

# Attachment 3

## Work Plan

Included in this Attachment 3 is the Work Plan for the entire Proposal.

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Appendix A Vail Lake Stabilization and Conjunctive Use Project Supplemental Materials

Appendix B WR-34 Hydroelectric Power Generation Project Supplemental Materials

Appendix C Implementing Nutrient Management in the Santa Margarita River Watershed Supplemental Materials

**ATTACHMENT 3**

**WORK PLAN**

**UPPER SANTA MARGARITA WATERSHED PLANNING REGION  
IRWM PROP 84 ROUND 1 IMPLEMENTAION PROPOSAL**

This Attachment 3 presents the Work Plan for the proposal as a whole as well as for each individual project included in the Proposal. *Part A Introduction/Proposal Description* summarizes the Proposal and *Part B Project Specific Work Plan* provides the detailed description of each project included in the Proposal.

## Section 1 Introduction and Overall Proposal Description

The Upper Santa Margarita Watershed Planning Region IRWM Implementation Proposal includes a suite of five projects that, when implemented both individually and collectively, will provide multiple water supply, water quality and environmental benefits.

The projects include the following:

1. Vail Lake Stabilization and Conjunctive Use Project (Section 2)
2. Agricultural Irrigation Efficiency Program (Section 3)
3. WR-34 Hydroelectric Power Generation Project (Section 4)
4. Water Quality Enhancement in Riverside County (Section 5)
5. Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I (Section 6)

These projects are described in detail in Sections 2 through 6 of this Work Plan. Figure 1 provides a Regional Map that shows the location of each of these projects relative to one another within the region. Additionally, a Project Map is provided for each project under the respective section. As shown in Figure 1, Projects 1 and 3 (the Vail Lake Stabilization and Conjunctive Use Project and the WR-34 Hydroelectric Power Generation Project) are shown as specific locations where these projects will be built. For Projects 2, 4, and 5 (Agricultural Irrigation Efficiency Program, Water Quality Enhancements in Riverside County and Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I), the projects are to be implemented over a wide area, therefore the boundary of the area of implementation is shown on the map.

Two summary tables (Tables A and B) are also included in this Section 1 to provide a high level overview of the projects and to orient the reader. These should be used as summary tables since the detailed information pertaining to each project is located within each of the projects dedicated section (Sections 2 through 6).

### 1.1 Goals and Objectives

The vision of the IRWM Plan as established by the Upper Santa Margarita Watershed stakeholders is stated as:

“The IRWM Plan will take a balanced and consensus-based approach that will provide for the protection and sustainability of the Upper Santa Margarita Watershed’s water resources, natural resources, and habitats.”

Based on this vision, the following goals and objectives were developed for the Approved IRWM Plan. The proposed Work Plan goals and objectives listed below are consistent with the IRWMP Plan listed below:

1. Develop more reliable and diverse portfolio of water supplies
2. Promote economic, social and environmental sustainability
3. Improve water quality
4. Restore, enhance and maintain habitats and open space
5. Manage floodplain impacts
6. Account for recreational opportunities
7. Implement effective land use planning
8. Increase stakeholder involvement

The projects included in this proposal all serve to meet these goals and objectives. The emphasis in the selected projects is to maximize water resources, as shown in that all five of the projects are specifically water resources projects. Table A illustrates which projects included in this Proposal directly and indirectly meet the goals and objectives listed above.

Table A Projects Meeting the IWMP Plan Goals and Objectives					
	Vail Lake Stabilization and Conjunctive Use Project	Agricultural Irrigation Efficiency Program	Hydroelectric Power Generation Project	Water Quality Enhancement in Riverside County	Nutrient Management in the Santa Margarita River Watershed
Develop more reliable and diverse portfolio of water supplies	•	•	○	•	○
Promote economic, social and environmental sustainability	•	•	•	•	
Improve water quality	○	•	•	•	•
Restore, enhance and maintain habitats and open space	○			•	
Manage floodplain impacts		•		•	
Account for recreational opportunities	•			•	
Implement effective land use planning	○	○		•	
Increase stakeholder involvement		•		•	○

- Directly contribute to this goal
- Indirectly or somewhat contribute to this goal

With these goals in mind, the projects listed in Table B were selected for by the Upper Santa Margarita Watershed Stakeholder Advisory Committee and Regional Water Management Group for inclusion in this Proposal. Table B serves to provide the reader with a general sense of the project’s components and where the project currently is to date. Summarized here is the project abstract, the current status of the project, the permit requirements associated with the project and respective status (including CEQA and other permits), any required proceeding work items and their respective status as well as a list of supplemental material included in this Proposal. Additional details on each of these elements is included in Sections 2 through 6. The supplemental materials that are included are specifically supporting design plans, specification, studies specific to the project, etc currently available. Other reference materials are discussed and referenced within the detailed project descriptions (Section 2 though 6) but are not attached herein.

Together, the projects detailed in this Proposal and summarized in Table B are a substantial step towards achieving an Upper Santa Margarita Watershed that better meets the goals and objectives included in the IRWM Plan

## **1.2 Purpose and Need:**

The purpose of the Proposal is to further meet the goals and objectives listed above for the region by implementing projects that are in line with the stated goals and objectives. As shown by the listed goals and objectives, the need to improve water quality and increase water supply has been identified, and the primary purpose of the suite of projects included in the Proposal serves to bring the region closer to meeting those needs.

The specific purpose and need for each individual project is included in Sections 2 through 6 of this document.



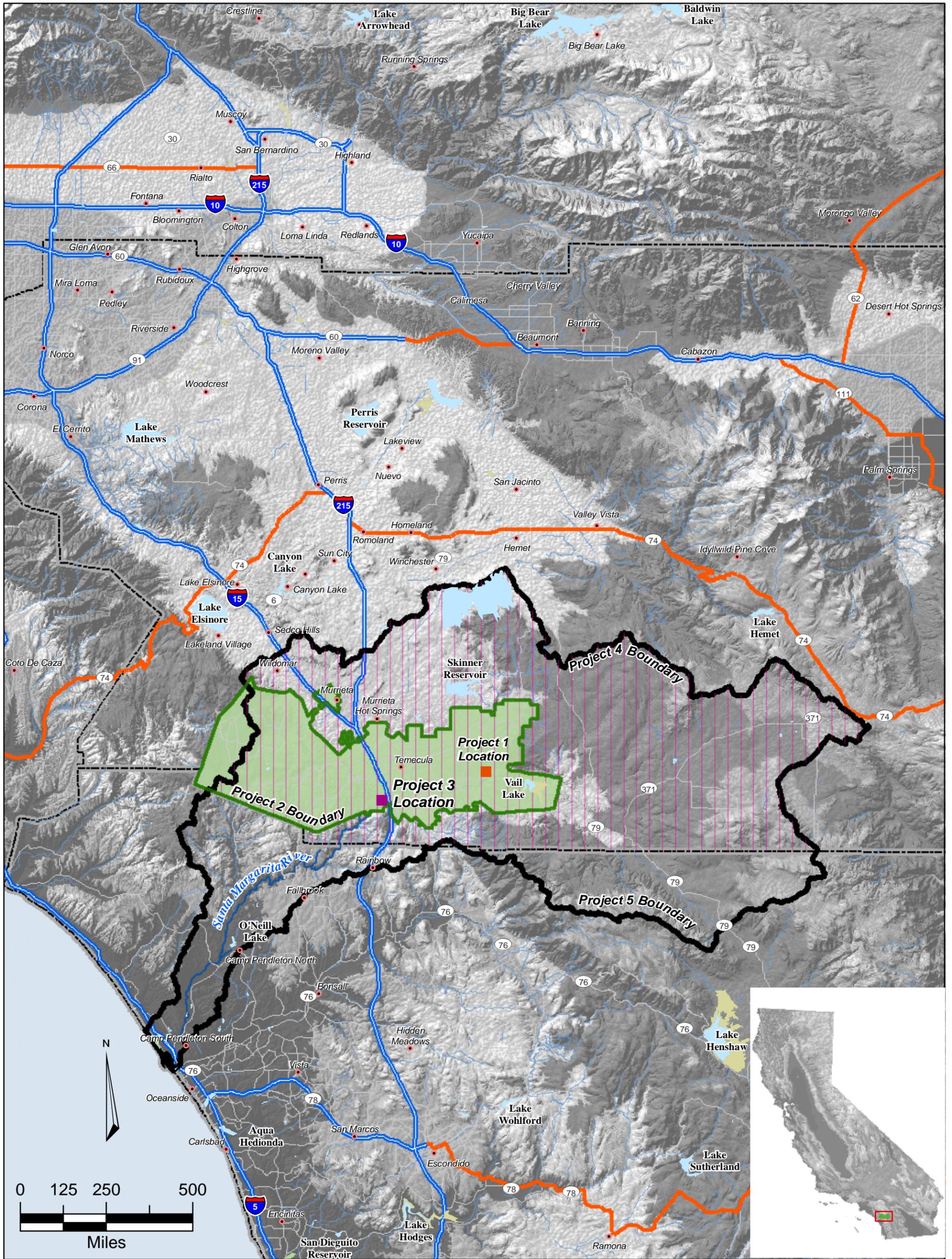
Table B Overview of Projects <sup>1</sup>							
Project Description			Permits		Required Preceding Work		Supplemental Materials Attached (additional supporting documents are also reference-see Sections 2 through 6)
Title / Implementing Agency	Abstract	Status	Required Permits	Status	Work Item	Status	
1. Vail Lake Stabilization and Conjunctive Use Project / Rancho California Water District	<p>The project will take advantage of additional imported water during wet years for storage and use during dry years. While the source of water for Vail Lake has been natural runoff, construction of a pipeline from an imported water turnout to the lake would allow for seasonal storage and conjunctive use storage. Water could be temporarily stored in Vail Lake for future delivery to agricultural users or piped to the Pauba Groundwater Basin for recharge.</p> <p>Project construction also includes Quagga Mussel Control Facilities since MWD raw water supply contains quagga mussels and Vail Lake is currently free of quagga mussels. Also includes native vegetation restoration.</p>	<p>The transmission pipeline and associated features are constructed. The remaining component of the project involves Quagga Mussel Control Facilities and native vegetation restoration which will begin after any funding is awarded. The benefits of the project are not dependent on any later phases.</p>	<p>1. CEQA 2. NEPA 3. Regional Water Quality Control Board - San Diego (RWQCB) General Construction Permit 4. Western Riverside County Multiple Species Habitat Conservation Plan Participating Special Entity Agreement, 5. CDFG Stream Alternation Agreement, 6. U.S. Army Corps of Engineers (USACE) Section 404 Permit, 7. RWQCB Section 401 Water Quality Certification.</p>	<p>1. An Initial Study and Mitigated Negative Declaration <b>complete</b>; programmatic Environmental Impact Report was <b>completed</b> in November 2007 and will be <b>amended</b> for the Quagga Mussel Control Facilities 2. U.S. Bureau of Reclamation finalized its Findings of No Significant Impact for subsequent <b>approval</b> under the National Environmental Protection Act (NEPA). 3. General Construction Permit <b>will be obtained</b>. 4. <b>Completed</b> 5. <b>Completed</b> 6. <b>Completed</b> 7. <b>Completed</b></p>	Construction of the Vail Lake Transmission Main and Pump Station	Complete.	Included in Appendix A to Attachment 3 there are multiple attachments associated with this project.
2. Agricultural Irrigation Efficiency Program/ Rancho California Water District	<p>Aid in sustaining regional agriculture by reducing agricultural water requirements for 2,000 acres of irrigated agriculture land by 2,115 acre-feet per year (AFY) through implementation of on-farm water use efficiency strategies.</p> <p>Involves developing accurate water budgets for 1,724 agricultural operations and compare them to historical water consumption to identify 200 agricultural operations or 2,000 irrigated acres that show the greatest need for water use efficiency improvements. The project will also audit the sites and identify ways to increase water use efficiency as well as providing financial incentives (50% of equipment cost). The sites will be re-evaluated and water supply benefits will be quantified.</p>	<p>While a similar, small scale version of this project is currently being implemented, this project is considered a standalone project that will begin after any funding is awarded. The benefits of the project are not dependent on any later phases.</p>	1. CEQA	1. CEQA Categorical Exemption.	None.	Not applicable.	
3. WR-34 Hydroelectric Power Generation Project/ Rancho California Water District	<p>Construction of the WR-34 Hydroelectric Power Generation Project to help stabilize water rates and reduce long-term operational costs, costs, while enhancing the ability to meet replenishment of a critical natural waterway, as required of RCWD by agreement with the Federal government. Utilize existing topography, existing water transmission infrastructure, and available hydraulic energy to produce safe and reliable electrical energy. When completed, the produced electrical power will be sold to Southern California Edison. Will enhance management of existing water transmission facilities while providing ecologically sound secondary benefits to water and power customers.</p>	<p>The construction of a raw water conversion line was already completed, which is the site of this project. The Hydroelectric Power Generator phase will begin after any funding is awarded. The benefits of the project are not dependent on any later phases.</p>	<p>1. Approval from MWD for additional easements and for construction of the Project within MWD easement. 2. SCE CREST (California Renewable Energy Small Tariff) program; execute an Interconnection Facilities Financing and Ownership Agreement for the facility with SCE for the purchase of energy generated by the Project; obtain California Energy Commission (CEC) pre-qualification that the facility is an Eligible Renewable Resource. 3. Encroachment permit with the City of Temecula. 4. Federal Energy Regulatory Commission (FERC) Conduit Exemption. 5. CEQA</p>	<p>1. <b>To be completed.</b> 2. <b>To be completed.</b> 3. <b>To be completed.</b> 4. <b>To be completed.</b> 5. <b>To be completed.</b></p>	Construction of the raw water conversion line where the hydroelectric power project is proposed to be added was previously build.	Complete.	Included in Appendix B to Attachment 3 is the Pre-Design Evaluation of the Hydroelectric Power Generation facility.
4. Water Quality Enhancement in Riverside County/ Riverside County Flood Control and Conservation District	<p>The project aims to reduce impacts from hydromodification, promote LID, support riparian and aquatic habitat restoration, and reduce the discharges of storm water pollutants and improve water quality. The project involves identification of retrofit opportunities in the Santa Margarita Watershed, which includes researching, inventorying and prioritizing areas of existing development (i.e. municipal, industrial, commercial, residential) as candidates for targeted retrofit projects that would reduce the impacts of existing development on the watershed. Specific outreach will occur through the education of home owners associations (HOAs), which will serve to identify the need and benefits to retrofit existing common</p>	<p>This is the first phase of a multi-phase project. This phase will begin after any funding is awarded. The full benefits of the project require that future phases be implemented as well, however this important first phase sets the groundwork for the subsequent phases. This phase can operate as a standalone project for several reasons. First, once the potential retrofit opportunities associated</p>	No permits are required for this phase of the project.	Not applicable.	None.	Not applicable.	



**Table B  
Overview of Projects<sup>1</sup>**

Table B Overview of Projects <sup>1</sup>							
Project Description			Permits		Required Preceding Work		Supplemental Materials Attached (additional supporting documents are also reference-see Sections 2 through 6)
Title / Implementing Agency	Abstract	Status	Required Permits	Status	Work Item	Status	
	landscaped areas. The project also involves hydromodification management, which will guide and support the planning, design and construction of priority new and significant redevelopment projects (PDPs) within the Upper Santa Margarita Watershed to manage increases in runoff discharge rates and durations.	with hydromodification, LID, etc are identified, this valuable information will be used whenever retrofit or construction activities are proposed at these locations for any reason, to maximize the opportunity to make these improvements. Second, the HOA effort is a standalone project. The benefits of that portion of the project will be immediately realized.					
5. Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I <sup>2</sup> /Riverside County Flood Control and Conservation District in partnership with the San Diego IRWM Plan.	To address nutrients in the watershed, the project will serve to identify water quality objectives (WQOs). The approach for developing nutrient WQOs for the SMR estuary leverages two major activities: 1) data collection to support modeling in the estuary and watershed to develop TMDLs and 2) ongoing research to develop the estuarine NNE framework, based on dissolved oxygen and macroalgae as endpoints. A stakeholder advisory group (which will be identified as part of the project) will guide project activities, review technical work products, and achieve consensus. The project involves conducting monitoring and special studies to address data gaps and pending the analysis of data gaps, potential studies will include core field data collection and special studies. The goal of core field data collection will be to measure ambient nutrient concentrations and conduct algal bioassessment studies. The special studies will include a characterization of the "natural background" conditions of nutrient concentrations and algal growth which will help characterize the variability in numeric targets.	This is the first phase of a multi-phase project. This phase will begin after any funding is awarded. The full benefits of the project require that future phases be implemented as well, however this important first phase sets the groundwork for the subsequent phases, and can operate as a standalone project because once the consensus is reached, data gaps are identified and required activities are determined, they may be used as guidance for future studies. Additionally, data are already available to conduct the nutrient modeling of the Santa Margarita River estuary.	1. CEQA	1. CEQA Categorical Exemption was approved and <b>will be obtained.</b>	None.	Not applicable.	Included in Appendix C to Attachment 3: 1. Bight '08 Estuaries and Coastal Wetlands Eutrophication Study 2. The final SCCWRP budget 3. The SMR Lagoon Monitoring Project Data Usability Assessment Review
Notes: 1. All elements described here are further described in specified detail for each project in the sections that follow. 2. WR-34 Implementing Nutrient Management in the Santa Margarita River Watershed – Phase I project is a multi-county project. This project is also included in the San Diego IRWM Plan and included in the Implementation Grant application submitted by that region.							





**Legend**

- Project 1 Location
- Project 2 Boundary (RCWD Service Area)
- Project 3 Location
- Project 4 Boundary (Riverside County within Watershed)
- Project 5 Boundary (Santa Margarita River Watershed)
- Watershed Boundary
- Rancho California Water District Service Area
- Regional Highway
- State Highway
- Major Street
- Santa Margarita River
- City

**Figure 1 Regional Map with Project Locations**

January 4, 2011



**CDM**

Data Sources: Riverside County Flood Control & Water Conservation District, ESRI Streets & Maps, USGS National Hydrography Dataset, U.S. Census Bureau Population 2000 Data.



### **1.3 Linkages and Synergies between Projects and Integrated Projects**

Overall the five projects included in this Proposal support one another in many facets. Following is a description of the areas where each project provides linkages and synergies between projects.

#### **Project 1: Vail Lake Stabilization and Conjunctive Use Project and Project 3: WR-34 Hydroelectric Power Generation Project**

The Vail Lake Stabilization and Conjunctive Use project and the WR-34 Hydroelectric Power Generation project together bring clean drinking water and clean energy to the region. Other elements of the Water Quality Enhancement in Riverside County and the Nutrient Management in the Santa Margarita River Watershed project will serve to improve surface water quality for the region. As such, these projects together bring clean water, clean energy, a reduction in potable water demand and an increase in water quality to the entire region.

#### **Project 2: Agricultural Irrigation Efficiency Program and Project 4: Water Quality Enhancements in Riverside County**

The Agricultural Irrigation Efficiency Program along with elements of the Water Quality Enhancement in Riverside County project will both serve to reduce the demand on potable water in the region. By identifying areas where users (agricultural water users, homeowners) can reduce water demand, these two projects will together provide a much needed benefit to the region.

#### **Project 4: Water Quality Enhancements in Riverside County**

The elements of this project were initially identified as two separate standalone projects. During stakeholder meeting and during review and scoring of the projects, these two separate projects were determined to have sufficient synergy between them that they were integrated into the Water Quality Enhancement in Riverside County project. One part of the project was led by Riverside County Flood Control and Water Conservation District and included two of the three tasks now included in this one integrated project. This included the task to identify BMP retrofit opportunities within the watershed as well as hydromodification management.

The third task included in this project was originally conceived by the Elsinore Murrieta Anza Resource Conservation District (EMARCD). This task involves education and outreach to homeowners associations on conservation and other BMPs that could be implemented at these properties to reduce the demand on potable water and decrease stormwater runoff from the properties.

As such, these two projects allowed for the natural integration that is found in the existing project. The project as a whole is an important step for the region in reducing its dependence on potable water and improving water quality.

#### **Project 5: Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I**

This project will benefit not only the Upper Santa Margarita River Watershed but the entire Santa Margarita River Watershed, as a whole. This project is a partnership between the Upper Santa Margarita River Watershed region and the San Diego Region and through this partnership; this project will serve to benefit a wide area. The project will ultimately serve to enhance water quality in the area by reducing nutrient loading. Also refer to Section 6 for additional information.

### **1.4 Basin Plan**

All projects in the application are consistent with the San Diego Regional Water Quality Control Board's Water Quality Control Plan for the San Diego Basin (9) last published April 25, 2007 (plus Amendments

approved or pending since April 2007). In particular, projects 4 and 5 will have direct benefits toward implementing RWQCB requirements and improving water quality in both surface and groundwater bodies of concern to the RWQCB. Implementation goals in the Basin plan that are strongly supported by the projects include:

1. Compliance with NPDES discharge permits for municipal (MS4) stormwater permits.
2. Control of non-point source pollution
3. Improving understanding of nutrients impairments of the Santa Margarita River watershed and particularly in the estuary and establishment of appropriate water quality objectives for the estuary

## 1.5 Data Management and Monitoring Deliverables

Following are the Upper Santa Margarita Data Management and Project Monitoring Goals:

- Develop baseline assessments to characterize the status of water quality, supply and other water management issues at the regional and local scales
- Identify appropriate indicators of water quality, water quantity and ecosystem health to accurately track changes at the local and regional scales
- Provide a system for on-going monitoring and analysis of appropriate indicators to inform the adaptive management of Upper Santa Margarita ecosystems
- Develop and standardize data development and output using widely accepted peer-reviewed protocols
- Disseminate data and metadata to stakeholders and collect data from stakeholders via interactive web portals
- Provide a formal and ongoing process for user-friendly data management in the region

Upper Santa Margarita IRWM Data Management will include monitoring and assessment protocols and data sources, existing monitoring programs, and educational materials

**How Data is Used:** The upper watershed agencies utilize data developed through the IRWM Plan process to better manage water supply reliability, water quality monitoring, invasive species removal, fisheries, MSHCP species of concern, trails, parks, and open space, land use development, greenhouse gas emissions, water conservation savings, disadvantaged communities benefits, cost/benefit project results, priority project progress, funding updates, and plan implementation results.

**Data Dissemination and Access:** Relevant reports to the IRWMP projects will also be made available through the websites. Website addresses are: RCWD ([www.ranchowater.com](http://www.ranchowater.com)) and the County ([www.countyofriverside.ca.us](http://www.countyofriverside.ca.us)).

Data dissemination will occur through several mechanisms including stakeholder and partner agency meetings, website postings, email notices, and agency contacts available to provide data if requested. CEQA and NEPA process for implementation projects will also provide opportunities for public input, review, and data dissemination.

Stakeholder workshops and Stakeholder Advisory Committee meetings will continue to be a primary means for data dissemination. Partner agencies and organizations will provide handouts, slideshow presentations, and hold question/answer periods. The County of Riverside and RCWD websites will also be the primary data management tools. Public meeting dates, agendas, and meeting summaries will be posted on the websites.

**Existing Monitoring Efforts** - Existing monitoring efforts and the procedures and management of those efforts will be incorporated into the data management structure of the IRWMP without modifying their

operation. The different mechanisms for data management and dissemination will incorporate a link to existing efforts as appropriate to grant more effective access to data to all interested agencies and stakeholders, and to facilitate the project and plan monitoring and performance. This region will utilize an adaptive management approach to IRWMP implementation so that monitoring results inform future planning and implementation allowing for improvement and modification of planning targets, schedule, and project formulation.

**Coordination to Support Statewide Data Needs** - The upper watershed agencies will coordinate with the state to maximize opportunities to share data and meet statewide data needs. To the extent possible, future data collected under the IRWMP will be in a format compatible with statewide data programs, including Surface Water Ambient Monitoring Program (SWAMP), Groundwater Ambient Monitoring and Assessment (GAMA), and California Environmental Resources Evaluation System (CERES). Table C describes these monitoring and data management programs. Upper watershed agencies will work with the coordinating state agency to obtain the appropriate data formats for submission to these programs.

Specifically, Project 1 (Vail Lake Stabilization and Conjunctive Use Project) will collect data that will be applicable to CERES data standard since the project is related to native vegetation restoration and Mussel control (preventing mussel from getting into the Vail Lake). This project will provide data as necessary to CERES. Additionally, Project 5 (Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I) will involve data collection to support modeling and TMDL development. This project will report data according to the SWAMP data program requirements.

**Table C**  
**Statewide Data Programs**

Program	Coordinating Agency	Upper Santa Margarita Projects	Description
<b>SWAMP</b>	State Water Resources Control Board	Projects 1, 4, and 5	Statewide monitoring effort to assess conditions of surface waters. Also includes collection of information for other TMDL, non-point source, and watershed project support programs.
<b>GAMA</b>	State Water Resources Control Board	Projects 1, 4, and 5	Includes a statewide basin assessment project that monitors groundwater for chemicals at low detection limits. GAMA objectives are to improve statewide ambient groundwater quality monitoring and assessment and availability of groundwater quality information.
<b>CERES</b>	California Resources Agency	Projects 1, 4, and 5	Includes environmental information catalog to share information about state resources. The goal of CERES is to improve environmental analysis and planning by integrating natural and cultural resource information from multiple contributors.

In addition, to the databases above RCWD will maintain a central clearinghouse and database to manage project data and performance. The database will also store or link to all groundwater and surface water data reports developed as the Project Assessment and Evaluation Plan (PAEP). The database will also

store or link to raw data for groundwater levels and production, surface water and groundwater quality, ecosystem restoration, and other watershed monitoring projects. Stakeholders will be required to deposit or link project data and view or access data from other projects and stakeholders. RCWD will provide standards for the data to integrate with the applicable state data programs and the California Water Plan. For example, the database will store or link to groundwater data collected from groundwater projects in a format compatible with GAMA. RCWD will manage the database and links to ensure that stakeholders are or storing entering data appropriately and maintaining the information in a timely manner. RCWD will manage the transfer of data to the State that is not part of an ongoing regulatory program.

RCWD will use the central database and links to compile periodic project performance reports. Depending on project implementation or the overall activity of the IRWMP, the reports will be published biannually or annually. These performance reports will be posted on the RCWD website for the public to access. The performance reports will include a description of recent activities on the IRWMP, project status updates, and performance statistics.

In accordance with the PSP and DWR IRWMP Guidelines, project deliverables for Projects 1 through 5 will be compiled in RCWD's central database for each phase of design, construction, and operation including:

1. Designs
2. Feasibility studies, reports, and information
3. Project Monitoring as described in each of the project descriptions within this work plan document

## **1.6 Project Timeline and Phasing**

As is described below under each specific project and illustrated in the schedule (Attachment 5), the expected start and end dates for the projects range June 2011 through December 2014. Each of the projects included in this Proposal are in some way considered a part of a larger project, but each will largely function as standalone projects. The Vail Lake Stabilization and Conjunctive Use Project, the Agricultural Irrigation Efficiency Program and the WR-34Hydroelectric Power Generation project are each part of larger projects that commenced prior to the submittal of this Proposal. However, all of the elements of these larger projects, not included for funding herein, have already been completed or are expected to be completed prior to June 2011. Therefore, the five proposed projects included in this Proposal can be considered as a standalone projects in that they will be fully functional without the implementation of subsequent projects or project elements.

The Water Quality Enhancement in Riverside County project and the Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I project are each a part of a larger project which will have subsequent project elements. These elements of these projects that are included for funding herein are critical elements that left undone would prohibit the subsequent elements of the projects from being accomplished.

Phase I of the Water Quality Enhancements in Riverside County project can operate as a standalone project for several reasons. First, once the potential retrofit opportunities associated with hydromodification, LID, etc are identified; this valuable information will be used whenever retrofit or construction activities are proposed at these locations for any reason, to maximize the opportunity to make these improvements.

Second, the HOA effort is a standalone project. The benefits of that portion of the project will be immediately seen.

Phase I of the Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I project can operate on a standalone basis because once the consensus is reached, data gaps are identified

and required activities are determined, they may be used as guidance for future studies. Additionally, data are already available to conduct the nutrient modeling of the Santa Margarita River estuary. This will be documented in the work products: monitoring plan and QAPP.

### **1.7 Summary**

Section 1 provided an overview of the Proposal as a whole. For each of the projects included in the Proposal, the following Sections 2 through 6 provide a detailed project description for each of the projects followed by the Proposed Work Tasks (which correspond to the budget and schedule found in Attachments 4 and 5). As stated previously, included here are the following projects:

1. Vail Lake Stabilization and Conjunctive Use Project (Section 2)
2. Agricultural Irrigation Efficiency Program (Section 3)
3. WR-34 Hydroelectric Power Generation Project (Section 4)
4. Water Quality Enhancement in Riverside County (Section 5)
5. Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I (Section 6)

Projects 1 through 4 will be managed as a Program by RCWD with supporting agreements from Riverside County to provide management of Project 4. Per Tri-County Funding Area Coordinating Committee agreement, Project 5 will be led by San Diego County with specific tasks being led by Riverside County, as identified in this work plan. Overall Program administration for this Proposal will be managed by RCWD. DWR will have one main point of contact at RCWD for all coordination associated with this Implementation Grant Proposal.

## **Section 2**

### **Vail Lake Stabilization and Conjunctive Use Project: Rancho California Water District**

#### **2.1 Introduction**

##### **Project Sponsor**

This project will be led by Rancho California Water District (the applicant) and does not involve any project partners, therefore no additional Memorandum of Understanding is required.

##### **Project Purpose**

The purpose of this project is to provide safe, reliable drinking water to the region.

##### **Project Need**

The Vail Lake Stabilization and Conjunctive Use Project (Project) will take advantage of additional imported water during wet years for storage and use during dry years. The source of water for Vail Lake has been natural runoff. However, construction of a pipeline from an imported water turnout to the lake would allow for seasonal storage and conjunctive use storage. Water could be temporarily stored in Vail Lake for future delivery to agricultural users or piped to the Pauba Groundwater Basin for recharge. Additional groundwater recharge would increase local storage, replenish groundwater levels, and enhance the reliability of local water supplies during dry years. The planned storage of this water for one year would allow RCWD to benefit from Metropolitan Water District of Southern California's (MWD) lower replenishment water rate. The Project would also supply raw imported water in Vail Lake to agricultural demands in the Rancho Division of RCWD. Delivering raw water to agricultural users would provide additional treated water supplies for other potable users.

##### **Project Objectives**

The objectives of the project include providing safe, reliable water supply which requires the construction of a water transmission main, pump station, as well as Quagga Mussel Control Facilities since MWD raw water supply contains quagga mussels and Vail Lake is currently free of quagga mussels. In addition, the project will restore native vegetation, which involves seed installation of appropriate mixes of native species seed in conjunction with some container plant and cuttings installation. Approximately 16.2 acres will be included in the native revegetation restoration.

##### **Linkages and Synergies**

Refer to Section 1.3 for the description of linkages and synergies for the Proposal.

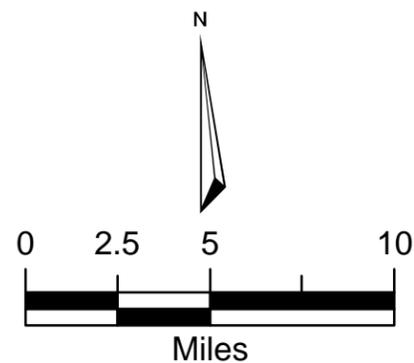
##### **Vail Lake Stabilization and Conjunctive Use Project Map**

Figure 2 is provides a Project Map of the location of the proposed project



**Legend**

-  Watershed Boundary
-  Rancho California Water District Service Area
-  San Mateo Wash Overlay
-  Project 1 Location
-  City
-  Regional Highway
-  State Highway
-  Major Street



**Figure 2 Vail Lake Stabilization and Conjunctive Use Project**

January 5, 2011



**CDM**

Data Sources: Riverside County Flood Control & Water Conservation District, ESRI Streets & Maps, USGS National Hydrography Dataset, U.S. Census Bureau Population 2000 Data.



### **Project Abstract**

The project will take advantage of additional imported water during wet years for storage and use during dry years. While the source of water for Vail Lake has been natural runoff, construction of a pipeline from an imported water turnout to the lake would allow for seasonal storage and conjunctive use storage. Water could be temporarily stored in Vail Lake for future delivery to agricultural users or piped to the Pauba Groundwater Basin for recharge.

Project construction also includes Quagga Mussel Control Facilities since MWD raw water supply contains quagga mussels and Vail Lake is currently free of quagga mussels. The project also includes native vegetation restoration.

### **Project Timing**

As described below in the project description, early phases of this project began in 2005, with construction of the transmission main and pumps substantially completed in November 2010. The components of the project included in this Proposal and described herein (including quagga mussel control facilities and native vegetation restoration) will begin with award of funding and are expected to be completed by mid 2012. Refer to Attachment 5 for the Schedule.

### **Supplemental Materials**

Supplemental materials are included in Appendix A to this Attachment 3. Additional details are also included under the project description.

## **2.2 Project Description**

The Project includes construction of the Vail Lake Transmission Main and Pump Station (VLTM&PS) to convey untreated imported water from Metropolitan Water District of Southern California's (MWD) Pipeline No. 6 at the EM-21 connection (turnout) to Vail Lake. The Project facilities include a 70 cubic feet per second (cfs) pump station located at the Upper Valle De Los Caballos (VDC) Recharge Ponds, and approximately 14,000 lineal feet of 48-inch diameter transmission pipeline generally along Pulgas Creek Road, from the VDC Recharge Ponds to Vail Dam, within the Temecula Creek Canyon. The facilities will convey imported untreated water acquired from MWD for storage in Vail Lake and subsequent groundwater recharge in the VDC Recharge Ponds.

Project construction also includes Quagga Mussel Control Facilities since MWD raw water supply contains quagga mussels and Vail Lake is currently free of quagga mussels. In addition, native vegetation restoration is also required as part of the Project, which involves seed installation of appropriate mixes of native species seed in conjunction with some container plant and cuttings installation. The areas disturbed during construction will be graded to pre-project contours, and all native vegetation communities disturbed will be replaced in-kind. Approximately 16.2 acres will be included in the native revegetation restoration.

The Project is one of three projects that make up a significant regional project to benefit the County of Riverside, the local ratepayers, and the local agricultural community, and reduce the dependency on imported water to Southern California. The regional project, Phase I Baseline Demineralization and Non-potable Water Conversion Project, will generate a demineralized water supply from wastewater from Rancho California Water District's (RCWD) Santa Rosa Water Reclamation Facility (SRWRF) and Eastern Municipal Water District's (EMWD) Temecula Valley Regional Water Reclamation Facility (TVRWF). The regional project includes the three elements; however, the proposed Project is not dependent on the completion of the other elements:

- » Element 1: Demineralization Treatment Facility. Purpose: Partial demineralization of wastewater to produce 10,000 AFY of reuse water with an average salinity of less than 500 mg/L.

- » Element 2: Santa Rosa and Rancho Division Infrastructure. Purpose: New infrastructure to increase seasonal storage capacity and convey demineralized water to agricultural areas; and new infrastructure to convey raw untreated MWD water from Vail Lake for agricultural use.
- » Element 3: Construction of the Vail Lake Transmission Main and Pump Station to convey 4,521 AFY of raw-untreated MWD water from turnout EM-21 to Vail Lake and for groundwater replenishment.

The regional project is a recommended water resource improvement from the RCWD Regional Integrated Resources Plan (IRP, October 2005) and RCWD's 2005 Water Facilities Master Plan. The Demineralization and Non-Potable Water Conversion Feasibility Report (July 2007) determined that it is technically and economically feasible for RCWD to implement the regional project – demineralize wastewater and convey the demineralized and raw MWD water to the agricultural areas, in order to replace the current use of potable water for these demands.

Benefits include a sustained, reliable, and economical water supply, reduced pumping costs for EMWD associated with transporting recycled water out of the basin, environmental benefit to maintained open space in the agricultural community, and reduced greenhouse gas emission by reducing associated electrical energy to convey imported water to the region and exporting recycled water out of the basin.

The proposed Project meets the Upper Santa Margarita Watershed Planning Region adopted IRWMP objectives and strategies, including: *Develop a More Reliable and Diverse Portfolio of Water Supplies: Strategy WS-2b, Groundwater Management, Conjunctive Use, Conjunctive Management and Groundwater Storage Strategies*. The Project also meets the Prop 84 program preferences by addressing the following Statewide priorities: 1) *Drought Preparedness: Promote conjunctive use, Efficient groundwater basin management, and Establish system inerties*; and 2) *Protect Surface Water and Groundwater Quality: Protecting and restoring surface water and groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses*.

Further, the Project meets the following statewide water management strategies: water supply reliability, conjunctive use, imported water, groundwater management, surface storage, recreation and public access, regional/local surface storage, and environmental habitat protection and improvement.

RCWD substantially completed construction of the VLTM&PS and a successful startup period in November 2010. As part of the Project, RCWD has been actively studying quagga mussel control strategies during construction and operation of the VLTM&PS. The proposed Vail Lake Quagga Mussel Control Facilities are intended to supplement the current quagga mussel control program operated by MWD. MWD's program consists of inspections of water conveyance systems, investigative studies to assess mussel transport and settling, vulnerability assessment of facilities at risk for quagga mussel settlement, studies of managing lake recreational facilities, control strategies to control quagga mussel spread from the Colorado River Aqueduct, evaluate screen designs at pumping plants, extensive chlorination, proposed isolation barriers and evaluation of integrated pest management.

The proposed Vail Lake Quagga Mussel Control Facilities consists of a coarse filtration step followed by an enhanced chlorination step performed at RCWD's EM-21 raw water turnout from MWD's San Diego Pipeline No. 6, followed by a dechlorination step performed at the Vail Lake Pump Station. Proposed facility drawings, *Proposed Filter and Chlorination Facilities at RCWD Turnout EM-21 Site* and *Proposed Dechlorination Facilities at Vail Lake Pump Station*, are included as Appendix A to Attachment 3. The proposed chlorine dosing rate is 5 mg/L. To accommodate the maximum pumping flow rate of 71 cfs for the Vail Lake project, the conceptual design equipment throughout the two sites includes the following:

- » Three (3) 200-micron automatic, self-cleaning screen filters;
- » Two (2) double contained plastic tanks totaling approximately 13,000 gallons of 12.5% sodium hypochlorite (for chlorination);

- » Two (2) double contained plastic tanks totaling approximately 13,000 gallons of 30% calcium thiosulfate (for dechlorination);
- » Chemical pumps;
- » Chemical injection equipment;
- » Chlorine residual analyzers;
- » Piping (transmission and backwash) and valves; and
- » Electrical/instrumentation and control items.

The proposed Quagga Mussel Control Facilities is based on extensive study conducted by RCWD beginning in 2007, when quagga mussels were first discovered in the Colorado River system, and continued through the recent RCWD Vail Lake Quagga Mussel Pilot Study conducted in early summer 2010. RCWD researched potential quagga mussel control solutions (including automatic self-cleaning screen filters), conducted raw water quality testing on raw water from MWD's Pipeline No. 6, performed current research literature reviews regarding effectiveness of quagga mussel filtration, and pilot tested three different screen filter manufacturers side-by-side in baseline (raw water) and elevated turbidity conditions. Among the pilot test conclusions, it was discovered that screen filtration removes a considerable amount of quagga mussels, but not all. Recommendations from RCWD's pilot study included the proposal to combine enhanced chlorination/dechlorination (to supplement MWD's chlorination) with screen filtration to best control quagga mussels for the Vail Lake Transmission Main and Pump Station Project. Kennedy/Jenks Consultants, along with quagga and zebra mussel expert, Renata Claudi of RNT Consulting, have served as scientific and engineering advisors to RCWD throughout the screen filtration pilot testing as well as the proposed Quagga Mussel Control Facilities.

The Vail Lake Quagga Mussel Control Facilities is ready for design and construction. An Initial Study and Mitigated Negative Declaration (IS/MND), completed in April 2007, will be amended for the Quagga Mussel Control Facilities, and the U.S. Bureau of Reclamation finalized its Findings of No Significant Impact for subsequent approval under the National Environmental Protection Act (NEPA). The majority of permits and agreements are in place, and a Regional Water Quality Control Board (San Diego) General Construction Permit will be obtained. No additional property is needed to purchase for the facilities because there is sufficient space available at both existing RCWD sites.

Proposed design of the Vail Lake Quagga Mussel Control Facilities is based on extensive study conducted by RCWD beginning in 2007, when quagga mussels were first discovered in the Colorado River system, and continued through the recent RCWD Vail Lake Quagga Mussel Pilot Study conducted in early summer 2010. RCWD researched potential quagga mussel control solutions including automatic self-cleaning screen filters, conducted raw water quality testing on raw water from MWD's Pipeline No. 6, performed current research literature reviews regarding effectiveness of quagga mussel filtration, and pilot tested three (3) different screen filter manufacturers side-by-side in baseline (raw water) and elevated turbidity conditions. Among the pilot test conclusions, it was discovered that screen filtration removes a considerable amount of quagga mussels, but not all. Recommendations from RCWD's pilot study included the proposal to combine enhanced chlorination/dechlorination, to supplement MWD's chlorination, with screen filtration to best control quagga mussels for the Vail Lake Transmission Main and Pump Station Project. Kennedy/Jenks Consultants, along with quagga and zebra mussel expert, Renata Claudi of RNT Consulting, has served as scientific and engineering advisors to RCWD throughout the screen filtration pilot testing as well as this proposed control facility project.

## **2.3 Proposed Work Tasks**

### ***Budget Category (a): Direct Project Administration Costs***

#### **Task 1: Administration**

Conduct project administration including management of consultants and contractors; manage reporting to regulatory agencies; monitor engineering, construction and inspections; prepare invoices; prepare

performance measures and monitoring plan; implement and oversee the labor compliance program; and other required project administration.

*Deliverables:* Invoices, monitoring plan, labor compliance program and other administrative deliverables as required.

### **Task 2: Reporting**

Prepare and submit quarterly, annual and final reports on project progress to DWR.

*Deliverables:* Submission of quarterly, annual and final reports as specified in the Grant Agreement.

### ***Budget Category (b): Land Purchase/Easement***

No task under this category.

### ***Budget Category (c): Planning/Design/Engineering/Environmental Documentation***

### **Task 3: Assessment and Evaluation**

Prepare feasibility studies, assessments and conceptual level sketches to evaluate preferred alternatives.

**Subtask 3.1:** Prepare a Feasibility Study for the overall project to include a conceptual engineering design: *Complete*

**Subtask 3.2:** Conduct an assessment of the chlorination and dechlorination dosing rates and detention times needed to cause 100% fatality to all quagga mussel life stages.

**Subtask 3.3:** Prepare conceptual level chlorination and dechlorination facilities including descriptions and layout sketches with the focus on proposed facility locations and key materials.

**Subtask 3.4:** Prepare preliminary design of chlorine and dechlorination facilities to include geotechnical investigation, conduct pilot testing, and secure permitting.

*Deliverables:* Evaluation Report on Chlorination/Dechlorination Facility identifying dosing rates, retention times, and conceptual layout.

### **Task 4: Permitting**

**Subtask 4.1:** Obtain required permits for the construction of the Vail Lake Transmission Main and Pump Station. *Complete*

**Subtask 4.2:** Obtain Western Riverside County Multiple Species Habitat Conservation Plan Participating Special Entity Agreement, CDFG Stream Alteration Agreement, U.S. Army Corps of Engineers (USACE) Section 404 Permit, and Regional Water Quality Control Board (RWQCB) – San Diego – Section 401 Water Quality Certification. *Complete* (see Appendix A to this Attachment 3, Compensatory Mitigation Plan).

**Subtask 4.3:** Obtain required “General Construction Permit” from the Regional Water Quality Control Board – San Diego Region 9.

*Deliverables:* Permits and agreements from identified agencies.

### **Task 5: Final Design**

Prepare conceptual and final design for Vail Lake Transmission Main and Pump Station, and for chlorination and dechlorination facilities.

**Subtask 5.1:** Prepare conceptual design and final design of Vail Lake Transmission Main and Pump Station. *Complete*

**Subtask 5.2:** Prepare 10% conceptual design, 30% concept, 60% design, 90% pre-final design, and 100 percent design of chlorination and dechlorination facilities

*Deliverables:* Conceptual and final design plans for the Vail Lake Transmission Main and Pump Station. Conceptual and final plans for the chlorination and dechlorination facilities.

### **Task 6: Environmental Documentation**

**Subtask 6.1:** Prepare an Initial Study and Mitigated Negative Declaration (IS/MND) for the Vail Lake Transmission Main and Pump Station: *Completed April 2007.*

**Subtask 6.2:** Prepare a Compensatory Mitigation Plan for the Vail Lake Transmission Main and Pump Station Project: *Completed August 2009; October 2009 Errata; April 2010 Revegetation Map Adjustment.*

**Subtask 6.3:** Prepare amendment to the IS/MND for the Vail Lake Transmission Main and Pump Station to include the chlorination and dechlorination facilities. The California Native American Tribe Notification will be followed in the process to adopt the amended IS/MND.

*Deliverables:* Approved and adopted amended CEQA documentation.

### **Budget Category (d): Construction/Implementation**

#### **Task 7: Construction Contracting**

**Subtask 7.1:** Bid solicitation for Vail Lake Transmission Main and Pump Station. *Complete*

**Subtask 7.2:** Bid solicitation for Native Vegetation Restoration. *Complete*

**Subtask 7.3:** Prepare and conduct solicitation for the chlorination and dechlorination facilities.

*Deliverables:* Bid documents, including advertisement for bids, pre-bid contractors meetings, evaluations of bids, and award of contracts.

#### **Task 8: Construction**

The Vail Lake Stabilization and Conjunctive Use Project has followed and will continue to follow a comprehensive set of construction standards, specifications, and technical provisions maintained and required by the District. These standards, specifications and provisions have been and will be rigorously monitored throughout implementation of the Project. Standards and materials documents to be followed include Standard Drawings, Facility Requirements and Design Criteria, Specifications, General Provisions, Special Provision, Technical Provisions, and an Approved Materials List, which are extensive and included on the District's Web page at <https://ranchowater.com/engineering.aspx>.

**Subtask 8.1:** Mobilization, site preparation, equipment procurement, project construction, and closeout for Vail Lake Transmission Main and Pump Station. *Complete*

**Subtask 8.2:** Mobilization, equipment procurement and site preparation for chlorination and dechlorination facilities.

**Subtask 8.3:** Conduct project construction for chlorination and dechlorination facilities. This includes the following Table E:

**Table E**  
**Probable Construction Items**

	#	Unit
<b>MWD Turnout EM-21: Screens and Chlorination System</b>		
12.5% Sodium Hypochlorite Double Walled Storage Tank	2	EA
Recessed Installation	70	CY
Sump Pump and Drainage Piping	1	EA
Chemical Feed Pump	2	EA
Chemical Feed Piping	100	LF
Sodium Hypochlorite Feed System Components	1	LS
48" Static Mixer	1	EA
Chlorine Analyzer	1	EA
Chlorine Sample Line (1" PVC)	100	LF
Chlorine Sample Discharge Piping (4" PVC)	100	LF
200-Micron Filters and Controllers	1	LS
18" BFV	6	EA
BW Piping to Lower VCD Ponds	1,320	LF
36" CML&C Piping/Fittings	150	LF
36" BFV	3	EA
<b>Subtotal for Chlorination System</b>		
30% Calcium Thiosulfate Double Walled Storage Tank	2	EA
<b>Dechlorination System</b>		
Chemical Feed Piping (Sch 80 PVC, double contained)	100	LF
Calcium Thiosulfate Feed System Components	1	LS
Concret Pad (15' x 30' x1")	17	CY
Chlorine Analyzer	2	EA
Chlorine Sample Line (1" PVC)	1000	LF
Chlorine Sample Discharge Piping (4" PVC)	100	LF

**Subtask 8.4:** Perform testing and conduct closeout.

*Deliverables:* Construction reports.

### **Task 9: Construction Management**

Conduct construction management activities including throughout the construction period. Perform construction inspections, perform startup testing and procedures, and amend the Vail Lake Transmission Main and Pump Station Operations Plan to include the Quagga Mussel Control Facilities (chlorination and dechlorination facilities).

*Deliverables:* Inspection reports, testing and startup report, and amended Operations Plan.

### ***Budget Category (e): Environmental Compliance/Mitigation/Enhancement***

#### **Task 10: Environmental Compliance/Mitigation/Enhancement**

Perform native revegetation restoration on approximately 16.2 acres on site, including seed installation of appropriate mixes of native species seed and container plant and cuttings installation. The areas disturbed during construction will be graded to pre-project contours, and all native vegetation communities disturbed will be replaced in-kind.

Conduct biological monitoring throughout the installation period. Prepare and submit a report to the USACE on each Special Condition of the Section 404 Permit, and prepare and submit an As-Built Report to the RWQCB.

*Deliverables:* Monitoring reports, As-Built Report and Section 404 Memorandum.

***Budget Category (f): Construction Administration***

No task under this category.

## Section 3

### **Agricultural Irrigation Efficiency Program: *Rancho California Water District***

#### **3.1 Introduction**

##### **Project Sponsor**

This project will be led by Rancho California Water District (the applicant) and does not involve any project partners; therefore, no additional Memorandum of Understanding is required.

##### **Project Purpose**

This purpose of this project is to reduce water demands in the region.

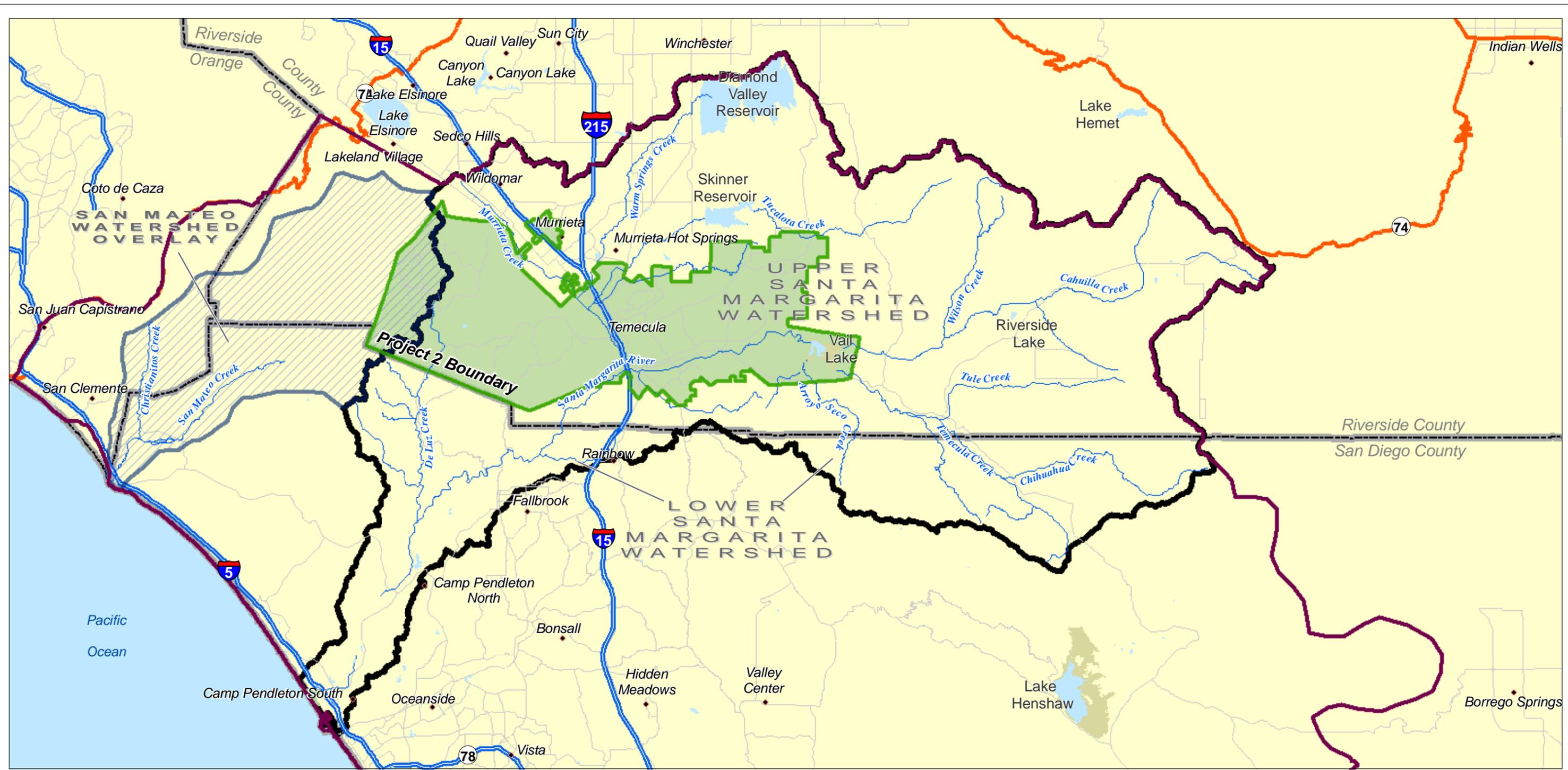
##### **Project Need**

Pest quarantines, foreign competition, adverse weather conditions, and rising costs for nitrogen fertilizer and water have all challenged the economic sustainability of southern California agriculture in recent years. As a result, in Rancho California Water District's (RCWD/District) service area a significant number of agricultural operations have failed economically and have shut down completely. This poses a threat to the viability of the local economy in general. Since water costs represent the largest capital investment for local agricultural operations and since RCWD plans to comply with the State of California's 20x2020 Plan, the District aims to assist local agriculture through the implementation of an Agricultural Irrigation Efficiency Program (AIEP/Program).

##### **Project Objectives**

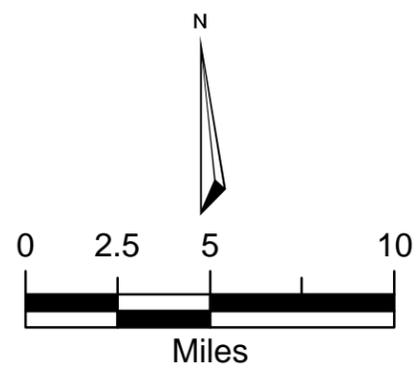
The **goal** of the District's AIEP is to aid in sustaining regional agriculture by reducing agricultural water requirements for 2,000 acres of irrigated agriculture land by 2,115 acre-feet per year (AFY) through implementation of on-farm water use efficiency strategies. The Program involves the following seven major **objectives**:

1. To develop accurate water budgets for 1,724 agricultural operations utilizing GIS and infrared data.
2. To compare these newly developed site-specific water budgets to historical water consumption for targeting approximately 200 agricultural operations or 2,000 irrigated acres that show the greatest need for water use efficiency improvements.
3. To perform irrigation system audits at the targeted sites for evaluating them in terms of irrigation system efficiency (i.e. distribution uniformity) and irrigation scheduling efficiency.
4. To increase irrigation system and scheduling efficiency at the targeted sites through system retrofits and implementation of remote sensing technologies.
5. to provide financial incentives (50% of approved equipment costs) for performing the system retrofits and installing ET and salinity remote sensing technologies
6. To re-evaluate sites in terms of irrigation system and scheduling efficiency following irrigation system retrofits.
7. To quantify water supply benefits in terms of improved irrigation system efficiency resulting from irrigation system retrofits.



**Legend**

-  Watershed Boundary
-  Rancho California Water District (RCWD) Service Area
-  San Mateo Wash Overlay
-  Project 2 Boundary (Program is district wide for the RCWD Service Area)
-  City
-  Regional Highway
-  State Highway
-  Major Street



**Figure 3 Agricultural Irrigation Efficiency Program**

January 5, 2011



**CDM**

Data Sources: Riverside County Flood Control & Water Conservation District, ESRI Streets & Maps, USGS National Hydrography Dataset, U.S. Census Bureau Population 2000 Data.



## **Linkages and Synergies**

Refer to Section 1.3 for the description of linkages and synergies for the Proposal.

## **Agricultural Irrigation Efficiency Program Project Map**

The Agricultural Irrigation Efficiency Program will be implemented throughout the RCWD service area, targeting agricultural water customers. The following Figure 3 is a Project Map of the RWCWD service area, with shows the geographical location of the project. The project involves implementation through this area.

## **Project Abstract**

Aid in sustaining regional agriculture by reducing agricultural water requirements for 2,000 acres of irrigated agricultural land by 2,115 acre-feet per year (AFY) through implementation of on-farm water use efficiency strategies.

Involves developing accurate water budgets for 1,724 agricultural operations and compare them to historical water consumption to identify 200 agricultural operations or 2,000 irrigated acres that show the greatest need for water use efficiency improvements. The project will also audit the sites and identify ways to increase water use efficiency as well as providing financial incentives (50 percent of equipment cost). The sites will be re-evaluated and water supply benefits will be quantified.

## **Project Timing**

The components of the project included in this Proposal and described herein will begin with award of funding and are expected to be completed by mid-2014. Refer to Attachment 5 for the Schedule.

## **3.2 Project Description**

The District is currently implementing the AIEP on a small scale. Since 2007, the District has worked with agricultural customers within its service area to develop water budgets based on crop type, irrigated acreage, and local weather conditions. Data for generating the water budgets was provided to the District by property owners through a certification process. In 2009, GIS imagery and infrared data purchased by the District enabled the ability to measure irrigated acreage more precisely for the purpose of calculating more accurate site-specific water requirements. More recently, the District has assisted agricultural growers in adhering to their water budgets by providing irrigation auditing services in conjunction with financial incentives for the purchase of irrigation system components necessary for reducing site water requirements by improving both irrigation system and irrigation scheduling efficiency. Cost-shared irrigation system components include but are not limited to booster pumps, pressure regulation devices, pressure compensating sprinklers, flow regulating devices, and remote sensing technologies such as soil moisture and salinity monitoring devices, weather stations for generating site-specific evapotranspiration data, weather based irrigation controllers, and computer software for making more informed irrigation scheduling decisions.

Irrigation system efficiency testing for local agricultural operations conducted by the Mission Resource Conservation District over the past five years shows that on-farm irrigation efficiency could be increased on a per acre basis by 17 percent by expanding RCWD's current AIEP, the desired outcome would be to achieve this increase in efficiency over 1,000 irrigated agricultural acres, thereby reducing water requirements by a total of 2,115 AFY and energy requirements by 3,173,400 kw/H annually (calculations explained more thoroughly in Water Supply Benefits analysis). Research also indicates that enhanced water use efficiency could result in reduced runoff from agricultural properties, which could benefit the local watershed through a reduction in the deposition of contaminants into the Santa Margarita River.

Irrigation control utilizing soil moisture and salinity monitoring devices in conjunction with weather based ET control has long been a tool of large agricultural operations, maximizing crop yields through pinpoint management of crop watering. These types of devices are now becoming more affordable for farming operations of all types and sizes. These types of equipment are considered state-of-the-art since

they provide site managers with data necessary for achieving high levels of irrigation efficiency. This is in contrast to antiquated methods that require site managers to base irrigation decisions on subjective observations. For example, hydraulically efficient irrigation systems combined with weather-based irrigation controllers have been proven to reduce water requirements and reduce runoff and pollution loads by reducing nuisance runoff that carries the pollutants to local receiving waters. This finding is demonstrated in the following two reports: 1) *Irrigation Technology Demonstration Project Report*, and 2) *Residential Runoff Reduction Study*.

The *Irrigation Technology Demonstration Project Report* presents a study that was completed by the Mission Resource Conservation District with funding from the US Bureau of Reclamation. Part of the study included the retrofit of an irrigation system in an avocado grove, which increased the hydraulic efficiency of the system and implemented irrigation scheduling technologies including soil moisture sensors and weather based irrigation technologies. The study demonstrates that while crop yield increased to a level above the regional average, 1.4 acre feet of water per acre was saved as a result of Project implementation.

The *Residential Runoff Reduction Study* established that excess irrigation results in inefficient use of valuable water supplies and increased runoff that is the transport mechanism of pollutants entering natural waterways and ultimately, for areas along the west coast, the Pacific Ocean (*Residential*, Page 1-1). The study found that water consumption by water users in the ET retrofit group was reduced by 41.2 gallons per day per household, with a reduction for the watering education group of 25.6 gallons per day per household (*Residential*, Page 7-6). The results of the study provided the knowledge to expand the application and use of ET technology to manage irrigation water for residential homes and large landscape areas (*Residential*, Page 7-6).

Other recent studies in Orange County have had promising results (*Residential*, Page 1-1). In 1998-1999, Irvine Ranch Water District (IRWD), Municipal Water District of Orange County (MWDOC), and the Metropolitan Water District of Southern California (MWD) conducted a study that evaluated the use of weather-based ET irrigation control technology at 40 residential homes in the Westpark area of Irvine. The report from this research, entitled *Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine 'ET Controller' Study*, showed water savings that translated to 37 gallons per day (gpd), or 7 percent of total household water use and 16 percent of irrigation water use. In April 2001, water savings from the *ET Controller Savings Through the Second Post-Retrofit Year: A Brief Update* in Westpark were evaluated through September 2000, or the second post-retrofit year. This evaluation confirmed the persistence of water savings observed during the initial evaluation. More specifically, this evaluation concluded that ET controllers were able to reduce total household water consumption by roughly 41 gallons per household per day, representing an 8 percent reduction in total household use, or an 18 percent reduction in estimated landscape water use. The *Residential Runoff Reduction Study*, discussed in the prior paragraph, is the subsequent phase of research associated with the new irrigation control technology linking benefits to watershed management.

Further, the Los Angeles Department of Water and Power (LADWP) conducted a *Weather-Based Irrigation Controller Pilot Study* to determine how weather-based irrigation controllers performed in non-residential settings with medium to large landscapes such as schools, parks, and homeowner associations. The August 2004 report noted findings from 25 sites with roughly 83 acres of landscape. Overall, the study found that landscapes using weather-based controllers supplied by dedicated irrigation meters are saving roughly 56 AFY, while landscapes supplied by mixed-use meters are saving 26 AFY, for a total program savings of 82 AFY (*Pilot Study*, Page vii). LADWP reported that its findings are close to that of two previous studies in Irvine, California.

MWDOC, retail water agencies, and cities have gained considerable experience implementing a similar county-wide SmarTimer Rebate Program since October 2004 in Orange County, CA. Nearly 1,200 SmarTimers have been installed throughout Orange County, which have resulted in 420 acre feet of water

savings annually, and an estimated 50 percent pollutant load reduction from those sites of nuisance runoff that carries the pollutants to local receiving waters.

The AIEP will identify operations where these technologies can be implemented most cost effectively and achieve the most water supply benefits. Since the Program is district wide and implemented on private property, no CEQA documentation will be required or anticipated.

The proposed Project meets the Upper Santa Margarita Watershed Planning Region adopted IRWMP objectives and strategies, including:

- » *Objective WS-1 Continue to Implement Water Conservation Efforts to Reduce Water Consumption for the Region: Strategy WS-1, Water Conservation, Urban Water Use Efficiency, Agricultural Water Use Efficiency Strategies;*
- » *Objective WS-3 Managed Drought Response to Increase Water Supply Reliability Through Implementation of Urban Water Management Plans, Drought Water Management Plans, and Water Facility Master Plans: Strategy WS-3, Water Supply Reliability*
- » *Objective SUS-1 Account for Expected Economic Growth, Societal Quality of Life, and Environmental Enhancement When Developing Water Resources Projects: Strategy SUS-1b, Pollution Prevention*
- » *Objective SUS-2b Promote Sustainable Practices for Agriculture: Strategy SUS-2, Agricultural Lands Stewardship*
- » *Objective WQ-3 Reduce Runoff Through Projects that Implement Best Management Practices: Strategy WQ-3a Non-Point Source Pollution Control*
- » *Objective WQ-6 Reduce Salt Loading with a Goal of Salt Balance in the Watershed and Groundwater Basin: Strategy WQ-6, Water Quality Protection and Improvement*
- » *Objective HAB-1a Increase Activities that Enhance Aquatic and Terrestrial Habitats, and Protect Endangered, Threatened and Key Species: Strategy HAB-1a and b, Ecosystem Restoration*

The Project also meets the Prop 84 program preferences by addressing the following Statewide priorities: 1) *Drought Preparedness: Improve landscape and agricultural irrigation efficiencies, and Achieve long-term reduction of water use;* 2) *Use and Reuse Water More Efficiently: Increase urban and agricultural water use efficiency measures such as conservation and recycling;* 3) *Climate Change Response Actions: Use and reuse water more efficiently, Water use efficiency, and Water system energy efficiency;* 4) *Expand Environmental Stewardship: Improve and expand environmental stewardship to protect and enhance the environment by improving watersheds, and* 5) *Protect Surface Water and Groundwater Quality: Salt/nutrient management planning as a component of the IRWM.*

Further, the Program meets the following statewide water management strategies: water conservation, water supply reliability, imported water, groundwater management, NPS pollution control, and environmental habitat protection and improvement.

AIEP supporting studies, reports and reference materials:

1. *The Irrigation Technology Demonstration Project Report*, Mission Resource Conservation District (MRCD), December 31, 2009
2. *LADWP Weather-Based Irrigation Controller Pilot Study*, Anil Bamezai Ph.D. of Western Policy Research, August 3, 2004 (P1 LADWP Pilot Study; CD #1)
3. *The Residential Runoff Reduction Study*, Municipal Water District of Orange County and Irvine Ranch Water District (IRWD), July 2004 (P1 Res Runoff Reduction Study; CD #1)

4. Evaluation of the Landscape Performance Certification Program, A & N Technical Services, Inc., January 2004 (P1 Eval Landscape Performance CP; CD #1)
5. ET Controller Savings Through the Second Post-Retrofit Year: A Brief Update, Anil Bamezai, Ph.D. of Western Policy Research, April 2001 (P1 ET Controller Savings Brief Update; CD #1)
6. Residential Weather Based Irrigation Scheduling: Evidence from the Irvine "ET Controller Study", Theodore Hunt (IRWD), *et al.*, 2001 (P1 Residential Weather Based Irrigation; CD #1)
7. Metropolitan Water District of Southern California: Weather Based Controller Bench Test Report, April 2004 (P1 MWD Weather BCB Test; CD #1)
8. City of Laguna Niguel Assessment and Evaluation Plan for the Sulphur Solution Project, Nancy Palmer of the City of Laguna Niguel, March 28, 2006 (P1 Laguna Niguel AEP Sulphur Soln.; CD #1)
9. Agricultural Irrigation Efficiency Program. Rancho California Water District. July 2010.
10. Covey Lane Study Revisited. University of California. 2007.
11. Code of Sustainable Winegrowing Practices. California Association of Winegrape Growers.
12. Agricultural Water Management Program Annual Report. Mission Resource Conservation District. 2006-2010.
13. Ag Reduction Plan. Rancho California Water District. 2007.

### 3.3 Proposed Work Tasks

#### ***Budget Category (a): Direct Project Administration Costs***

##### **Task 1: Administration**

Conduct project administration including management of contractors, track expenditures, prepare invoices, and develop performance measures and a monitoring plan; and other required project administration.

*Deliverables:* Invoices and other documentation as required as per the grant agreement.

##### **Task 2: Reporting**

Report on Program accomplishments. Reports will include data relating to irrigation system audits, irrigation system efficiency improvements resulting from system retrofits, and water supply benefits.

*Deliverables:* Submission of quarterly, annual, and final reports as specified in the grant agreement.

#### ***Budget Category (b): Land Purchase/Easement***

No task under this category.

#### ***Budget Category (c): Planning/Design/Engineering/Environmental Documentation***

##### **Task 3: Water Budget Development**

Develop accurate water budgets for 1,724 agricultural properties. Updated GIS imagery and infrared data will be purchased and customized for assessing irrigated acreage on a site by site basis. Irrigated acreage will be used in conjunction with crop type and crop water requirement data to develop site-specific water budgets.

*Deliverables:* GIS Maps to include irrigated acreage, crop type, and water budget information.

#### **Task 4: Site Identification**

Identify agricultural properties that could benefit from Project participation. Historical site water usage will be compared with water budgets generated for Task 4 to identify sites where usage exceeds the budget. These sites will be targeted for irrigation system audits and retrofits.

*Deliverables:* List of potentially qualified agricultural properties.

#### **Task 5: Contractor Procurement**

Extend current contract with irrigation system auditing contractor for performing pre-retrofit and post-retrofit irrigation system audits.

*Deliverables:* Copy of signed contract extension.

#### ***Budget Category (d): Construction/Implementation***

#### **Task 6: Pre- and Post-Retrofit Site Evaluations/Audits**

Conduct pre-retrofit irrigation system audits to assess existing irrigation system efficiency at target sites. Recommend system improvements based on audit results. Return to site after property owner implements recommended system retrofits. Verify adequacy of retrofits and conduct post-retrofit irrigation system audit. Produce reports for both types of audits. The pre-retrofit site audit will contain the following:

1. On-site evaluation of irrigation system performance and practices.
2. A written, dated report provided by the auditor which details at least the following:
  - a. General description of the site, crop, and irrigation system.
  - b. A description of the soil types found in the tested areas.
  - c. A summary of audit findings including date of audit.
  - d. Data from a single event distribution uniformity test performed to industry standards.
  - e. Flow and pressure data collected during the evaluation.
  - f. Observations and recommendations for improving distribution uniformity, overall system performance, and reducing water usage.
  - g. Specific recommendations of capital improvements that improve agricultural irrigation system efficiencies.
  - h. Estimated water savings from system improvements.
  - i. Recommended irrigation schedule/water budget.

The post-retrofit site audit will document the irrigation system improvements and measure current distribution uniformity. The final audit report shall include the following at a minimum:

- a. A summary of the audit findings including date of audit.
- b. Data from a single event distribution uniformity test performed to industry standards.
- c. Flow and pressure data collected during the evaluation.
- d. Revised recommended irrigation schedule/water budget based on current distribution uniformity.
- e. Estimated annual water savings calculation based on current distribution uniformity compared to distribution uniformity documented in the pre-retrofit audit.

*Deliverables:* Pre- and post-retrofit irrigation system efficiency audit reports.

### **Task 7: Program Assessment of Performance Measures**

Quantify Water Supply Benefits. Water Supply Benefits will be measured based on the difference between pre-irrigation system retrofit distribution uniformity and post-irrigation system retrofit distribution uniformity. Water Supply Benefits and subsequent energy savings will be estimated based on this difference and according to the following formulas:

#### **Water Supply Benefits (acre feet per year)**

$$WSB = WR_{pre} - WR_{post}$$

where,

WSB = water supply benefits (acre feet per year)

WR<sub>pre</sub> = site water requirement in acre feet prior to irrigation system retrofit

WR<sub>post</sub> = site water requirement in acre feet following to irrigation system retrofit

and,

$$\text{site water requirement in acre feet} = ((E_{To} \times K_c) / DU) / 12 * IA$$

where,

E<sub>To</sub> = evapotranspiration (in inches)

K<sub>c</sub> = crop coefficient (as % of E<sub>To</sub>)

IA = irrigated acreage

DU = irrigation system distribution uniformity (%)

12 = number of acre inches in an acre foot

#### **Energy Savings (kWh/yr)**

$$ES = WSB \times 1500$$

where,

WSB = water supply benefits (from previous calculation)

1500 = kWh consumed per acre foot pumped

*Deliverables:* Report on Water Supply Benefits and energy savings accomplishments

### **Task 8: Provide Incentives**

Provide financial incentives for irrigation system retrofits based on approved equipment costs. Collect supporting documentation of retrofit costs in the form of receipts/invoices. Incentives are defined as 50 percent of qualified equipment costs for approved projects. Qualified equipment is that which increases irrigation efficiency and has undergone third party testing such as the Center for Irrigation Technology (CIT). RCWD staff will approve equipment for reimbursement. Send detailed approval letters to customers indicating acceptable retrofit equipment and potential incentive dollar amounts.

Participants are required to complete the following documentation process:

1. Interested customers contact RCWD to see if they qualify for the program.
2. A site audit by a qualified agricultural irrigation specialist is required to participate in this program.

3. Interested customer submits a completed application that details planned improvements, along with a copy of the pre-retrofit audit report to RCWD.
4. RCWD notifies the applicant of approval status in writing.
5. When approved, the applicant makes irrigation system improvements.
6. Once improvements are made, the applicant contacts same auditor for post audit verification.
7. Post audit is performed, irrigation system improvements are reviewed and final emission uniformity is determined.
8. Applicant submits the final report along with original copies of receipts/invoices to RCWD.
9. RCWD reimburses the customer for 50% of the equipment costs on the water bill.

*Deliverables:* Receipts for retrofit equipment and incentive payment documentation.

***Budget Category (e): Environmental Compliance/Mitigation/Enhancement***

No task under this category. There are no CEQA or environmental requirements for this project.

***Budget Category (f): Construction Administration***

**Task 9: Facilitate Program Activities**

Coordinate customer participation and oversee audit contractor activities. Advertise the program to target sites via direct mailings. Manage customer application materials. Track contractor audit schedules and conduct random site visits during irrigation system audits for quality control purposes. Review audit reports and verify reasonableness of site retrofit recommendations.

*Deliverables:* Program advertising materials.

## **Section 4**

### **WR-34 Hydroelectric Power Generation Project: *Rancho California Water District***

#### **4.1 Introduction**

Surface waters and groundwater supporting surface water in the Santa Margarita Watershed have been under some form of court jurisdiction since 1928. A Watermaster has been assigned by the US District Court for the Southern District of California to oversee all water uses within the Santa Margarita Watershed. Specific water rights in the watershed have not been adjudicated. However, the Stipulated Judgment assigns two-thirds of all natural waters to the United States of America (Camp Pendleton) and the remaining one-third to RCWD.

Rights to utilize the water and groundwater stored in Vail Lake are defined in the 1940 Stipulated Judgment in the case of Santa Margarita versus Vail and Appropriations Permit 7032 issued by the State Water Resources Control Board (SWRCB). RCWD stores local runoff in Vail Lake, which was created in 1948 through construction of Vail Dam on Temecula Creek. RCWD has a surface water storage permit in Vail Lake for up to 40,000 AF from November 1 to April 30. During these months, RCWD releases available water from Vail Lake to the Valle de los Caballos (VDC) spreading basins, about 1.5 miles downstream, for groundwater recharge. From May through October, existing State permits prohibit storage and require inflow to pass through Vail Lake to Temecula Creek and ultimately to the lower watershed. RCWD must meet Gorge flow requirements of 2,500 AFY as set by the Cooperative Water Resource Management Agreement between Camp Pendleton and RCWD. RCWD currently meets this requirement by discharging untreated imported water into Murrieta Creek. Maintaining base flows and other physical, hydrological, and biological processes and conditions is critical to maintaining the high resource values of the system. RCFC in coordination with local, state, and federal agencies maintains a flood control system to provide protection against flood hazards caused by excessive wet weather flows. Major flood control facilities, including dams, flood basins, levees, open channels, and major underground storm drains in the Upper Santa Margarita Watershed. Privately proposed drainage and flood control structures and improvements are subject to review and approval by the local agency public works departments or the RCFC depending on who will ultimately maintain the infrastructure. The system drains wet and dry weather runoff from surface areas such as streets and routes flows into underground pipes and drains discharging to various inland streams and channels. Ultimately, stormwater runoff is discharged to the Pacific Ocean at the Santa Margarita lagoon in the watershed.

The IRWMP development and implementation process has promoted projects, like the Hydroelectric Power Generation Project, that seek diversity and integration in developing local water supply options to assist in resolving ongoing water rights issues in the Watershed while increasing the reliability of water supplies.

#### **Project Sponsor**

This project will be led by Rancho California Water District (the applicant) and does not involve any project partners, therefore no additional Memorandum of Understanding is required.

#### **Project Need**

Water supply in the Santa Margarita Watershed is governed by a settlement agreement and Cooperative Water Resource Management Agreement between Camp Pendleton and Rancho California Water District, defining Rancho California Water District's (RCWD) Gorge flow requirements to the Santa Margarita River system to be 2,500 acre-feet per year. Maintaining base flows and other physical, hydrological, and biological processes and conditions is critical to maintaining the high resource values of the system. In

addition to critical water supply needs, endangered and sensitive species as well as critical habitat areas rely on these Santa Margarita River base flows in order to sustain ecosystem function and values. The Santa Margarita River Outfall Project (WR-34 Turnout) was constructed by RCWD to provide imported water in order to help maintain required base flows to the Santa Margarita River. RCWD invested \$1.4 million to construct this turnout project, along with annual imported water purchases from the Metropolitan Water District. Construction of the subject WR-34 Hydroelectric Power Generation Project will strengthen RCWD's ability to continue to replenish the Santa Margarita River base flows required by settlement agreement with the Federal government by enhancing management of existing water management facilities and using available hydraulic flows to provide green energy in order to reduce costs associated with replenishment of Santa Margarita base flows. Since RCWD must use imported water to help meet this settlement agreement, more energy is being consumed to bring down this water from northern California, hundreds of miles. The subject hydropower project is a direct offset of energy for a water supply project.

Construction of the WR-34 Hydroelectric Power Generation Project will also help stabilize water rates and reduce long-term operational costs, while strengthening RCWD's ability to continue to replenish the Santa Margarita River base flows required by a settlement agreement with the Federal government by enhancing management of existing facilities and using available hydraulic energy to provide safe and reliable electrical energy.

### **Project Purpose**

The RCWD proposes to construct the WR-34 Hydroelectric Power Generation Project (Project) as part of its long term goal of water supply efficiency and sustainability of the Santa Margarita River. The project will utilize existing topography and existing water transmission infrastructure to produce electrical power. When completed, the produced electrical power will be sold to Southern California Edison (SCE) for use throughout their service area. The Project will enhance management of existing water transmission facilities while providing ecologically sound secondary benefits to water and power customers. The Project will use available hydraulic energy to provide safe and reliable electrical energy while continuing to replenish a critical natural waterway, as required of RCWD by agreement with the Federal government. In addition, the new revenue stream from the sale of electric power will help stabilize rates, important to water customers and critical in keeping the RCWD's agricultural customers viable.

### **Project Objectives**

The objectives of this project are to meet an established Santa Margarita River base flow requirement per settlement agreement with the Federal government, to provide groundwater replenishment, and to provide a clean source of green energy to the region.

### **Linkages and Synergies**

Refer to Section 1.3 for the description of linkages and synergies for the Proposal.

### **Hydroelectric Power Generation Project Map**

Following are the three maps associated with this project. Figure 4 shows the Project Map, which provides a location of the project relative to the watershed, Figure 5 shows the location of the proposed facilities from a closer perspective and Figure 6 shows the more detailed layout of the proposed facilities.

### **Project Abstract**

Construction of the WR-34 Hydroelectric Power Generation Project to help stabilize water rates and reduce long-term operational costs, while enhancing the ability to meet replenishment of a critical natural waterway, as required of RCWD by agreement with the Federal Government. Utilize existing topography and existing water transmission infrastructure to produce electrical power. When completed, the produced electrical power will be sold to Southern California Edison to enhance management of existing water transmission facilities while providing ecologically sound secondary benefits to water and power customers. Use available hydraulic energy to provide safe and reliable electrical energy while continuing to replenish a critical natural waterway, as required of RCWD by agreement with the Federal government.

### **Project Timing**

Earlier phases of this project were already completed. The components included in this Proposal will begin with award of funding and are expected to be completed by mid 2013. Refer to Attachment 5 for the Schedule.

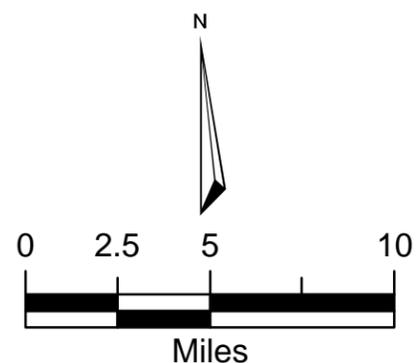
### **Supplemental Materials**

Supplemental materials are included in Appendix B to this Attachment 3. Additional details are also included under the project description.



**Legend**

-  Watershed Boundary
-  Rancho California Water District Service Area
-  San Mateo Wash Overlay
-  Project 3 Location
-  City
-  Regional Highway
-  State Highway
-  Major Street



**Figure 4 WR-34 Hydroelectric Power Generation Project**

January 5, 2011



**CDM**

Data Sources: Riverside County Flood Control & Water Conservation District, ESRI Streets & Maps, USGS National Hydrography Dataset, U.S. Census Bureau Population 2000 Data.





Figure 5 Hydroelectric Power Generation Project Locations of Facilities

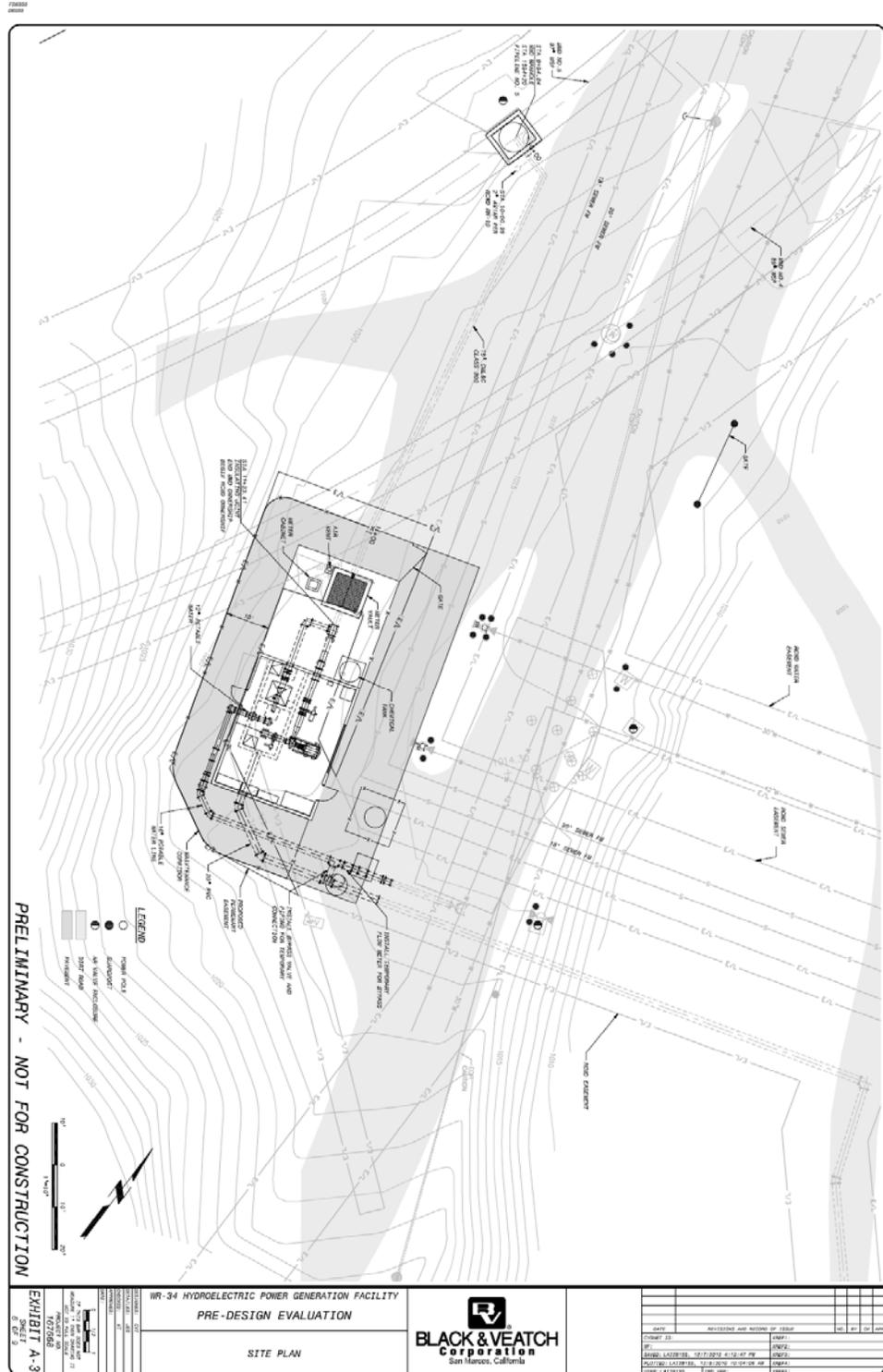


Figure 6 Hydroelectric Power Generation Project Facilities

## 4.2 Project Description

The hydroelectric power generation facility will be located along an existing raw water diversion line which delivers water to the Santa Margarita River. A significant drop exists along this diversion and the economics of using this drop as the power for the electric generation is feasible. RCWD owns and operate the WR-34 Turnout Facility that is used to take raw water from the Metropolitan Water District of Southern California's (MWD) Pipeline No. 5 and discharge it to the Santa Margarita River. Water discharges are made in compliance with the Santa Margarita River Cooperative Water Resource Management Agreement between RCWD and the United States on behalf of Camp Pendleton. The Turnout Facility includes a single sleeve valve that is used to dissipate approximately 400 feet of excess head in the flow prior to discharge to the River. Because of this excess hydraulic head, RCWD commissioned a Pre-Design Evaluation to provide an assessment of the technical and economic feasibility of incorporating a hydroelectric turbine-generator into the Turnout Facility. This evaluation was complete in July 2010 and shows the project is feasible.

The Pre-Design Evaluation was prepared by Black & Veatch evaluated existing conditions, including facilities, available head at Pipeline No. 5, and turnout flow conditions. They then evaluated three hydropower facility options – two pump turbine generator types and a powerhouse facility – compared to existing conditions, developed cost and revenue estimates, and performed economic analyses. The evaluation also identified required approvals, permits and licenses. Based on the favorable economic position of the pre-project evaluation, the Project is recommended for design and construction using the preferred 13.1 cfs pump-turbine option. This pump-turbine is the preferred alternative based on the following:

- Requires a smaller, less expensive building
- Lower capital cost
- Payback period is approximately nine years
- Meets the energy generation requirements for economic feasibility
- Results in a net positive financial position generating in excess of \$1.6 million
- Helps stabilize water rates while producing clean energy for the community

The hydroelectric turbine-generator will be directly connected to the SCE electrical grid. This type of connection is authorized under State law and SCE has an existing payment program which is expected to provide an annual payment to RCWD.

Successful implementation of the Hydroelectric Power Generation Project is anticipated to result in the following project benefits:

1. Stabilization of RCWD water rates
2. Sustainable water rates for agricultural users
3. Create a reliable municipal electric generation facility that will produce a new energy source from existing water infrastructure, clean electrical energy for the community, renewable electric energy without adding atmospheric carbon load, and a reliable energy source powered by a predictable water flow.
4. Meets Statewide objective of developing alternative electrical generation facilities
5. Meets National objectives of the pending Hydropower Improvement Act of 2010
6. Meets National objective of reducing atmospheric carbon dioxide (CO<sub>2</sub>)

Construction of the WR-34 Hydroelectric Power Generation Project will distinctly result in enhanced sustainable water rates by producing clean, renewable electric energy through the modification and

installation of generation equipment place on existing water infrastructure. The Project will meet the Upper Santa Margarita Watershed Planning Region adopted objectives, including *Promote Economic, Social, and Environmental Sustainability, and Maximize Implementation of Water Resource Projects*. The Project also meets the Prop 84 program preferences of addressing the following Statewide priorities: 1) *Climate Change: Reduction of greenhouse gas emissions, reduced energy consumption, water system energy efficiency*; 2) *Improve Tribal Water and Natural Resources: Development of Tribal consultation and collaboration*; and 3) *Ensure Equitable Distribution of Benefits: Develop multi-benefit projects with consideration of affected disadvantaged communities*.

The Project is a stand-alone project. Development of the Project would begin immediately upon execution of the grant agreement and is anticipated to be completed from permitting to construction in 16 months. Specific tasks are shown below and are consistent with the proposed project budget and schedule.

### 4.3 Proposed Work Tasks

#### ***Budget Category (b): Direct Project Administration Costs***

##### **Task 1: Administration**

Conduct project administration including management of consultants and contractors, oversee reporting, preparation of invoices, development of performance measures and a monitoring plan, and implement and oversee the labor compliance program.

*Deliverables:* Invoices, monitoring plan, labor compliance program and other administrative deliverables as required.

##### **Task 2: Reporting**

Prepare and submit quarterly, annual and final reports on project progress to DWR.

*Deliverables:* Submission of quarterly, annual and final reports as specified in the Grant Agreement.

#### ***Budget Category (b): Land Purchase/Easement***

No task under this category.

#### ***Budget Category (c): Planning/Design/Engineering/Environmental Documentation***

##### **Task 3: Assessment and Evaluation**

###### **Subtask 3.1: Pre-Design Evaluation**

Prepare a Pre-Design Evaluation to provide a preliminary assessment of the technical and economic feasibility of incorporating a hydroelectric turbine-generator into the Turnout Facility to recover available head, presently being dissipated before being discharged in the Santa Margarita River, to produce and sell electricity to SCE. ***Completed July 26, 2010***

*Deliverable:* Pre-Design Evaluation Memorandum

###### **Subtask 3.2: Site Investigations**

Conduct site investigations including topographic survey, geotechnical investigation, corrosivity study, subsurface utility exploration, and a biological resources/habitat assessment. RCWD's consultant engineer will perform this task.

*Deliverable:* Site Investigation Reports

### **Subtask 3.3: Turbine-Generator Procurement Package**

Prepare the engineering/design and prepare the necessary drawings and technical specifications for procurement of the owner-furnished hydroelectric water-to-wire equipment that includes the turbine, generator, hydraulic power unit, and the electrical switchgear/control panel. RCWD's consultant engineer will perform this task and develop the complete procurement package.

*Deliverable:* Complete turbine-generator water-to-wire procurement package.

### **Task 4: Final Design**

Perform the design and engineering for the hydroelectric facility, which includes the preparation of the detailed design, drawings and technical specifications for the procurement and construction of a complete and operable hydroelectric power generation facility. Design engineering will be performed by RCWD's design engineer and, in general, will include the following items:

- Collect and analyze additional data as required to complete the final design
- Recommend and specify the type and quality of construction materials.
- Prepare calculations as required for design of equipment, material selection, and preparation of construction drawings.
- Provide engineering/design in accordance with applicable code requirements.
- Prepare designs, drawings, and specifications to the degree of detail that contractors can determine manufacturing and construction work requirements; such engineering disciplines include civil, mechanical, architectural, structural, electrical, and instrumentation and control.

*Deliverable:* Complete project plans and specifications at the 90 percent and final level.

### **Task 5: Environmental Documentation**

Prepare CEQA documentation including the CEQA Initial Study Environmental Checklist, Environmental Impact Assessment Form, Mitigated Negative Declaration, and Mitigation Monitoring Program. The California Native American Tribe Notification will be followed in the process to adopt the CEQA documentation.

*Deliverable:* Approved and adopted CEQA documentation.

### **Task 6: Permitting**

Obtain approvals, permits and licenses from the following entities during project execution.

- a) Obtain approval from MWD for additional easements and for construction of the Project within MWD easement.
- b) Prepare an application for the SCE CREST (California Renewable Energy Small Tariff) program and execute an Interconnection Facilities Financing and Ownership Agreement for the facility with SCE for the purchase of energy generated by the Project. Within this activity, obtain California Energy Commission (CEC) pre-qualification that the facility is an Eligible Renewable Resource.
- c) Obtain an encroachment permit with the City of Temecula for construction with the City of Temecula right-of-way.
- d) Obtain a Federal Energy Regulatory Commission (FERC) Conduit Exemption. Conduct the three required consultation stages: 1) Notify resource agencies and Indian tribes of intent to apply for exemption; conduct a joint meeting with agencies, tribes and public; and finalize study plans, if any; 2) Proceed with studies, if any, and provide stakeholders with a Draft application including

results of studies; obtain comments and finalize application to FERC; and 3) Submit application for Conduit Exemption to FERC and respond to FERC comments, if any.

e) Obtain CEQA.

*Deliverables:* MWD easement approval; SCE CREST program agreement; encroachment permit; and FERC Conduit Exemption; CEQA documentation.

***Budget Category (d): Construction/Implementation***

**Task 7: Construction Contracting**

Prepare a detailed bid package and conduct solicitation for the Hydroelectric Power Generation Project.

*Deliverables:* Bid documents, including advertisement for bids, pre-bid contractors meetings, evaluations of bids, and award of contract.

**Task 8: Construction**

The WR-34 Hydroelectric Power Generation Facility will follow a comprehensive set of construction standards, specifications, and technical provisions maintained and required by the District. These standards, specifications and provisions will be rigorously monitored throughout implementation of the Project. Standards and materials documents to be followed include Standard Drawings, Facility Requirements and Design Criteria, Specifications, General Provisions, Special Provision, Technical Provisions, and an Approved Materials List, which are extensive and included on the District's Web page at <https://ranchowater.com/engineering.aspx>.

**Subtask 8.1: Mobilization and Site Preparation**

Perform temporary grubbing and grading, which includes the following: Set-up temporary construction office and sanitary facilities; set-up secure equipment and materials storage area; and deliver necessary equipment to perform the construction.

**Subtask 8.2: Project Construction**

Perform project construction to include the following:

- Demolition of existing structures
- Site preparation
- Civil work: earthwork and below grade piping
- Structural/Architectural work: masonry building and concrete vault
- Mechanical work: subsurface piping and above grade piping and equipment
- Electrical work: SCE service and equipment, switchgear and control equipment, and instrumentation and controls.

<b>Table F</b>		
<b>Detail of Probable Construction Items</b>		
<b>Item</b>	<b>Quantity</b>	<b>Unit</b>
<b>Mobilization and Demobilization</b>		
Supervision		LS
Temporary Facilities		LS
Temporary Utilities		LS
Equipment Rental & Misc.		LS
<b>Site Work</b>		
Earthwork – Clear and Grub	0.04	AC
Earthwork – Excavation	150	CY
Earthwork – Compacted Fill	30	CY
Retaining Wall		LS
Site Improvements		LS
Relocation of Chemical Storage Tank		LS
Relocation and Salvage of 6" Pipe and Appurtenances		LS
<b>Hydroelectric Building</b>		
Concrete – Foundation	11	CY
Concrete – Slab-on-Grade	25	CY
Concrete Encasement	15	CY
Concrete – Miscellaneous	15	CY
Masonry – 8" Smooth Face CMU	1,588	SF
Metals - Miscellaneous		LS
Thermal & Moisture Protection – Roof - Plywood	700	SF
Thermal & Moisture Protection – Roof – Insulation	700	SF
Thermal & Moisture Protection – Roof – Clay Tiles	8	SQ
Thermal & Moisture Protection – Roof – Miscellaneous		LS
Powerhouse Doors – Hollow Metal	1	EA
Powerhouse Doors – Hollow Metal, Double Door	1	EA
Powerhouse Doors – Door Hardware		LS
Powerhouse Finishes – Acoustical Panels	1,000	SF
<b>Mechanical Work</b>		
Pelton Turbine & Generator Package	1	EA

### **Subtask 8.3: Project Closeout Activities**

Perform project closeout activities, which include startup and testing, contractor deficiencies (punch list), site restoration, and demobilization, and prepare As-Built plans.

*Deliverables:* Contractor deficiency list, site restoration and demobilization status reports, and As-Built plans.

### **Budget Category (e): Environmental Compliance/Mitigation/Enhancement**

#### **Task 9: Environmental Compliance/Mitigation/Enhancement**

Environmental mitigation would be known upon completion of Task 5, Environmental Documentation. If environmental mitigation is required, all mitigation activities and costs are performed. Costs are included in the contingency budget.

*Deliverable:* Mitigation compliance reporting to regulatory agencies, final compaction and materials testing reports (Geo-tech if applicable), equipment test reports, and daily inspection reports.

***Budget Category (f): Construction Administration***

**Task 10: Construction Administration/Management**

**Subtask 10.1: Construction Administration/Management**

Perform construction management activities, which will include contract management of contractor, construction inspection activities, review and respond to material/equipment submittals and request-for-clarification inquiries.

*Deliverables:* Construction management and inspection reports.

**Subtask 10.2: Prepare Operations Plan**

Prepare an Operations Plan for the long-term operation of the Hydroelectric Power Generation Facility.

*Deliverable: WR-34 Hydroelectric Power Generation Facility Operations Plan*

## Section 5

### Water Quality Enhancements in Riverside County – Phase I: Riverside County Flood Control and Conservation District

#### 5.1 Introduction

##### Project Sponsor

This project will be led by Riverside County Flood Control and Conservation District, and as such Rancho California Water District (the applicant) will enter into a Memorandum of Understanding with Riverside County for disbursement of awarded funds. Riverside County Flood Control and Conservation District will also enter into an agreement (MOU) with Elsinore Murrieta Anza Resource Conservation District (EMARCD).

##### Project Objectives

The Santa Margarita Watershed IRWM Plan identifies the following planning objectives (see pg ES-6 and 3-2):

- A. Develop a more reliable and diverse portfolio of water supplies
- B. Promote economic, social and environmental sustainability
- C. Improve water quality
- D. Restore, enhance and maintain habitats and open space
- E. Promote sustainable floodplain management
- F. Promote appropriate recreational opportunities
- G. Promote appropriate land use planning
- H. Increase stakeholder involvement and stewardship
- I. Maximize implementation of water resources projects

There are several **objectives** for the project which include the following:

- Encourage the use of Low Impact Development (LID) site design Best Management Practices (BMPs) to reduce negative hydromodification impacts to the existing receiving waters and improve water quality, environmental sustainability and water conservation.
- Maximize stakeholder/ community involvement and stewardship in the Santa Margarita watershed through establishing a stakeholder group that will aid in the education process to the public. Cooperation with the public is necessary to effectively identify, implement and maintain retrofit projects that will improve water quality and preserve habitat in the receiving waters. With a representative of the community as the messenger, the message and education efforts will be more effective. (See IRWMP pg 3-8)
- Imported water supply availability fluctuates, is susceptible to interruption and can be expensive (See IRWMP pg 3-3). With LID site design BMPs in place, water will be reused and conserved or infiltrated into the groundwater basins replenishing a more reliable water supply.
- Incorporation of watershed based programs results in inclusion of Disadvantage Community Areas. Identification and focus on the most critical areas will shift focus on improvements in areas most needed and not most wealthy. (See IRWMP pg 3-4)
- Incorporation of watershed based programs will result in more efficient and cost- effective long term solutions. (See IRWMP pg 3-4)

## Project Purpose

The **purpose** of the project, which includes the water quality enhancements under phase 1, is to aim to reduce impacts from hydromodification, promote LID, support riparian and aquatic habitat restoration, and reduce the discharges of storm water pollutants and improve water quality. (See California Regional Water Quality Control Board San Diego Region Waste Discharge Requirements from the Municipal Separate Storm Sewer Systems Draining the County of Riverside, the Incorporated Cities of Riverside County, and the Riverside Flood Control And Conservation District within the San Diego Region, Order No. R9-2010-0016 pg. 64 – referred to as the MS4 Permit). These **goals** will be accomplished through: 1) creating a GIS watershed map/guidance identifying retrofit opportunities 2) creating an education component to encourage retrofit projects and 3) creating a watershed Hydromodification Management Plan.

## Project Needs

Implementation of the Water Quality Enhancements for Riverside County - Phase 1 includes pieces of three larger projects included originally in the IRWMP: (1) Retrofit public property with water quality measures - \$10.3 million, (2) Funding for NPDES related public education - \$320,000, and (3) Plan to enhance Master Drainage Plans (MDPs) to incorporate water quality and water conservation aspects as well as construct those facilities - 13.5 million. These projects total to approximately \$24 million dollars. This first phase of implementation is to assess, identify, educate and prepare guidance documents in order to implement physical projects to enhance water quality and conservation throughout the Santa Margarita Watershed. The watershed based analysis will allow for the best sites and most critical sites to be chosen for retrofit projects and stream restoration from hydromodification impacts. The original projects didn't account for hydromodification impacts but with the recently adopted Order No. R9-2010-0016 hydromodification management has been identified as necessary. The retrofit project will include an evaluation of public and private properties for water quality management measures such as Low Impact Development (LID) BMPs and other water quality/conservation/management measures and later phases will include implementing identified projects. The education project is a necessary component of an effective NPDES program and targets anthropogenic source of pollutants from urban sources in order to avoid the need for separate programs to address TMDL impairments in the watershed. Education to the public will highlight water conservation practices to be used and result in preventing water waste. Lastly, incorporation of the analysis into the Riverside County Flood Control and Water Conservation District MDPs is crucial to master planning the watershed as a whole, keeping new development projects in line with overall goals and keeping the public informed of this plan. Construction of identified projects will benefit the watershed by reducing contaminants to the receiving waters, minimizing negative hydromodification impacts to habitat areas, and increase water supply through the use of reuse and infiltration of runoff.

Additionally, several **needs** for the project have been identified, as follows:

- The current rate of redevelopment will not address water quality problems resulting from existing development in a timely manner therefore there is a need to identify retrofit projects for existing developments causing or contributing to pollution to the receiving waters. An education outreach program is necessary to encourage such retrofit projects and aid in the success to maintain effectiveness in perpetuity. (See MS4 Permit, Findings D.3.h Order No. R9-2010-0016 pg. 11-12)
- Current BMPs are not as effective in preventing negative hydromodification impacts to receiving waters including downstream erosion, impaired stream habitat in natural drainages and impaired beneficial uses. Use of LID site design BMPs at new development, redevelopment and retrofit projects will help preserve and restore the natural hydrologic cycle of the site, allowing for

filtration and infiltration and thus reducing the volume, peak flow rate, velocity, and pollutant loads of storm water runoff. (See MS4 Permit, Findings D.2.c. and D.2.g Order No. R9-2010-0016 pg. 9-10)

- To identify critical water quality problems and develop programs on a watershed basis is necessary to efficiently manage runoff that traverses multiple political jurisdictions, land uses and habitat areas. (See MS4 Permit, Findings D.4.a Order No. R9-2010-0016 pg. 12)

### **Existing Data and Studies**

As this is the first phase of the project, the project is in the initial stages of development and therefore only concept level planning has been completed.

### **Linkages and Synergies**

Refer to Section 1.3 for the description of linkages and synergies for the Proposal.

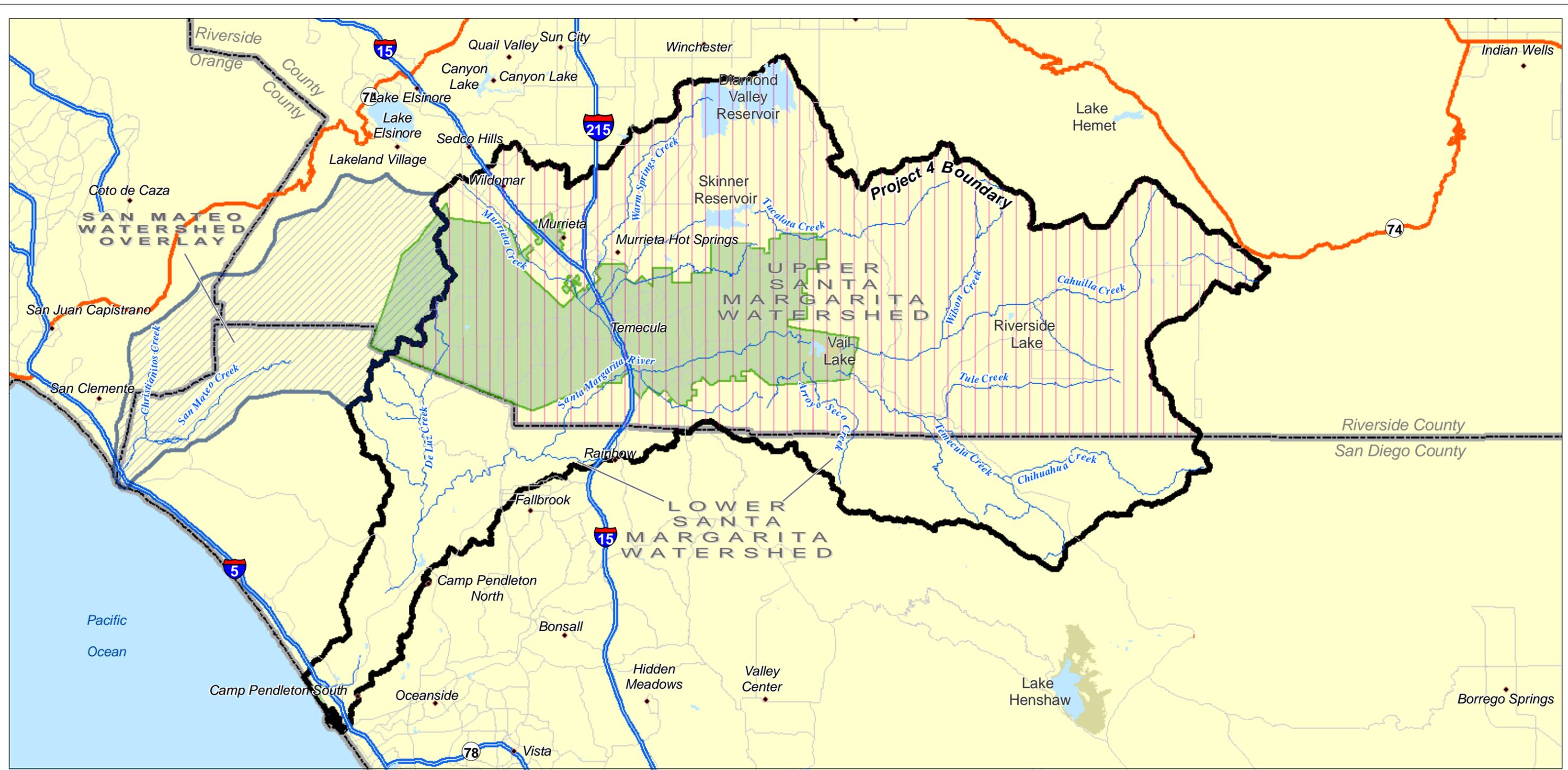
### **Project Timing**

This project will begin with award of funding and are expected to be completed by mid 2014. Refer to Attachment 5 for the Schedule.

### **Water Quality Enhancements in Riverside County Project Map**

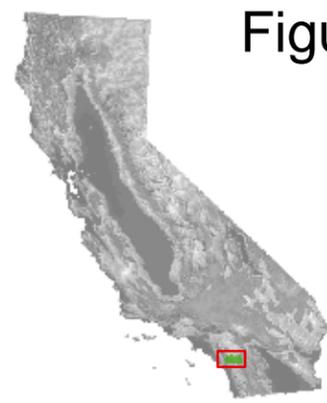
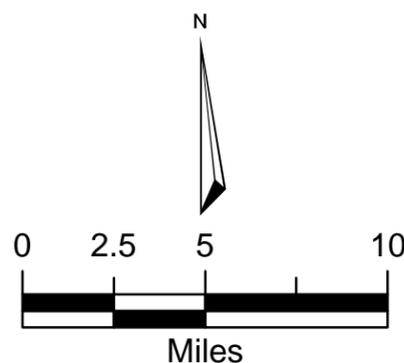
A Project Map is shown in Figure 7. Implementation of the project will occur throughout this area.





**Legend**

-  Watershed Boundary
-  Rancho California Water District Service Area
-  San Mateo Wash Overlay
-  Project 4 Boundary (Implementation throughout Riverside County portion of Watershed)
-  City
-  Regional Highway
-  State Highway
-  Major Street



**Figure 7 Water Quality Enhancements in Riverside County**

January 5, 2011



**CDM**

Data Sources: Riverside County Flood Control & Water Conservation District, ESRI Streets & Maps, USGS National Hydrography Dataset, U.S. Census Bureau Population 2000 Data.



### **Project Abstract**

The project aims to reduce impacts from hydromodification, promote LID, support riparian and aquatic habitat restoration, and reduce the discharges of storm water pollutants and improve water quality.

The project involves identification of retrofit opportunities in the Santa Margarita Watershed, which includes researching, inventorying and prioritizing areas of existing development (i.e. municipal, industrial, commercial, residential) as candidates for targeted retrofit projects that would reduce the impacts of existing development on the watershed.

Specific outreach will occur through the education of home owners associations (HOAs), which will serve to identify the need and benefits to retrofit existing common landscaped areas.

The project also involves hydromodification management, which will guide and support the planning, design and construction of priority new and significant redevelopment projects (PDPs) within the Upper Santa Margarita Watershed to manage increases in runoff discharge rates and durations.

### **Project Timing and Phasing**

This project is part of a multi-phase project, however each of the phases of the project have been designed to include individual, standalone smaller projects. The components of the phase of project included for funding herein are essential to the success of future phases.

Phase I of the project can operate as a standalone project for several reasons. First, once the potential retrofit opportunities associated with hydromodification, LID, etc are identified, this valuable information will be used whenever retrofit or construction activities are proposed at these locations for any reason, to maximize the opportunity to make these improvements. Second, the HOA effort is a standalone project. The benefits of that portion of the project will be immediately realized.

## **5.2 Proposed Work Tasks and Project Description**

### ***Budget Category (a): Direct Project Administration Costs***

#### **Task 1: Administration and Reporting**

Management and oversight of the development of the Hydromodification Management Plan (HMP), and Retrofit Opportunities Study, including holding status update meetings with Riverside Copermittees, Technical Advisory Committee, and RWQCB staff. Work includes oversight and administration of contractual work. Prepare performance measures and monitoring plan and other required project administration.

The Riverside County Flood Control and Water Conservation District (District) and other Permittees (County of Riverside, Cities of Temecula, Wildomar and Murrieta), and Rancho California Water District will carry out project administration tasks relating to direct project administration and reporting for this project.

Costs are requested to cover Rancho California Water District's (RCWD) administration costs for coordination with the state.

*Deliverables:* RFP and consulting services contract. Submission of quarterly, annual and final reports as specified in the Grant Agreement.

### ***Budget Category (b): Land Purchase/Easement***

No task under this category.

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

**Task 2: Assessment and Evaluation – Identification of Retrofit Opportunities in the Santa Margarita Watershed**

This task will include researching, inventorying and prioritizing areas of existing development (i.e. municipal, industrial, commercial, residential) as candidates for targeted retrofit projects that would reduce the impacts of existing development on the watershed, and support the following objectives: water conservation, reducing impacts from hydromodification, promoting LID, supporting riparian and aquatic habitat restoration and improve water quality by reducing storm water pollutants.

**Subtask 2a: Research areas of existing development**

Various sources of information about areas of existing development in the Upper Santa Margarita Watershed will be analyzed. Zoning and assessors' parcel information will be used to identify existing land uses and ownership and will be cross referenced to recent aerial photography; topographical information such as natural water courses and hydrologic sub areas will also be combined with MS4 maps; and available information about water quality impaired, eroded or otherwise modified receiving waters, information on public lands and infrastructure will be reviewed.

**Subtask 2b: Inventory and prioritize retrofit opportunities**

The information gathered in Task 2a will be comprehensively analyzed in a GIS environment to identify areas where, targeted retrofit of existing development would support the identified objectives and reduce the impact of those developments on the health of the watershed. Retrofit opportunities will be assessed project based and regionally where appropriate and types include: retrofits of parks and the MS4 system, water quality retrofits in targeted areas of private development, efforts to encourage water harvesting and conservation, and retrofits of public infrastructure.

The identified potential retrofit opportunities will be prioritized based on factors such as: the number of objectives supported, feasibility, cost effectiveness, pollutant removal effectiveness, tributary area potentially treated, maintenance requirements, landowner cooperation, neighborhood acceptance, aesthetic qualities, efficacy at addressing concern and potential improvements on public health and safety.

**Subtask 2c: Create GIS Map / Guidance**

The results of Task 2 will be aggregated into a GIS Map / guidance that will assist with watershed planning and guide the focused allocation of resources to enhance water quality and conservation within the watershed.

*Deliverables:* GIS Watershed Map/Guidance identifying retrofit opportunities.

**Task 3: EMARCD Education and Outreach to HOAs**

This task involves two components, a) preparation of presentations, development of handout materials, and developing a post-presentation survey; and b) conducting workshops, printing distributing handout materials, and conducting post-presentation survey. Outreach efforts will be done by EMARCD staff. If EMARCD staff are unavailable to perform the work, Riverside County will contract these services.

### **Subtask 3a: Development of Materials**

This task involves the development of the presentation that will be given to each HOA Board and home owners on the benefits of water conservation and infiltration as well as the development of a post-presentation survey (to be conducted a number of months after the presentation was conducted). Outreach efforts will focus on encouraging home owners to replace old landscapes using water wise plants and sprinkler retrofit systems as well as methods of reducing stormwater runoff from the property.

### **Subtask 3b: Conduct Workshops and Follow-up Survey**

This task involves conducting the actual presentation and conducting a follow up survey to determine effectiveness of the effort. It is anticipated that 40 presentations will be given. Handouts will be provided at the workshop and will be made available to the residents. The goal of the presentations is to educate the homeowners on the need and benefits associated with retrofitting existing common landscaped areas to include features that reduce the use of potable water and promote infiltration of stormwater. Increasing stormwater runoff will reduce the discharge of pollutants to downstream waterbodies. A follow up survey and assessment will be conducted at each location where a presentation was made. The survey will be developed as part of Task 3a, and will serve to determine behavioral and retrofit changes that were implemented at the site following the presentation. The survey will be conducted after the date a presentation is made (e.g., between 1 year and 6 months after the presentation to allow sufficient time to see changes).

Educate the need and benefits to retrofit existing common landscaped areas.

*Deliverables:* Report including number of Homeowner Associations outreached to.

## **Task 4: Hydromodification Management**

This task will guide and support the planning, design and construction of priority new and significant redevelopment projects (PDPs) within the Upper Santa Margarita Watershed to manage increases in runoff discharge rates and durations. The management of these increases in runoff pursuant to the HMP will result in significantly more storm water being recharged to the groundwater, or otherwise retained onsite, potentially for onsite uses such as irrigation.

### **Subtask 4a: Literature Review**

This subtask will include research of methods for identifying streams that are susceptible to hydromodification, and methods for managing increases in runoff from developments. Existing resources on hydromodification assessment, and management methods and implementation techniques will be reviewed, including those developed by the Southern California Coastal Waters Research Project (SCCWRP) as part of their Hydromodification study, and guidance used in the San Diego, Sacramento, Contra Costa and Santa Clara HMPs.

### **Subtask 4b: Geomorphic stability of streams**

Based on the assessment methodologies identified in task 4a, perform a limited field reconnaissance to identify the range stream types in the Upper Santa Margarita Watershed and their geomorphic stability. This field reconnaissance, work performed pursuant to Task 2a above and information from the implementation of the Santa Margarita MS4 permit programs will be used to specifically identify any areas within the Santa Margarita Hydrologic Unit for potential opportunities to restore or rehabilitate stream channels with historic hydromodification of receiving waters that are tributary to documented low or very low Index of Biotic Integrity (IBI) scores.

**Subtask 4c: BMP selection and sizing criteria**

In support of the HMP developed per task 4c above, a suite of onsite management practices (such as detention, retention, and infiltration) that can provide integrated hydromodification flow control and Water Quality treatment capabilities, will be established and integrated into the HMP process. Existing Water Quality BMP design guidance will be utilized and updated as necessary to mitigate hydromodification impacts, and additional design criteria for Regional control measures and in-stream rehabilitation will be established.

A series of continuous simulation analyses will be performed on a range of representative sites, to establish sizing factors that can be used to ensure that BMPs selected for a site are sized and designed to the requirements of the HMP. A BMP sizing calculator that integrates the sizing factors will be created to facilitate simplified compliance with the HMP requirements. The sizing calculator and the backing hydrologic and geomorphic analysis to justify the sizing factors will be incorporated into an attachment to the HMP.

**Subtask 4d: Develop a Hydromodification Management Plan**

Based on the results of tasks 4a and 4b, an HMP will be developed to establish and document the methodologies, including a range of runoff flows to be controlled, that will be implemented by PDPs to ensure that post-project runoff flow rates and durations do not exceed pre-development runoff flow rates and durations by more than 10 percent, and to compensate for any loss in sediment supply. The HMP will assist the development community and the municipalities in the Upper Santa Margarita Watershed to identify which projects are subject to the HMP requirements, and will present a step-by-step approach to designing a PDP and a methodology for documenting compliance with the requirements of the HMP. A tiered process for selecting BMPs will be included based on a prioritized consideration of: (a) Site design control measures; (b) On-site management measures; (c) Regional control measures located upstream of receiving waters; and (d) In-stream management and control measures.

**Subtask 4e: Training Workshops**

Work includes development of and performing training workshops to both the public and municipal staff. Workshops to include discussion of the overall HMP as well as the developed BMP Sizing tools in task 4d above.

*Deliverables:* Final Hydromodification Management Plan and Training Workshops.

***Budget Category (d): Construction/Implementation***

No task under this category.

***Budget Category (e): Environmental Compliance/Mitigation/Enhancement***

No task under this category. CEQA is not required under this phase.

***Budget Category (f): Construction Administration***

No task under this category.

## Section 6

# Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I

### 6.1 Introduction

#### Project Sponsor

This project is a joint effort between two IRWMP regions: the Santa Margarita River Watershed (San Diego RWMG) and the Upper Santa Margarita Watershed regions (Upper Santa Margarita RWMG).

The portion of this project for which funds are being requested under this grant application (Upper Santa Margarita River Watershed) will be led by Riverside County Flood Control and Conservation District, and as such Rancho California Water District (the applicant herein) will enter into a Memorandum of Understanding with Riverside County for dispersment of awarded funds.

#### Project Need

Nitrogen and phosphorous loading from the Santa Margarita River 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 (N), phosphorus (P), or eutrophication. Addressing these adverse effects 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 are problematic, in part, because they do not consider site-specific factors. The Nutrient Numeric Endpoint (NNE) framework, an alternative regulatory approach advocated by State Water Resources Control Board (SWRCB) staff and U.S. Environmental Protection Agency (USEPA) Region 9, is currently under development. The *Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I* project will address data gaps inherent in the NNE framework and refine nutrient WQOs for the watershed.

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

#### Project Purpose

The *Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I* project aims to establish nutrient WQOs for the Santa Margarita River estuary (Phase I) and ultimately watershed (Phase II) that will lead to the implementation of nutrient reduction and water conservation practices in the watershed.

#### Project Objectives

The *Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I* project seeks to accomplish the following objectives: Create and facilitate a Santa Margarita River watershed stakeholder group that will provide feedback, critical review of technical work products, and achieve consensus on WQOs;

- Conduct monitoring and special studies to address data gaps in data required to develop WQOs for the River; and
- Develop proposed nutrient WQOs or nutrient endpoints for Santa Margarita River estuary based on the NNE approach and local data.

- *Maximize stakeholder and community involvement* in the Santa Margarita watershed by establishing a stakeholder group
- Develop nutrient WQOs for SMR watershed that are protective of beneficial uses thus encouraging the implementation of BMPs to reduce nutrient runoff from wet and dry weather sources

Table D provides an overview of the San Diego IRWM Plan objectives that are achieved through implementation of the *Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I* project.

**Table D: Contribution to IRWM Plan Objectives**

Proposal Projects	Contribution to IRWM Plan Objectives								
	Obj A	Obj B	Obj C	Obj D	Obj E	Obj F	Obj G	Obj H	Obj I
Implementing Nutrient Management in the Santa Margarita River Watershed - Phase I	•	•	•				•		

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

- **A: *Maximize stakeholder and community involvement and stewardship.*** Stakeholder involvement is central to the goals of the project. The stakeholder group will guide project objectives, identify data gaps, review technical outcomes, participate in water conservation outreach, and achieve consensus on recommending WQOs for the lagoon that are protective of beneficial uses that include protecting current habitats.
- **B: *Effectively obtain, manage, and assess water resources data and information.*** 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.
- **C: *Further the scientific and technical foundation of water management.*** The project will demonstrate an innovative approach to establishing nutrient WQOs by using open source models, publishing results in peer-reviewed scientific literature, and making presentations to stakeholders, thus improving the technical foundation of water management.
- **G: *Effectively reduce sources of pollutants and environmental stressors.*** This project will develop nutrient WQOs that will help reduce sources of pollutants, specifically nutrients, and other environmental stressors associated with point and non-point source runoff.

Table G provides an overview of the Upper Santa Margarita Watershed IRWM Plan objectives that are achieved through implementation of the *Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I* project.

<b>Table G Objectives</b>	
	<b>Nutrient Management in the Santa Margarita River Watershed</b>
Develop more reliable and diverse portfolio of water supplies	○
Promote economic, social and environmental sustainability	
Improve water quality	●
Restore, enhance and maintain habitats and open space	
Manage floodplain impacts	
Account for recreational opportunities	
Implement effective land use planning	
Increase stakeholder involvement	○

- Directly contribute to this goal
- Indirectly or somewhat contribute to this goal

- ***Develop more reliable and diverse portfolio of water supplies*** The project will demonstrate an innovative approach to establishing nutrient WQOs by using open source models, publishing results in peer-reviewed scientific literature, and making presentations to stakeholders, thus improving the technical foundation of water management. 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.
- ***Improve water quality*** This project will develop nutrient WQOs that will help reduce sources of pollutants, specifically nutrients, and other environmental stressors associated with point and non-point source runoff.
- ***Increase stakeholder involvement*** Stakeholder involvement is central to the goals of the project. The stakeholder group will guide project objectives, identify data gaps, review technical outcomes, participate in water conservation outreach, and achieve consensus on recommending WQOs for the lagoon that are protective of beneficial uses that include protecting current habitats.

### **Project Partners**

Project partners in the *Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I* project include: the Counties of San Diego and Riverside; the Cities of Temecula, Murrieta, Wildomar, and Menifee; Riverside County Flood Control and Water Conservation District (RCFCWCD); Rancho California Water District (RCWD); 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; Elsinore Murrieta Anza Resource Conservation District (EMARCD); and Trout Unlimited.

The project is also a partnership between the Upper Santa Margarita RWMG and the San Diego RWMG, as partners in the Tri-County Funding Area Coordinating Committee (Tri-County FACC) of the San Diego Funding Area.

### **Project Abstract**

To address nutrients in the watershed, the project will serve to identify water quality objectives (WQOs).

The approach for developing nutrient WQOs for the SMR estuary leverages two major activities: 1) data collection to support modeling in the estuary and watershed to develop TMDLs and 2) ongoing research to develop the estuarine NNE framework, based on dissolved oxygen and macroalgae as endpoints. A stakeholder advisory group (which will be identified as part of the project) will guide project activities, review technical work products, and achieve consensus.

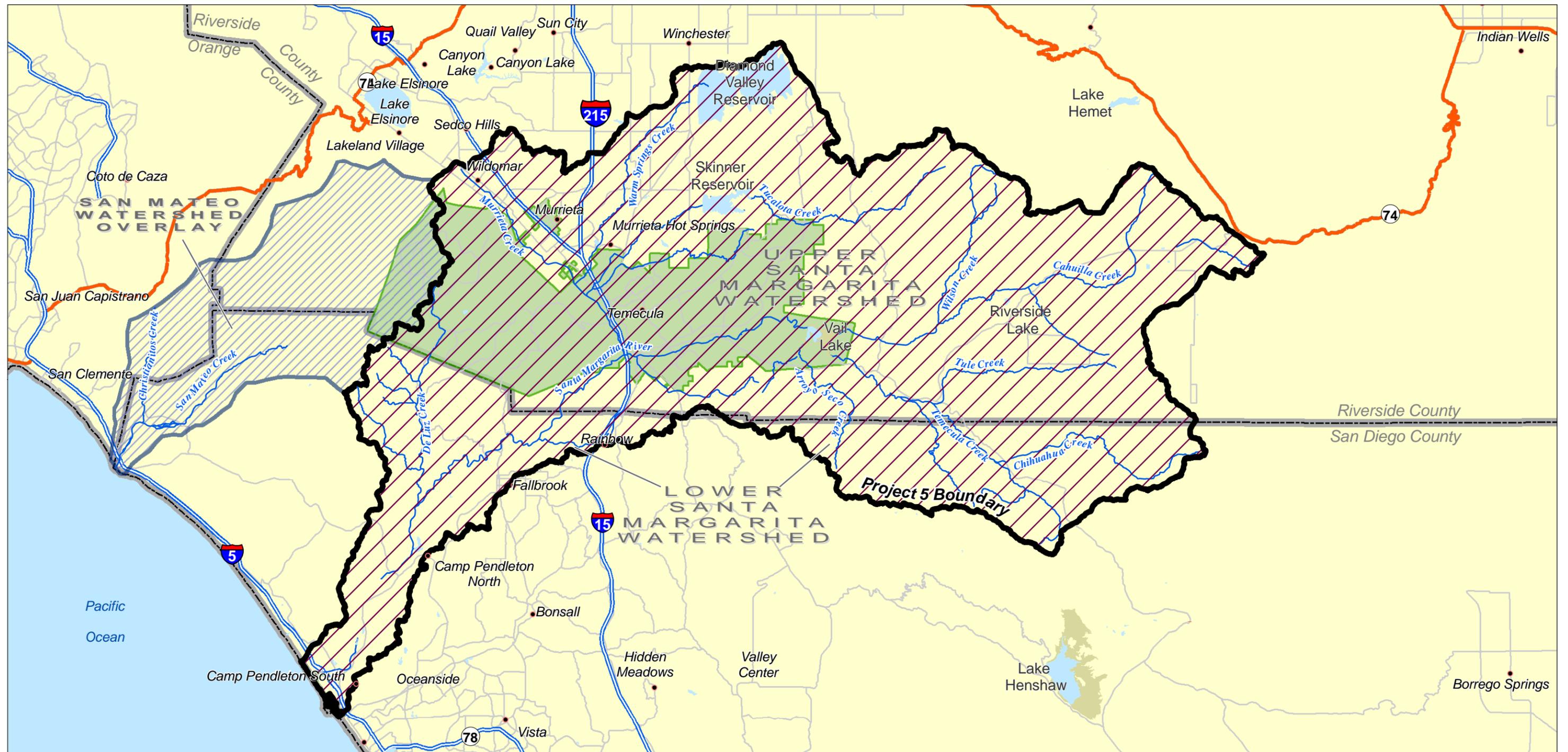
The project involves conducting monitoring and special studies to address data gaps and pending the analysis of data gaps, potential studies will include core field data collection and special studies.

The goal of core field data collection will be to measure ambient nutrient concentrations and conduct algal bioassessment studies.

The special studies will include a characterization of the “natural background” conditions of nutrient concentrations and algal growth which will help characterize the variability in numeric targets.

### **Project Map**

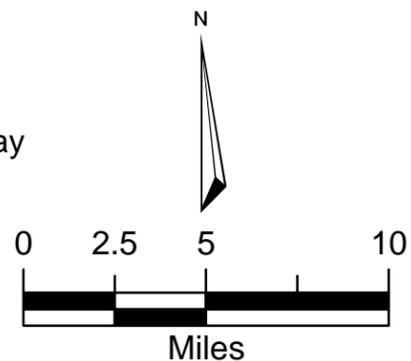
Figure 8 provides a Project Map showing the general location and sphere of influence of the project. Figure 9 provides a more detailed site location map for the project, showing boundary of project, surface waters, groundwater basins, DACs layer, and any proposed monitoring locations.



**Legend**

-  Watershed Boundary
-  Rancho California Water District Service Area
-  San Mateo Wash Overlay
-  Project 5 Boundary (Watershed Wide Implementation)

-  City
-  Regional Highway
-  State Highway
-  Major Street



**Figure 8 WR-34 Implementing Nutrient Management in the Santa Margarita River - Phase II, Additional Monitoring**

January 5, 2011



**CDM**

Data Sources: Riverside County Flood Control & Water Conservation District, ESRI Streets & Maps, USGS National Hydrography Dataset, U.S. Census Bureau Population 2000 Data.





### **Linkages and Synergies between Projects**

In addition to the summary in Section 1.3, the Implementing Nutrient Management in the Santa Margarita River Watershed-Phase I project is also linked to the following:

- Santa Margarita River Conjunctive Use Project (receiving Prop 50 funding through the San Diego IRWMP)
- San Diego Lagoon TMDL Project (receiving 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 for Upper Santa Margarita IRWMP funding)
- Murrieta Creek Phase II (proposed by RCFCWCD for Upper Santa Margarita IRWMP funding)
- Murrieta Creek Phases III and IV (proposed by RCFCWCD for Upper Santa Margarita IRWMP funding)
- San Mateo Creek Fish Habitat Restoration (proposed EMARCD partnered with Trout Unlimited for Upper Santa Margarita IRWMP funding)
- Reclaim and Recycled Anza Farming Irrigation Runoff Water and Other Nearby Contaminated Water (proposed by Anza/Aguanga IRWMP community for Upper Santa Margarita IRWMP funding)
- Agricultural Waiver Project (proposed by RCWD for Upper Santa Margarita IRWMP funding)
- Sustainable Agriculture (proposed by RCWD for Upper Santa Margarita IRWMP funding)
- Salt and Nutrient Groundwater Management Plan (proposed by RCWD for Upper Santa Margarita IRWMP Funding)
- Implementation of Wildomar Master Drainage Plan (proposed by RCFCWCD for Upper Santa Margarita IRWMP funding)
- Retrofit Public Property with Water Quality Measures (proposed by RCFCWCD for Upper Santa Margarita IRWMP funding)
- Stream Restoration (Santa Margarita Watershed) for Steelhead Trout (proposed by Trout Unlimited for Upper Santa Margarita IRWMP funding)
- Agricultural Lands Stewardship (proposed by EMARCD for Upper Santa Margarita IRWMP funding)

### **Supplemental Materials**

Supplemental materials are included in Appendix C to this Attachment 3. Additional details are also included under the project description.

Further, this project type, scope and focus and, in some instances, location type is also identified specifically in the following watershed and TMDL implementation plans:

- Santa Margarita River Lagoon Monitoring Project Data Usability and Assessment Reviews of Field Measured and Laboratory Data (See Appendix C attached)

### **Project Timing and Phasing**

The project is a multi-phased project:

- Phase I (*the subject of this Work Plan*) will involve forming and facilitating discussions among a Santa Margarita River watershed stakeholder group to guide project activities, review technical work products, and achieve consensus. This Phase will include modeling of the Santa Margarita

Estuary using existing data and developing WQOs for the estuary. The group will identify key study questions, outline the conceptual approach, evaluate existing data, identify data gaps, and determine specific technical activities and information required. Based on this, the group will develop a monitoring program that will include the monitoring plan and QAPP.

- Phase II will involve conducting additional monitoring and special studies to address data gaps identified by stakeholders, and develop proposed nutrient WQOs for Santa Margarita River based on the NNE approach using local data.

Phase I of the project can operate on standalone basis because once the consensus is reached, data gaps are identified and required activities are determined, they may be used as guidance for future studies. Additionally, data are already available to conduct the nutrient modeling of the Santa Margarita River estuary. This will be documented in the work products: monitoring plan and QAPP.

Phase II of the project can also operate on standalone basis because it focuses on the developing the WQOs of nutrients in the Santa Margarita River watershed. Additional monitoring may be required to develop the Santa Margarita River WQOs and that will be determined in consultation with the stakeholder group.

## 6.2 Project Description

The project consists of three major activities (listed in Task 4) as described below. Please note that this project is part of a joint application between the San Diego IRWM Region and the Upper Santa Margarita IRWM Region. The Upper Santa Margarita IRWM Implementation Grant Proposal includes the same project. The project descriptions are identical (as each proposal partially funds the whole project) except for the budget, which is specific to the IRWM planning region (please refer to Attachment 4). The County of San Diego will serve as the administrator for the overall project. Each of the tasks below identifies which proposal(s) are funding the task:

### **Subtask 4A. Form and Facilitate Stakeholder Advisory Group (San Diego and Upper Santa Margarita Proposals)**

The purpose of this subtask is to form and facilitate discussions among a Santa Margarita River watershed stakeholder group to guide project activities, review technical work products, and achieve consensus.

The group will guide project activities, and review and provide feedback on technical and policy elements. The group will be formed from the existing Santa Margarita River Executive Management Team (EMT), which is comprised of key agencies and land owners in the watershed who meet quarterly to address water management issues.

One of the group's first tasks will be to develop a monitoring program to support the development of nutrient WQOs. This will be done by identifying key questions and conceptual approach, determining specific technical activities and information required, evaluating existing data and identifying data gaps. The resulting products will be the monitoring plan and Quality Assurance Project Plan (QAPP) to be prepared by USMC Camp Pendleton.

This task includes funding for the Principal and Senior Scientist for the field and special studies to attend ten four-hour Stakeholder Advisory Group Meetings, scheduled approximately bimonthly, from July 2011 through December 2012 (10 meetings). Their purpose would be to take input from the stakeholder group regarding the project and provide updates, grant reports, and other information. Each meeting is presumed to require 2 hours of driving and 6 hours of preparation.

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#### **Subtask 4B. Conduct Field and Special Studies (San Diego and Upper Santa Margarita Proposals)**

The purpose of this subtask is to conduct monitoring and special studies to address data gaps identified by stakeholders to achieve project objectives. Pending the analysis of data gaps, potential studies will include core field data collection and special studies.

The goal of core field data collection will be to measure ambient nutrient concentrations and conduct algal bioassessment studies. The core studies will focus on site-specific factors controlling algal response that include canopy cover, substrate types, flow rates, and others. Pending the outcome of task 4A, approximately 10 to 15 sites will be sampled 3 times per year during the growing season over a period of 1 year. The studies may include hydrology measurements as well as water quality sampling. The *SWAMP Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California* (May 2010) protocol will be followed (includes water chemistry, algal biomass, cover, biovolume, and PHAB).

The special studies will include a characterization of the “natural background” conditions of nutrient concentrations and algal growth. The studies will provide information needed to select appropriate algal thresholds and to determine “background” indicator variability (the margin of error). The special studies will further address important nutrient sinks (ex. denitrification), sources (ex. groundwater), and rates of nutrient transformation processes. They will help characterize the variability in numeric targets. The specific studies required will be better defined during work plan discussions.

The deliverables will include data uploaded to Santa Margarita River watershed database, technical report summarizing data quality and conditions by reach, and technical report summarizing the outcomes of the special studies.

The specific distribution of stations for monitoring and special study between the two regions will be determined from the data gap analysis. Funding of the data collection and special study will be based on the attached budget worksheets (see Appendix C) independent of station/study location as the project, as a whole, benefits both the Upper Santa Margarita and San Diego regions. The San Diego and Upper Santa Margarita IRWM Regions have therefore agreed to a fixed percentage distribution of costs for this project.

#### **Subtask 4C. Develop Nutrient WQOs for Santa Margarita River Estuary (San Diego Proposal)**

The approach for developing nutrient WQOs for the Santa Margarita River estuary leverages two major activities: 1) data collection to support modeling in the estuary and watershed to develop TMDLs and 2) ongoing research to develop the estuarine NNE framework, based on dissolved oxygen and macroalgae as endpoints.

In 2007, the SDRWQCB issued a Monitoring Order to San Diego Co-Permittees to collect data to support the calibration and validation of watershed loading and lagoon water quality models, with the specific purpose of calculating the “maximum load” of nutrients that the estuary can sustain and establishing the TMDL (load and waste load allocations, implementation plan, etc.). To assist in this effort, SCCWRP received funding from a Prop 50 grant to conduct special studies to complement the monitoring order. Data collection is now completed and the final baseline report will be issued in December 2010. In addition, SCCWRP is providing technical support to the SWRCB by conducting literature review and studies to refine estuarine water column dissolved oxygen objectives and to develop NNE thresholds for macroalgal blooms in mudflats. Final deliverables for this statewide estuarine NNE project will be available in the spring of 2012, but a preliminary assessment framework will be available in the spring of 2011.

This project will build on these existing efforts by reviewing, with stakeholders, the available data for selection of a macroalgal NNE target, and calibrating and validating the estuarine water quality model in order to estimate the “maximum sustainable load” of N and P. This work will form the basis for selecting N and P WQOs for the estuary and will inform the river nutrient WQOs by determining nutrient concentrations required to protect downstream (i.e. estuarine) beneficial uses.

### 6.3 Proposed Work Tasks

#### Grant Administration (GA)

The San Diego County Water Authority will be responsible for administration and processing of the Implementation Grant contract, including tasks associated with compiling and submitting project invoices, quarterly reports, and completion reports for DWR. Therefore, this information will come directly from the San Diego County Water Authority and funds will be directed directly to San Diego County Water Authority as well. The Riverside County portion of the project will be funded through San Diego County Water Authority.

#### *Budget Category (d): Direct Project Administration Costs*

**Task 1 – Project Administration:** This task involves project administration, coordination, and review of all following project tasks. This task is not included within the budget for this project, because funds to support this task will come from the County of San Diego’s General Fund.

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

**Task 3 – Reporting:** In order to assess progress and accomplishments of the project, the following submittals will be completed by each indicated date.

Project Administration Submittals	Date	Status
<b>BEFORE June 1, 2011</b>		
Sample and Analysis Plan	May 31, 2011	Not started.
Quality Assurance Project Plan (QAPP)	May 31, 2011	Not started.
Project Assessment Evaluation Plan (PAEP)	May 31, 2011	Not started.
<b>AFTER June 1, 2011</b>		
Quarterly Reports and Invoices	Quarterly as determined by Start	Not started.
Project Completion Report	October 1, 2014	Not started.

#### *Budget Category (b): Land Purchase/Easement*

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

#### *Budget Category (c): Planning/Design/Engineering/Environmental Documentation*

##### **Task 4 – Assessment and Evaluation:**

Subtasks 4A, 4B, and 4C listed within the Budget for this project (refer to Attachment 4) include the following assessments and/or evaluations. Note that portions of Subtask 4C Develop Nutrient WQOs for Santa Margarita River Estuary, and the entirety of Subtask 4A Form and Facilitate Stakeholder Advisory Group will be completed prior to initiation of the Grant Agreement (June 1, 2011). Deliverables that will result from this task include:

- Monitoring and Special Studies Report (draft and final), and

- Proposed Nutrient WQOs for Santa Margarita Estuary Report (draft and final).

#### **Subtask 4A: Form and Facilitate Stakeholder Advisory Group**

This task will be completed by May 31, 2011, and will involve forming and facilitating a stakeholder advisory group. The stakeholder group will guide project activities, and review and provide feedback on technical and policy elements of the project. Stakeholders will also identify key questions and a conceptual approach, and determine specific technical activities and information required to carry out that approach. The group will also evaluate existing data and identify any current data gaps.

The group will develop a monitoring program to support the development of nutrient water quality objectives (WQOs), the products of which will be a Sample and Analysis Plan, QAPP, and PAEP as outlined in Task 3 above.

Data collected during this process include technical evaluations and feedback from stakeholders, which were used to identify data gaps. In addition, stakeholders will provide input on the modeling effort to develop WQOs and assist in development of the QAPP and PAEP.

#### **Task 4B: Conduct Field and Special Studies**

This task will be completed after initiation of the Grant Agreement, by October 1, 2014. The studies conducted for this task will address site-specific factors controlling algal response. Approximately 10 to 15 sites will be sampled 3 times per year for one year's time. Data generated will include an algal bioassessment, water quality data, and site-specific physical and hydrological data. Monitoring and special studies will address data gaps identified by the stakeholder group (as part of Subtask 4A) necessary to achieve project objectives. Potential studies will include core field data collection and other special studies.

#### **Task 4C: Develop Nutrient WQOs for Santa Margarita River Estuary**

Before the Grant Agreement, the project team completed the *Santa Margarita River Estuary Investigation* (June 2009). In response to Order 13267 from the San Diego Regional Water Quality Control Board, a Santa Margarita River Estuary Investigation was conducted by a subgroup of stakeholders between 2008 and 2009. The data collected during this time will be used to conduct estuary modeling.

The Southern California Coastal Water Research Project (SCCWRP), under a Proposition 50 grant, collected additional information from the Santa Margarita River Estuary to address nitrogen sources within the lagoon. Additionally, the San Diego Municipal Stormwater Co-Permittees contributed funds to the field equipment and data collection of information for the *Bight '08 Estuaries and Coastal Wetlands Eutrophication Study* (December 2008, see Appendix C attached) that included extensive work done at the Santa Margarita River Estuary. The results of that study are currently being analyzed and will be considered for the modeling of estuary processes below.

Proposed future work tasks will be completed by October 1, 2014. These tasks will involve using existing data mentioned above, as well as data collected from the Bioassessment Program, which includes algal and benthic macroinvertebrate bioassessment data, water quality measurements, flow measurements, and other site specific data.

The approach for developing nutrient WQOs for the Santa Margarita River estuary leverages two major activities:

- 1) data collection to support modeling in the estuary and watershed to develop Total Maximum Daily Loads (TMDLs) and

- 2) ongoing research to develop the estuarine nutrient numeric endpoints (NNE) framework, based on dissolved oxygen and macroalgae as endpoints.

Based on the NNE approach and local data, the nutrient WQOs for the Estuary will be developed by staff of the San Diego RWQCB, as appropriate.

Study Performed	Date	Status
<b>BEFORE June 1, 2011</b>		
4A: Form and Facilitate Stakeholder Advisory Group	May 31, 2011	In process
4C: Santa Margarita River Estuary Investigation	May 31 2011	Complete
4C: Bight '08 Estuaries and Coastal Wetlands Study (Santa Margarita River Estuary data collection)	May 31, 2011	Complete
<b>AFTER June 1, 2011</b>		
4B: Monitoring and Special Studies Report	October 1, 2014	Not started
4C: Proposed Nutrient WQOs for Santa Margarita River Estuary Report	October 1, 2014	Not started

**Task 5 – Final Design:**

Not applicable.

**Task 6 – Environmental Documentation:**

This project qualifies as a planning study according to Section 15262 of the California Environmental Quality Act (CEQA) Guidelines, because it will identify programs and projects for possible future actions, but does not have a legally binding effect of the participating agencies. As such, this project was issued a CEQA Categorical Exemption in May 2011. This project does not require NEPA-related analysis.

Environmental Documentation	Submittal	Status
CEQA Categorical Exemption	May 31, 2011	Not Started

**Task 7 – Permitting**

This project will not involve construction, and was issued a CEQA Categorical Exemption. Therefore, permitting is not applicable to this project.

***Budget Category (d): Construction/Implementation***

**Task 8 – Construction Contracting**

This project will not require construction contracting.

**Task 9 – Construction**

This project will not involve construction.

***Budget Category (e): Environmental Compliance/Mitigation/Enhancement***

**Task 10 – Environmental Compliance/Mitigation/Enhancement**

This project was issued a CEQA Categorical Exemption, which renders it compliant with CEQA. All tasks carried out for this project (studies) will be conducted in a manner that ensures environmental compliance with all other environmental statutes.

***Budget Category (f): Construction Administration***

**Task 11 – Construction Administration**

Construction administration will not be completed as part of this project.

