

Work Plan Introduction

Attachment 3 consists of the following items:

- ✓ **Work Plan.** Attachment 3 contains detailed information regarding the tasks that were and will be performed for the

Opening Statement

The Upper Santa Margarita Watershed (USMW) Integrated Regional Water Management (IRWM) Region's proposal for funding from Department of Water Resources' (DWR) Round 2 of Proposition 84 (Prop 84) Implementation Grant Program is comprised of three projects. Each of these projects has unique benefits that will help the Region in meeting its IRWM Plan Objectives as well as DWR Program Preferences. Together these projects reflect a truly integrated and cost-effective suite of IRWM approved management strategies to help meet the Region's water management needs. The USMW Region is committed to implementing these projects, with the help of the DWR, by providing a local match of 81% to support the tasks described in this Work Plan. This Work Plan Introduction provides an overall summary of the combined application and is followed by specific work plans for each of the following three projects:

- Recycled Water and Plant Material Conversion for HOA Common Areas (RWPMC) Project
- Native Botanical Garden Project
- Upper Valle de Los Caballos Recharge (Upper VDC) Project

In addition, the USMW IRWM Region is jointly funding and participating with the San Diego IRWM Region in the interregional project, Implementing Nutrient Management in the Santa Margarita River Watershed – Phase II (SMR Nutrient Project). Although the USMW IRWM Region is a full partner and benefits will accrue across watershed boundaries to both regions, the entire project work plan, budget and cost/benefit analysis for the project have been included in the San Diego IRWM Region's funding application in order to simplify project administration and contracting. However, since the USMW IRWM Region benefits from the interregional project and will meet certain Program Preferences identified in Attachment 9, the SMR Nutrient Project description, goals and objectives, need, integrated elements, completed work, project partners, and proposed work are discussed following the third project in the

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USMW IRWM proposed projects. This information will provide sufficient detailed information to understand the project and its benefits to the region.

Regional Objectives

As part of the 2007 IRWM Plan, the USMW IRWM Region articulated nine objectives to meet the water management needs of the Region. All projects included in this proposal are multi-benefit projects that attain multiple IRWM Plan objectives as shown in **Table 3-1**.

Table 3-1: Regional Objectives

#	Project	Objective 1: Develop a more reliable and diverse portfolio of water supplies	Objective 2: Promote economic, social, and environmental sustainability	Objective 3: Improve water quality	Objective 4: Restore, enhance and maintain habitats and open space	Objective 5: Promote sustainable floodplain management	Objective 6: Promote appropriate recreational opportunities	Objective 7: Promote appropriate land use planning	Objective 8: Increase stakeholder involvement and stewardship	Objective 9: Maximize implementation of water resources projects
1	Recycled Water and Plant Material Conversion Project for HOA Common Areas	X	X	X	X		X		X	X
2	Native Botanical Garden Project	X	X		X		X		X	
3	Upper Valle de Los Caballos Recharge Project	X	X	X						X
<i>Interregional Project in San Diego IRWM Region Application</i>										
4	Implementing Nutrient Management in the Santa Margarita River Watershed – Phase II		X	X	X				X	

Regional Purpose and Need

The USMW Region is highly dependent upon imported water supplies that are served from the Metropolitan Water District of Southern California (MWD). MWD's supplies originate from the Colorado River and the State Water Project. These supplies both have reliability and cost concerns for the Region; therefore, Objective 1 of the 2007 IRWM Plan addresses the need for

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the Region to reduce its dependence on imported supply through the implementation of demand management strategies and local resource development.

The USMW Region is also home to the Anza Valley area (a Disadvantaged Community (DAC)) that is without imported supply connection(s) and is therefore solely dependent upon local groundwater supplies. Beyond inconsistent issues with individual well production, the overall groundwater basin's reliability is unknown and is relying upon a recent Round 2 Prop 84 Planning Grant award to begin determining and documenting the capacity and constraints of this supply. Although the Anza Valley is rural, the interest in protecting and enhancing the native plants and habitats that have existed in the area is important as new land-owners develop housing and landscaping that impact both water supply and habitat. With new development, there is also a greater need for recreational spaces that provide a community benefit while educating about the native resources.

The USMW Region also experiences both groundwater and surface water quality issues. The Temecula Valley Basin Salt and Nutrient Planning effort (also partially funded through Round 2 Prop 84 Planning funds) will examine ways to manage basin quality relative to the need for increased recharge of both imported and recycled water supplies that also improve the supply reliability through providing longer-term storage.

Murrieta and Temecula creeks as well as the Santa Margarita River are 303(d) listed as impaired water bodies for nutrients and TDS. Improving the Region's ability to better understand the contaminant loads, their potential sources as well as strategies to reduce these loads is critical to improving Regional water quality and meeting TMDL requirements.

Together, the three projects included in this proposal help to address all of the Regional needs described above.

Project List

Table 3-2 provides an overview of the Proposal projects that includes an abstract of each project, the current status of each project in terms of percent completion of design, and the agencies involved in implementing the project.

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Table 3-2: Project Overview

#	Project Name	Abstract	Status
1	Recycled Water and Plant Material Conversion Project for HOA Common Areas <i>Lead: Rancho California Water District (RCWD)</i>	Project will convert irrigation systems at 3 Home Owner Association (HOA) Common Areas to use recycled water and improve water use efficiency. Project will also re-vegetate sites with California friendly/native lower water use plants. Project will offset 100% (or 43 acre-feet per year (AFY)) of current potable supply used. Educational workshops will also be conducted.	Design and construction have already begun
2	Native Botanical Garden Project <i>Lead: South Coast Resource Conservation & Development Council</i>	Project will re-vegetate 1/2 acre site with native plants unique to Anza Valley and provide workshops that educate community on water conservation and native habitat resulting in 4 AFY of estimated conserved supply. Community meeting area and pathways will provide this DAC addition community with new recreation amenities and enhance existing surrounding amenities.	Design is ready to begin upon award of grant
3	Upper Valle de Los Caballos Recharge Project <i>Lead: RCWD</i>	Project will improve reliability of imported supply by optimizing recharge and recovery at local groundwater basin. Project will offset the need to purchase treated imported supply by 5,417 AFY by infiltrating untreated imported supply into the groundwater basin for use when needed not based upon availability or peaking constraints of imported supply. Project will recover supply through construction of new well facility.	Design has already begun
Interregional Project in San Diego IRWM Region Application			
4	Implementing Nutrient Management in the Santa Margarita River Watershed – Phase II <i>Lead: County of San Diego and Riverside County Flood Control & Water Conservation District</i>	The project will develop nutrient and water quality goals to protect surface water and groundwater quality. These goals will be employed in the development of alternative nutrient water quality objectives in the Santa Margarita River watershed to address the Water Quality Control Plan for the San Diego Basin Triennial update. The Project's ability to do this will encourage the better stewardship of resources for environmental benefits.	Completion of supporting studies for hydrology, field measurements, and analytical laboratory data for the SMR Estuary; stakeholder group is formed and meeting

Work Plan Introduction**Integrated Elements of Projects**

The four projects described above, including the interregional project, are integrated in their ability to address nearly all of the 2007 IRWM Plan Objectives. They also show a wide distribution throughout the USMW Region as shown in **Figures 3-1 and 3-2**. A few synergies between the projects are noted below:

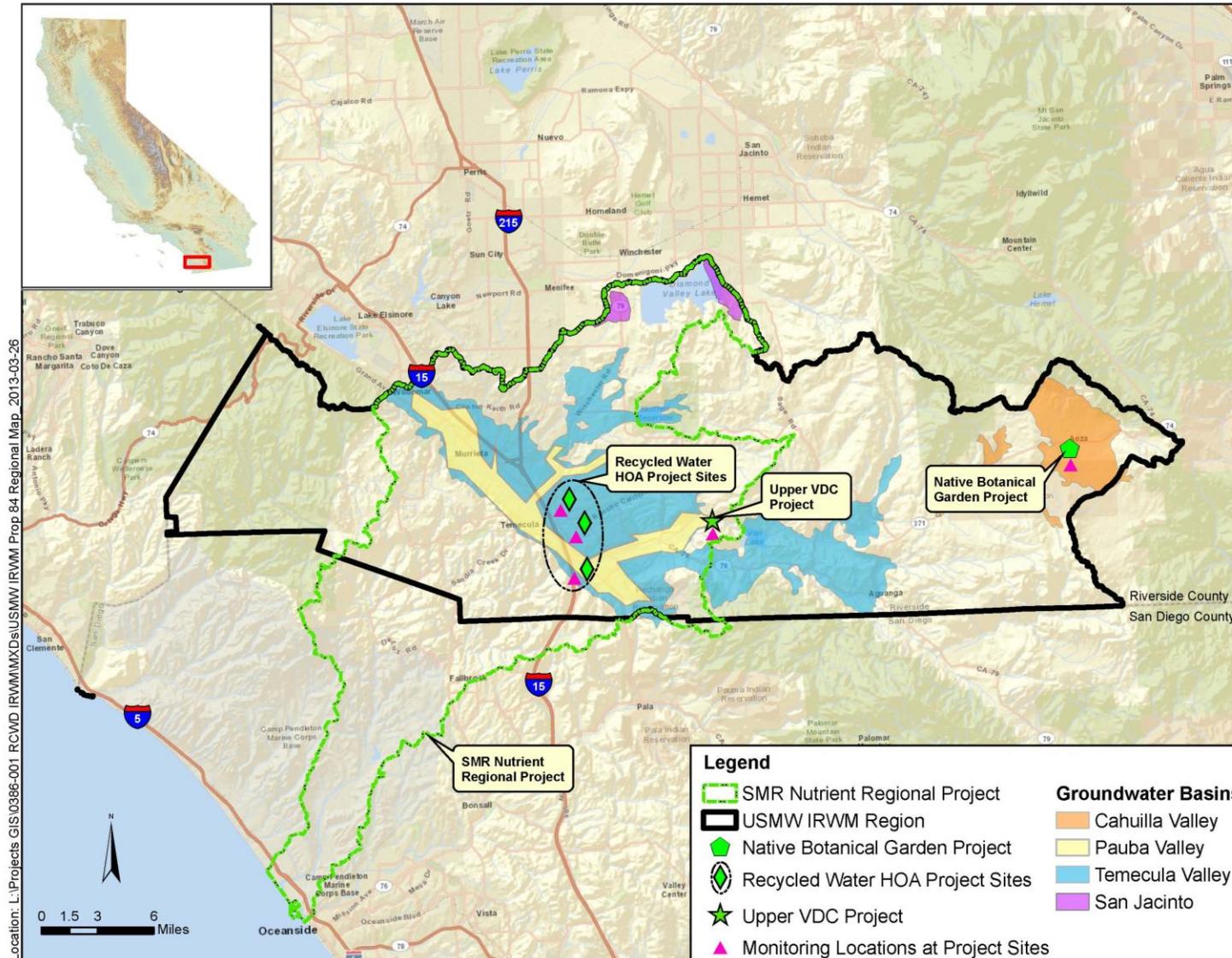
- The RWPMC and Upper VDC projects both focus on offsetting higher cost potable imported supply while also proving multiple benefits of optimizing local supplies/storage potential.
- The Native Botanical Garden and RWPMC projects both use California friendly and native plants to educate the community about water use efficiency and the importance of the preserving native habitats and ecosystems.
- The SMR Nutrient Project and RWPMC projects work to improve surface water quality in the Region. Since the Santa Margarita River Watershed exists within both the USMW and San Diego IRWM regions – the SMR Nutrient Project is an intra-regional project that seeks to improve surface water quality for both Regions through better understanding of contaminant sources and potential Best Management Practices (BMPs). Water quality improvement BMPs include projects like the RWPMC which reduces the amount of dry weather runoff due to over irrigation thereby limiting the transport of contaminant concentrations into the Santa Margarita Watershed.
- All projects help to adapt to climate change impacts by improving reliability of supply through education on demand management, reducing treated imported water use and maximizing local supply storage. Projects also help mitigate against climate change by either reducing or not increasing green house gas (GHG) emissions relative to the without project alternatives.

Regional Maps

Figures 3-1 and 3-2 highlight the location of all four projects relative to the USMW Region. **Figure 3-1** shows project sites including monitoring locations relative to the Region's DACs and **Figure 3-2** shows the project sites and monitoring locations relative to the Region's groundwater basins.

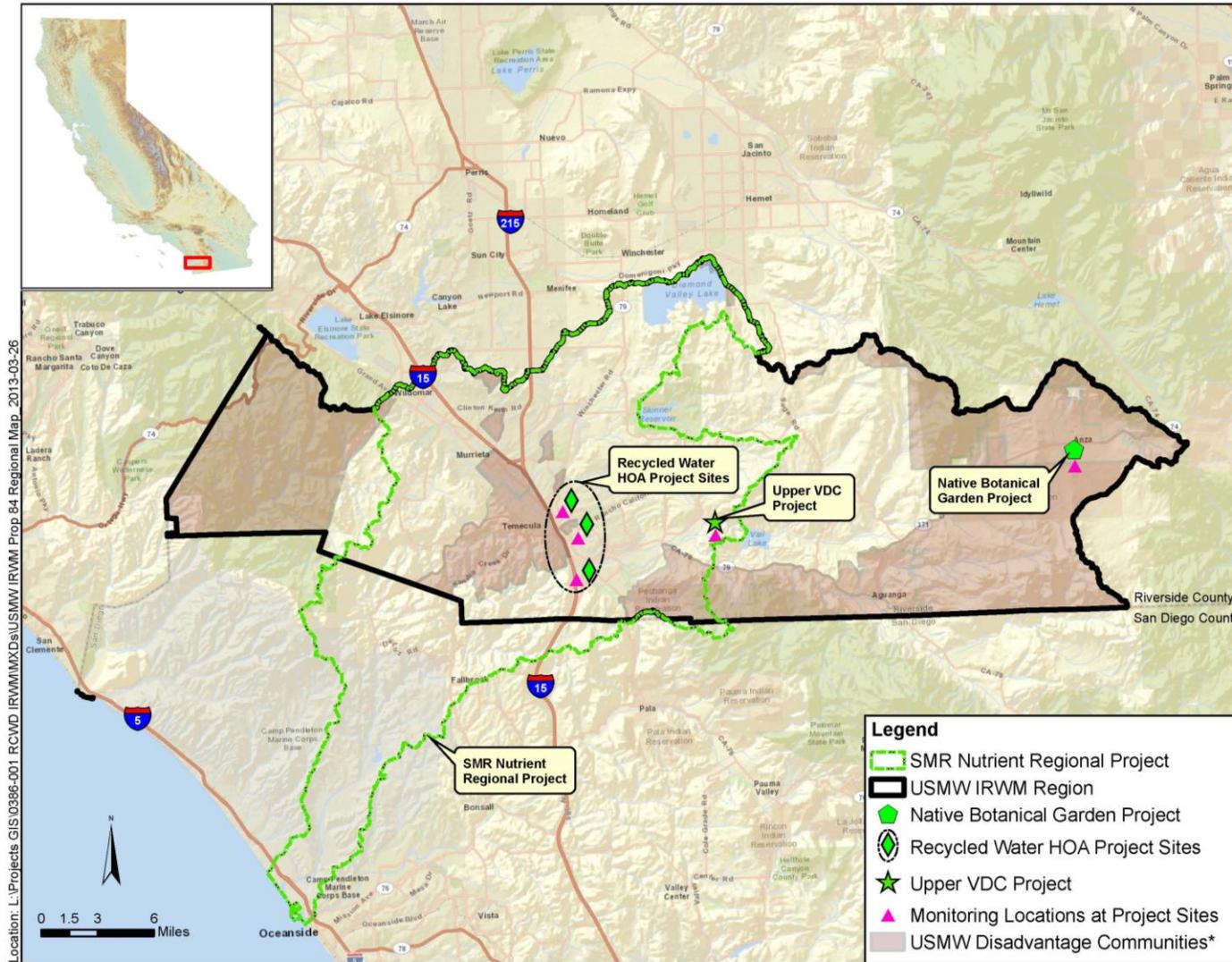
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Figure 3-1: Project Locations in the USMW Region (Groundwater Basin Overlay)



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Figure 3-2: Project Locations in the USMW Region (DAC Overlay)



**Recycled Water and Plant Material Conversion
Project for HOA Common Areas**

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Introduction

Project Description

The Recycled Water and Plant Material Conversion (RWPMC) Project for Home Owner Association (HOA) Common Areas is proposed for funding by Rancho California Water District (RCWD) in partnership with Metropolitan Water District of Southern California (MWD), Eastern Municipal Water District (EMWD), Rainbow Canyon Home Owners Association (HOA), Meadowview HOA, and Paloma Del Sol HOA. The RWPMC Project seeks to offset current potable supply used for the irrigation of common areas at the Rainbow Canyon, Meadowview Community and the Paloma Del Sol HOAs within RCWD's service area. (See Figures 3-3, 3-4 and 3-5). . The RWPMC Project will consist of the following activities:

- Conversion of existing potable-water irrigation systems to efficient recycled water systems (i.e. installation of drip components, high efficiency nozzles, and smart irrigation controllers)
- Hot-tapping of RCWD's recycled water mainline to accommodate use of recycled water at the conversion sites
- Replacement of existing high water use plant materials with drought tolerant and aesthetically pleasing California natives
- Public outreach (i.e. workshops and site signage) to demonstrate to the local community the benefits of the aforementioned irrigation system retrofits and use of California native landscapes, and to promote the importance of recycled water use

The RWPMC Project will replace traditional and inefficient irrigation system spray head components with high efficiency materials such as rotating nozzles and/or drip emitters. Pipe replacement and repair will also be made on existing water supply lines and deficient irrigation lines to reduce water losses in the system. Each of the selected sites will be outfitted with a weather based irrigation controller (WBIC). Once the irrigation system is replaced, RCWD will replace a portion of the existing higher water use plant/turf materials with drought tolerant and/or California native plants and grasses that will demand less irrigation supply.

The RWPMC Project would then involve RCWD expanding its recycled water system to provide water to the newly installed irrigation systems. RCWD's recycled water mainline is conveniently located adjacent to each of the proposed retrofit sites, and extension of the mainline will not

Recycled Water and Plant Material Conversion Project for HOA Common Areas

be necessary. Hot taps will be made on the recycled water mainline at each of the HOA sites and laterals with recycled water meters will be installed for connection to the newly installed irrigation systems.

The last component of the RWPMC Project is a public education component. This will consist of installing signage and conducting workshops to inform the HOA residents and public on water conservation strategies and promote the importance of native plants and recycled water.

If the RWPMC Project is awarded a Proposition 84 Round 2 Implementation Grant, the funding received for implementing the RWPMC Project will be used in combination with matching funds committed by RCWD and other funding partners to pay for completion of design, irrigation system components and replacement plant materials, and for the contractors to perform the retrofit work at the HOA common areas sites.

Project Timing and Phasing

The RWPMC Project began in 2012 with the implementation of the potable water irrigation system conversion to a highly efficient recycled water irrigation system at the Rainbow Canyon HOA site. As part of the initial Rainbow Canyon HOA site conversion, existing high water use vegetation is being replaced with drought tolerant California native plants. The Rainbow Canyon HOA site conversion will be completed in September 2013.

Upon award of Prop 84 funding, the two additional conversion sites at Meadowview and Paloma Del Sol HOA common areas will be added to the RWPMC Project. These sites' potable irrigation systems will also be converted to highly efficient recycled water irrigation systems and a portion of the existing high water use vegetation will be replaced with drought tolerant and/or California native plants to increase water conservation potential.

Implementation of the remaining two sites would begin immediately upon award and execution of the Proposition 84 grant financial assistance agreement. Construction activities are anticipated to be complete by April 2014. Public workshop and outreach activities are anticipated to be complete by April 2015. A detailed project schedule is located in Attachment 5.

Project Partners

RCWD is the lead implementing agency for the project and oversees all contractors and project work. Securing matching funds for this project requires MOUs with RCWD, MWD, EMWD and the three participating HOAs. An MOU has already been executed for the Rainbow Canyon HOA and is provided as an appendix to this attachment. The additional two sites at Meadowview and

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Paloma Del Sol HOAs will have MOUs in place by July 1, 2013. Each of the project partners will contribute matching funds to the project as detailed below:

- Metropolitan Water District of Southern California: Imported water wholesaler to EMWD will provide \$46,902 in matching funds
- Eastern Municipal Water District: MWD member agency and wholesaler to RCWD will provide \$13,000 in matching funds
- Rainbow Canyon Homeowners Association: will allow conversion of sites irrigation system and plant materials and provide \$50,245 in matching funds
- Meadowview Homeowners Association: will allow conversion of site's irrigation system and plant materials and provide \$35,000 in matching funds (see **Appendix C**)
- Paloma Del Sol Homeowners Association will allow conversion of site's irrigation system and plant materials and provide \$35,000 in matching funds (see **Appendix C**)

Project Goals and Objectives

The project goals and objectives are identified in **Table 3-3**.

Table 3-3: Project Goals and Objectives

Project Goals	Project Objectives
Decrease total irrigation water demand at project sites and reduce dependence of imported water supply	<ul style="list-style-type: none"> • Replace seven acres of existing non-native turf landscaping with lower water use plants including native plants and grasses • Improve efficiency of current irrigation system by upgrading all existing irrigation facilities • Decrease total water demand at three HOA Common area sites by 14 AFY (from 43 AFY to 29 AFY) by 2014
Improve beneficial use of existing water supplies	<ul style="list-style-type: none"> • Replace 100% of potable demands with 29 AFY recycled water supplies by 2014
Improve overall Regional water use efficiency	<ul style="list-style-type: none"> • Use project sites to provide public education on efficient water irrigation systems and low water use native landscaping
Improve water quality at local Murrieta and Temecula Creeks	<ul style="list-style-type: none"> • Decrease dry-weather runoff to Murrieta and Temecula Creeks from project sites
Help adapt to and mitigate against potential future climate change impacts	<ul style="list-style-type: none"> • Conserve energy by using less imported water • Reduce green house gas emissions • Reduce water demand to adapt to climate change

**Recycled Water and Plant Material Conversion
Project for HOA Common Areas****Project Need**

The RWPMC Project is needed to improve overall supply reliability by increasing increase water use efficiency and decreasing imported potable use, improve the beneficial use of existing supplies, educate the public, and protect the water quality of local water bodies from dry-weather runoff.

Supply Reliability and Water Use Efficiency

RCWD currently depends on imported water from the Sacramento-San Joaquin Delta and the Colorado River, supplied by the MWD through both EMWD and Western Municipal Water District (WMWD) for over 60% of its water needs. Recently, there have been significant reductions in these imported water supplies due to recent drought conditions in northern California, ongoing drought conditions in the Colorado River watershed, and from regulatory actions and court decisions that have reduced exports from the Sacramento-San Joaquin Delta. In addition, the effects of climate change may make future imported water supplies even less reliable. Thus, RCWD has made it a goal to reduce its dependency on imported water which will increase projected supply reliability. This goal can be accomplished through the better utilization of local water supplies and improvement of the overall water use efficiency of its customers.

Currently, the three HOA common area sites use 100% potable water. The RWPMC Project will directly reduce the demand of overall water supply and offset remaining potable demands with recycled water supply for common area irrigation within three HOAs. Water use efficiency will be improved by 34%¹ through irrigation system retrofits and plant material replacement. Potable irrigated water demand at the sites will be eliminated through conversion to a recycled water irrigation system.

Beneficial Use of Existing Local Supply

The new recycled water supply used to irrigate the project sites will predominately come from the Temecula Valley Regional Water Reclamation Facility (TVRWRF) which is owned and operated by EMWD. Under a series of agreements with EMWD, RCWD currently receives 2,017 AFY from the TVRWRF, and has the contractual right, if it develops facilities to utilize the additional recycled water, to receive up to an additional 3,586 AFY. Currently, when there is not enough demand, the effluent from the TVRWRF is discharged to Temescal Creek, which ultimately enters the Pacific Ocean via the Santa Ana River.

¹ The average efficiency percentage among sprinkler irrigation systems is approximately 63%. The RWPMC Project will increase efficiency to approximately 80%. This 17% increase in system efficiency results in 34% decrease in irrigation water use.

Recycled Water and Plant Material Conversion Project for HOA Common Areas

The RWPMC Project will increase the recycled water use from the TVRWRF will help reduce the direct discharge of recycled water into the Pacific Ocean and put the water to beneficial use.

Water Quality Protection

Inefficient irrigation of landscaped areas in RCWD's service area can result in dry-weather runoff, which may ultimately reach receiving water bodies, including Temecula Creek, Murrieta Creek, the Santa Margarita River, and the Santa Margarita Lagoon. Dry weather runoff is particularly poor in water quality since there is no precipitation available to dilute the concentration of contaminants transferred by the run-off flow. Runoff from landscaped areas can contain contaminants such as nutrients from fertilizers, pesticides and trash. These contaminants reduce the quality of local receiving waters. **Table 3-4** lists all of the 303(d) listed creeks and rivers that could potentially receive contaminants from runoff at the project sites.

Table 3-4: Impaired Water Bodies Potentially Receiving Runoff from Project Site

Water Body	CWA 303(d) List
Murrieta Creek	iron, manganese, nitrogen, phosphorous
Temecula Creek	nitrogen, phosphorous, TDS
Santa Margarita River (upper)	phosphorous
Santa Margarita Lagoon	eutrophic

Source: www.projectcleanwater.org, http://www.projectcleanwater.org/html/ws_santa_margarita.html

The proposed RWPMC Project will replace existing potable-water irrigation systems to efficient recycled water systems. The efficient recycled water systems will consist of drip irrigation components, high efficiency nozzles, and smart irrigation controllers. The installation of efficient water systems will reduce dry-weather runoff and prevent these contaminated flows from entering local water bodies. The RWPMC Project will aid in mitigating surface water quality degradation caused by the deposition of contaminants through the reduction of dry-weather runoff.

Project Purpose

The purpose of the RWPMC Project is to address the project needs stated previously in the following ways:

- *Improve Water Supply Reliability:* Potable water use for irrigation at the HOA common area sites will be eliminated and replaced recycled water. The use of local recycled water supplies and overall water use efficiency will decrease RCWMD's dependence on California Bay-Delta and Colorado River Basin imported water supplies, increasing the Regions water supply reliability. The offset of imported water will be 100% of current demand or 43 AFY which is 1290 AF over the 30 year life of the Project

**Recycled Water and Plant Material Conversion
Project for HOA Common Areas**

- *Conserve and Use Water More Efficiently:* The RWPMC Project will result in quantifiable and sustained water savings and improved water management at three dedicated landscape irrigation sites through the conversion of existing irrigation systems to higher efficiency systems using smart irrigation controllers, drip irrigation, and high efficiency nozzles. Higher water use landscaping (such as turf) will be replaced with lower water use plants including native plant species to further reduce the need for irrigation supply over the same area. Through these activities, the overall water requirement at the sites will be reduced from 43 AFY to 29 AFY which equates to a total of 1,290 AF in water savings over a 30-year lifetime.
- *Beneficial Use of Existing Supply:* The RWPMC Project will increase the use of existing unused recycled water supply that would instead be discharged to Temescal Creek to offset potable supply.
- *Protect Surface Water Quality:* The RWPMC Project will help mitigate surface quality degradation caused by deposition of these contaminants through reduction in dry-weather flows from irrigation runoff. Since native plants will be used in lieu of existing turf it can also be assumed that fertilizer requirements will be decreased which correlated to decreases in nutrient contaminant sources at the Project sites. Receiving water bodies, including Temecula Creek, Murrieta Creek, the Santa Margarita River, and the Santa Margarita Lagoon would benefit as result.
- *Adapt to and Mitigate against further climate change impacts:* The RWPMC Project will decrease energy use through water conservation improvements that result in reduced water conveyance from imported sources including the Colorado River Basin and the California Bay-Delta, reduced water treatment requirements, and reduced local pumping requirements. Increased energy efficiency will reduce GHG emissions and increased water use efficiency will promote sustainable use of water and help adapt to climate change impacts.

Integrated Elements of Project

The RWPMC Project is in keeping with the water conservation program and water use efficiency objectives identified in the RCWD's 2005 Regional Integrated Resources Plan, 2010 Urban Water Management Plan (UWMP), and 2007 USMW IRWM Plan (IRWM Plan)². RCWD adopted the 2007 IRWM Plan on July 31, 2007 and the IRWM Plan List was most recently updated and

² From Section 4-16 of IRWMP: Strategy WS- 8 Recycled Water, Recycled Municipal Water Strategies; From Section 3-3 of IRWMP:

Recycled Water and Plant Material Conversion Project for HOA Common Areas

approved in November 2012 by the Regional Water Management Group. The RWPMC Project is included in this most recent list of approved 2007 IRWM projects and RCWD is an active participant in the 2014 IRWM Plan Update. The RWPMC Project addresses seven of nine 2007 IRWM Plan objectives as shown in **Table 3-5**.

Table 3-5: Contribution to the IRWM Plan Objectives

	Objective 1: Develop a more reliable and diverse portfolio of water supplies	Objective 2: Promote economic, social, and environmental sustainability	Objective 3: Improve water quality	Objective 4: Restore, enhance and maintain habitats and open space	Objective 5: Promote sustainable floodplain management	Objective 6: Promote appropriate recreational opportunities	Objective 7: Promote appropriate land use planning	Objective 8: Increase stakeholder involvement and stewardship	Objective 9: Maximize implementation of water resources projects
RWPMC Project	X	X	X	X		X		X	X

The RWPMC Project contributes to the IRWM Plan objectives in the following ways:

- Objective 1: *Develops a More Reliable and Diverse Portfolio of Water Supplies***

The project will eliminate a potable water requirement of 43 AFY at three landscape irrigation sites through water use efficiency and recycled water use. The use of water use efficiency (conserved supply) and recycled water in lieu of current imported supply, increases the diversity of the Region’s current water supply portfolio and improves reliability.
- Objective 2: *Promotes Economic, Social, and Environmental Sustainability***

Irrigation system upgrades including conversion to drip irrigation and plant material replacement with low water use species will result in decreased water application and a more sustainable irrigation need and land use. Additionally, the Project will help reduce the Region’s energy usage and greenhouse gas (GHG) emissions by reducing potable imported water supply needs.

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Project for HOA Common Areas**

- **Objective 3: *Improves Water Quality***

Consistent with Objective 2, irrigation system upgrades including conversion to drip irrigation and plant material replacement with low water use species will result in decreased water application and more effective use of irrigation water, both of which will result in runoff reduction and environmental benefits including decreased deposition of fertilizer borne pollutants into the Region's water bodies.

- **Objective 4: *Restore, enhance and maintain habitats and open space***

The Project will to preserve the current common area open spaces at the HOA sites by creating a more sustainable landscape and irrigation system. Replacing turf and other non-native landscaping with native plants also increases the Region's native plant habitats.

- **Objective 6: *Promote appropriate recreational opportunities***

By switching to recycled water, the HOAs participating in the Project will no longer be subject to watering restrictions during times of drought and can sufficiently irrigate their common areas regardless of drought conditions (thus remaining green during dry periods). This will improve the aesthetics and enjoyment of the HOA common areas and, in extreme cases, may avoid closures of common areas that would otherwise be necessary to prevent further turf damage.

- **Objective 8: *Increase Stakeholder Involvement and Stewardship***

The project includes an outreach component that educates the Region's public on best management practices for promoting stewardship of water resources and water use efficiency.

- **Objective 9: *Maximize Implementation of Water Resources Projects***

The project is ready to implement, has a very high likelihood of success due to the specific elimination of potable water requirement to the sites, will result in long-term benefits, and is eligible for federal, state, and regional grants.

Completed Work

A few activities have been completed in preparation for the implementation of the RWPMC Project. Completed project activities and study include:

Recycled Water and Plant Material Conversion Project for HOA Common Areas

- Identification of the project sites via the *New Water Demand Offset Program (NWDOP) Data Collection and Estimate of Average Conversion Cost Project Final Report (Appendix C)*
- A pre-retrofit irrigation system audit for one of the three project sites (Rainbow Canyon HOA) that determined to potential water conservation savings. A copy of the pre-retrofit irrigation system audit is provided in **Appendix C**.

Existing Data and Studies

An Irrigation Study has been prepared in support of the RWPMC Project feasibility. The NWDOP Data Collection and Estimate of Average Conversion Cost Project Report (**Appendix C**) identified all the dedicated landscape irrigation sites within 500 feet of existing recycled water mainline. The study identified 845 sites through this analysis. RCWD also performed an analysis of water usage among these 845 sites to find ones for which recycled water conversions would be more cost-effective (i.e. those with the highest potable water consumption that could be offset with recycled water). Through this analysis and meetings with local landscape contractors, RCWD identified the three sites for the RWPMC Project.

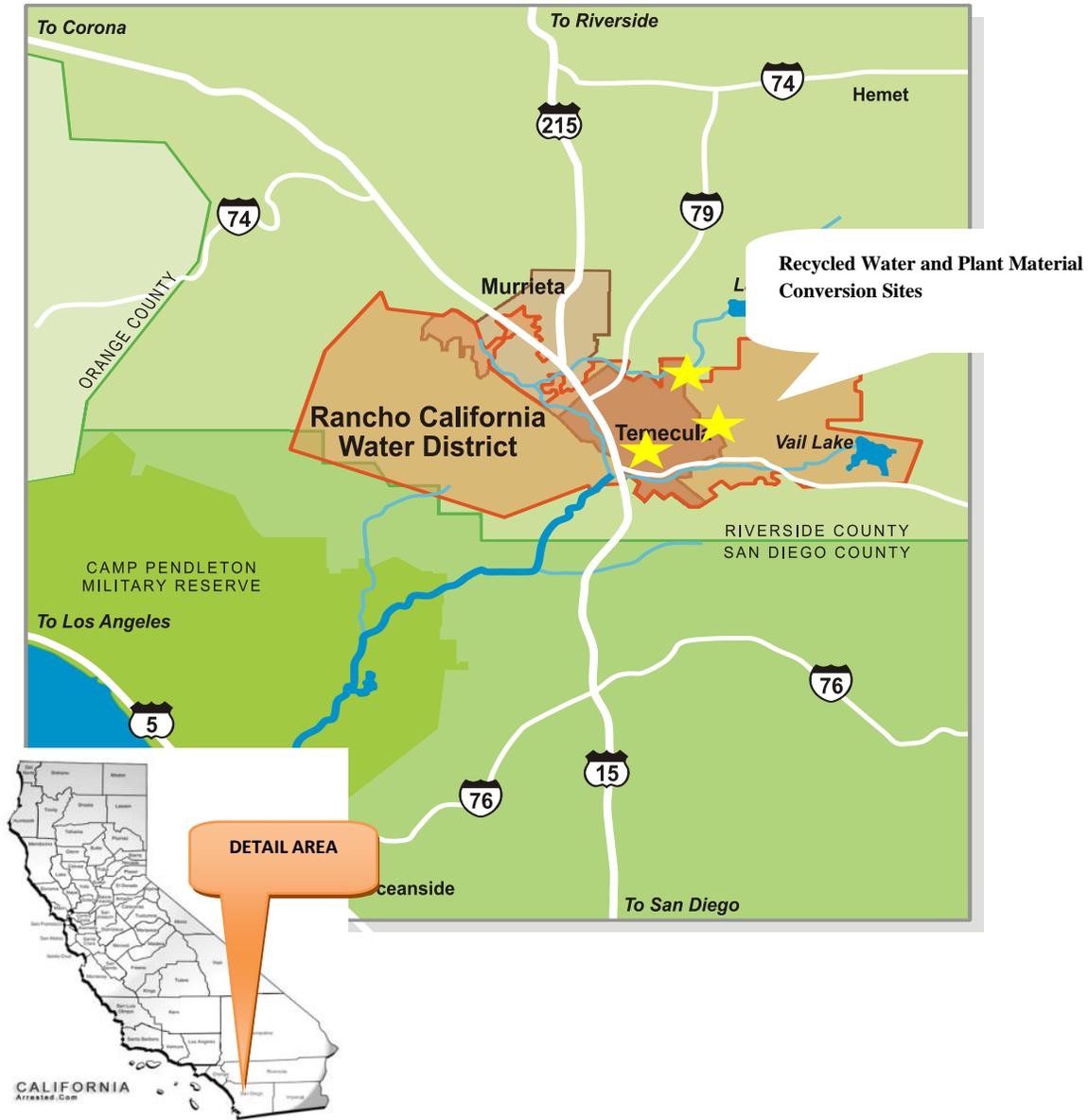
An initial audit at the Rainbow Canyon HOA Project site was also completed to determine the conservation potential at Rainbow Canyon and is used to provide estimates of conservation potential at the other two Project sites as well.

Project Map

The RCWD service area boundary and project site locations are shown in **Figure 3-3**. **Figure 3-4** shows a closer view of the three project sites relative to current RCWD recycled water distribution lines, and **Figures 3-5 through 3-7** show the detailed aerial imagery for each HOA common area Project site.

Recycled Water and Plant Material Conversion
Project for HOA Common Areas

Figure 3-3: RCWD Service Area and Project Site Locations



Recycled Water and Plant Material Conversion
Project for HOA Common Areas

Figure 3-5: Rainbow Canyon HOA Common Area



Recycled Water and Plant Material Conversion
Project for HOA Common Areas

Figure 3-6: Meadowview HOA Common Area



**Recycled Water and Plant Material Conversion
Project for HOA Common Areas****Proposed Work**

The following sections discuss work items necessary for implementation of the project. The work items are divided into each of the six primary budget categories and associated tasks as shown on Table 6, pages 33 and 34, of the Proposition 84, Round 2 Implementation Grant PSP. Work is divided into tasks completed before the grant award date (before October 1, 2013) and after the grant award date (after October 1, 2013).

(a) Direct Project Administration Costs**Task 1: Project Administration**

Project administration has been and will continue to be performed by RCWD staff. Project administration tasks will include overall project coordination and management, communication with the project team, and project meetings. As construction activities are completed for the RWPMC Project, RCWD staff will collect invoices from and pay contractors for labor and materials associated with the conversions. RCWD will also generate summary reports showing all expenditures for the project including work performed by all contractors and RCWD employees. RCWD staff will document matching funds provided by funding partners and create invoices and backup documentation that will be submitted to DWR for match funding verification and requesting reimbursements under the Proposition 84 Implementation Grant Program.

As part of this task, the RCWD staff will develop a Post-Conversion Consumption 1-Year Monitoring Plan and a Data Management Plan. The information gained through monitoring will be utilized through implementation of the Data Management Plan to demonstrate project benefits and assist RCWD in meeting water reduction goals under the Water Conservation Act of 2009 of a 20 percent reduction of urban water use per capita by the year 2020 (20x2020).

Development of finance for the RWPMC Project will be performed by RCWD staff. RCWD Staff will secure the required funding match for the RWPMC Project and finalize MOUs with MWD, EMWD, Meadowview HOA, and Paloma Del Sol HOA. An MOU has already been executed for the Rainbow Canyon HOA and commitment letters have been received from Meadowview and Paloma Del Sol HOAs (see **Appendix C**). All MOUs and funding match will be fully secured by July 1, 2013.

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Table 3-6: Program Administration Activities

Project Administration Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Project Administration	7/30/2012 – 7/31/2015	In Progress		✓
Development of Financing	8/30/2012 – 7/1/2013	In Progress	✓	
Development of Project Monitoring Plan and Data Management	10/1/2013 – 3/14/2014	Not yet begun		✓

Task 2: Labor Compliance Program

RCWD has an active Labor Compliance Program in place, which was approved by California's Department of Industrial Relations in September 2012. Labor Compliance Providers, LLC (LCP) provides services to RCWD for projects requiring performance of labor compliance activities. The LCP will continue to implement throughout the construction phase of the RWPMC Project.

The activities that will be done under the implementation of the LCP are listed below:

- Project coordination, pre-construction, and progress meetings throughout the RWPMC Project
- Monitor and audit contractors CPRs & related documents; monitor contractors' compliance with apprenticeship requirements; Identify potential labor compliance issues and conduct investigations
- Job-site reviews and worker interviews/verify interview against submitted payrolls
- Prepare monthly reports on status of labor compliance
- Administrative reviews, project management and staff assignment status meetings
- Project closeout and archiving

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Table 3-7: Labor Compliance Activities

Labor Compliance Program Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Labor Compliance Program Approval	9/10/2012 - 4/30/2014	Active	✓	✓

Task 3: Reporting

RCWD will submit quarterly progress, final and post-completion reports to the State per grant requirements. Quarterly reports will provide updates on the progress of the RWPMC Project implementation and the achievement of project benefits. The final report will be submitted to the state after completion of the project construction, public workshops, and 1-year of monitoring/data collection under grant are completed. RCWMD acknowledges post-performance reports are required to be submitted to the State within ninety (90) calendar days after the first operational year of a project has elapsed annually for a 10 year period.

Table 3-8: Reporting Activities

Reporting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Quarterly Progress Reports	10/25/2013 - 7/31/2015	Not yet begun		✓
Final Report	5/29/2015	Not yet begun		✓

(b) Land Purchase/Easement

The RWPMC Project will not require purchase of land or acquisition of right-of-ways as the property is completely within the HOA ownership and within the RCWD service area. The funding partners, including the HOAs, have or will enter into MOUs to complete the projects, allowing full access to the HOA properties.

(c) Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation

Initial assessment and evaluation activities have already been completed as part of the NWDOP Data Collection and Estimate of Average Conversion Cost Project:

Recycled Water and Plant Material Conversion Project for HOA Common Areas

- Identification and prioritization of all dedicated landscape irrigation sites within 500 feet of the existing recycled water mainline by water consumption
- Identification and selection of the three participating HOA common area sites for the RWPMC Project

A pre-retrofit conversion site landscape irrigation audit has already been completed at the Rainbow Canyon HOA. The two remaining audits will be conducted to identify a baseline efficiency and water requirement data to use for measurement of project performance. These pre-conversion audits will include distribution uniformity tests and recommendations for system retrofits. An inventory of plant materials will also be taken, and recommendations will be made for replacing high water use plant materials with drought tolerant plants including California natives.

Table 3-9: Assessment and Evaluation Activities

Assessment and Evaluation Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Identify RCWD dedicated landscape irrigation sites within 500 feet of existing recycled water mainline	11/30/2009	Completed	✓	
Prioritize sites by water consumption and estimate conversion costs	11/30/2009	Completed	✓	
Identify three (3) participating sites	1/13/2012 – 6/1/12	Completed	✓	
Pre-Retrofit Conversion Site Audits	8/1/2012 – 10/31/13	Partially Completed ¹		✓

1. Partially completed tasks include work performed at the Rainbow Canyon HOA site

Task 5: Final Design

Irrigation system retrofits for recycled water connections will require system irrigation conversion and system design plans to be prepared and submitted to RCWD's Engineering Department for approval. The landscape construction contractor hired for converting each of the sites will be responsible for generating and obtaining approval for the design plans. In

Recycled Water and Plant Material Conversion Project for HOA Common Areas

In addition, the landscape construction contractor will be responsible for developing the final plant materials list. The design plans must adhere to RCWD's Standard Specifications, Drawings, and Design Criteria for water, sewer, and recycled water systems. Design plans for the Rainbow Canyon HOA Project site have been completed and are included as **Appendix C** to this Attachment. The remaining design plans are anticipated to be complete by November 2013.

Table 3-10: Final Design Activities

Final Design Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Site Irrigation Conversion Plans	8/30/2012 – 11/29/2013	Partially Completed		✓
Complete Irrigation System Design Work	7/30/2012 – 11/29/2013	Partially Completed		✓
Complete Plant Materials List	7/30/2012 – 11/29/2013	Partially Completed		✓

1. Partially completed tasks include work performed at the Rainbow Canyon HOA site

Task 6: Environmental Documentation

Environmental documentation is not required for implementation of the RWPMC Project on all three sites since the project is being constructed wholly on private property that has been previously disturbed. However, at the Meadowview project site, an adjacent drainage area is within the Total Dissolved Solids (TDS) objective area of 500 ppm, which is the level of TDS typical for recycled water. Accordingly, an analysis was conducted and determined that the soil has sufficient assimilative capacity to offset application of recycled water. Within a RCWD July 1992 Report of Waste Discharge, an assimilative capacity analysis was presented (and included in **Appendix C** as map called TDS Levels at Project Site) which demonstrated that it is appropriate to use recycled water within the lower portion of the Gertrudis Hydrologic Subarea (HSA 2.42) that includes the Meadowview development. On the basis of this assimilative capacity analysis, Regional Board Order No. 94-92 (Finding No. 8) allows recycled water use within the Meadowview portion of the Gertrudis HSA at a 12-month average TDS concentration of 750 mg/l (Discharge Specification B.3). Further, since the project is not under CEQA, tribal notification is not required.

Task 7: Permitting

Traffic Control Permits are required for installing lateral lines that connect the new recycled water meter to the recycled water mainline at the Paloma Del Sol site.

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Table 3-11: Permitting Activities

Permitting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Traffic Control	1/6/2014 – 1/10/2014	Not Complete		X

(d) Construction/Implementation

Task 8: Construction Contracting

The construction contracting for the project will be handled by RCWD staff in compliance with public contracting code. RCWD has contacted and met with the project site landscape contractors, Adams Landscaping and Environmental Concepts, as they already have intimate knowledge of the sites' irrigation systems and plant materials. Adams Landscaping was contracted in August 2012 to perform the site conversion at the Rainbow Canyon HOA project site. Either Adams Landscaping or Environmental Concepts will be hired to perform the design and construction for the two additional common area HOA sites. This strategy represents a time and money saving measure for RCWD. Therefore, RCWD will not advertise for bids or perform any bid related work.

Table 3-12: Construction Contracting Activities

Construction Contracting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Award Contracts to Landscape Contractors	7/30/2012 – 10/31/2013	Partially Completed	✓	✓

Task 9: Construction and Implementation

The conversion of the sites' irrigation systems include the replacement of existing irrigation equipment with those that are both more efficient and capable of delivering recycled water received from RCWD's existing water reclamation facilities. Plant material conversion efforts will accompany the irrigation system retrofits and will involve the removal of existing turf and replacement with drought tolerant plants and grasses to include California natives. Workshops and tours will also be provided to educate the public on water use efficiency and native plants.

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Subtask 9.1 Mobilization and Site Preparation:

This subtask consists of the removal of non-essential turf at each site which includes a “grow and kill” strategy involving a 3-4 week spray plan.

Table 3-13: Mobilization and Site Preparation Activities

Construction Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Subtask 9.1 Mobilization and Site Preparation				
Turf Removal	8/30/2012 – 2/3/2014	Partially Completed ¹		✓

1. Partially completed tasks include work performed at the Rainbow Canyon HOA site

Subtask 9.2 Project Construction:

Project construction includes the following components:

Install New Drip System: An efficient drip irrigation system will be installed in the areas where turf was removed to accommodate new, low-water use shrub materials. Lateral lines and irrigation valves will have recycled water distribution capabilities.

Convert Existing Irrigation to High Efficiency Nozzles: In areas where essential turf is not removed, irrigation heads will be converted to high-efficiency nozzles and check valves to increase irrigation system performance. The nozzles will be installed with head to head coverage to meet distribution uniformity standards. Lateral lines and irrigation valves will have recycled water distribution capabilities.

Install Plantings: New drought tolerant plants will be installed in the areas where the turf was removed and the drip system was installed.

Install and Program Smart Irrigation Controller: Existing irrigation timers will be replaced with “Smart” weather based irrigation controllers. The controllers will be programmed according to the needs of the new plantings.

Connect Irrigation System to RCWD Recycled Water Line: Install piping necessary for connecting the newly installed irrigation systems, to RCWD’s existing recycled water distribution system.

Recycled Water and Plant Material Conversion Project for HOA Common Areas

Install Educational/Informational Signage: Signage will be installed at each of the conversion sites to provide visitors with information about irrigation efficiency, drought tolerant plants, and the benefits of recycled water conversions.

Table 3-14: Project Construction Activities

Construction Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Subtask 9.2 Project Construction				
Install New Drip System	9/7/2012 – 2/3/2014	Partially complete		✓
Convert Existing Irrigation to high Efficiency Nozzles	9/7/2012 – 3/14/2014	Partially complete		✓
Install Plantings	10/15/2012 – 3/14/2014	Partially complete		✓
Install and Program Smart Controller	10/15/2012 – 3/14/2014	Partially complete		✓
Replace Remaining Turf	10/22/2012 – 3/14/2014	Partially complete		✓
Connect Irrigation System to RCWD Recycled Water Mainline	11/1/2012 – 3/14/2014	Partially complete		✓
Install Educational/Informational Signage	11/1/2012 – 3/14/2014	Partially complete		✓

1. Partially completed tasks include work performed at the Rainbow Canyon HOA site

Subtask 9.3 Performance Testing and Demobilization:

Project performance testing will be conducted by RCWD staff and consist of post-conversion site audits and post-conversion consumption monitoring.

Post – Conversion Site Audits: For quality control purposes, each of the sites will have their irrigation systems audited following construction by RCWD staff. These post-conversion audits will include distribution uniformity tests and will document improvements made to the system. Information from the audit will be used to verify smart irrigation controller settings. The audit will also include an inspection of the newly installed plant materials to verify proper selection

Recycled Water and Plant Material Conversion Project for HOA Common Areas

and installation. The post-conversion site audit will be the final activity of construction. At conclusion of the site audit, project construction will be considered demobilized.

Post – Conversion Consumption Monitoring: RCWD staff will monitor the water consumption at each of the sites following the site conversions and compare pre- and post-conversion water consumption to document water savings benefits.

Table 3-15: Performance Testing and Demobilization Activities

Construction Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Subtask 9.3 Performance Testing and Demobilization				
Post-Conversion Irrigation System Audits and Demobilization	3/17/2013 – 4/30/2014	Not yet begun		✓
Post-Conversion Consumption Monitoring	4/30/2014 – 4/30/2015	Not yet begun		✓

Subtask 9.4: Public Outreach, Workshops and Demonstrations

One workshop will held at each of the three common HOA area sites following the conversion process to showcase the work that was done and promote landscape best management practices (BMPs) to HOA residents and community members. Information provided at the workshops will include ways to improve the efficiency of irrigation systems and decrease overall demand through the use of native plant landscaping. Information will also be provided regarding the benefits of recycled water conversions and use. During the workshops, participants will be taken on a tour of the sites and directed to education/information signage installed as part of the conversions.

Table 3-16: Public Outreach, Workshops and Demonstration Activities

Public Outreach, Workshops, and Demonstration Activity or Deliverable	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Three Public Workshops	10/1/13 – 4/30/15	Not yet begun		✓

Recycled Water and Plant Material Conversion Project for HOA Common Areas

(e) Environmental Compliance/Mitigation/Enhancement

Task 10: Environmental Compliance/Mitigation/Enhancement

Environmental compliance/mitigation/enhancement is not required for implementation of the RWPMC Project.

(f) Construction Administration

Task 11: Construction Administration

RCWD Staff will conduct the construction administration activities. Construction administration activities will consist of oversight during the construction process to ensure installation of proper water-efficient irrigation equipment, plant materials, and education signage.

Table 3-17: Construction Administration Activities

Construction Administration Activity or Deliverable	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Construction Administration	9/7/2012– 3/14/2014	Ongoing	✓	✓

(g) Other Activities

RCWD will provide project approval and connection to its recycled water mainline for the three HOA sites as part of the Project.

Table 3-18: Other Activities

Other Activity or Deliverable	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Water District Approval/Connection Costs	10/1/2013 – 12/31/2013	Not yet begun		✓

**Recycled Water and Plant Material Conversion
Project for HOA Common Areas****Discussion of Standards**

The Project includes both onsite (on HOA private property) and offsite (outside the HOA property) improvements. Onsite construction on private property is not subject to RCWD standards; however, RCWD will inspect the Project to meet all the following construction standards, health and safety standards, laboratory analysis, and classification methods:

- RCWD Water System Facilities Requirements and Design Guidelines will be adhered to for project design.
- American Water Works Association materials standards will be used for project material design and acquisition.
- Occupational Safety and Health Administration (OSHA) will be implemented.
- Prevailing Wage Requirements through the Labor Compliance Program will be followed.
- To ensure that a consistent high level of safety is maintained, recycled water is continually regulated, monitored and tested using standards set by the U.S. Environmental Protection Agency, Regional Water Quality Control Board, and State Department of Health Services.
- Guidelines set by the California Department of Public Health (CDPH) and enforced by RCWD ensure that clear signage identifies the recycled water facilities.

Native Botanical Garden Project

Introduction

Project Description

The Native Botanical Garden Project, a DAC project, is proposed by the South Coast Resource Conservation and Development Council (SCRDC) in partnership with the Hamilton Museum, the High Country Conservancy, and the Anza Community Beautification and Garden Projects Committee. The Native Botanical Garden Project would expand an existing native plant garden at the Hamilton Museum by an additional ½ acre. The additional native botanical garden will revegetate the existing open space with exhibit plants that represent the local landscape and natural habitat types unique to the Anza Valley in southern Riverside County. To access the plant exhibits, a series of winding pathways will be constructed throughout the Project site garden. Each of the plant exhibits will have interpretive signs and plant identification markers installed to assist the public with selecting plant varieties to use in their own gardens and landscaping designs. The proposed Project would also install viewing benches and a covered area throughout the garden for people to sit and gather during public workshops. Figure 3-4, shows the lay-out of the local native plant exhibits and landscape designs that will be used on the site.

The Native Botanical Garden Project seeks to improve water conservation regionally by educating and encouraging property owners to use native plants in their landscape in lieu of invasive plants that require more irrigation water to survive. The public workshops and tours will discuss the importance and habitat, water supply and water quality benefits of restoring native plants to the Region. In this way, the Native Botanical Garden can be used as an educational outreach facility to demonstrate to the public the natural beauty of native landscapes and how using drought-tolerant native plant species can help conserve water resources while enhancing the aesthetics and resource-value of the local living environment.

As an added benefit, the Native Botanical Garden Project will provide an opportunity to enhance relationships between community members, local organizations working for the benefit of the community by providing a shared community recreation area.

Although activities associated with this project including tours and workshops will be completed within 2 years, it is anticipated that additional educational and community activities will be implemented at the garden for at least a 15-year project life, and beyond.

Project Timing and Phasing

In 2011, the US Fish and Wildlife Service awarded the Hamilton Museum a \$2,000 grant to help create the existing native plant garden on the Hamilton Museum grounds which consists of a

Native Botanical Garden Project

simulated wetlands environment of approximately 500 square feet. The grant also provided funding to build a display of a native Cahuilla home, called a Kish, that is built along with a plant grouping to showcase culturally significant native plants in the Cahuilla lifestyle. Workshops are currently held at the existing garden to teach the public the traditional cultural uses of native grasses such as basket-weaving. The exhibits and Kish will be fully completed by June 2013.

This Native Botanical Garden Project will be constructed as an expansion of the existing site. Construction of the Native Botanical Garden Project will be completed by August 2014. The public tours and workshops will be conducted during construction through August 2015 as part of the Project. A program to continue these workshops and tours will be developed after the Project is complete but is not included in the scope of this Project.

Project Partners

The lead implementation agency is the SCRCDC and will be responsible for all administrative and fiscal tasks. The SCRCDC will coordinate all construction activities and create and provide any reporting required by the Prop 84 Implementation Grant program. The Hamilton Museum and the High Country Conservancy are the project cooperating agencies. The Hamilton Museum is the project site location and will provide access to the site and facilities. The Hamilton Museum will be the liaison between the primary implementing agency (SCRCDC) and the land owners to coordinate acquisition of the conservation easement from the land owners. The High Country Conservancy will be responsible for monitoring components of the project and for the maintenance of the garden.

Additionally, the Anza Community Beatification and Garden Projects Committee (Committee) will monitor the Project's progress and coordinate the educational tours and workshop activities as well as the training and supervision of volunteer efforts associated with the Native Botanical Garden Project. The Committee consists of members representing the Boojum Institute, High County Boys & Girls Club, Anza Civic Improvement League, Mountain Communities of Resilience and the High County Conservancy.

Goals and Objectives

The project goals and objectives are identified in the following table.

Native Botanical Garden Project

Work Plan

Table 3-19: Project Goals and Objectives

Project Goals	Project Objectives
Improve overall water use efficiency in the Region	<ul style="list-style-type: none"> • Increase the conversion of existing non-native landscapes into native landscapes that demand less water for irrigation throughout the Region • Hold tours and workshops to educate property owners on water use efficiency measures
Increase and enhance recreational space for local residents	<ul style="list-style-type: none"> • Increase recreational space available to local residents • Further enhance the benefits of existing open space and museum for visitors
Create native plant ecosystems that improve local habitat	<ul style="list-style-type: none"> • Increase native habitat coverage in the Anza Valley

Project Need

The Anza Valley, which is considered a DAC, relies on the Anza groundwater basin as its sole water supply source. Protection of this limited water supply, in quality and quantity, is necessary to ensure the continued availability of water to the community. As described in the 2007 USMW IRWM Plan, the groundwater basin in the Anza Valley area experiences relatively heavy groundwater use and is believed to be impacted from agricultural chemicals and leaking septic tanks. Groundwater use in the Anza Valley, coupled with recent droughts, has resulted in some residential groundwater wells being unable to sustain well water draws. Such conditions have led to substantial water-related conflicts, including water rights lawsuits and resistance to new construction. The Anza Valley does not have viable options for procuring other sources of water, and would be required to rely on expensive and unsustainable options such as hauling water into the area if local groundwater basins were to become unviable from either a water quality or water supply perspective. As such, the 2007 USMW IRWM Plan identifies “Addressing groundwater issues in the Anza DAC Area” and “Improving Outreach and Communication” as key regional issues.

The area was recently awarded Proposition 84 Round 2 Planning funding, under the USMW IRWM Plan Update Project, for conducting the DAC Groundwater Study in the Anza Area as a first step to better determine the limits and challenges of this un-adjudicated basin. Although the results of this study are not yet known, the need for this study was based upon previous limited analysis given supply reliability issues experienced by this community. Without access to

Native Botanical Garden Project

back-up supplies, increasing the reliability of the limited existing supplies by decreasing demand in this area is critical.

Although the Anza area has a great deal of open space, very little of this area is developed to provide the community with educational and recreational facilities. Given that this area is a DAC, little to no funds are available to develop areas where the community can congregate to learn about and enjoy their cultural heritage and environment.

Although rural, the Anza Valley has been impacted from non-native planting and landscaping. The existence of non-native plants has impacted both the habitat values in the area and increased irrigation needs.

Project Purpose

The Native Botanical Garden Project directly increases the recreation and habitat benefits for the Region at the project site. However, the greatest purpose of this Project is that it provides education through demonstration of the benefits of native landscaping. The project does this through the development of the actual gardens and facilities on the project site, but also through the dedication of community volunteers that will provide workshops and tours to show the community how using drought-tolerant native species can help stretch limited water supplies while enhancing the aesthetics and habitat-value of its local living environment. The Native Botanical Garden will be used as an education outreach facility to provide opportunities for youth and adults to learn about the local ecosystem and understand how human impacts upon it effect the local land and water resources.

The garden development will also help the region further enhance the recreational value of the existing museum, wetlands and Kish as well as provide new recreational opportunities for the community and Region.

Integrated Elements of Project

The Native Botanical Garden Project is a regional project within the 2007 USMW IRWM Plan. The Native Botanical Garden Project will help address four of nine 2007 IRWM Plan objectives. **Table 3-20** below provides an overview of the 2007 IRWM Plan objectives that will be addressed through implementation of the Native Botanical Garden Project.

Native Botanical Garden Project

Work Plan

Table 3-20: Contribution to the IRWM Plan Objectives

	Objective 1: Develop a more reliable and diverse portfolio of water supplies	Objective 2: Promote economic, social, and environmental sustainability	Objective 3: Improve water quality	Objective 4: Restore, enhance and maintain habitats and open space	Objective 5: Promote sustainable floodplain management	Objective 6: Promote appropriate recreational opportunities	Objective 7: Promote appropriate land use planning	Objective 8: Increase stakeholder involvement and stewardship	Objective 9: Maximize implementation of water resources projects
Native Botanical Garden Project	X	X		X		X		X	

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

- **Objective 1: *Develop a More Reliable and Diverse Portfolio of Water Supplies Maximize Implementation of Water Resources Projects:*** The Project will increase existing supply reliability by indirectly decreasing water demand for landscaping irrigation in the Region.
- **Objective 2: *Promotes Economic, Social, and Environmental Sustainability:*** The Project will promote water conservation strategies to reduce water consumption and enhance a community asset for a DAC within the Region. Local native habitat will also be increased and protected.
- **Objective 4: *Restore, enhance and maintain habitats and open space:*** The Project will create enhance existing open space and increase native habitat by re-vegetating land with native plant species.
- **Objective 6: *Promote Appropriate Recreational Opportunities:*** The Project will enhance existing and provide additional recreational opportunities for the community and the Region.
- **Objective 8: *Increase Stakeholder Involvement and Stewardship:*** The Project will educate the public on best management practices for promoting stewardship of land and water resources.

Native Botanical Garden Project

Completed Work

No work has yet to be completed for the project.

Existing Data and Studies

As a DAC, there has been limited funding available for the development of studies and plans specific to the Anza Valley area. The area was recently awarded Proposition 84 Round 2 Planning funding, under the USMW IRWM Plan Update Project, for conducting the *DAC Groundwater Study in the Anza Area* as a first step to better determine the limits and challenges of this un-adjudicated basin. Although the results of this study are not yet known, the need for this study was based upon previous limited analysis given supply reliability issues experienced by this community,

Project Maps

The proposed Native Botanical Garden Project site location and maps are shown in **Figure 3-8** through **Figure 3-10**. **Figure 3-8** shows the project is located in southern Riverside County in the Upper Santa Margarita Watershed. **Figure 3-10** shows the Project site which is where Project monitoring will also take place.

Figure 3-8: Anza Valley Project Area

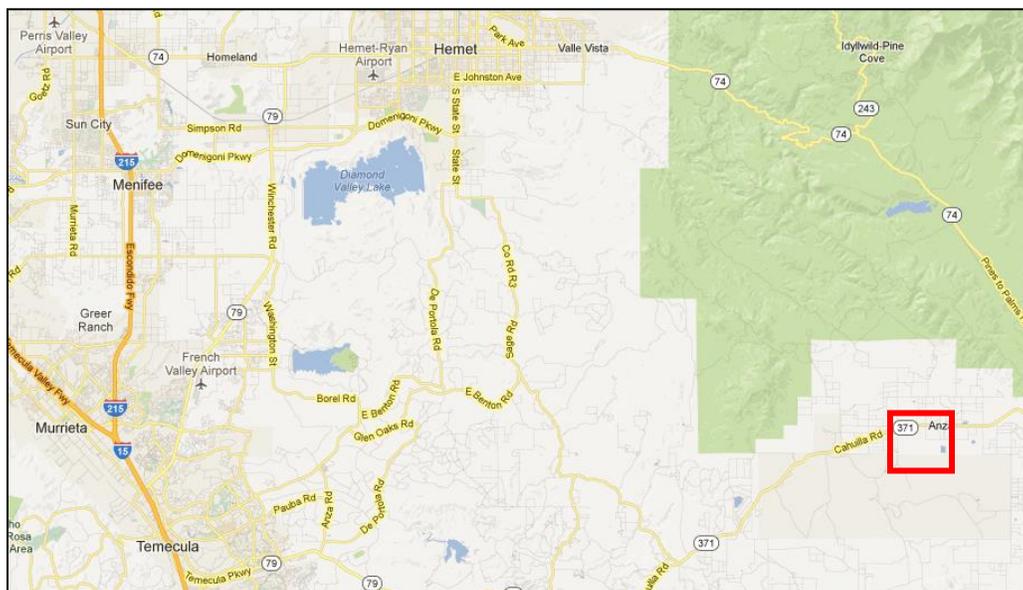


Figure 3-9: Hamilton Museum Grounds

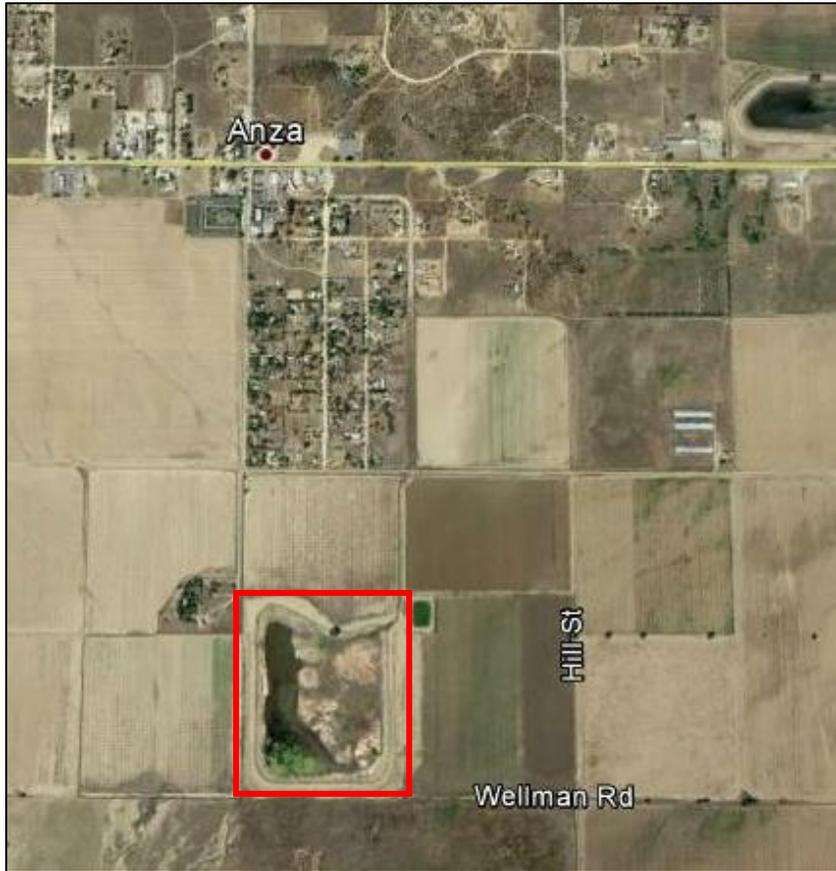
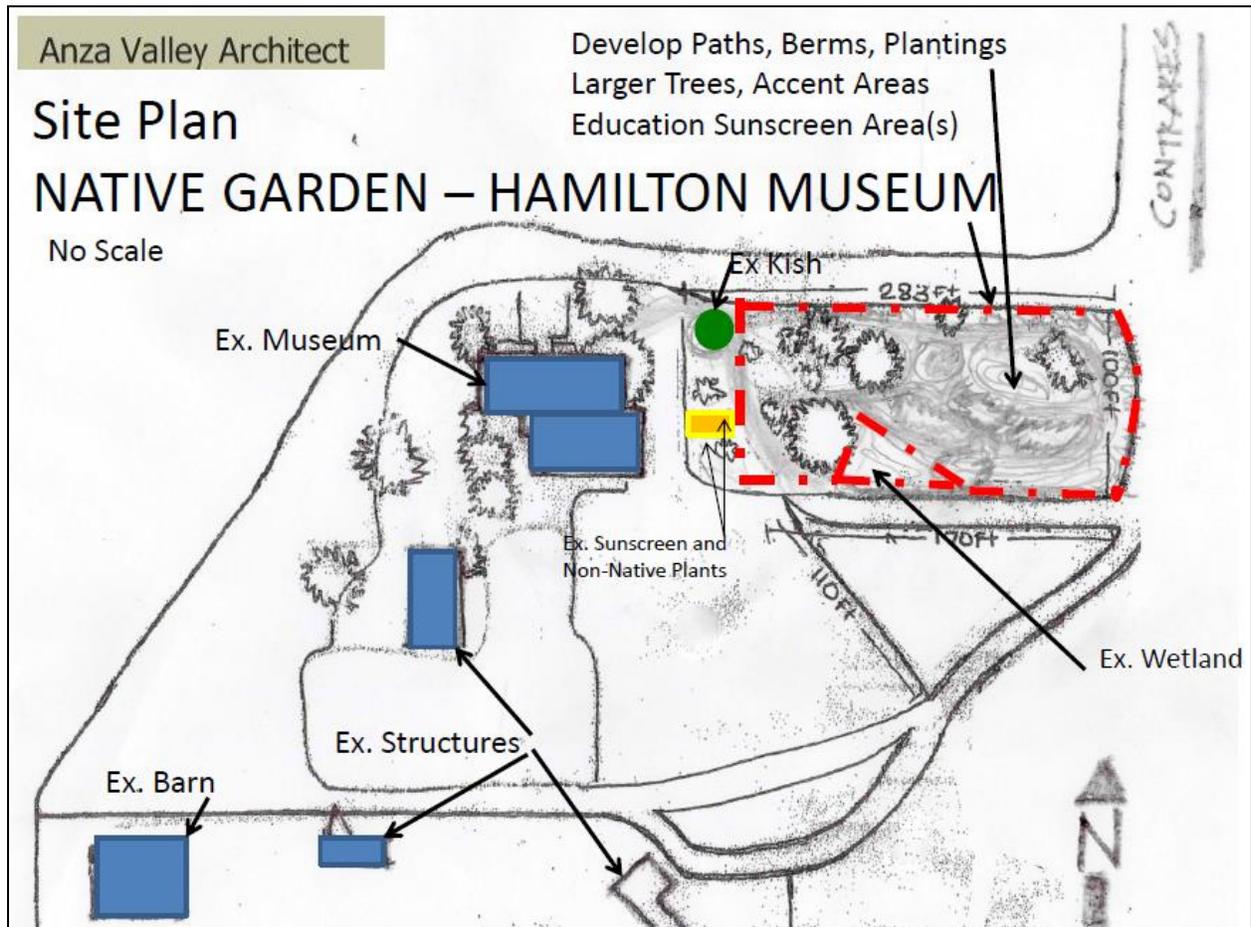


Figure 3-10: Project Site



Native Botanical Garden Project**Work Plan****Proposed Work**

The following sections discuss work items necessary for implementation of the Project. The work items are divided into each of the six primary budget categories and associated tasks as shown on Table 6, pages 33 and 34, of the Proposition 84, Round 2 Implementation Grant PSP. Work is divided into tasks completed before the grant award date (before October 1, 2013) and after the grant award date (after October 1, 2013).

(a) Direct Project Administration Costs**Task 1: Project Administration**

Project administration will be performed by the SCRCDC staff. Project administration tasks will include project coordination, management, and communication. The SCRCDC staff will be responsible for generating all reporting and oversight of fiscal duties. As part of this task, the SCRCDC staff will document matching funds and create invoices and backup documentation that will be submitted to DWR for match funding verification and requesting reimbursements under the Proposition 84 Implementation Grant Program. The SCRCDC staff will also develop a project monitoring and data management plan before completion of the Project under this task.

Table 3-21: Project Administration Activities

Project Administration Activities or Deliverables	Completion Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Project Administration	10/1/2013 – 09/30/2015	Not yet begun		✓
Development of Financing	10/1/2013 – 09/30/2015	Not yet begun		✓
Development of Project Monitoring Plan and Data Management	10/1/2013 – 09/30/2015	Not yet begun		✓

Task 2: Labor Compliance Program

The SCRCDC will keep information and implement measures to ensure compliance with applicable California Labor Code requirements regarding public works, limitations on use of volunteer hours, labor compliance programs and payment of prevailing wages for work done

Native Botanical Garden Project

and funded according to the Labor Compliance Program (LCP) guidelines. The hired project contractor will be required to secure and meet all LCP requirements.

Table 3-22: Labor Compliance Activities

Labor Compliance Program Activities or Deliverables	Completion Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Labor Compliance Program	10/1/2013 – 09/30/2015	Not yet begun		✓

Task 3: Reporting

The SCRDC will submit quarterly progress, final and post-completion reports to the State per grant requirements. Quarterly reports will provide updates on the progress of the Native Botanical Garden Project implementation and the achievement of project benefits. The final report will be submitted to the state after completion of the project construction, public workshops, and 1-year of monitoring/data collection under grant. SCRDC acknowledges post-performance reports are required to be submitted to the State within ninety (90) calendar days after the first operational year of a project has elapsed and annually for a 10-year period.

Table 3-23: Reporting Activities

Reporting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Quarterly Progress Reports	01/31/2014 – 07/31/2015	Not yet begun		✓
Final Report	09/30/2015	Not yet begun		✓

(b) Land Purchase/Easement

The Native Botanical Garden Project site is currently owned by a private owner that has provided a 15-year lease to the Hamilton Museum (see letter included as an appendix to this attachment). The SCRDC, Hamilton Museum, and the High Country Conservancy are in the process of securing a conservation easement. The conservation easement will be secured prior to the award grant date (Oct 1, 2013). The conservation easement will be obtained from the land owner at no cost to the project.

Native Botanical Garden Project

Table 3-24: Land Purchase / Easement Activities

Land Purchase/ Easement Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Conservation Easement	08/31/2012 – 09/30/2013	In Progress	✓	

(c) Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation

As part of the Native Botanical Garden Project a Plant and Soil Analysis will be completed prior to the implementation of the Project. The Plant and Soil Analysis is needed to finalize the planting selections and locations given the existing soil and water quality. This analysis will ensure that the garden will be easily maintained in the local environment.

Table 3-25: Assessment and Evaluation Activities

Assessment and Evaluation Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Plant and Soil Analysis	10/1/2013 – 12/2/2013	Not yet begun		✓

Task 5: Final Design

The following design activities/deliverables will be completed for the proposed Project:

- 10% Conceptual Phase will provide a refined conceptual lay-out of the Project site. These initial design documents are to be used to prepare a Request for Proposal (RFP) for selecting a landscape architect.
- 30% Concept Design Phase will consists of detailed design plans that will be submitted by the selected landscape architect to the SCRDC for approval and to review any value engineering or substitution items.
- 60% Design Phase will consist of further defining the project details necessary. These design plans will be reviewed by the SCRDC and refined in the 90% design.
- 90% Construction Documents will consist of near completed design documents that will be reviewed by the SCRDC. If no major revisions will be needed, these documents will be used for permit submissions.
- 100% Construction Documents will consist of the final project design documentation.

Native Botanical Garden Project

Work Plan

Table 3-26: Final Design Activities

Final Design Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
10% Conceptual Design	10/1/2013 – 11/12/2013	Not yet begun		✓
30% Schematic Design	11/13/2013 – 12/6/2013	Not yet begun		✓
60% Design	12/18/2013 – 01/14/2014	Not yet begun		✓
90% Design	01/15/2014 – 02/12/2014	Not yet begun		✓
100% Design	02/13/2014 – 03/06/2014	Not yet begun		✓

Task 6: Environmental Documentation

The Native Botanical Garden Project is exempt from CEQA and a categorical exemption will be filed prior to award of the grant.

Table 3-27: Environmental Documentation Activities

Environmental Documentation Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
CEQA Categorical Exemption	01/1/2014 – 02/28/2014	Not yet begun		✓

Task 7: Permitting

A site permit may be required from the County of Riverside for construction at the project site. The construction manager/architects will be responsible for submitting required documentation to the County of Riverside, meet with any officials, answer questions, and make any agreed revisions to procure the site permit.

Native Botanical Garden Project

Table 3-28: Permitting Activities

Permitting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Site Permit	01/01/2014 – 04/10/2014	Not yet begun		✓

(d) Construction/Implementation

Task 8: Construction Contracting

The construction contracting for the project will be handled by a SCRCDC staff construction manager and will consist of preparing a bid package, answering bid questions, compiling and evaluating bids, summarizing and recommending a bidder award, and awarding of project contract.

Table 3-29: Construction Contracting Activities

Construction Contracting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Bid Document Package Preparation	02/28/2014 – 03/06/2014	Not yet begun		✓
Contractor Bidding and Evaluation	03/7/2014 – 04/03/2014	Not yet begun		✓
Contractor Award and Contracts	04/04/2014 – 04/10/2014	Not yet begun		✓

Task 9: Construction

The expansion of the native garden will consist of planning local landscape and natural habitat exhibits of the Anza Valley on ½ acre of land. Construction will consist of planting, creating a series of pathways through the botanical garden, installing interpretive signs and identification markers, and the placement of benches and covered areas. The construction subtasks below list project construction work for the Native Botanical Garden Project.

Subtask 9.1 Mobilization and Site Preparation:

No mobilization will be required as part of the Native Botanical Garden Project.

Native Botanical Garden ProjectSubtask 9.2 Project Construction:

Project construction will consist of the following activities:

- Reworking of the soils, amendment and rough grade, and forming the garden beds
- Prepare the soil and install the rock borders for the planting beds
- Construct pathways throughout the botanical garden
- Planting of plant beds, large plantings, and hedges by volunteers
- Install all watering and drip irrigation systems
- Commence landscape replacement
- Install a Photo Voltaic lighting system for pathways
- Install rock or timber exhibit boundary elements
- Install all educational plaques and signs
- Fence the project site boundary
- Install benches, shade structure, and picnic tables

Native Botanical Garden Project

Work Plan

Table 3-30: Project Construction Activities

Construction Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Subtask 9.2 Project Construction				
Soils Rework, Amendment and Rough Grade, Form Garden Beds	04/11/2014 – 06/16/2014	Not yet begun		✓
Prepare Soil and Rock Borders at Beds	04/17/2014 – 06/9/2014	Not yet begun		✓
Plantings in Beds, Larger Plantings and Hedge	06/17/2014 – 07/8/2014	Not yet begun		✓
Pathways	05/13/2014 – 07/8/2014	Not yet begun		✓
Landscape Replacement	06/24/2014 – 07/11/2014	Not yet begun		✓
Watering and Drip Irrigation System	05/6/2014 – 05/19/2014	Not yet begun		✓
Photo Voltaic Lighting System	05/6/2014 – 05/19/2014	Not yet begun		✓
Exhibit Boundary Elements	06/24/2014 – 07/8/2014	Not yet begun		✓
Planting ID Plaques/Signs	06/24/2014 – 07/8/2014	Not yet begun		✓
Fencing at Boundary	06/17/2014 – 07/8/2014	Not yet begun		✓
Benches, Shade Structure, Picnic Tables	05/28/2014 – 07/8/2014	Not yet begun		✓

Native Botanical Garden Project**Work Plan***Subtask 9.3 Performance Testing and Demobilization:*

The Native Botanical Garden Project will not require any demobilization activities.

The High Country Conservancy established a set of site photo points that create a baseline showing the pre-project condition of the Project site's land cover. The High Country Conservancy will develop a program to regularly photograph the same locations to monitor and record progress of garden vegetation.

The High County Conservancy has developed monitoring forms to collect project information at the time the photos are taken. Monitoring at seven photo sites will be done in the Spring and Fall of each year beginning in 2014 throughout the term of the proposed grant agreement.

The SCRCDC staff will also monitor and collect data on the number of people that visit the Hamilton Museum and Native Botanical Garden and participate in the youth and adult workshops and tours. This data will be collected using sign-in sheets at the workshops and tours. The data collected will be used to estimate the exposure of the conservation and educational messaging to the community that will help influence landscaping and water conservation behaviors. Visitation logs can also help determine the recreational value achieved by the Project. Collection of this information will begin with the first tour date.

Table 3-31: Performance Testing Activities

Construction Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Subtask 9.3 Performance Testing and Demobilization				
Project Monitoring	06/14/2014 – 09/30/2015	Not yet begun		✓

Subtask 9.4: Public Outreach, Workshops and Demonstrations

As part of the Native Botanical Garden Project, youth and adult workshops and tours will be held at the garden to teach the public about the local ecosystem and the benefits of native plants to provide water conservation, enhance supply reliability, and habitat protection and creation. Naturalists will work to develop tour scripts and workshop materials in advance. Eight workshops, four for youth and four for adults, are planned to start during construction and through the end of the Project. Multiple public tours will be given to the public on several days during the Project term. Tours will be conducted by volunteers who will be trained by

Native Botanical Garden Project**Work Plan**

naturalists. After the Project is completed, additional workshops and tours will continue to be conducted even after the grant program but are not included in the scope of this Project.

Table 3-32: Public Outreach, Workshops and Demonstration Activities

Public Outreach, Workshops, and Demonstrations Activity or Deliverable	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Public Workshops and Tours	03/30/2014 – 09/30/2015	Not yet begun		✓

(e) Environmental Compliance/Mitigation/Enhancement**Task 11: Environmental Compliance/Mitigation/Enhancement**

Environmental compliance/mitigation/enhancement is not required for implementation of the Native Botanical Garden Project.

(f) Construction Administration**Task 12: Construction Administration**

SCRDC Staff will conduct the construction administration activities including attending Project construction related meetings, reviewing documentation, management of the overall project progress during construction, assist in project accounting, and close out of construction.

Table 3-33: Construction Administration Activities

Construction Administration Activity or Deliverable	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Construction Administration	04/11/2014 – 07/18/2014	Not yet begun		✓

(g) Other Costs

There are no other costs associated with this Project.

Native Botanical Garden Project

Discussion of Standards

The Native Botanical Garden Project will meet all the following construction standards, health and safety standards:

- Occupational Safety and Health Administration (OSHA) will be implemented.
- Prevailing Wage Requirements through the Labor Compliance Program will be followed.
- The Anza Community Beautification and Gardens Volunteer safety standards.

Upper Valle de Los Caballos Recharge Project

Introduction

Rancho California Water District (RCWD) operates a groundwater recharge/recovery facility in the Pauba Valley known as the Valle de Los Caballos Recharge/Recovery Facility (VDCR/RF). The VDCR/RF is frequently referred to by location, with the “Upper” VDC being the easternmost area of the Pauba Valley. RCWD artificially recharges untreated imported water supply from Metropolitan Water District of Southern California (MWD) into this facility. Since 1999, RCWD has recharged an average of approximately 20.4 cfs (~ 15,000 AFY) of untreated imported water into five existing Upper VDC recharge ponds. Over the same period, an average of 12.0 cfs (~8,600 AFY), or 60% or recharge, has been recovered from the four (4) existing Upper VDC production wells. The remaining recharged water moves beyond the local recovery system down gradient to additional RCWD offsite production wells where the remaining recharged water is recovered offsite of the VDCR/RF.

Groundwater recharge and recovery is a critical part of RCWD’s overall groundwater management and water supply strategy, and is expected to become even more critical in future years with increasing demand and increasing uncertainty in water supply reliability. As such, RCWD embarked upon a strategic plan to optimize the operation of its VDCR/RF. The *Upper VDC Conjunctive Use Optimization Study Final Report* (Optimization Study), completed in May 2012, outlines a preferred program for increasing production and optimizing recovery and recharge operations.

The recommended groundwater recovery and recharge program, in its ultimate configuration, set forth in the Optimization Study would increase recharge rates from 20.4 cfs (~15,000 AFY) to 60 cfs (~43,000 AFY), with models indicating a 60% recovery rate at the Project site. The remaining 34% recharge will be recovered for use with down gradient wells with 6% banked in the groundwater basin, as part of a water resource management strategy.

Project Description

The improvements described in this grant application (Upper VDC Project) for the VDCR/RF is one component of the overall Program outlined in the Optimization Study to improve the overall sustainability of RCWD’s groundwater supply. The Upper VDC Project, shown in **Figure 3-11**, involves implementation of several improvements identified in Phase 2 of the Optimization Study and would increase RCWD’s current groundwater recharge capacity by an additional 4.5 cfs (3,250 AFY). The Project site location in relation to water facilities and waterways is shown in **Figure 3-12**. Note that Project monitoring will take place on site.

Project improvements, described in more detail in the “Proposed Work” section, include:

- Modifications to existing berms and well pad construction
- Modifications to pond discharge piping
- Construction of a new production well (Well No. 161)

Upper Valle de Los Caballos Recharge Project

- Construction of well discharge piping

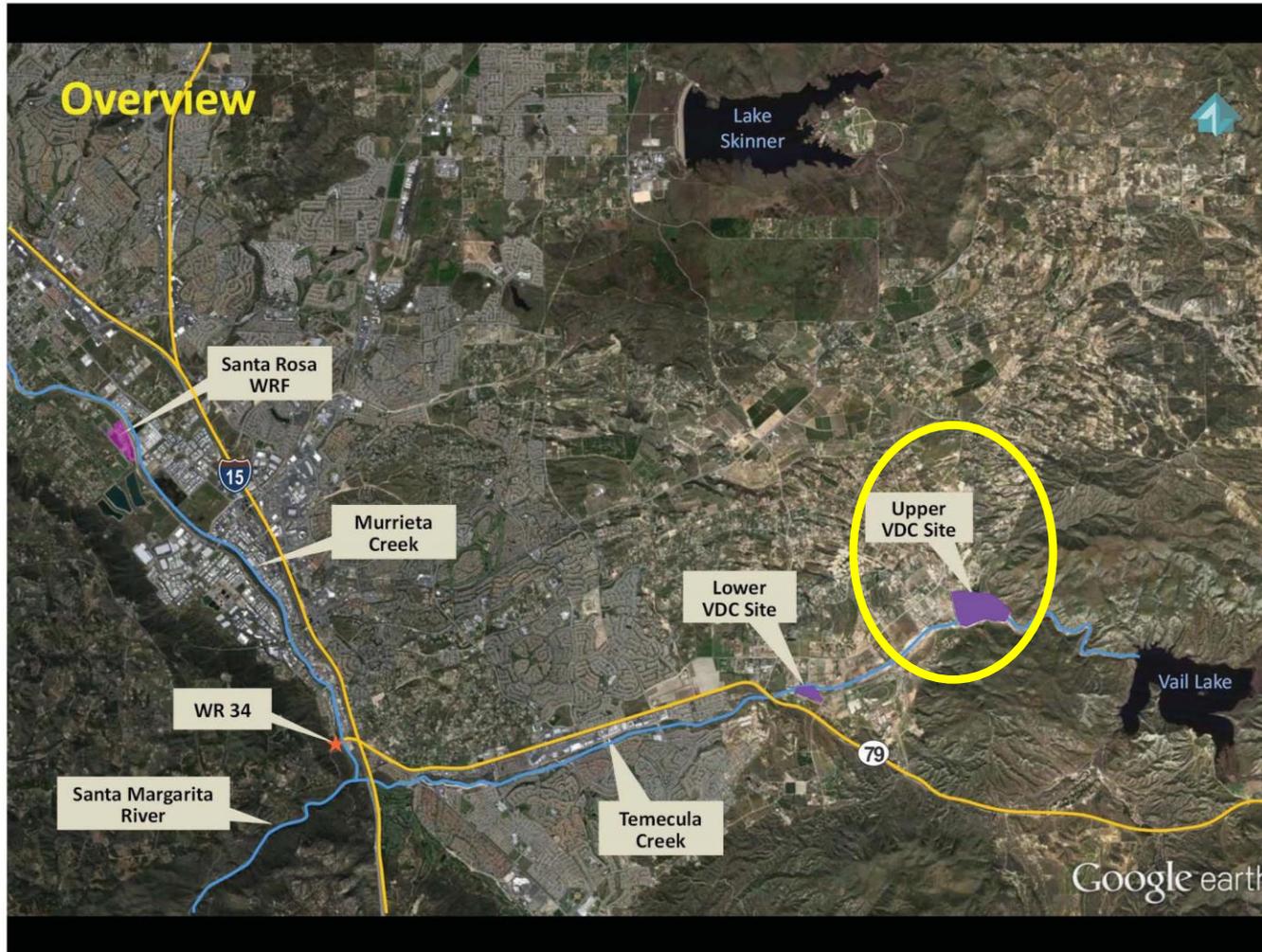
Proposition 84 grant funding is being requested to help pay for the construction of the new production well (Well No. 161). RCWD has committed matching funds to pay for all other necessary project tasks.

Implementation of the Upper VDC Project would yield multiple benefits:

- The Project would maximize the use of RCWD's existing untreated imported water supply capacity and reduce RCWD's dependence on treatment capacity of that supply. This would result in a significant cost savings to RCWD as the District's VDCR/RF and down gradient wells result in a lower cost operation.
- The Project would improve the overall sustainability incorporating RCWD's groundwater basin capacity and therefore reducing the threat of short-term water shortage impacts with the long-term groundwater storage.
- The Project would provide water quality benefits by diluting the impacts of agricultural drainage water and other degraded water sources through the introduction of higher quality, lower TDS water into the basin.
- The Project also optimizes the efficiency with increased production from existing facilities.

Upper Valle de Los Caballos Recharge Project

Figure 3-12: Regional Project Area



Upper Valle de Los Caballos Recharge Project

Project Timing and Phasing

The VDCR/RF improvements planned are described in the aforementioned Optimization Study, which is included in Appendix C. The Optimization Study presents the improvements to occur in four phases that will ultimately increase RCWD's ability to recharge raw imported water from an average of 20.4 cfs as of 2010 to a maximum of 60 cfs (~43,000 AFY) by 2043 should all four phases be completed.

All four phases of the VDC Project provide an independent increment of recovery:

- Phase 1 of the VDCR/RF improvements is substantially complete. This phase focused on increasing recharge and recovery through modification and upgrade of existing VDCR/RF wells and disinfection facilities to increase recharge to 25 cfs.
- Phase 2 of the VDCR/RF improvements involves implementing various improvements to increase the recharge rate to 30 cfs up to 40 cfs, depending on the number of wells constructed. The Upper VDC Project referred to in this application includes construction of one of the three proposed wells projected for this Phase, as well as modifications to the berms and the construction of various piping improvements. These improvements for the Upper VDC Project alone are expected to yield an additional 4.5 cfs of recharge capacity.
- Phases 3 and 4 of the VDCR/RF improvements include construction of additional wells, chlorine contact tank, centralized treatment and other facilities necessary to complete VDCR/RF improvements for an optimized recharge and recovery operation at 60 cfs recharge.

The Upper VDC Project (improvements described in this grant application) will be fully functional without having to implement the other Upper VDC phases, and can independently provide the added benefit of recharge and recovery of water supplies from MWD. Work on this Project has already been initiated to facilitate construction of Well No. 161 (the project element for which RCWD is seeking grant funding). Well No. 161 is planned for design to begin in July 2015 and construction in July 2016. The Project is anticipated to be complete by December 2017.

Project Partners

RCWD is the sole implementing agency for the Upper VDC Project.

Goals and Objectives

The project goals and objectives are identified in the following table.

Upper Valle de Los Caballos Recharge Project

Table 3-34: Project Goals and Objectives

Project Goals	Project Objectives
Decrease imported supply costs	<ul style="list-style-type: none"> • Reduce need for higher-cost <i>treated</i> imported supply from MWD by maximizing the recharge and recovery of lower-cost <i>untreated</i> imported water supply.
Improve supply reliability	<ul style="list-style-type: none"> • Improve overall sustainability of RCWD's groundwater supply by increasing long-term storage through groundwater recharge, thereby reducing the impact of short-term water supply shortages. • Increase access and local control of supply treatment.
Improve groundwater quality	Improve groundwater quality at the downstream end of the basin by diluting the impacts of agricultural drainage water and other degraded water sources through the introduction of higher quality, lower TDS water into the basin.

Project Need

RCWD currently depends on imported water from the Sacramento-San Joaquin Delta and the Colorado River, supplied by the MWD and both EMWD and WMWD for over 60 percent of its water needs. Recently, there have been significant reductions in these imported water supplies due to recent drought conditions in northern California, ongoing drought conditions in the Colorado River watershed, and from regulatory actions and court decisions that have reduced exports from the Sacramento-San Joaquin Delta. In addition, the effects of climate change may make future imported water supplies even less reliable.

Although RCWD does plan to further develop local supplies to offset imported water use, it is understood that a significant amount of imported water supply will still be needed to meet RCWD demands. As such, RCWD also needs to implement projects that will increase the reliability of that imported supply.

Since 1999, RCWD has recharged an average of approximately 20.4 cfs of untreated imported water in the five Facility recharge ponds. Over the same period, an average of 12.0 cfs (60% of recharge) has been able to be recovered from existing Upper VDC production wells. The remaining recharged water bypasses the local recovery system and migrates down gradient to additional RCWD offsite production wells where an additional portion is recovered and banked. There is a need and opportunity to improve the recovery rate of the recharged supply to provide increased local supply to RCWD.

RCWD purchases treated Tier 1 and Tier 2 imported water to meet whatever system demands are in excess of what can be produced and served from local groundwater, surface water or

Upper Valle de Los Caballos Recharge Project

recycled water supplies. There is a potential for significant cost savings if some of that imported supply could be purchased as untreated raw supply and recharged and/or treated locally.

The Pauba Basin has high TDS levels as called out in the *Groundwater Basin Assimilative Capacity*, an assessment of local groundwater basins for the proposed Temecula Valley Wine Country Development (RCWD, 2012) (see **Appendix C**). RCWD is currently completing a Salt and Nutrient Management Plan for the Temecula Valley Basin that looks at opportunities to decrease TDS level in the basin. It should be noted that the Temecula Valley Basin includes two aquifers – the Pauba aquifer and the Temecula aquifer – and eight underlying groundwater subbasins. The Pauba aquifer covers approximately 18 square miles, while the Temecula aquifer extends over an area of approximately 100 square miles.

Project Purpose

The purpose of the Upper VDC Project is to optimize groundwater recharge and recovery and allow for increased production of potable water and improved operations.

The Upper VDC Project will increase the ability for RCWD to recharge untreated imported water and optimize the existing Upper VDC Facility. This will offset the use of treated imported supplies that are purchased at a much higher rate as well as increase the reliability of that imported supply by maximizing the seasonal and longer-term storage potential that exists in the Pauba Basin. By reducing the need for imported water treatment, the Project will allow RCWD to maintain more local control improving both cost and reliability.

The Upper VDC Project will also provide RCWD a means to further optimize and maximize the existing Upper VDC facilities by improving the recharge potential of the spreading basins as well as improving the recovery rate of the recharged supplies by adding a local production well.

Given the high TDS associated with the Pauba Basin, the increased recharge of lower TDS supplies (such as imported water) into the basin will help to dilute and thereby reduce TDS levels to improve groundwater quality.

Integrated Elements of Project

The proposed Upper VDC Project is a project listed in the 2007 Upper Santa Margarita Watershed IRWM Plan (IRWM Plan). RCWD adopted the 2007 IRWM Plan on July 31, 2007 and the IRWM Plan Project List was recently updated and approved in November 2012, which includes the Upper VDC Project. RCWD is also an active participant in the 2014 IRWM Plan Update. The Upper VDC Project will help address four of nine 2007 IRWM Plan objectives. **Table 3-35** below provides an overview of the 2007 IRWM Plan objectives that will be addressed through implementation of the Upper VDC project.

Upper Valle de Los Caballos Recharge Project

Table 3-35: Contribution to the IRWM Plan Objectives

	Objective 1: Develop a more reliable and diverse portfolio of water supplies	Objective 2: Promote economic, social, and environmental sustainability	Objective 3: Improve water quality	Objective 4: Restore, enhance and maintain habitats and open space	Objective 5: Promote sustainable floodplain management	Objective 6: Promote appropriate recreational opportunities	Objective 7: Promote appropriate land use planning	Objective 8: Increase stakeholder involvement and stewardship	Objective 9: Maximize implementation of water resources projects
Upper VDC Project	X	X	X						X

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

- Objective 1:** *Develop a More Reliable and Diverse Portfolio of Water Supplies*
The project will offset an additional increment of purchased treated imported supply with more reliable untreated imported water supply. Reliability is further enhanced given that these supplies can be purchased and stored during times with higher availability and used at times with greater demand and lower availability by storing it in the local groundwater aquifer.
- Objective 2:** *Promote Economic, Social, and Environmental Sustainability*
This project will decrease the overall cost and energy required to supply water to RCWD customers by decreasing treatment needs.
- Objective 3:** *Improve Water Quality*
This project will increase the amount of lower TDS water that will be recharged into the Pauba Basin and as a result will further dilute and decrease the concentrations of TDS within the basin.
- Objective 9:** *Maximize Implementation of Water Resources Projects*
The project is ready to implement, has a very high likelihood of success through the construction of a new production well, will result in long-term benefits, and is eligible for federal, state, and regional grants.

Completed Work

RCWD has completed and/or is currently working on several aspects of the Upper VDC Project.

Upper Valle de Los Caballos Recharge ProjectAdministrative Work

RCWD's Labor Compliance Program was approved by the Department of Industrial Relations in September 2012 (see **Appendix C**).

Planning Work

As stated previously, the *Upper VDC Conjunctive Use Optimization Study Final Report* (Optimization Study) was completed in May 2012. This Optimization Study outlined the recommended project, facility requirements and planning level costs for the project (see **Appendix C**).

Design Work

RCWD has initiated design work on several project elements:

- In October 2012, RCWD approved a contract with an outside engineering firm to complete the preliminary design of various pipeline and flow control improvements for the Upper VDC project, including a new berm, regrading the recharge pond bottoms, new pond discharges, a 36" raw water pipeline and a 24" treated water pipeline. A copy of this contract and scope of work is included as **Appendix C**.
- In December 2012, RCWD approved a contract with an outside engineering firm to complete the final design of various pipeline and flow control improvements for the Upper VDC project, including: (1) design of 1,800 LF of 36" diameter raw water pipeline; (2) design of 1,000 LF of 24" diameter treated water pipeline to be routed from new Well 161 site to an existing transmission line; (3) design of four new pond flow control stations; and (4) design for relocation of an existing flow control station. A copy of this contract and scope of work is included as **Appendix C**.
- In January 2013, RCWD approved a contract with an outside engineering firm to complete the final design of various grading improvements associated with the Upper VDC project, including: (1) design of new berm; (2) regrading recharge pond bottoms to direct recharge closer to recovery wells; (3) grading for new Well No 161; and (4) extending pads for five other wells. A copy of this contract and scope of work is included as **Appendix C**.

Environmental Compliance Work

In 1984, RCWD adopted an Initial Study/Negative Declaration for a Supplemental Water Supply Program (SWSP) which consisted of pumping and using local groundwater, then recharging the groundwater with rainwater and imported water. The IS/ND found that the project development would not result in significant unavoidable impacts, and the existing Upper VDC groundwater recharge and recovery facilities were later constructed. As the Upper VDC project

Upper Valle de Los Caballos Recharge Project

is proposing modifications to these facilities, including construction of a new well, RCWD prepared an Addendum to the original IS/MND. The Draft CEQA Addendum, included as **Appendix C**, was approved by RCWD Board of Directors in March 2013.

Existing Data and Studies

Pertinent data and studies relating to the Upper VDC Project have been included in **Appendix C**

- RCWD's *Upper VDC Conjunctive Use Optimization Study Final Report* completed in May 2012.
- Labor Compliance Program Approval
- Upper VDC Preliminary Design Contract
- Upper VDC Pipeline and Flow Control Final Design Contract
- Upper VDC Grading Improvements Final Design Contract
- Draft CEQA Addendum
- Groundwater Basin Assimilative Capacity, an assessment of local groundwater basins for the proposed Temecula Valley Wine Country Development

Upper Valle de Los Caballos Recharge Project

Proposed Work

The following sections discuss work items necessary for implementation of the project. The work items are divided into each of the six primary budget categories and associated tasks as shown on Table 6, pages 33 and 34, of the Proposition 84, Round 2 Implementation Grant PSP. Work is divided into tasks completed before the grant award date (before October 1, 2013) and after the grant award date (after October 1, 2013).

(a) Direct Project Administration Costs

Task 1: Project Administration

General Project Administration will include overall project coordination, project management, communication with project team, project meetings, etc. As construction activities are completed for the Upper VDC Project, RCWD staff will collect invoices from and pay contractors for labor and materials. RCWD will also generate summary reports showing all expenditures for the project including work performed by the contractor and RCWD employees. RCWD employees will document matching funds, create invoices, and backup documentation that will be submitted to DWR for match funding verification and requesting reimbursements under the Proposition 84 Implementation Grant Program.

Table 3-36: Project Administration Activities

Project Administration Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Project Administration	Ongoing through January 2018	In progress	✓	✓
Development of Financing	November 2015 – February 2016	Not Yet Begun		✓
Development of Project Monitoring Plan and Data Management	February 2016	Not Yet Begun		✓

Task 2: Labor Compliance Program

Effective September 10, 2012, the State of California granted RCWD approval of a Labor Compliance Program in accordance to Title 8 of the California Code of Regulations Section 16425 including projects subject to the requirements of Section 75075. RCWD will comply with applicable Labor Compliance provisions through the course of this Project.

Upper Valle de Los Caballos Recharge Project

Table 3-37: Labor Compliance Activities

Labor Compliance Program Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Labor Compliance Program Approval (ID: 2012.01123)	Approved September 2012	Complete	✓	
Labor Compliance Monitoring	July 2016 – January 2018	Not Yet Begun		✓

Task 3: Reporting

RCWD will submit quarterly progress, final and post-completion reports to the State per grant requirements. Quarterly reports will provide updates on the progress of project implementation and the achievement of project benefits.

Table 3-38: Reporting Activities

Reporting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Quarterly Progress Reports (QPR)	October 2013- January 2018	Not yet begun		✓
Final Report	January 2018	Not yet begun		✓

(b) Land Purchase/Easement

The modification of berms, new recharge piping and new groundwater production well (Well No. 161) will be located at an existing VDCR/RF site. The Upper VDC Project will not require purchase of land or acquisition of right-of-ways as the property belongs to RCWD.

(c) Planning/Design/Engineering/Environmental Documentation**Task 4: Assessment and Evaluation**

This task is not applicable. As discussed previously, the Upper VDC Conjunctive Use Optimization Study Final Report was completed in May 2012 (see **Appendix C**). No additional planning tasks are required for this Project.

Upper Valle de Los Caballos Recharge Project

Table 3-39: Assessment and Evaluation Activities

Assessment and Evaluation Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Upper VDC Conjunctive Use Optimization Study	Completed May 2012	Complete	✓	

Task 5: Project Design

RCWD already has initiated some design efforts for the Upper VDC project already, including design of a berm, various pipelines, flow control stations and grading improvements. As part of this project, RCWD will also completing the design for a new production well (Well 161).

Table 3-40: Project Design Activities

Project Design Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Preliminary Design Upper VDC Project – Pipeline/Grading	Completed 2012	Completed	✓	
Final Design of Pipeline and Flow Control Improvements	January 2013- March 2013	In progress	✓	
Final Design of Grading Improvements	January 2013 – March 2013	In Progress	✓	
Design of Well 161	July 2015 – February 2016-	Not yet begun		✓

This task would include the preparation of 30%, 60%, 90% and Final Design documents for design and equipping a new production well (Well 161). The task would include:

- Confirming the basis of design and design criteria;
- Performing design analysis and calculations;
- Preparation of standard specifications;
- Preparation of plans including applicable general, civil, mechanical, geotechnical, structural, electrical and standard detail design sheets;
- Preparation of construction cost estimates;
- Review and approval of the design documents; and
- Final sign-off on Plans and Specifications.

RCWD Water System Facilities Requirements and Design Guidelines will be adhered to for project design.

Upper Valle de Los Caballos Recharge Project

Task 6: Environmental Documentation

This task is not applicable. As discussed previously, RCWD approved a CEQA Addendum for the Upper VDC project on March 14, 2013 (see **Appendix C**). No additional environmental documentation tasks are required for this Project.

Table 3-41: Environmental Documentation Activities

Environmental Documentation Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
CEQA Addendum	1/2/2013-3/14/13	Complete	✓	

Task 7: Permitting

This task will obtain a Water Supply Permit Amendment – which is required by CDPH for the operation of any new supply facility.

Table 3-42: Permitting Activities

Permitting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Water Supply Permit Amendment	June 2017 – August 2017	Not yet begun		✓

(d) Construction/Implementation**Task 8: Construction Contracting**

The construction contracting for the project will be handled by RCWD staff in compliance with public contracting code. A contractor will need to be hired to drill and equip Well 161. This task includes all activities necessary to secure a contractor and to award the contract, including: advertisement for bids, a pre-bid meeting, bid opening, bid evaluations, selection of contractor, board approval, award of contract, and notice to proceed.

Upper Valle de Los Caballos Recharge Project

Table 3-43: Construction Contracting Activities

Construction Contracting Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Preparation of Bid Package	April 2016 – June 2016	Not yet begun		✓
Bid Award	July 2016	Not yet begun		✓

Task 9: Construction*Subtask 9.1 Mobilization and Site Preparation:*

Mobilization for the project will include moving the required equipment and materials onto the sites in preparation for construction. This includes mobilization of trailers, staff and staging equipment as well as mobilization of the drill rig.

Subtask 9.2 Project Construction:

This task involves construction of the following improvements:

- **Berm Modification and Well Pad Construction.** One (1) new berm will be constructed and the bottoms of the recharge ponds will be regraded to direct recharge closer to the recovery wells. A pad for new Well 161 will be graded and the pads for five other wells will be extended.
- **Pond Discharge Piping Modifications.** The contractor will install 1,800 LF of new 36" diameter raw water piping along the southern and eastern portions of the recharge ponds. In addition, four (4) new flow control stations will be installed.
- **Well Installation.** The contractor will drill a new well (Well 161) with well casing and will equip it with a pump, motor and appurtenant equipment.
- **Well Discharge Piping Construction.** The contractor will install 1,000 LF of new 24" diameter treated water piping from Well 161 to an existing transmission pipeline.

It should be noted that the magnitude of the flow control, berm and grading work described above takes into consideration the needs of the Upper VDC Project as well as future phases of the overall groundwater recharge program. In addition, the 36" diameter raw water pipe is purposely being oversized to accommodate the ultimate project. Attachment 8 describes the approach taken for the cost/benefit analysis given that some of the costs that will be incurred for this Project are for the benefit of future phases.

Upper Valle de Los Caballos Recharge Project

Subtask 9.3 Performance Testing and Demobilization:

This task will involve demobilization of the construction equipment, as well as the disinfection of the new well and piping and testing the water system for compliance with the California Department of Public Health (CDPH) drinking water guidelines.

Table 3-44: Project Construction Activities

Construction Activities or Deliverables	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Subtask 9.1 Mobilization and Site Preparation				
Mobilization and Site Preparation	July 2016	Not yet begun		✓
Subtask 9.2 Project Construction				
Berm Modifications and Pipeline Installation	January 2013 – October 2013	In Progress	✓	
New Well (Well 161)	July 2016 – June 2017	Not yet begun		✓
Subtask 9.3 Performance Testing and Demobilization				
Disinfection of New Well and Piping	December 1, 2017 – December, 15 2017	Not yet begun		✓
Testing and Compliance with CDPH Drinking Water Guidelines	December 18, 2017 – December 22, 2017	Not yet begun		✓
Demobilization	December 25, 2017 – January 1, 2018	Not yet begun		✓

(e) Environmental Compliance/Mitigation/Enhancement**Task 10: Environmental Compliance/Mitigation/Enhancement**

Environmental compliance/mitigation/enhancement is not required for implementation of the Upper VDC Project.

(f) Construction Administration**Task 11: Construction Administration**

RCWD Staff will conduct the construction administration activities which will consist of oversight during the construction process.

Upper Valle de Los Caballos Recharge Project

Table 3-45: Construction Contracting Activities

Construction Contracting Activity or Deliverable	Schedule	Status	Completion	
			Before Oct 2013	After Oct 2013
Construction Administration	July 2016 – August 2017	Not yet begun		✓

(g) Other Costs

Not applicable.

Discussion of Standards

RCWD will inspect the project to meet all the following construction standards, health and safety standards, laboratory analysis, and classification methods:

- RCWD Water System Facilities Requirements and Design Guidelines will be adhered to for project design.
- American Water Works Association materials standards will be used for project material design and acquisition.
- Occupational Safety and Health Administration (OSHA) will be implemented.
- Prevailing Wage Requirements through the Labor Compliance Program will be followed.

Implementing Nutrient Management in the Santa Margarita River Watershed – Phase II

IMPLEMENTING NUTRIENT MANAGEMENT IN THE SANTA MARGARITA RIVER WATERSHED – PHASE II

Introduction

The *Implementing Nutrient Management in the Santa Margarita River (SMR) Watershed – Phase II* project (SMR Nutrient Project) included in this funding application is an interregional project being implemented jointly by the Upper Santa Margarita IRWM Region and the San Diego IRWM Region. Although the Upper Santa Margarita IRWM Region is a full partner and benefits will accrue across watershed boundaries to both regions, the entire project work plan, budget, and cost/benefit analysis for the project have been included in the San Diego IRWM Region’s funding application in order to simplify project administration and contracting. However, since the USMW IRWM Region benefits from the interregional project and meets Program Preferences identified in the Proposition 84 Guidelines, Attachment 9 Program Preferences of this application includes the SMR Nutrient Project.

The San Diego Funding Area maintains an agreement among the Regional Water Management Groups (RWMGs) to equitably allocate the Funding Area’s Proposition 84 funds. Consequently, the Upper Santa Margarita RWMG has committed both grant funds (per the aforementioned agreement) and matching funds to support this interregional project. **Appendix C** includes a letter from the San Diego IRWM Program Manager that explains and supports the interregional project.

Included as follows are the SMR Nutrient Project *Description, Goals and Objectives, Need, Integrated Elements of the Project, Completed Work, and Project Partners* for project understanding and reference to evaluate Program Preferences in Attachment 9. The Project Work Plan (tasks) is detailed in the San Diego IRWM Region application.

Project Description

Nitrogen and phosphorous loading from the SMR Watershed can result in low DO and increased algal blooms in the estuary and stream segments, several of which have been 303(d)-listed for nitrogen, phosphorus, or eutrophication. Total Maximum Daily Loads (TMDLs) are not currently in place in most of the SMR Watershed segments which are listed for nutrient impairment. However, TMDLs are likely to be instituted in the near future. As there is little scientific knowledge about the appropriate level of nutrients that the SMR can sustainably assimilate, the TMDLs would be based on a generalized approach if no actions are taken.

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The SMR Nutrient Project aims to establish the science and seek stakeholder consensus to develop nutrient water quality goals that are protective of beneficial uses and could be employed in the development of alternative nutrient water quality objectives (WQOs) for the SMR Watershed in response to the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) Triennial Update. This is the second phase of work, which consists of continued stakeholder facilitation and continued monitoring, modeling, and data analyses to determine nutrient water quality goals. The project leverages an investment of over \$2 million in data collection and other resources contributed by watershed stakeholders and partners.

Project Goals and Objectives

The project goals and objectives are identified in Table 3-46.

Table 3-46: Project Goals and Objectives

Project Goals	Project Objectives
Maximize community involvement in the SMR watershed	<ul style="list-style-type: none"> Continue ongoing stakeholder group facilitation (established in Phase I)
Achieve consensus on the nutrient water quality goals	<ul style="list-style-type: none"> Continue work with the stakeholder group to obtain feedback and critical review of technical work products
Develop the nutrient water quality goals or nutrient numeric targets for the SMR	<ul style="list-style-type: none"> Continue core monitoring and special studies needed to address data gaps Further refine proposed nutrient water quality goals developed in Phase 1 for the SMR Estuary, if necessary Develop nutrient water quality goals for the SMR River as needed based on the Nutrient Numeric Endpoints (NNE) approach and local data that are protective of beneficial uses

Project Need

The SMR Nutrient Project benefits the SMR watershed and the region by providing scientifically-based nutrient water quality goals that will ultimately conserve water and control eutrophication. Stakeholders believe that since the estuary through which the SMR flows is open to the ocean during the winter (the wet season), nutrients in the river only have a short residence time before they enter the ocean. This effort will counteract hydromodifications and lead to improved protection and restoration of habitat and open space, optimize water-based

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recreational opportunities, and enhance the maintenance of water resources. Within the region, the project will further the technical foundation of water management by demonstrating a science-based approach to establishing nutrient water quality goals that can be developed jointly with the regulatory agencies. If warranted by the results, the scientific studies will provide the underpinnings necessary to support Nutrient Site-Specific Objectives (SSOs) that require a Basin Plan amendment. This effort will serve as a template for similar efforts within the region.

The SMR Watershed provides the greatest remaining expanse of largely undisturbed riparian corridor in coastal southern California. The lower 27 miles of the watershed, comprised of the main river channel and its estuary, is dominated by federal and state land ownership. Consequently, this watershed serves as valuable habitat, providing a home for 1,000 known species, including seven federal or state listed endangered or threatened species, and more than 60 other species listed by the state and other groups as having special concern. Of increasing concern, however, is that the lower watershed is vulnerable to impacts accompanying development and large-scale land use changes upstream. The upper watershed, drained by Temecula and Murrieta Creeks, includes some of the fastest urbanizing areas in the state. This development pressure increases the potential for additional point and nonpoint pollutant loading to the SMR Watershed.

Nitrogen and phosphorous loading from the SMR Watershed can result in low dissolved oxygen (DO) and increased algal blooms in the estuary and stream segments, several of which have been 303(d)-listed for nitrogen, phosphorus, or eutrophication. California's *2010 Integrated Report (Clean Water Act Section 303(d) / 305(b) Report)*³ lists the following segments of SMR as impaired for nutrients:

- The SMR Estuary (28 acres) is listed as impaired by eutrophication.
- The Upper SMR (18 mi) from its start at the confluence of Temecula and Murrieta Creeks down to De Luz Creek is listed as impaired by phosphorus.
- The Lower SMR (19 miles) from De Luz Creek to the Estuary is listed as impaired by phosphorus and total nitrogen as N.

A nutrient TMDL for Rainbow Creek, a tributary of the SMR, was completed and adopted on February 9, 2005⁴ to address elevated nutrient concentrations that have caused excessive algal growth in portions of the creek.

³ SWRCB, 2010, http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml

⁴ SDRWQCB, 2009, http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/rainbowcreek.shtml

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Addressing nutrient loading, low DO, and algal blooms requires use of appropriate water quality objectives (WQOs) based on the level of nutrients a waterbody can sustainably assimilate. This level varies greatly due to site-specific factors such as hydrology, shading, and temperature, which modulate biological response to nutrients. Current N and P WQOs in the *Water Quality Control Plan for the San Diego Basin*⁵ are problematic, in part, because they do not consider site-specific factors. The NNE framework, an alternative regulatory approach advocated by the State Water Resources Control Board (SWRCB) staff and U.S. Environmental Protection Agency (USEPA), is currently under development. The SMR Nutrient Project will provide data and modeling results that can be used to address data gaps inherent in the NNE framework. The project will result in proposed nutrient water quality goals for the SMR River and selected tributaries that are protective of beneficial uses and can support efforts directed at refining nutrient WQOs for the watershed.

Depending upon the results of the studies, it is possible that a broader range of discharges to the SMR River may be naturally sustained, such as recycled water, if the nutrient levels are protective of the beneficial uses.

Integrated Elements of Project

The SMR Nutrient Project addresses four of nine 2007 IRWM Plan objectives as shown in Table 3-47.

Table 3-47: Contribution to the IRWM Plan Objectives

	Objective 1: Develop a more reliable and diverse portfolio of water supplies	Objective 2: Promote economic, social, and environmental sustainability	Objective 3: Improve water quality	Objective 4: Restore, enhance and maintain habitats and open space	Objective 5: Promote sustainable floodplain management	Objective 6: Promote appropriate recreational opportunities	Objective 7: Promote appropriate land use planning	Objective 8: Increase stakeholder involvement and stewardship	Objective 9: Maximize implementation of water resources projects
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⁵ SDRWQCB, 1994, http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/

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The SMR Nutrient Project contributes to the IRWM Plan objectives in the following ways:

- **Objective 2: Promote economic, social, and environmental sustainability**

The Project will promote environmental sustainability by significantly reducing pollution in impaired waters and sensitive habitat areas and improved water quality standards that drain into the SMR. The Project supports components of the region's multi-species habitat conservation plan.

- **Objective 3: *Improve water quality***

The Project will utilize and expand the existing watershed-wide hydrology and water quality database, leveraged from existing partnerships, to further obtain, manage, and assess water resource data and information. As a result, the Project will contribute measurably to the long-term attainment and maintenance of water quality in the SMR.

Consistent with RWQCB Basin Plan Triennial Review priorities to evaluate surface water nutrient WQOs (tier 1 priority) and consider seasonal variation of WQOs (tier 2 priority), this project will scientifically support the development of proposed numeric targets for the SMR River using new and existing water quality data. This work is the logical next step to the work conducted under Phase I. Once established, the proposed numeric targets can be used to support development of SSOs, Total Maximum Daily Loads (TMDLs), or other acceptable alternate approaches to compliance for the SMR Estuary and Watershed. Furthermore, the project will demonstrate an innovative approach to establishing nutrient water quality goals that are protective of beneficial uses by employing open source models, publishing results in peer-reviewed scientific literature, and making presentations to stakeholders, thus improving the technical foundation of water management.

- **Objective 4: *Restore, enhance and maintain habitat and open space***

The Project will preserve, enhance and maintain the habitat within the Santa Margarita River and Estuary, and supports implementation of the region's multi-species habitat conservation plan. The Project also enhances and maintains sensitive habitat areas of the SMR.

- **Objective 8: *Increase stakeholder involvement and stewardship***

Stakeholder involvement is central to the goals of this project. The effort would maximize stakeholder involvement in all aspects of the project, fostering a sense of stewardship and consensus to further watershed management goals. The stakeholder

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group will continue to guide project objectives, identify data gaps, review technical outcomes, and recommend nutrient water quality goals for the SMR River that are protective of beneficial uses and that include protecting current habitats.

The SMR Nutrient Project also has synergies or linkages with a number of other policy, planning, or implementation activities within the USMW and San Diego IRWM regions:

- SMR River conjunctive use project (received Prop 50 funding through San Diego IRWM)
- San Diego Lagoon TMDL Project (received Prop 50 funding through SCCWRP);
- Technical Support for Estuarine Nutrient Numeric Endpoint (SWRCB funded project to SCCWRP)
- Water Augmentation Study (proposed by U.S. Bureau of Reclamation in USMW IRWM Region);
- Murrieta Creek Phase II (proposed by RCFC&WCD in USMW IRWM Region)
- Murrieta Creek Phases III and IV (proposed by RCFC&WCD in USMW IRWM Region)
- San Mateo Creek Fish Habitat Restoration (proposed by EMARCD partnered with Trout Unlimited in USMW IRWM Region)
- Reclaim and Recycled Anza Farming Irrigation Runoff Water and Other Nearby Contaminated Water (proposed by Anza/Aguanga DAC Group in USMW IRWM Region)
- Agricultural Waiver Project (proposed by RCWD in USMW IRWM Region)
- Sustainable Agriculture (proposed by RCWD in USMW IRWM Region)
- River Salt and Nutrient Groundwater Management Plan (received Prop 84 funding)
- Implementation of Wildomar Master Drainage Plan (proposed by RCFC&WCD in USMW IRWM Region)
- Retrofit Public Property with Water Quality Measures (proposed by RCFC&WCD in USMW IRWM Region)
- Stream Restoration (SMR Watershed) for Steelhead Trout (proposed by Trout Unlimited in USMW IRWM Region)
- Agricultural Lands Stewardship (proposed by EMARCD in USMW IRWM Region)

Efforts contributed by watershed stakeholders and other partners since 2007 include:

1. Previous and ongoing monitoring by United States Marine Corps (USMC) Camp Pendleton in the lower SMR River and the SMR Estuary
2. Development of an SMR Estuary Model by Camp Pendleton
3. Development of the Salt and Nutrient Management Plans by USMC Camp Pendleton, Fallbrook Public Utility District, and Rancho California Water District for underlying groundwater basins
4. SMR Estuary data collected by MS4 Co-Permittees in response to the SDRWQCB Lagoon Monitoring Order (and Bight '08 Eutrophication Assessment)
5. Watershed modeling support from USEPA Region 9 overseen by the SDRWQCB to aid in the development of estuarine NNEs

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6. Stakeholder meetings and field studies supported by Phase I

The SMR Nutrient Project will also leverage the existing regional stream bioassessment dataset collected by the Southern California Monitoring Coalition (SMC) Regional Stream Assessment Program (of which Riverside and San Diego Counties are members).

Completed Work

A substantial amount of work has been completed or is expected to be completed prior to the grant award date for the SMR Nutrient Project. The following reports provide hydrology, field measurements, and analytical laboratory data for the SMR Estuary:

- CDM Federal Programs Corporation. June 2009. Santa Margarita River Lagoon Monitoring Project: Data Usability and Assessment Review, Field Measured Data.
- CDM Federal Programs Corporation. June 2009. Santa Margarita River Lagoon Monitoring Project: Data Usability and Assessment Review, Laboratory Data.
- U.S. Navy Environmental Sciences Branch of the Space and Naval Warfare Systems Center Pacific (SSC-PAC). 2012. Santa Margarita Lagoon Water Quality Monitoring Data.

Water quality, bioassessment, and hydrology data collected in the lower SMR River are available from:

- U.S. Bureau of Reclamation (USBR). 2010. Hydrological and Biological Support to Lower Santa Margarita River Watershed Monitoring Program Water Years 2008-2009.

Project Partners

The County of San Diego, in partnership with the Riverside County Flood Control and Water Conservation District (RCFC&WCD), is the project sponsor in this joint project between the San Diego IRWM Region and the USMW IRWM Region, as partners in the Tri-County Funding Area Coordinating Committee (Tri-County FACC).

Project partners include: the Counties of San Diego and Riverside; the Cities of Temecula, Murrieta, Wildomar, and Menifee; RCFCWCD; Rancho California Water District (RCWD); USMC Camp Pendleton; U.S. Bureau of Reclamation; San Diego Regional Water Quality Control Board (SDRWQCB); Caltrans; Fallbrook Public Utilities District; Southern California Coastal Water Research Project (SCCWRP); Mission Resources Conservation District; San Diego County Farm Bureau, Sierra Club, Elsinore Murrieta Anza Resource Conservation District (EMARCD); and Trout Unlimited.

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Margarita River Watershed – Phase II****Proposed Work**

As indicated, although the USMW IRWM Region is a full partner in the project (and benefits will accrue across watershed boundaries to both the USMW and San Diego IRWM regions), the entire project work plan, budget, and cost/benefit analysis for the project have been included in the San Diego IRWM Region's funding application in order to simplify project administration and contracting. Since benefits accrue in the USMW IRWM Region, Attachment 9 Program Preferences does include the SMR Nutrient Project.