluate potential adaption strategies, and will make recommendations as to how to collect and utilize greenhouse gas emissions data within the IRWM Plan framework.

Expand Environmental Stewardship

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The two WUE Program Projects both reduce runoff from irrigation to local channels; thereby reducing the amount of pollution in the streams and rivers. The Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) Project will help promote pollution prevention over constructing more wastewater treatment facilities. This Project is looking out for the environment as well as improving the quality of the Santa Clara River by reducing the chloride discharged into the river.

Another ecological threat addressed by this Proposal is the presence of arundo and tamarisk in the SCR. In a study commissioned by the Ventura County Resource Conservation District, the impacts of arundo and tamarisk include high water consumption, reduced biodiversity, bank erosion, and channel alteration.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

This proposal contains projects that practice, promote, improve, and expand environmental stewardship; therefore certainty of achieving this Statewide Priority is high. The magnitude of benefits is great. Benefits from the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) Project would include the entire Santa Clara River and all of its downstream users. Benefits of the SCR Arundo Removal Project are also widespread as it is necessary to undertake removal in the upper watershed to enable eradication efforts throughout the river system.

Practice Integrated Flood Management

Relevant Projects:

(1) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

This proposal contains one project that augments the productivity of the SCR floodplain while providing protective measures against losses resulting from flooding.

As described by the California Water Plan, arundo displaces native vegetation along waterways, impedes flow during floods, and is a heavy water user. Further, arundo that clogs floodways eventually ends up downstream, resulting in expensive beach clean-ups. Removal serves to improve habitat for the native species, reduce flood risk, and reduce water losses. Therefore, arundo removal itself is a non-structural flood management strategy that has multiple benefits.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

Integrated flood management is a multi-strategy approach that employs both structural and non-structural measures to maximize the benefits of floodplains while minimizing potential for loss of life and property damage from flooding. The projects in this proposal are near-term approaches to addressing integrated flood management. However, the commitment to integrated flood management is also long-term. The IRWM Plan Update is undertaking a Climate Change Study that will greatly inform the description of future flood vulnerabilities and identify adaptation strategies. The Climate Change Study will provide a means to consider uncertainty and risk not only for water management but specifically for flood management.

Protect Surface Water and Groundwater Quality

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

The majority of projects associated with this proposal protect surface and groundwater quality.

The two WUE Programs targets outdoor water application, including large landscape audits, installation of WBICs, and specialized training for landscape contractors and maintenance companies. These programs will limit application of excessive water and, therefore, undesirable salts and nutrients to the landscape. These programs will reduce runoff and improve the quality of any receiving waters. In addition, water use information from the audits and landscape programs will allow the Region to better manage the salts and nutrients through reductions of imported water, and greater accounting of where salts and nutrients are applied in the watershed.

The Pellet Water Softening Treatment Plant - Phase 1 Project completes the engineering phase of a multi-phase project that when constructed will allow NCWD to improve drinking water quality by reducing calcium carbonate hardness, which will consequently also reduce the need for point-of-use water softeners, some types of which discharge chloride into the Santa Clara River. This Project complements the Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) Project that should remove the remaining illegal residential automatic water softeners in the SCV through a combination of activities. The multi-faceted effort is expected to achieve a reduction in the chloride discharged from the WRPs up to 5 mg/L.

Arundo and tamarisk are major threats to the beneficial uses of the USCR. These weeds are pervasive and provide no redeeming wildlife value. These weeds clog flood channels, pose an increased wildfire risk and result in heavy stream erosion. Unlike native vegetation, arundo and tamarisk do not shade the riparian area. Lack of shade alters pH and oxygen levels and increases toxicity of undesirable nutrients such as ammonia.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The certainty of achieving this program preference is high, assuming funding is made available for implementation. The outcomes from the two proposed WUE Programs are well understood given past experience with similar water use efficiency programs implemented in the USCR Region. Implementation of this proposal will decrease polluted runoff, reduce the chloride levels in the SCR, and assist the agencies in complying with the Basin Plan. Besides preventing degradation the Proposal will enhance water quality through reestablishment of native vegetation leading to improved pH, improved oxygen levels and less sedimentation.

Improve Tribal Water and Natural Resources

The SCV is within the historic range of the Tataviam Band of Mission Indians, though there are no tribal lands within the Region. The IRWM Plan has solicited the input and participation from a broad Stakeholder group, including a specific solicitation to the Tataviam. Unfortunately, no tribal representatives have participated to date. The IRWM Plan Stakeholders will continue to solicit tribal participation.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The six projects of this proposal have broad benefits for all persons in the Region.

Ensure Equitable Distribution of Benefits

Relevant Projects:

(1) Santa Clara Valley Water Use Efficiency Strategic Plan Programs (CLWA-3),
(2) Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2),
(3) Foothill Feeder Connection (CLWA-8),
(4) Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2),
(5) Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and
(6) USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

As described earlier, the IRWM Plan has not identified communities that met the State definition for a DAC. Additional outreach directed at economically disadvantaged areas and populations did not find any water quality or supply issues unique to DACs. Likewise, outreach to California Native American Tribes did not identify any critical water supply or water quality needs. However, this proposal contains regional project and programs that benefit a large geographic area. The projects and programs of this proposal do not adversely affect one particular group but rather equitably distribute benefits to a broad geographic area and all residents and water users of that area.

Certainty of Achieving Program Preferences, Breadth and Magnitude of Program Preference Achieved

The IRWM Plan process included considerable effort to include disadvantaged communities as well as California Native American Tribes. Extensive outreach did not point to any safe drinking water, wastewater, or other unique water-related needs of these populations.

This Proposal provides for the implementation of a suite of projects that will enhance the reliability of existing supplies by reducing water demand, and increasing water supply and improving water quality, for the benefit of every person within the Santa Clarita Valley.

The proposal does not include a project that specifically addresses a critical, exclusive water supply or water quality need of a DAC, since no communities were identified that met the definition of a DAC, as defined in the Water Code, during development of the 2008 Upper Santa Clara River IRWM Plan. During the 2013 IRWM Plan Update, DWR's newly developed DAC mapping tool was used to search for DACs within the Region. DWR's mapping tool is based on American Community Service data between 2006 and 2010 and it was found that none of the communities within the Region met the defined standard for a DAC that has a median household income (MHI) of less than 80 percent of the statewide annual MHI. A MHI of less than $48,706 meets this threshold (DWR 2012). This means that all areas reported average median household incomes greater than 80 percent of the statewide annual MHI for that period. The County had a reported MHI of $55,476 and the City of Santa Clarita had a reported MHI of $82,642 during that period. The Santa Clarita Valley Planning area had a reported average annual household income of $83,900 in 2004 (City of Santa Clarita and County of Los Angeles 2004). While no disadvantaged communities that met the strict state definition were identified, both the City of Santa Clarita and the County have identified areas where particular outreach efforts are merited, due either to substandard infrastructure, substandard housing, or similar concerns.

In the spirit of providing "a safe, clean, affordable, and sufficient water supply to meet the needs of California residents, farms, and businesses" (CWC §79501(b)), an outreach effort directed at DAC members was developed during the 2008 IRWM Plan process. During this initial effort, as well as during the 2013 IRWM Plan Update with the assistance of DWR's DAC Mapping Tool, no DACs were identified within the Region. As a result, the subcommittee has not actively conducted outreach during the IRWM Plan update.

Therefore, this Attachment is not applicable to this Proposal.

Documents Provided

Castaic Lake Water Agency (CLWA) is the applicant and also the Urban Water Supplier that will be receiving funding from this Round 2 Implementation Grant should the Proposal be awarded funding. The Groundwater Management Plan (GWMP) (CWC §10753.7) self certification document for the Region is included as Att11_IG2_SelfCert_2of5.

Self- certification forms for documenting compliance with California Water Code (CWC) §525 for Water Meter Installation and Assembly Bill (AB) 1420 for Best Management Practice implementation were originally provided as part of the Round 2 Planning Grant application. Therefore, current forms, albeit no changes, are being submitted as Att11_IG2_SelfCert_3of5. In addition, documentation provided as Att11_IG2_SelfCert_3of5 is DWR's compliance letter which provides DWR's review and acceptance of CLWA's conformance with AB 1420.

Santa Clarita Water Division (SCWD) is also an Urban Water Supplier that will be receiving funding from this Implementation Grant should the Proposal be awarded funding. SCWD is the project sponsor for the Santa Clarita Water Division Water Use Efficiency Programs (SCWD-2). As such, self certification forms for documenting compliance with CWC §525 for Water Meter Installation and AB 1420 for Best Management Practice implementation are provided as Att11_IG2_SelfCert_4of5.

Newhall County Water District (NCWD) is also an Urban Water Supplier that will be receiving funding from this Implementation Grant should the Proposal be awarded funding. NCWD is the project sponsor for the Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2). As such, self certification forms for documenting compliance with CWC §525 for Water Meter Installation and AB 1420 for Best Management Practice implementation are provided as Att11_IG2_SelfCert_5of5.

California Department of Water Resources
Integrated Regional Water Management Grant Programs

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

Grant Program: ☒ Implementation ☐ SWFM

IRWM Region: Upper Santa Clara River

Agency name: Castaic Lake Water Agency

Project Title (as shown on application form): USCR Prop 84 IRWMP Implementation Grant

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

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

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

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

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

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

DAN MASNADA — Name of Authorized Representative (Please print)

Signature

GENERAL MANAGER — Title

3/14/13 — Date

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: California Department of Water Resources

Funding Program name: Proposition 84, IRWM Implementation Grants

Applicant (Agency name): Castaic Lake Water Agency

Project Title (as shown on application form): USCR IRWM Round 2 Implementation Grant

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.

DAN MASNADA
Name of Authorized Representative (Please print)

Signature

GENERAL MANAGER
Title

3/14/13
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 Dirk Marks Title of Signatory Water Resources Manager Signature of signatory [signature] Date 2/6/12 21-Sep-10

Application Date:

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

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: Castaic Lake Water Agency

Project Title:

Applicant's Contact Information: **Name:** **Phone:** **E-mail:**

Participants:

Retailer (List Below)	*Wholesaler (List Below)*

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															
	✓	BMP 2 Residential Plumbing Retrofit															
✓	✓	BMP 3 System Water Audits, Leak Detection		Yes		✓							Yes			Yes	
✓	✓	BMP 3 Leak Repairs		Yes		✓							Yes			Yes	
	✓	BMP 4 Metering with Commodity Rates for All New connections															
	✓	BMP 4 Retrofit of Existing Connections															

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

***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.

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

ARNOLD SCHWARZENEGGER, Governor

November 9, 2010

Mr. Dirk Marks, Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350-2173

Dear Mr. Marks:

The Department of Water Resources (DWR) has reviewed the Castaic Lake Water Agency's (CLWA) Self-Certification Statement – Table 1 dated October 26, 2010, regarding implementation of the Urban Best Management Practices (BMPs).

The purpose of DWR's review is to determine eligibility of CLWA 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, CLWA 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 CLWA 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: California Department of Water Resources

Funding Program name: R2 Implementation Grant - Prop 84 IRWMP

Applicant (Agency name): Santa Clarita Water Division

Project Title (as shown on application form): SCWD-2 Santa Clarita Water Division Water Use Efficiency Programs

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.

Cathy Z Hollomon
Name of Authorized Representative
(Please print)

Cathy Z Hollomon
Signature

Assoc. Water Resources Planner
Title

March 15, 2013
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 Cathy Z. Hollomon Title of Signatory Associate Water resources Planner Signature of signatory Cathy Z Hollomon Date 3-18-13

Application Date:

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

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

Applicant Name: Santa Clarita Water Division

Project Title: SCWD-2 Santa Clarita Water Division Water Use Efficiency Programs

Applicant's Contact Information: Name: Cathy Z. Hollomon | Phone: 661-964-3997 | E-mail: chollomon@scwater.org

Participants:

Retailer (List Below)	*Wholesaler (List Below)*
Santa Clarita Water Division	*Castaic Lake Water Agency*

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	✓					✓				No		3/2/2008		Yes			
	✓	BMP 2 Residential Plumbing Retrofit	✓					✓				No		3/2/2008		Yes			
✓	✓	BMP 3 System Water Audits, Leak Detection	✓			✓						Yes		3/2/2008		Yes			
✓	✓	BMP 3 Leak Repairs	✓			✓						Yes		3/2/2008		Yes			
	✓	BMP 4 Metering with Commodity Rates for All New connections	✓			✓						Yes		3/2/2008		Yes			
	✓	BMP 4 Retrofit of Existing Connections	✓			✓						Yes		3/2/2008		Yes			

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

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

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

AB 1420 Self- Certification Statement Table 2

Provide Schedule, Budget, and Finance Plan to Demonstrate Commitment to Implement All BMP's to Become in Compliance with BMP Implementation - Commencing Within 1st Year of Agreement for Which Applicant Receives Funds.

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_Cathy Z. Hollomon___Title of Signatory _Associate Water Resources Planner_ Signature of signatory Cathy Z Hollomon Date 3-18-13

Application Date:

Proposal Identification Number:

CUWCC Member? Yes/No: Yes

Applicant Name: Santa Clarita Water Division

Is the UWM Plan Deemed Complete by DWR? Yes/No: Yes

Project Title:

Applicant's Contact Information: Name: Cathy Z. Hollomon - 661-964-3997

	Retailer (List Below)		
Participants:	Santa Clarita Water Division		

C1	C2	C3	C4	C5	*C6	C7	C8	**C9	**C10	**C11	C12			C13	C14	C15	C16	C17	C18	C19
				BMP Implemented by Retailers and/or Wholesalers				Compliance Options / Alternative Conservation Approaches (1)			BMP is Exempt (2)			Implementation Scheduled to Commence within 1st Year of Agreement						
CUWCC 2010 Flex Track BMPs	BMPs required for Wholesale Supplier	BMPs required for Retail Supplier	BMPs	Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	Alternative Conservation Approaches Yes/No	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	Start Date (MM/YR)	Completion Level (%)	BMP Completion Date (MM/YR)	Budget (Dollars)	Funding Source & Finance Plan to Implement BMPs	Meets CUWCC Coverage Yes/No	Funds Requested, if Available. (See AB 1420 Compliance Table 3) Yes/No
1. Utility Operations Programs																				
1.11	✓	✓	BMP 12 Conservation Coordinator																	
1.12		✓	BMP 13 Water Waste Prohibitions																	
1.13	✓		BMP 10 Wholesale Agency Assistance Programs																	
1.20	✓	✓	BMP 3 System Water Audits, Leak Detection/**Repair**																	
1.30		✓	BMP 4 Metering with Commodity Rates for All New/**Retrofit of Existing** connections																	
1.40		✓	BMP 11 Conservation Pricing																	
2. Educational Programs																				
2.10	✓	✓	BMP 7 Public Information																	
2.20	✓	✓	BMP 8 School Education																	
3. Residential																				
3.11		✓	BMP 1 **Indoor** Water Survey for Single/Multi-Family Residential Customers	✓						✓				Jul-08	30	Jun-17	program to be combined with BMP 5 - large landscape Conservation, which focuses on HOA properties	water rates	Yes	

CUWCC 2010 Flex Track BMPs	BMPs required for Wholesale Supplier	BMPs required for Retail Supplier	BMPs	BMP Implemented by Retailers and/or Wholesalers				Compliance Options / Alternative Conservation Approaches (1)			BMP is Exempt (2)			Implementation Scheduled to Commence within 1st Year of Agreement						
				Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	Alternative Conservation Approaches Yes/No	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	Start Date (MM/YR)	Completion Level (%)	BMP Completion Date (MM/YR)	Budget (Dollars)	Funding Source & Finance Plan to Implement BMPs	Meets CUWCC Coverage Yes/No	Funds Requested, if Available. (See AB 1420 Compliance Table 3) Yes/No
3.12		✓	BMP 1 **Outdoor** Water Survey for Single/Multi-Family Residential Customers	✓						✓				Jul-09	30	Jun-17	program to be combined with BMP 5 - large landscape Conservation, which focuses on HOA properties	water rates	Yes	
3.20		✓	BMP 2 Residential Plumbing Retrofit	✓						✓				Jun-08	80	Dec-13	$4,000	water rates	Yes	
3.30		✓	BMP 6 High-Efficiency Washing Machine Rebate Programs	✓		✓				✓				Feb-12	20	Jun-15	$50,000	water rates	Yes	
3.40		✓	BMP 14 Residential ULFT Replacement Programs	✓		✓				✓				Jun-07	50	Dec-13	$20,000	water rates	Yes	
4. Commercial, Industrial, Institutional																				
4.00		✓	BMP 9 Conservation programs for Commercial, Industrial, and Institutional (CII) Accounts	✓						✓				Jun-09	20	Jun-17	$30,000	water rates	Yes	
5. Landscape																				
5.00		✓	BMP 5 Large Landscape Conservation Programs and Incentives	✓						✓				Jun-09	30	Jun-17	$150,000	water rates	Yes	

*C6: Wholesaler may also be a retailer (supplying water to end water users)
**C9, ** C10, and **C11: 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, or lack of legal authority, as detailed in the CUWCC MOU.

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: California Department of Water Resources

Funding Program name: Proposition 84 IRWM

Applicant (Agency name): Newhall County Water District

Project Title (as shown on application form): Pellet Water Softening Treatment Plant

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.

Stephen L. Cole
Name of Authorized Representative
(Please print)

Signature

G.M.
Title

3.25.13
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 Stephen L. Cole Title of Signatory General Manager Signature of signatory _____ Date 3/25/2013

Application Date: 3/29/2013

Proposal Identification Number: _____ CUWCC Member? Yes/No Yes

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: Newhall County Water District

Project Title: Pellet Water Softening Treatment Plant

Applicant's Contact Information: Name: Michael Alvord Phone: 661-259-3610 E-mail: malvord@ncwd.org

Participants:

Retailer (List Below)	*Wholesaler (List Below)*
Newhall County Water District	*Castaic Lake Water Agency*

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	No	No		✓					No	No	12/30/2008		Yes
	✓	BMP 2 Residential Plumbing Retrofit	Yes	No	No		✓					No	No	12/30/2008		Yes
✓	✓	BMP 3 System Water Audits, Leak Detection	Yes	Yes	No	✓						Yes	Yes	12/30/2008		Yes
✓	✓	BMP 3 Leak Repairs	Yes	Yes	No	✓						Yes	Yes	12/30/2008		Yes
	✓	BMP 4 Metering with Commodity Rates for All New connections	Yes	No	No	✓						Yes	No	12/30/2008		Yes
	✓	BMP 4 Retrofit of Existing Connections	Yes	No	No	✓						Yes	No	12/30/2008		Yes

C1	C2	C3	C4	C5	*C6	C7	**C8	**C9	**C10	C11	C12	C13	C14	C15	C16	C17	C18
				BMP Implemented by Retailers and/or Wholesalers / *BMP*			Compliance Options/Alternative Conservation Approaches (1)			BMP Is Exempt (2)			BMP Implementation Requirements Met				
BMPs required for Wholesale Supplier	BMPs required for Retail Supplier	BMPs		Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	CUWCC MOU Requirement Met: Retailer *Yes/No*	CUWCC MOU Requirement Met: Wholesaler *Yes/No*	Date of BMP Report Submitted to CUWCC for (2007-2008) (MOU Signatories)	Date BMP Implementation Data Submitted to DWR in CUWCC Format (Non MOU Signatories) (3)	All Supporting Documents have been Submitted Yes/No
	✓	BMP 5 Large Landscape Conservation Programs and Incentives		Yes	Yes	No	✓						Yes	No	12/30/2008		Yes
	✓	BMP 6 High-Efficiency Washing Machine Rebate Programs		Yes	Yes	No		✓					No	No	12/30/2008		Yes
✓	✓	BMP 7 Public Information		Yes	Yes	No	✓						Yes	Yes	12/30/2008		Yes
✓	✓	BMP 8 School Education		Yes	Yes	No	✓						Yes	Yes	12/30/2008		Yes
	✓	BMP 9 Conservation programs for Commercial, Industrial, and Institutional (CII) Accounts		Yes	Yes	No	✓						Yes	No	12/30/2008		Yes
✓		BMP 10 Wholesale Agency Assistance Programs		No	Yes	No	✓						Yes	Yes	12/30/2008		Yes
	✓	BMP 11 Conservation Pricing		Yes	No	No							Yes	No	12/30/2008		Yes
✓	✓	BMP 12 Conservation Coordinator		Yes	Yes	No	✓						Yes	Yes	12/30/2008		Yes
	✓	BMP 13 Water Waste Prohibitions		Yes	No	No	✓						Yes	No	12/30/2008		Yes
	✓	BMP 14 Residential ULFT Replacement Programs		Yes	Yes	No	✓						Yes	No	12/30/2008		Yes

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

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

AB 1420 Self- Certification Statement Table 2

Provide Schedule, Budget, and Finance Plan to Demonstrate Commitment to Implement All BMP's to Become in Compliance with BMP Implementation - Commencing Within 1st Year of Agreement for Which Applicant Receives Funds.

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 Stephen L. Cole Title of Signatory General Manager Signature of signatory _____ Date 3/25/2013

Application Date: 3/29/2013

Proposal Identification Number: _____ CUWCC Member? Yes/No Yes

Applicant Name: Newhall County Water District Is the UWM Plan Deemed Complete by DWR? Yes/No Yes

Project Title: Pellet Water Softening Treatment Plant

Applicant's Contact Information: Name Michael Alvord

	Retailer (List Below)			
Participants:	Newhall County Water District			

C1	C2	C3	C4	C5	*C6	C7	C8	**C9	**C10	**C11	C12			C13	C14	C15	C16	C17	C18	C19
				BMP Implemented by Retailers and/or Wholesalers				Compliance Options / Alternative Conservation Approaches (1)			BMP is Exempt (2)			Implementation Scheduled to Commence within 1st Year of Agreement						
CUWCC 2010 Flex Track BMPs	BMPs required for Wholesale Supplier	BMPs required for Retail Supplier	BMPs	Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	Alternative Conservation Approaches Yes/No	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	Start Date (MM/YR)	Completion Level (%)	BMP Completion Date (MM/YR)	Budget (Dollars)	Funding Source & Finance Plan to Implement BMPs	Meets CUWCC Coverage Yes/No	Funds Requested, if Available. (See AB 1420 Compliance Table 3) Yes/No
	1. Utility Operations Programs																			
1.11	✓	✓	BMP 12 Conservation Coordinator																	
1.12		✓	BMP 13 Water Waste Prohibitions																	
1.13	✓	✓	BMP 10 Wholesale Agency Assistance Programs																	
1.20	✓	✓	BMP 3 System Water Audits, Leak Detection/Repair																	
1.30		✓	BMP 4 Metering with Commodity Rates for All New/Retrofit of Existing connections																	
1.40		✓	BMP 11 Conservation Pricing																	
	2. Educational Programs																			
2.10	✓	✓	BMP 7 Public Information																	
2.20	✓	✓	BMP 8 School Education																	
	3. Residential																			
3.11		✓	BMP 1 Indoor Water Survey for Single/Multi-Family Residential Customers	Yes	No		Yes		✓					Jul-11	95%	Jun-13	$ 1,000.00	Water Rates	Yes	
3.12		✓	BMP 1 Outdoor Water Survey for Single/Multi-Family Residential Customers	Yes	No		Yes		✓					Jul-11	95%	Jun-13	$ 1,000.00	Water Rates	Yes	
3.20		✓	BMP 2 Residential Plumbing Retrofit	Yes	No		Yes		✓					Jul-11	65%	Jun-15	$ 4,000.00	Water Rates	Yes	

CUWCC 2010 Flex Track BMPs	BMPs required for Wholesale Supplier	BMPs required for Retail Supplier	BMPs	BMP Implemented by Retailers and/or Wholesalers			Compliance Options / Alternative Conservation Approaches (1)				BMP is Exempt (2)			Implementation Scheduled to Commence within 1st Year of Agreement						
				Retailer *Yes/No*	Wholesaler *Yes/No*	Regional *Yes/No*	Alternative Conservation Approaches Yes/No	BMP Checklist	Flex Track	Gallons Per Capita Per Day GPCD	Not Cost Effective	Lack of Funding	Lack of Legal Authority	Start Date (MM/YR)	Completion Level (%)	BMP Completion Date (MM/YR)	Budget (Dollars)	Funding Source & Finance Plan to Implement BMPs	Meets CUWCC Coverage Yes/No	Funds Requested, if Available. (See AB 1420 Compliance Table 3) Yes/No
3.30		✓	BMP 6 High-Efficiency Washing Machine Rebate Programs	Yes	No		Yes		✓					Jul-11	20%	Jun-17	$ 20,000.00	Water Rates	Yes	
3.40			BMP 14 Residential ULFT Replacement Programs																	
	4. Commercial, Industrial, Institutional																			
4.00			BMP 9 Conservation programs for Commercial, Industrial, and Institutional (CII) Accounts																	
	5. Landscape																			
5.00			BMP 5 Large Landscape Conservation Programs and Incentives																	

*C6: Wholesaler may also be a retailer (supplying water to end water users)
**C9, ** C10, and **C11: 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, or lack of legal authority, as detailed in the CUWCC MOU.

UPPER SANTA CLARA RIVER
Integrated Regional Water Management

Consent Form
IRWM Plan Update

IRWM Plan Update Applicant: **Castaic Lake Water Agency**

IRWM Region: **Upper Santa Clara River**

RWMG: **Upper Santa Clara River**

Date of Adoption: **July 9, 2008**

As the authorized representative of the above-referenced RWMG, I acknowledge and affirm that the RWMG is utilizing an IRWM Plan that was adopted on or before September 30, 2008, to meet part of the grant Eligibility Criteria for the Round 2, Proposition 84 IRWM Grant Program, Implementation Grant solicitation.

I also acknowledge that the RWMG understands that it must enter into a binding agreement with DWR to update, within two years of the execution date of the agreement, the IRWM Plan to meet the IRWM Plan standards contained in the 2012 Guidelines; and to undertake all reasonable and feasible efforts to take into account water-related needs of disadvantaged communities in the area within the IRWM region.

I further acknowledge that the RWMG understands that failure to meet the condition listed above may result in termination of the grant agreement by DWR and that DWR may demand the immediate repayment to State of an amount equal to the amount of grant funds disbursed to Grantee prior to such termination.

_Dan Masada_____
Name of Authorized Representative

F _____
Signature

_General Manager_____
Title of Authorized Representative

3/14/13
Date

Introduction

This attachment addresses the following requirements from the Proposal Solicitation Package:

- Identify and include portions of the IRWM Plan that demonstrate it helps reduce dependence on the Sacramento-San Joaquin Delta for water supply; and
- Provide assurances that any revised or subsequent IRWM Plan will continue to help reduce dependence on the Sacramento-San Joaquin Delta for water supply.

The Upper Santa Clara River (USCR) IRWM Plan Region receives State Water Project (SWP) water delivered through the Delta; actions within the Region contribute to the success of CALFED Bay-Delta Program objectives.

In the adopted 2008 USCR IRWM Plan, the Stakeholders made "reduction in water demand" one of the regional objectives. In the IRWM Plan, Stakeholders sought a "ten percent overall reduction in projected urban water demand throughout the Region by 2030 through implementation of water conservation measures" (IRWM Plan, pg. 3-3). A reduction in water demand would reduce dependence on imported SWP water and contribute to the attainment of CALFED objectives, benefiting the Delta. The USCR IRWM Plan is in the process of being updated and completion is anticipated late 2013. The Stakeholders have revised this objective for the 2013 Updated IRWM Plan to "reduction in potable water demand," to emphasize the necessity to enhance supplies other than the Delta.

Since the 2008 IRWM Plan was adopted, new State water conservation requirements of Senate Bill 7 of Extended Session 7 (SBX7-7) have been enacted, mandating that urban water suppliers reduce statewide water demand (in gallons per capita per day) by 20 percent by 2020. The California Department of Water Resources (DWR) has recommended that the Region receive the planning grant funds requested during Planning Grant Round 2, which is allowing the Region to better plan for recycled water in the future and update their Water Use Efficiency (WUE) Strategic Plans. The effort will also develop a cost-effective water supply portfolio for the Region and further compliance with SBX7-7 regulations. Additionally, the Proposal Projects **Santa Clarita Valley (SCV) WUE Strategic Plan Programs (CLWA-3)** and **Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2)** specifically address water supply management practices to reduce potable water demand within the Region.

Water Demand and Imported Water Needs in USCR

Nearly 50 percent of the Region's water supply is imported water from the SWP. The imported water is delivered to Castaic Lake through SWP facilities, treated at one of Castaic Lake Water Agency's (CLWA's) two treatment plants, and then delivered to the domestic water purveyors through transmission lines owned and operated by CLWA. CLWA, as the Region's water wholesaler, has been contracting with the State of California through the DWR to acquire and distribute SWP water since 1980. CLWA's Water Supply Contract with DWR is for 95,200 acre-feet per year (AFY) of SWP Table A Amount (IRWM Plan, pg. 2-49). The four local retail water purveyors; 1) CLWA SCWD (a Regional Water Management Group (RWMG) member), 2) Los Angeles County Waterworks District No. 36 (LACWWD36), 3) Newhall County Water District (NCWD) (a RWMG member), and 4) Valencia Water Company (VWC) (a RWMG member), deliver these water supplies to municipal and industrial (M&I) users within the Valley. Agricultural uses are serviced by local groundwater supplies. Together, the Purveyors provide water to about 70,400 service connections (2011 Santa Clarita Valley Water Report).

Consistent with other urban SWP contractors, SWP deliveries to the CLWA have increased as its requests for SWP have increased (IRWM Plan, pg. 2-50). Table 13-1, adapted from the USCR IRWM Plan presents historical total SWP deliveries to CLWA's service area.

TABLE 13-1: HISTORICAL TOTAL SWP DELIVERIES TO PURVEYORS

Year	Deliveries (AF)	Year	Deliveries (AF)	Year	Deliveries (AF)
1980	1,125	1996	18,093	2004	47,205
1985	11,823	1997	22,148	2005	38,034
1990	21,647	1998	20,254	2006	40,646
1991	7,968	1999	27,282	2007[(a)]	45,332
1992	13,991	2000	32,579	2008	41,705
1993	13,393	2001	35,369	2009	38,546
1994	14,389	2002	41,768	2010	30,578
1995	16,996	2003	44,419	2011	30,850

Source: Santa Clarita Valley Water Report, 2011.
Note: (a) Historically these supplies were comprised of only SWP Table A Amount. Since 2007, CLWA's imported supplies now consist of a combination of SWP water and water acquired from the Buena Vista Water Storage District in Kern County.

In late 2007 a federal court decision required that DWR curtail pumping from the Delta to protect the endangered Delta Smelt. A similar court decision was rendered in 2009 involving endangered salmon. The results of these impacts on environmental resources in the Delta, when combined with recent socio-economic conditions, conservation efforts and hydrology changes have already reduced imported SWP utilization in the Region from a high in 2004 of 47,205 acre-feet (AF) to approximately 30,578 AF in 2010 (see Table 13-1). On December 14, 2010, the court overturned these rulings and has required new analysis of Delta pumping requirements. While the results are unknown at this time, it is expected that some level of SWP pumping restrictions will continue into the future.

The SWP supply itself is highly variable and depends on hydrologic conditions in northern California, the amount of water in SWP storage reservoirs at the beginning of the year, regulatory and operational constraints, the total amount of water requested by the contractors, and climate change. Currently, the reliability of the Region's overall water supply is dependent upon the reliability of its groundwater, imported water, and recycled water supplies. Since SWP water deliveries are subject to reductions when dry conditions occur in Northern California, and/or are affected by environmental decisions, the IRWM Plan, as well as the CLWA 2010 Santa Clarita Valley Urban Water Management Plan (UWMP), include water management strategies for enhancing local water supply reliability during such occurrences.

Natural catastrophes can also impact water supplies. If an earthquake were to occur, pipelines, canals, or pump stations conveying water across the Tehachapi Mountains might become inoperable, making SWP deliveries to CLWA and the other downstream contractors dependent on the supplies then available in the terminal reservoirs. Although pipelines that traverse fault lines are reinforced, damage can still occur depending on the magnitude of the earthquake. Therefore, water banking opportunities south of the Tehachapi Mountains have a high value to CLWA, and thus are given high value as water management strategies within the USCR IRWM Plan.

In addition to earthquakes, the SWP could experience other emergency outage scenarios. Past examples include slippage of aqueduct side panels into the California Aqueduct near Patterson in the mid-1990s, the Arroyo Pasajero flood event in 1995, and various subsidence repairs needed along the East Branch of the Aqueduct since the 1980s. Such events could impact some or all SWP contractors south of the Delta. Impacts to the delivery of SWP water to CLWA would require the purveyors to rely on local supplies, increased groundwater pumping, recycled water, conservation, and water available to CLWA from Pyramid and Castaic Lakes during the time period the SWP was unavailable. Thus combinations of water management strategies that reduce dependence on imported water and that maximize the reliability of other local resources are strongly sought within the IRWM framework.

The following section identifies how the USCR IRWM Plan will continue to integrate multiple water management strategies (WMS) in order to maximize the flexibility of the Region's water resources.

USCR IRWM Plan Objectives

For the 2013 Updated IRWM Plan, the Stakeholders have already collaborated to complete the ranking process and have produced an updated list of priority projects. This Proposal was developed from the 2013 Updated IRWM Plan priority project list. During development of the IRWM Plan, stakeholder issues and concerns culminated into significant key themes.

Key Issue #1: ***Increasing water demand while imported water supplies become less reliable.***

Since reduction in water demand is a critical objective within USCR IRWM Plan Region, and prioritizing projects is predicated on the objectives within the IRWM Plan, all of the projects within the IRWM Plan, and this Grant Proposal have been selected to directly meet the IRWM Plan objectives below (IRWM Plan, pg. 3-1).

USCR IRWM PLAN OBJECTIVES

2008 IRWM Plan Objective	Draft 2013 Updated IRWM Plan Objective(a)	Multiple Benefit
Reduce Water Demand: Implement technological, legislative and behavioral changes that will reduce user demands for water.	***Reduce <u>Potable</u> Water Demand***: Implement technological, legislative and behavioral changes that will reduce user demands for water.	These projects result in more efficient water use, ***less dependence on imported water supplies***, less energy usage for treatment and delivery of water, and reduced demand for new or expanded water supply infrastructure. Proposal Projects CLWA-3 and SCWD-2 are examples.

2008 IRWM Plan Objective	Draft 2013 Updated IRWM Plan Objective(a)	Multiple Benefit
Improve Operational Efficiency: Maximize water system operational flexibility and efficiency, including energy efficiency.	***N/A***	These projects have benefits related to reduced maintenance costs and decreased system water loss. Proposal Project CLWA-8 is an example.
Increase Water Supply: Understand future regional demands and obtain necessary water supply sources.	***Increase Water Supply:*** Understand future regional demands and obtain necessary water supply sources.	These projects ***provide for increased use of local supplies rather than imported water.*** They can decrease peak flood flows and can provide opportunities for habitat improvement and restoration. Proposal Projects CLWA-3 and SCWD-2 are examples.
Improve Water Quality: Supply drinking water with appropriate quality; improve groundwater quality; and attain water quality standards.	***Improve Water Quality***: Supply drinking water with appropriate quality; improve groundwater quality; and attain water quality standards.	These projects reduce the potential for human exposure to potentially harmful substances and improve the efficiency of both water and wastewater treatment processes. They also benefit agricultural water users and wildlife habitat. Proposal Projects SCVSD-1and NCWD-2 are examples.
Promote Resource Stewardship: Preserve and improve ecosystem health; improve flood management; and preserve and enhance water-dependent recreation.	***Promote Resource Stewardship:*** Preserve and improve ecosystem health, and preserve and enhance water-dependent recreation.	These projects improve overall habitat quality, reduce flooding and prevent erosion. Arundo removal also increases water supply as this plant utilizes large quantities of surface and groundwater. Proposal Project SC-1/BCN-1 is an example.

Note: (a) Additional Draft 2013 Updated IRWM Plan Objectives include: Flooding/Hydromodification, Take action within the watershed to adapt to climate change, and Promote projects and actions that reduce greenhouse gas emissions.

While all of the objectives are meant to work in together in order to maximize their benefits; two of the objectives are more directly focused on water supply as a resource and demand as a management tool that impacts that supply: ***Reduce Water Demand*** and ***Increase Water Supply***.

The USCR IRWM Plan objective ***Reduce Water Demand*** will be implemented by technological, legislative and behavioral changes that will reduce user demands for water. This is important to the USCR IRWM Plan for a few key reasons:

1. Adequate planning for, and the procurement of reliable water supplies is a critical component of CLWA's mission. Planning for an adequate water supply to meet demands requires consideration of the reliability of SWP supplies, because history and statistical analysis indicate that the full contractual Table A Amount will not be available for delivery to the SWP Contractors in all years (IRWM Plan, pg. 2-51). Therefore, SWP Contractors like CLWA are compelled to initiate local projects given that maximum Table A Amounts are not projected for delivery in the future.
2. The 2011 SWP Delivery Reliability Report indicates that environmental water needs and climate change will result in SWP deliveries from 9 percent to 70 percent of the maximum contract amount over an 82-year simulation period under current conditions. Deliveries are expected to average 61 percent of maximum contract amount under current conditions, but decrease to approximately 35 percent of maximum contract amount over multiple dry years. Anticipated deliveries under future conditions are similar. Therefore, SWP contractors such as CLWA cannot rely on the SWP for delivery of maximum contract amounts, now or in the future, compelling agencies to expand and pursue local water supply projects.
3. Local water agencies like CLWA and the four purveyors understand that local water supplies will provide them with more control and will also expand their water portfolios and encourage efficient water allocation and use.

The USCR IRWM Plan objective ***Increase Water Supply*** will be implemented by understanding regional water demands and obtaining the necessary water supply sources. This is important to the USCR IRWM Plan for a few key reasons:

1. The CLWA service area portion of the Region's anticipated demand in a normal year is projected to be about 88,564 AF in 2030 (with conservation), but this could increase in a multi-year dry situation to an estimated

99,096 AF in 2030 (CLWA 2010 UWMP). Concurrently, in a multi-year drought scenario, supplies will decline. For this reason the water agencies in the Region have planned for other sources to increase water supply and water supply reliability, including programs to restore groundwater production, to utilize recycled water, and to conserve water. Further, storm water capture and subsequent groundwater recharge provides for increased use of local supplies rather than imported water. These projects assist in maintaining the long-term sustainability of the groundwater supply.

2. Implementing and expanding the recycled water system within the Region provides a reliable source of water year round that can help offset reliance on imported water and local groundwater. Use and delivery of up to 17,400 AFY of reclaimed water was considered in CLWA's Recycled Water Master Plan Final Program Environmental Impact Report (IRWM Plan, pg. 3-6). By utilizing the effluent from the Region's two existing wastewater treatment plants, the Saugus Water Reclamation Plant and the Valencia Water Reclamation Plant, CLWA and the purveyors can more efficiently allocate its potable water and increase the reliability of the local water supplies in the Santa Clarita Valley (IRWM Plan, pg. 2-53).
3. CLWA and the purveyors currently meet the balance of their demands with local groundwater and a small amount of recycled water. However, CLWA has evaluated the long-term water needs (water demand) within its service area based on applicable county and city land use plans and has compared these needs against existing and potential water supplies. Results indicate that CLWA's water requirements should utilize increased proportions of supply from conjunctive use, water transfers and water banking as means to improve the reliability of SWP supplies, and that the Region's long-term water supply strategy should also include water conservation, storm water capture, groundwater recharge and recycled water (IRWM Plan, pgs. 2-60, 2-90, 3-4, 3-6, 4-13, 4-36, 5-10).
4. Since preparation of the 2008 IRWM Plan, new State water conservation requirements have been enacted. Methods of complying with SBX7-7 include enhanced water conservation, water use efficiency, and recycled water. In addition, storm water capture and groundwater recharge projects provide for increased use of local supplies rather than imported water. These projects assist in maintaining the long-term sustainability of the groundwater supply.

Additionally, to help gain a better understanding the Region's dependence on the Delta water supplies from a hydrologic perspective, the Region is implementing a focused region-specific Climate Change Technical Study during the 2013 Updated IRWM Plan. The Climate Change Technical Study identifies the vulnerabilities of the Region to climate change, evaluates potential climate change impacts, and identifies and evaluates potential adaption strategies to better understand this altered hydrologic reliability.

USCR Strategies to Reduce Dependence on Imported Water

Nearly 20 separate projects were submitted for consideration as Priority Projects during the "call for projects" when developing the 2013 Updated IRWM Plan. The projects included in this Proposal address the critical water management challenges in the Region. Full implementation of the IRWM Plan will provide for the following specific benefits:

Demand Management Projects

Regional water purveyors coordinate wherever possible to maximize efficiency and ensure the cost effectiveness of their conservation programs.

> "More efficient water use will result in less demand on imported water supplies, less energy usage for treatment and delivery of water, and reduced demand for new or expanded water supply infrastructure" (IRWM Plan, pg. 5-9).

By improving indoor and outdoor water use efficiency and conserving water, WUE projects can:

- reduce water demand (on the Delta),
- avoid costs for purchase of imported water,
- increase water supply reliability for the CLWA customers, and
- improve operational flexibility for the Region.

WUE programs have proven successful in the Region and more are planned as part of this grant application to assist with reduction of Delta demand (see Table 13.2).

Conservation efforts by current stakeholders are having success in the Region. Conservation actions include activities besides installation of low flow water fixtures. In the Region, non-native plants are significant water users. Arundo

(*Arundo donax*) uses almost twice as much water as native riparian vegetation for the same area of coverage. Besides their heavy water demands, invasive plants in the watershed, such as arundo and tamarisk (*Tamarix spp.*) negatively affect water quality, crowd out native plants and species, and increase flood risk, erosion hazard, and wildfire risk. Large stands of arundo or tamarisk can obstruct stream flows and shunt flow outward, exacerbating bank erosion (IRWM Plan, pg. 3-8).

The City of Santa Clarita, Angeles National Forest, and other stakeholders are implementing an environmentally beneficial project in the USCR watershed that will remove invasive plant species and increase of water quantity (and therefore decrease the demand on the Delta), improve water quality, and reduce the flood/wildfire hazard. One of these projects (**USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1**)) is included in this grant application for funding.

Water Supply Projects

The majority of Priority Projects submitted by Stakeholders relate to water supply, particularly storm water capture, groundwater recharge, and development of recycled water supplies. Storm water capture and subsequent groundwater recharge provides for increased use of local supplies rather than imported water. These projects assist in maintaining the long-term sustainability of the groundwater supply. Depending on project specifics, these projects can also serve to decrease peak flood flows and provide opportunities for habitat improvement and restoration. Recycled water supplies, likewise, decrease demand for imported water. Recycled water can offset potable water demand, recharge groundwater, and be used to create and restore wetland areas. (IRWM Plan, pg. 5-9).

TABLE 13-2: SELECT USCR PROJECTS THAT REDUCE DEPENDENCE ON IMPORTED WATER

Project Type	Project	Applicable WMS/RMS that Reduce Dependence on Imported Water
Water Use Efficiency	CLWA-3, Santa Clarita Valley (SCV) WUE Strategic Plan Programs. SC-1, Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation. SCWD-2, Santa Clarita Water Division (SCWD) WUE Programs. SCVSD-1, Automatic Water Softener Rebate and Public Outreach Program.	• Water conservation/Water use efficiency • Water supply reliability • Reduce water demand
Recycled Water	SCVSD-2, Ultraviolet Treatment at the Water Reclamation Plants. NCWD-1, Santa Clara River – Sewer Trunk Line Relocation Phase II and III. CLWA-1, Recycled Water Program, Phase II.	• Recycled municipal water • Groundwater management • Conjunctive use • Water supply reliability • Increase water supply
Groundwater Management/ Conjunctive Use	NCWD-2, Pellet Water Softening Treatment Plant – Phase 1. LADPW-9, SCR South Fork Rubber Dam No. 1 and Spreading Grounds. CLWA-9, West Saugus Formation Groundwater Resources Monitoring Project.	• Groundwater management • Conjunctive use • Water supply reliability • Increase water supply

Note: Blue text indicates Proposal Projects. These are only example projects from the 2013 Updated IRWM Plan Priority Project List, focused on projects with near-term implementation. Space limitations prevent a full listing of projects.

Future IRWM Plan Efforts to Continue to Reduce Dependence

For the following reasons the USCR IRWM Plan *will continue to help reduce dependence on the Delta for water supply:*

- Adopted objectives of the USCR IRWM Plan are to ***Reduce Water Demand*** and ***Increase Water Supply*** *(using local sources)*
- Adequate planning for, and the procurement of, a reliable water supply is a fundamental function of CLWA, the Region's SWP wholesaler and active Region Water Management Group (RWMG) member; and
- The RWMG is committed to, and the IRWM Plan governance structure supports, implementing and updating the IRWM Plan into the future.

The list of Priority Projects (Att13_IG2_Delta_2of2); *projects that when implemented would continue to help reduce the Region's dependence on the Delta, through either a reduction in demand or an enhancement in supply have been highlighted.*

Appendix to Attachment 13

UPPER SANTA CLARA RIVER DRAFT 2013 UPDATED IRWM PLAN LIST OF PRIORITY PROJECTS

Upper Santa Clara River Integrated Regional Water Management Plan
Draft Ranking, Projects Submitted During 2012 Call for Projects

Project ID	Project Name	Sponsor Agency	Estimated Cost	Objectives							Project and Project Applicant Elgibility	Addresses Multiple Objectives	Integrates Multiple Resource Management Strategies	Benefits DAC/Increases DAC Participation	Addresses Critical Water Issues for Native American Tribal Communities	Environmental Justice Concerns	Consistent with Local Land Use Plans	Improves Interregional Coordination	Readiness to Proceed	Tie-Breaker Points	Total	Rank
				Reduce Potable Water Demand	*Increase Water Supply*	*Improve Water Quality*	*Promote Resource Stewardship*	*Flooding/ Hydromodification*	*Climate Change Adaptation*	*GHG Reduction*												
SC-1	Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) Implementation	City of Santa Clarita	$0.5M-$20M (Capital); $25k - $100k/yr over 15 years (O&M)	◆		◆	◆	◆	◆	◆	5	90	60	0	0	0	100	100	200	0	555	1
SCVSD-1	SCVSD Automatic Water Softener Rebate and Public Outreach Program	Santa Clarita Valley Sanitation District	$1.1M/yr over 3 years (O&M)	◆		◆	◆			◆	5	45	20	0	0	0	100	100	200	0	470	2
NCWD-2	Pellet Water Softening Treatment Plant - Phase 1	Newhall County Water District	$250,000 - $500,000 (Capital)	◆		◆	◆			◆	5	60	25	0	0	0	100		200	0	390	3
AA/BCN-1	Bouquet Canyon Creek Restoration, Control of Invasive Weeds	Agricultural Access/Bouquet Canyon Network (Currently no eligible applicant as Sponsor Agency)	$20,240 - $52,852 (Capital); $13,052/yr over 5 years (O&M)	◆		◆	◆	◆	◆	◆	0	90	45	0	0	0	100	0	150	0	385	4
SCWD-2	July 2012 Santa Clarita Water Division Water Use Efficiency Strategic Plan Water Use Efficiency Programs	Santa Clarita Water Division	$301,930-$2,520,469 (Capital); $62,370-$366,223/yr over 8 years (O&M)	◆		◆	◆			◆	5	60	25	0	0	0	100	0	175	0	365	5
SCVSD-2	Saugus Water Reclamation Plan - Ultraviolet Light Disinfection Facility	Santa Clarita Valley Sanitation District	$8M-$14M (Capital); $2K/yr for 20 years (O&M)		◆	◆	◆				5	45	25	0	0	0	100	100	75	0	350	6
CLWA-3	Santa Clarita Valley Water Use Efficiency Strategic Plan	Castaic Lake Water Agency	$1M-$5M/yr over 8 years (Capital)	◆		◆	◆				5	45	25	0	0	0	100	0	150	0	325	7
LADPW-9	SCR South Fork Rubber Dam No. 1 and Spreading Grounds	Los Angeles County Flood Control District	$5M-$9M (Capital); $50K/yr over 50 years (O&M)		◆	◆	◆	◆			5	60	35	0	0	0	100	0	100	0	300	8
CLWA-8	Foothill Feeder Connection	Castaic Lake Water Agency	$3M-$5M (Capital); $50K/yr over 50 years (O&M)		◆						5	15	15	0	0	0	100	0	150	0	285	9
SC-5	Biofiltration and Low Impact Development Retrofits	City of Santa Clarita	$4M-$6M (Capital); $200,000/yr over 15 years (O&M)	◆	◆	◆	◆	◆	◆		5	90	50	0	0	0	100	0	25	10	280	10
SC-6	Septic to Sewer Retrofit Project	City of Santa Clarita	$25M-$35M (Capital); unknown O&M		◆	◆	◆				5	45	45	50	0	0	100	0	25	0	270	11
CLWA-7	Castaic Conduit	Castaic Lake Water Agency	$14,910,000-$16M (Capital); $5,000/yr (O&M)		◆						5	15	10	0	0	0	100	0	125	0	255	12
CLWA-10	Distribution System - RV-2 Modification	Castaic Lake Water Agency	$2,880,000-$3,200,000 (Capital); $5,000/yr (O&M)		◆						5	15	15	0	0	0	100	0	100	0	235	13
CLWA-9	West Saugus Formation Groundwater Resources Monitoring Project	Castaic Lake Water Agency	$628,675			◆	◆				5	30	20	0	0	0	100	0	75	0	230	14
NCWD-1	Santa Clara River – Sewer Trunk Line Relocation Phase II and III	Newhall County Water District	$2,500,000 - $4,000,000 (Capital); $30K/yr over 50 years (O&M)			◆	◆				5	30	30	0	0	0	100	0	25	0	190	15
NCWD-3	Santa Clarita Valley Residential Turf Removal Program	Newhall County Water District	625000 (Capital); $312,500/yr over 2 years (O&M)	◆				◆			5	30	25	0	0	0	100	0	25	0	185	16
CLWA-11	Santa Clarita Valley Volatile Organic Carbon Groundwater Investigation	Castaic Lake Water Agency	$250,000-$5M (Capital)			◆	◆				5	30	20	0	0	0	100	0	25	0	180	17

BMS Printout

BMS PRINTOUT IS FOLLOWING

Proposal Full View

Print

Applicant Information

Organization Name	Castaic Lake Water Agency *
Tax ID	**942147007**
Proposal Name	Upper Santa Clara River Integrated Regional Water Management Plan Round 2 Proposition 84 Implementation Grant *
Proposal Objective	The Regional Water Management Group for the Upper Santa Clara River (USCR) Integrated Regional Water Management Plan (IRWM Plan) is applying for funding under Proposition 84 to implement six projects that were developed in response to the objectives of the IRWM Plan. The six projects proposed in this application will address water demand, water quality, water supply reliability, and environmental habitat quality. Two conservation projects (one by the wholesaler and one by a retailer) will reduce dependence on the regional water supply (including the Delta). The construction of a permanent expanded water source connection will increase efficiency and reliability for the Region. A pellet treatment project will protect the quality and availability of groundwater supplies. Implementation of a public outreach program will remove the remaining automatic water softeners in the Santa Clarita Valley to achieve a reduction in chloride discharged from the Water Reclamation Plants and help comply with the USCR TMDL for chloride. Finally, an invasive species removal project on the Santa Clara River will aid in decreasing the loss of local water supply to noxious non-native weeds. Project benefits will apply to the Santa Clarita Valley, the Upper Santa Clara Region, the Lower Santa Clara Region, as well as statewide. *

Budget

Other Contribution	$0.00
Local Contribution	$3,979,094.00
Federal Contribution	$0.00
Inkind Contribution	$0.00
Amount Requested	$7,006,481.00 *

Total Project Cost	$10,985,575.00 *

Geographic Information

Latitude *		DD(+/-) 34	MM 26	SS 3	
Longitude *		DD(+/-) -118	MM 31	SS 1	
Longitude/Latitude Clarification	n/a		Location		Santa Clara Valley
County			Los Angeles *		
Ground Water Basin			Santa Clara River Valley-Santa Clara River Valley East		
Hydrologic Region			South Coast		
Watershed	Upper Santa Clara River				

Legislative Information

Assembly District	38th Assembly District *
Senate District	17th Senate District,19th Senate District *
US Congressional District	District 25 (CA) *

Project Information

Project Name: Santa Clarita Valley Water

Implementing Organization	Castaic Lake Water Agency
Secondary Implementing Organization	
Proposed Start Date	10/1/2013
Proposed End Date	9/30/2015
Project Scope	Implement the five water use efficiency programs as detailed in the project's Work Plan (Attachment 3).
Project Description	The proposed program is based on the analysis of the 2008 CLWA Santa Clara Valley Water Use Efficiency Strategic Plan (CLWA Strategic Plan) which identified programs that will most effectively reduce per capita water use in the Santa Clarita Valley. CLWA has been implementing these recommendations and is proposing to expand its programs in light of the new State water conservation requirements. The

	Project includes expansion of the following programs: (1)Large Landscape Audit and Incentives, (2) Commercial, Industrial and Institutional (CII) Audit and Customized Incentives, (3) Landscape Contractor Certification and Weather-Based Irrigation Controllers, (4) High-Efficiency Clothes Washer Rebates, and (5) Cash for Grass.
Project Objective	The primary goal of the SCV WUE Strategic Plan Programs (CLWA-3) is to effectively reduce per capita water use in the Santa Clarita Valley in order to help meet the newly passed State legislation calling for progress towards a 20 percent reduction water use by 2020. This goal will in turn reduce runoff and improve water quality.

Project Benefits Information

Project Objective

Budget

Other Contribution	0
Local Contribution	624905
Federal Contribution	0
Inkind Contribution	0
Amount Requested	1874715
Total Project Cost	2499620

Geographic Information

Latitude DD(+/-)		34	MM 25	SS 59
Longitude DD(+/-)		-118	MM 31	SS 1
Longitude/Latitude Clarification	NA	Location		Santa Clarita

County Los Angeles Ground Water Basin Santa Clara River Valley-Santa Clara River Valley East Hydrologic Region South Coast WaterShed Upper Santa Clara River

Legislative Information

Assembly District	38th Assembly District

Senate District	17th Senate District,19th Senate District
US Congressional District	District 25 (CA)

Project Information

Project Name: Foothill Feeder Connection

Implementing Organization	Castaic Lake Water Agency
Secondary Implementing Organization	
Proposed Start Date	10/1/2013
Proposed End Date	10/30/2015
Project Scope	Construct the project using the plans and specifications detailed in the project's Work Plan (Attachment 3).
Project Description	CLWA's Foothill Feeder Connection Project (CLWA-8) will provide initially 6 million gallons per day (MGD) of additional capacity to CLWA's potable water system (up to a maximum of 30 MGD additional capacity when the Rio Vista Water Treatment Plant [RVWTP] is expanded in the future), consequently improving system reliability. The project will replace the current connection, which is undersized for the recently expanded RVWTP, and thus allow CLWA to utilize the full treatment plant capacity. Also, the current connection was designed as a temporary structure so a permanent connection increases infrastructure reliability.
Project Objective	The Foothill Feeder Connection Project (CLWA -8)will provide additional capacity to CLWA's potable water system allowing CLWA to more reliably meet consumers' demands. The Project allows for an increase of up to 6 MGD (6,700 AFY) of water delivery immediately for CLWA and 30 MGD (33,600 AFY) of water delivery available once the RVWTP is expanded to the planned 90 MGD capacity.

Project Benefits Information

Project Objective

Budget

Other Contribution	0
Local Contribution	2023545
Federal Contribution	0
Inkind Contribution	0
Amount Requested	1500000
Total Project Cost	3523545

Geographic Information

Latitude DD(+/-)		34	MM 25	SS 33	
Longitude DD(+/-)		-118	MM 32	SS 46	
Longitude/Latitude Clarification	NA	Location		Santa Clarita	

County Los Angeles Ground Water Basin Santa Clara River Valley-Santa Clara River Valley East Hydrologic Region South Coast WaterShed Upper Santa Clara River

Legislative Information

Assembly District	38th Assembly District
Senate District	17th Senate District,19th Senate District
US Congressional District	District 25 (CA)

Project Information

Project Name Pellet Water Softening Trea

Implementing Organization	Newhall County Water District
Secondary Implementing Organization	
Proposed Start Date	10/1/2013
Proposed End Date	6/30/2015
Project Scope	Implement the project as detailed in the project's Work Plan (Attachment 3).
Project Description	This Project is designed to improve drinking water quality by reducing calcium carbonate hardness. The focus of the project is to alleviate the number one water quality customer complaint. Over the years, NCWD has received more customer complaints about hard water than any other type of water quality concern. It

	remains by the far the greatest number of customer complaints received by NCWD. Source water treatment is a more cost-effective solution compared to point-of-use systems. Prior to construction and implementation of a full-scale pellet softening treatment plant, a thorough analysis of the source water quality is required. In addition, available land for the treatment system and various related components is vital. Lastly, a cost analysis is required to establish capital and operational costs. Any additional operational costs need to be examined on how these costs might affect existing water rates. If water rates are to be increased because of an unregulated treatment process, community acceptance is critical. Surveys and focus groups will need to be used to understand the community's interest in receiving "pre-softened" water as an alternative to the high cost of point-of-use devices. Phase 1 of this project would address the aforementioned.
Project Objective	The project goal for this Phase 1 is to complete the engineering studies and feasiblity analysis required for moving forward with the next two phases of project. The overall project goal is to improve source water quality by reducing naturally occurring calcium water hardness.

Project Benefits Information

Project Objective

Budget

Other Contribution	0
Local Contribution	50000
Federal Contribution	0
Inkind Contribution	0
Amount Requested	150000
Total Project Cost	200000

Geographic Information

Latitude DD(+/-)		34	MM 23	SS 58
Longitude DD(+/-)		-118	MM 32	SS 29
Longitude/Latitude Clarification	NA	Location		Santa Clarita

County Los Angeles Ground Water Basin Santa Clara River Valley-Santa Clara River Valley East Hydrologic Region South Coast WaterShed Upper Santa Clara River

Legislative Information

Assembly District	38th Assembly District
Senate District	17th Senate District,19th Senate District
US Congressional District	District 25 (CA)

Project Information

Project Name Upper Santa Clara River (L

Implementing Organization	City of Santa Clarita
Secondary Implementing Organization	
Proposed Start Date	10/1/2013
Proposed End Date	2/29/2016
Project Scope	Implement the Project according to the Work Plan in Attachment 3.
Project Description	The City of Santa Clarita is working with a group of homeowners to undertake a regional arundo/tamarisk eradication project along the tributaries of the Santa Clara River: the Bouquet Canyon Creek and San Francisquito Creek. The Project will restore riparian habitat through the removal of these invasive plant species, improve water quality, and increase water supply by increasing the available surface and subsurface water that can be utilized for beneficial purposes.
Project Objective	The restoration of riparian habitat through the removal of these invasive plant species, some of which have colonized in large extents of the Upper Santa Clara River watershed, (1) improves water quality and (2) increases water supply by increasing the available surface and subsurface water that can be utilized for

	beneficial purposes, (3) also reduces the risk of flooding and fire hazard.

Project Benefits Information

Project Objective

Budget

Other Contribution	0
Local Contribution	153175
Federal Contribution	0
Inkind Contribution	0
Amount Requested	419050
Total Project Cost	572225

Geographic Information

Latitude DD(+/-)		34	MM 25	SS 0
Longitude DD(+/-)		-118	MM 31	SS 59
Longitude/Latitude Clarification	NA	Location		Santa Clarita

County Los Angeles Ground Water Basin Santa Clara River Valley-Santa Clara River Valley East Hydrologic Region South Coast WaterShed Upper Santa Clara River

Legislative Information

Assembly District	38th Assembly District
Senate District	17th Senate District,19th Senate District
US Congressional District	District 25 (CA)

Project Information

Project Name: Automatic Water Softener F

Implementing Organization	Los Angeles County Sanitation Districts
Secondary Implementing Organization	
Proposed Start Date	10/1/2013
Proposed End Date	3/31/2017

Project Scope	Implement the Project's Work Plan as detailed in Attachment 3.
Project Description	This Project builds on a ground breaking, nationally recognized multi-pronged approach by the Sanitation District to reduce chloride sources in all customer sectors, promoted innovation, spurred three local ordinances and more. These efforts were initiated in response to the development of the USCR Chloride Total Maximum Daily Load (TMDL) requiring the Sanitation District to reduce chloride levels in the discharges from its two water reclamation plants in 2002. The Program will focus on removing the remaining automatic water softeners in the Santa Clarita Valley through a combination of activities including: home inspections, issuing Notices of Violations to residents that still have automatic water softeners, issuing rebates to residents that remove their automatic water softeners, chloride monitoring, and public outreach. The goal of the project is to remove all remaining automatic water softeners in the Sanitation District's service area. The multi-faceted effort is expected to achieve an additional reduction in the chloride discharged from the WRPs by up to 5 mg/L, keep awareness of the chloride problem high in the community and prevent backsliding (residents installing and/or using illegal automatic water softeners), minimize the size of future chloride compliance facilities and help the Sanitation District comply with the USCR chloride TMDL.
Project Objective	The Sanitation District's goal is to remove all remaining automatic water softeners in the Sanitation District's service area. By removing these units, it is expected to achieve a reduction in the chloride discharged from the Saugus and Valencia WRPs by up to 5 mg/L.

Project Benefits Information

Project Objective

Budget

Other Contribution	0
Local Contribution	862989
Federal Contribution	0
Inkind Contribution	0
Amount Requested	2508574
Total Project Cost	3371563

Geographic Information

Latitude DD(+/-)		34	MM 41	SS 59	
Longitude DD(+/-)		-118	MM 54	SS 1	
Longitude/Latitude Clarification	NA	Location		Santa Clarita	

County Los Angeles Ground Water Basin Santa Clara River Valley-Santa Clara River Valley East Hydrologic Region South Coast WaterShed Upper Santa Clara River

Legislative Information

Assembly District	38th Assembly District
Senate District	17th Senate District,19th Senate District
US Congressional District	District 25 (CA)

Project Information

Project Name: Santa Clarita Water Divisio

Implementing Organization	CLWA Santa Clarita Water Division
Secondary Implementing Organization	Castaic Lake Water Agency
Proposed Start Date	10/1/2013
Proposed End Date	9/30/2015
Project Scope	Implement the three water use efficiency programs as detailed in the project's Work Plan (Attachment 3).
Project Description	The elements identified in this program originate in SCWD's Water Use Efficiency Strategic Plan (SCWD Strategic Plan). The SCWD Strategic Plan was developed in July 2012 to identify, analyze and provide a roadmap for implementing programs that will allow

	SCWD to achieve its State water conservation requirements and reduce dependence on imported water sources. The SCWD Strategic Plan specifies ten water use efficiency incentive programs. Combining the implementation efforts with supporting outreach and education programs will allow SCWD to achieve its goals. SCWD-2 is requesting funding to help implement three of the programs identified in the SCWD Strategic Plan: (1) High-Efficiency Irrigation Nozzle Distribution, (2) High-Efficiency Clothes Washer (HECW) Machine Rebate Program and Residential and Commercial Program Rebate, and (3) Large Landscape Water Budgets. The first two programs are currently being implemented and SCWD would like to expand these efforts based on their success to date and the recommendations made in their Strategic Plan. The large landscape program represents a new effort with a focus on irrigation, which is a significant use of water in the Santa Clarita Valley.
Project Objective	The goals specific to SCWD-2 are to: 1.Implement programs that help achieve SBX7-7 requirements, i.e., reduce per capita water use 20 percent by 2020. SCWD must reduce gpcd to 188 by 2020. 2. Reduce dependence on imported water sources.

Project Benefits Information

Project Objective

Budget

Other Contribution	0
Local Contribution	75000
Federal Contribution	0
Inkind Contribution	0
Amount Requested	220500
Total Project Cost	295500

Geographic Information

Latitude DD(+/-)		34	MM 24	SS 47
Longitude DD(+/-)		-118	MM 30	SS 33
Longitude/Latitude Clarification	NA	Location		Santa Clarita

County Los Angeles Ground Water Basin Santa Clara River Valley-Santa Clara River Valley East Hydrologic Region South Coast WaterShed Upper Santa Clara River

Legislative Information

Assembly District	38th Assembly District
Senate District	17th Senate District,19th Senate District
US Congressional District	District 25 (CA)

Section: Applicant Information Question Tab

APPLICANT INFORMATION QUESTION TAB

Q1. PROPOSAL DESCRIPTION

Provide a brief abstract of the Proposal, including a listing of individual project titles. Please note which projects, if any, directly address a critical water supply or water quality issue for DACs or Native American Tribal communities.

This Proposal is aimed at increasing the water supply reliability and decreasing dependence on imported water supplies within the Upper Santa Clara River IRWM Plan Region by increasing conservation, decreasing demand, improving water quality, and restoring natural resources. All of the projects being proposed in this grant application have the potential to beneficially impact the Region through these water conservation, demand reduction, water quality and natural resource improvements. They are: 1. Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3) 2. Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2) 3. Foothill Feeder Connection (CLWA-8) 4. Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2) 5. Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1) 6. USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1)

Q2. PROJECT DIRECTOR

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

Dan Masnada, General Manager Castaic Lake Water Agency 27234 Bouquet Canyon Road Santa Clarita, CA 91350 Phone: (661) 297-1600 Fax: (661) 297-1611

Q3. PROJECT MANAGEMENT

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

Lauren Everett, Water Resources Planner Castaic Lake Water Agency 27234 Bouquet Canyon Road Santa Clarita, CA 91350 Phone: (661) 513-1282 Fax: (661) 297-1611

Q4. APPLICANT INFORMATION

Provide the agency name, address, city, state and zip code of the applicant submitting the application.

Castaic Lake Water Agency 27234 Bouquet Canyon Road Santa Clarita, CA 91350 Phone: (661) 513-1282 Fax: (661) 297-1611

Q5. ADDITIONAL INFORMATION

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

Visit the following website to locate the IRWM funding area(s).

http://www.water.ca.gov/irwm/grants/fundingarea.cfm

Los Angeles Sub-Region

Q6. DAC WAIVER COST SHARE REQUEST:

Are you applying for a DAC cost share waiver? If yes, complete attachment 10.

No

Q7. RESPONSIBLE REGIONAL WATER QUALITY CONTROL BOARD(S) (RWQCB)

List the name of the Regional Water Quality Control Board (RWQCB) in which your proposal is located. For a region that extends beyond more than one RWQCB boundary, list the name of each Board.

Visit the following website to find the RWQCB for a particular location:

http://www.waterboards.ca.gov/waterboards_map.shtml

Los Angeles Regional Water Quality Control Board (#4)

Q8. ELIGIBILITY

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

No. The total funding match for the six projects proposed in the application is 36%.

Q9. ELIGIBILITY

Does the application represent a single application from an IRWM Region approved in the RAP? To verify, see RAP website: http://www.water.ca.gov/irwm/grants/rap.cfm If yes, include the name of the IRWM Region. If no, please explain.

Yes, Upper Santa Clara River IRWMP Region

Q10. ELIGIBILITY

Please specify whether the applicant is a local public agency or non-profit organization as defined in Appendix B of the 2012 Guidelines.

Yes. The applicant for the Upper Santa Clara River Watershed Integrated Regional Water Management Plan Implementation Grant is the Castaic Lake Water Agency (CLWA). CLWA is a public agency, as defined in Appendix B of the Guidelines, which is defined as any city, county, city and county, special district, joint powers authority, or other political subdivision of the State, a public utility as defined in Sections 216 of the Public Utilities Code, or a mutual water company as defined in Section 2725 of the Public Utilities Code (California Water Code Section 10535). The CLWA is a public agency formed and established by the California State Legislature in 1962 for the principal purpose of providing imported Northern California water for use within and adjacent to the Santa Clarita Valley (refer CWC Appendix Section 103-1, 103 15).

Q11. ELIGIBILITY

List the urban water suppliers that will receive funding from the proposed grant. Please provide the agency name, a contact phone number and e-mail address. Those listed must submit self certification of compliance with CWC §525 et seq. and AB 1420, see Attachment 11. Answer "NA", if there are no urban water suppliers that will receive funding from the proposed grant.

CLWA, Santa Clarita Water Division (SCWD) and Newhall County Water District (NCWD) are the Urban Water Suppliers that will receive funding from this Implementation Grant. As such, Self-Certification forms for documenting compliance with CWC ?525 for Water Meter Installation and AB 1420 for Best Management Practice implementation are provided for

CLWA, SCWD, and NCWD. (see Attachment 11 of this Application).

Q12. ELIGIBILITY

Have all of the urban water suppliers, listed in Q11 above, submitted complete Urban Water Management Plans (UWMPs), to DWR? Have those plans been verified as complete by DWR? If not, explain and provide the anticipated date for having a complete UWMP. Answer "NA" if no urban water supplier identified in Q11 above.

Yes. CLWA prepared its 2010 UWMP update which also included the four local retail water agencies in the Santa Clarita Valley: (1) CLWA's Santa Clarita Water Division (SCWD), (2) Newhall County Water District (NCWD), (3) Valencia Water Company (VWC), and (4) Los Angeles County Waterworks District No. 36 (LACWWD #36). The completed plan was submitted to DWR by the wholesaler deadline of July 21, 2011 and uploaded to the online DOST submittal tool. DWR reviewed the agency and retailer plans and found that the plans addressed the requirement of the California Water Code via a letter date January 24, 2012.

Q13. ELIGIBILITY

Have any urban water suppliers, listed in Q11, submitted AB 1420 compliance tables and supporting documentation to DWR for a different grant program on or after January 1, 2013? If so, please list the urban water supplier and the grant program. An urban water supplier must submit AB 1420 compliance documentation to DWR. If the urban water supplier has not submitted AB 1420 documentation, or that documentation was determined to be incomplete by DWR, the urban water supplier's projects will not be considered eligible for grant funding. Refer to Section IIIB of the 2012 Guidelines for additional information.

Answer "NA" if no urban water supplier identified in Q11 above.

No.

Q14. ELIGIBILITY

Does the Proposal include any groundwater projects or other projects that directly affect groundwater levels or quality? If so, provide the name(s) of the project(s) and list the agency(ies) that will implement the project(s).

Answer "NA" if the Proposal does not include groundwater projects or other projects that directly affect groundwater levels or quality.

NA. All of the projects being proposed in this grant application have the potential to beneficially impact the regions groundwater through water supply, natural resource and water quality

improvements. They are: Santa Clarita Valley (SCV) Water Use Efficiency (WUE) Strategic Plan Programs (CLWA-3), Santa Clarita Water Division (SCWD) WUE Programs (SCWD-2), Foothill Feeder Connection (CLWA-8), Pellet Water Softening Treatment Plant - Phase 1 (NCWD-2), Automatic Water Softener Rebate and Public Outreach Program (SCVSD-1), and USCR Arundo/Tamarisk Removal Program (SCARP) Implementation (SC-1/BCN-1).

Q15. ELIGIBILITY

For the agency(ies) listed in Q14, how has the agency complied with CWC §10753 regarding Groundwater Management Plans (GWMPs), as described in Section III.B of the 2012 Guidelines?

Answer "NA" if the Proposal does not include groundwater projects or other projects that directly affect groundwater levels or quality.

Yes. CLWA prepared a groundwater management plan in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area, which covers the Santa Clarita Water Division (SCWD) and Newhall County Water District (NCWD) retail service areas. CLWA's groundwater management plan (GWMP) was drafted in 2002, and adopted in 2003. The Upper Santa Clara River IRWM Plan and the projects being proposed are consistent with the requirements of the GWMP.

Q16. ELIGIBILITY

Does the IRWM region receive water supplied from the Sacramento-San Joaquin Delta? Please answer yes or no. If no, please explain.

Yes. CLWA's annual SWP Table A Amount is 95,200 AF. The Region has received Delta supplies in addition to Table A water when available, including "Article 21" water, Turnback Pool water, and DWR dry-year purchases.

Q17. ELIGIBILITY

Does the existing IRWM Plan help reduce dependence on the Sacramento-San Joaquin Delta for water supply? Please answer yes or no. If no, please explain. If yes, please complete attachment 13.

Yes. The IRWM Plan helps to reduce dependence on the Delta for supply by increasing supply reliability through the identification and implementation of its regional objectives: Reduce Water Demand by implementing technological, legislative and behavioral changes that will reduce user demands for water. Improve Operational Efficiency by maximizing water system operational flexibility and efficiency, and including energy efficiency. Increase Water Supply in order to understand future regional demands and obtain necessary water supply sources. Improve Water Quality to supply drinking water with appropriate quality, improve groundwater quality; and attain water quality standards. Promote Resource Stewardship to preserve and improve ecosystem health, improve flood management; and preserve and enhance water dependent recreation.

Q18. ELIGIBILITY

If an update to the IRWM plan will take place in the near future, will the updated plan continue to reduce dependence on the Sacramento-San Joaquin Delta for water supply? Please answer yes or no. If no, please explain. If yes, please complete Attachment 13.

Yes. The USCR IRWM Plan is in the process of being updated and completion is anticipated no later than April 2014. The Stakeholders have revised their previous objective of reduction in water demand for the 2013 Updated IRWM Plan to reduction in POTABLE water demand, to emphasize the necessity to enhance supplies other than the Delta. The 2013 Updated USCR IRWM Plan will continue to help reduce dependence on the Delta for water supply for the following reasons: 1. Adopted objectives of the Updated USCR IRWM Plan are to Reduce Water Demand and Increase Water Supply (using local sources) 2. Adequate planning for, and the procurement of, a reliable water supply is a fundamental function of CLWA, the Region's SWP wholesaler and active Region Water Management Group (RWMG) member; and 3. The RWMG is committed to, and the IRWM Plan governance structure supports, implementing and updating the IRWM Plan into the future.

Q19. ELIGIBILITY

List the agricultural water suppliers that will receive funding from the proposed grant. Please provide the agency/organization name, a contact phone number and e-mail address. If there are none, please indicate so.

There are none.

Q20. ELIGIBILITY

Have all of the agricultural water suppliers, listed in Q19 above, submitted complete Agricultural Water Management Plan to DWR? Have those plans been verified as complete by DWR? If the plan has not been submitted, please indicate the anticipated submittal date.
Answer "NA" if no agricultural water suppliers identified in Q19 above.

NA

Q21. ELIGIBILITY

List the surface water diverters that will receive funding from the proposed grant. Please provide the agency/organization name, a contact phone number and e-mail address. If there are none, please indicate so.

There are none.

Q22. ELIGIBILITY

Have all of the surface water diverters, listed in Q21 above, submitted to the State Water Resources Control Board surface water diversion reports in compliance with requirements outlined in Part 5.1 (commencing with §5100) of Division 2 of the CWC? If not, explain and provide the anticipated date for meeting the requirements.
Answer "NA" if no surface water diverters identified in Q21 above.

NA

Q23. ELIGIBILITY

List the groundwater users that will receive funding from the proposed grant. Please provide the agency/organization name, a contact phone number and e-mail address. If there are none, please indicate so.

The groundwater users that will receive funding include the Santa Clarita Water Division (SCWD) and the Newhall County Water District, both water purveyors of the Castaic Lake Water Agency.

Q24. ELIGIBILITY

Have all of the groundwater users, listed in Q23 above, met the requirements of DWR's CASGEM Program: http://www.water.ca.gov/groundwater/casgem/ ? If not, explain and provide the anticipated date for meeting the requirements.
Answer "NA" if no groundwater users identified in Q23 above.

CLWA and the four retail purveyors, including NCWD and SCWD, entered into a MOU in October of 2011 to monitor groundwater levels within the groundwater basin according to the requirements of the CASGEM Program. The group is currently working with a consultant to prepare a CASGEM workplan which outlines which wells within the basin will be included within the monitoring plan. That draft workplan will be submitted to the purveyors and DWR for review in April 2013. DWR will review the plan to ensure it complies with the conditions of the CASGEM program before any data is uploaded to the CASGEM website. A final workplan is anticipated later in the year.

Section: Application Attachments Tab

APPLICATION ATTACHMENTS TAB

ATTACHMENT 1: AUTHORIZATION AND ELIGIBILITY REQUIREMENTS

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload authorization and eligibility documentation here. This field is

mandatory.

Last Uploaded Attachments: Att1_IG2_Eligible_1of5.pdf

Upload additional authorization and eligibility documentation here, if necessary.

Last Uploaded Attachments:
Att1_IG2_Eligible_2of5.pdf,Att1_IG2_Eligible_4of5.pdf,Att1_IG2_Eligible_5of5.pdf

ATTACHMENT 2: ADOPTED PLAN AND PROOF OF FORMAL ADOPTION

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload adopted plan and proof of formal adoption documentation here. This field is mandatory.

Last Uploaded Attachments: Att2_IG2_Adopt_1of2.pdf

Upload additional adopted plan and proof of formal adoption documentation here, if necessary.

Last Uploaded Attachments: Att2_IG2_Adopt_2of2.pdf

ATTACHMENT 3: WORK PLAN

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload work plan documentation here. This field is mandatory.

Last Uploaded Attachments: Att3_IG2_WorkPlan_1of1.pdf

ATTACHMENT 4: BUDGET

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload budget documentation here. This field is mandatory.

Last Uploaded Attachments: Att4_IG2_Budget_1of2.pdf

Upload additional budget components here, if necessary.

Last Uploaded Attachments: Att4_IG2_Budget_2of2.pdf

ATTACHMENT 5: SCHEDULE

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload schedule documentation here.This field is mandatory.

Last Uploaded Attachments: Att5_IG2_Schedule_1of2.pdf

Upload additional schedule components here, if necessary.

Last Uploaded Attachments: Att5_IG2_Schedule_2of2.pdf

ATTACHMENT 6: MONITORING, ASSESSMENT, AND PERFORMANCE MEASURES

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload monitoring, assessment, and performance measures documentation here. This field is mandatory.

Last Uploaded Attachments: Att6_IG2_Measures_1of1.pdf

ATTACHMENT 7: TECHNICAL JUSTIFICATION OF PROJECT PHYSICAL BENEFITS

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload technical justification of project physical benefits documentation here. This field is mandatory.

Last Uploaded Attachments: Att7_IG2_TechJust_1of1.pdf

ATTACHMENT 8: BENEFITS AND COST ANALYSIS

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload benefits and cost analysis documentation here. This field is mandatory.

Last Uploaded Attachments: Att8_IG2_BenCost_1of1.pdf

ATTACHMENT 9: PROGRAM PREFERENCES

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload program preferences documentation here. This field is mandatory.

Last Uploaded Attachments: Att9_IG2_Preferences_1of1.pdf

ATTACHMENT 10: DISADVANTAGED COMMUNITY ASSISTANCE

This attachment is required only if the proposal includes a project that specifically addresses a need of a DAC. Please refer to PSP for detail information.

If this attachment does not apply to your proposal, you MUST still upload a document that indicates this attachment is not applicable. If the upload field to this attachment is left blank, your proposal cannot be saved or completed.

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload disadvantaged community assistance documentation here.This field is mandatory.

Last Uploaded Attachments: Att10_IG2_DAC_1of1.pdf

ATTACHMENT 11: GWMP, AB 1420, AND WATER METER COMPLIANCE INFORMATION

If your proposal does not include 1) a groundwater project or a project that directly affects groundwater levels or quality, or 2) an urban water supplier who would receive grant funding, you MUST still upload a document that indicates this attachment is not applicable to your proposal. If the upload field to this attachment is left blank, your proposal cannot be saved or completed.

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload GWMP, AB1420, and water meter compliance documentation here.This field is mandatory.

Last Uploaded Attachments: Att11_IG2_SelfCert_1of5.pdf

Upload additional GWMP, AB1420, and water meter compliance information documentation here, if necessary.

Last Uploaded Attachments:

Att11_IG2_SelfCert_2of5_GWMP.pdf,Att11_IG2_SelfCert_3of5_CLWA_1420.pdf,Att11_IG2_Self Cert_4of5_SCWD_1420.pdf,Att11_IG2_SelfCert_5of5_NCWD_1420.pdf

ATTACHMENT 12. CONSENT FORM

This attachment is required only if the proposal is utilizing an IRWM Plan that was adopted on or before September 30, 2008. The Consent Form contained in Exhibit F of the PSP must be signed and submitted in hard copy. Please refer to PSP for more information.

If this attachment does not apply to your proposal, you MUST still upload a document that indicates this attachment is not applicable. If the upload field to this attachment is left blank, your proposal cannot be saved or completed.

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload the signed consent form here. This field is mandatory.

Last Uploaded Attachments: Att12_IG2_Consent_1of1.pdf

ATTACHMENT 13: IRWM PLAN - REDUCED DELTA WATER DEPENDENCE

This attachment is required only if the IRWM region receives water supplied from the Sacramento-San Joaquin Delta. Attachment 13 must summarize the portions of the plan that address how implementation of the IRWM Plan will help reduce dependence on the Sacramento-San Joaquin Delta for water supply, and include relevant plan excerpts to support the summary. Please refer to PSP for detail inforamtion.

If this attachment does not apply to your proposal, you MUST still upload a document that indicates this attachment is not applicable. If the upload field to this attachment is left blank, your proposal cannot be saved or completed.

Ensure file name is consistent with Section V of the P84 Round 2 Implementation PSP.

Upload the summary of IRWM Plan here. This field is mandatory.

Last Uploaded Attachments: Att13_IG2_Delta_1of2.pdf, Att13_IG2_Delta_2of2.pdf