



Background and Current Status in Meeting IRWM Standards

Background

The Watersheds Coalition of Ventura County (WVCV) is comprised of a consortium of local cities, wholesale and retail water agencies, special districts, the County of Ventura, and non-governmental agencies interested in promoting and implementing integrated regional water management planning efforts in Ventura County. WVCV was formed in April 2006 as the integrated regional water management (IRWM) group (required by Propositions 50 and 84) and as the group of stakeholders addressing issues critical to water management in the County.

The WVCV IRWM Regional boundary is synonymous with the County of Ventura's boundary, with one exception, that portion of the Malibu Creek Watershed located in Ventura County, which lies in the Greater Los Angeles County IRWM region (Figure 3-1). Ventura County has a population of over 817,000 people and is located north and west of Los Angeles County, east of Santa Barbara County and south of Kern County. The Pacific Ocean forms its southwestern boundary. Virtually the entire northern half is within the Los Padres National Forest. Residential, agricultural, military, and business uses comprise the southern portion of the Region. The County has a total area of 1,199,748 acres (1,843 square miles), of which some 550,211 acres are in the National Forest and 330,000 are in agriculture. There are 42 miles of coastline. The Region encompasses three major watersheds (the Ventura River Watershed, the Santa Clara River Watershed, and the Calleguas Creek Watershed), six smaller watersheds, and twenty-six groundwater basins. There are ten cities, three wholesale water agencies and over 170 retail water purveyors, two groundwater management agencies, and five sanitary districts.

All planning efforts and projects undertaken and coordinated by the WVCV are guided by the WVCV's Integrated Regional Water Management Plan (IRWMP), which was originally adopted in 2006. Organizationally, the WVCV consists of the general membership, a steering committee and three watershed committees representing the County's three major watersheds. This organizational structure lends itself well to integrated planning with many projects and ideas originating at the watershed level where stakeholders have a vested interest and then

expanding to incorporate and benefit from greater regional collaboration and support through the WVCV.

Current Status in Meeting IRWM Standards

The WVCV adopted its IRWMP in 2006. Table 3-1 documents how the existing IRWMP meets the current IRWM Plan Standards. As can be seen in Table 3-1, the existing IRWMP meets most of the IRWM Standards. However, many elements of the existing IRWMP would benefit from updated information. For example, since 2006 agencies in Ventura County have reevaluated water supplies as part of their 5-year Urban Water Management Plans – thus meriting an update to the Region Description and the section on Local Water Planning.

Recently WVCV secured a \$485,684 Proposition 84 Planning Grant to update its IRWMP and complete two focused studies – the Ventura River Watershed Bio-digester Planning Study and the Update to the Regional Groundwater Flow Model. As described under "Additional IRWMP Plan Work", the WVCV IRWMP Update will comply with the Proposition 84 IRWM Plan Standards.

Two special studies are proposed as part of this application:

- **Lower Santa Clara River Basins, Regional Salt and Nutrient Management Plan** (hereafter Regional LSCR Plan). See Figure 3-2.
- **Las Posas Basin Conjunctive Use Study** (hereafter Las Posas Study). See Figure 3-3.

The special studies as part of this application will enhance many aspects of the IRWMP and result in a higher level of compliance with the IRWM Plan Standards, as described below:

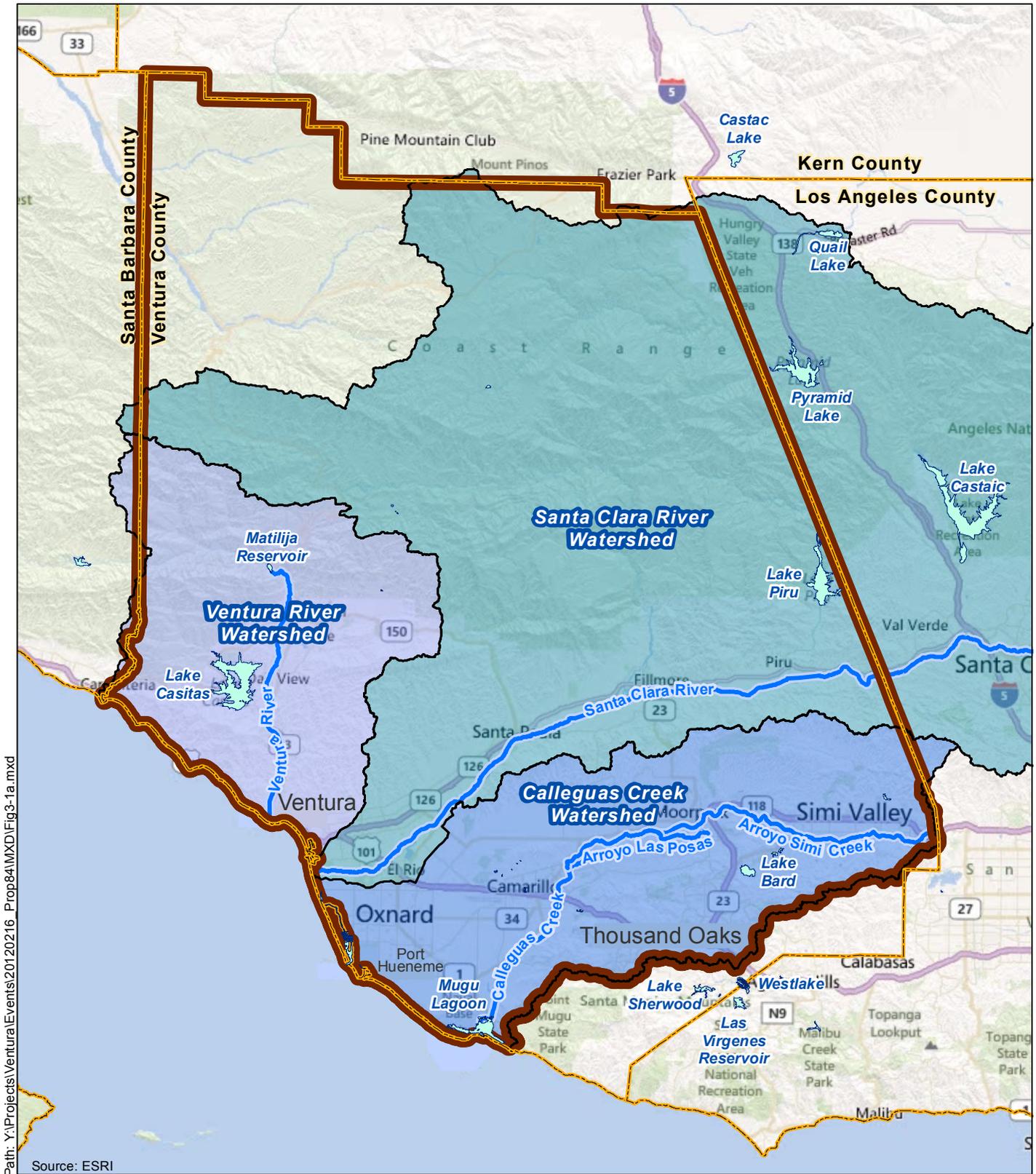
Region Description. The special studies will provide critical information on the status of two of the Region's most important resources – groundwater and recycled water. Groundwater is the largest single source of water in the Region and is the primary source of water for agriculture. Recycled water is one of the only water sources considered "drought proof" and one of the few means to enhance Regional water supplies. The IRWMP recommends the Region focus on increasing future recycled water use as a means to improve water supply reliability (see page 85 IRWMP).



**Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant
Attachment 3 – Work Plan**

**TABLE 3-1
IRWMP REVIEW AND UPDATE**

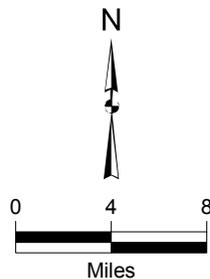
	Addresses IRWMP Objectives	Addresses IRWMP Objectives	Fills Data Gaps	DAC Outreach	
Current IRWMP	<input checked="" type="checkbox"/> Governance	<input type="checkbox"/> Resource Management Strategies	NA	NA	✓
	<input checked="" type="checkbox"/> Region Description	<input type="checkbox"/> Impacts and Benefits			
	<input checked="" type="checkbox"/> Objectives	<input type="checkbox"/> Plan Performance and Monitoring			
	<input type="checkbox"/> Integration	<input checked="" type="checkbox"/> Relation to Local Water Planning			
	<input type="checkbox"/> Project Review Process	<input checked="" type="checkbox"/> Relation to Local Land Use Planning			
	<input type="checkbox"/> Data Management	<input checked="" type="checkbox"/> Stakeholder Involvement			
	<input checked="" type="checkbox"/> Finance	<input checked="" type="checkbox"/> Technical Analysis			
	<input checked="" type="checkbox"/> Coordination	<input type="checkbox"/> Climate Change			
IRWMP Update (Prop 84 Rnd 1 Grant Activities)	<input checked="" type="checkbox"/> Governance	<input checked="" type="checkbox"/> Resource Management Strategies	✓	✓	✓
	<input checked="" type="checkbox"/> Region Description	<input checked="" type="checkbox"/> Impacts and Benefits			
	<input checked="" type="checkbox"/> Objectives	<input checked="" type="checkbox"/> Plan Performance and Monitoring			
	<input checked="" type="checkbox"/> Integration	<input checked="" type="checkbox"/> Relation to Local Water Planning			
	<input checked="" type="checkbox"/> Project Review Process	<input checked="" type="checkbox"/> Relation to Local Land Use Planning			
	<input checked="" type="checkbox"/> Data Management	<input checked="" type="checkbox"/> Stakeholder Involvement			
	<input checked="" type="checkbox"/> Finance	<input checked="" type="checkbox"/> Technical Analysis			
	<input checked="" type="checkbox"/> Coordination	<input checked="" type="checkbox"/> Climate Change			
Special Studies (this proposal)	<input type="checkbox"/> Governance	<input checked="" type="checkbox"/> Resource Management Strategies	Key objectives for the affected watersheds are to reduce dependence on imported water and improve water supply reliability (see pages 67 and 68 IRWMP)	Addresses data gaps in basin understanding, including hydrogeology, aquifer properties, potential storage, and potential yield (see page 26 IRWMP)	Addresses water supply and water quality for DACs and will solicit DAC participation
	<input checked="" type="checkbox"/> Region Description	<input checked="" type="checkbox"/> Impacts and Benefits			
	<input checked="" type="checkbox"/> Objectives	<input checked="" type="checkbox"/> Plan Performance and Monitoring			
	<input checked="" type="checkbox"/> Integration	<input checked="" type="checkbox"/> Relation to Local Water Planning			
	<input checked="" type="checkbox"/> Project Review Process	<input type="checkbox"/> Relation to Local Land Use Planning			
	<input checked="" type="checkbox"/> Data Management	<input checked="" type="checkbox"/> Stakeholder Involvement			
	<input type="checkbox"/> Finance	<input checked="" type="checkbox"/> Technical Analysis			
	<input checked="" type="checkbox"/> Coordination	<input checked="" type="checkbox"/> Climate Change			



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Legend

 WCVC Boundary



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**Watersheds Coalition of Ventura County
Planning Area**

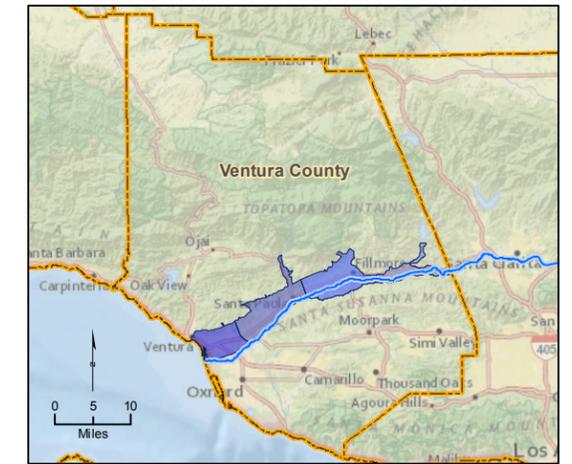
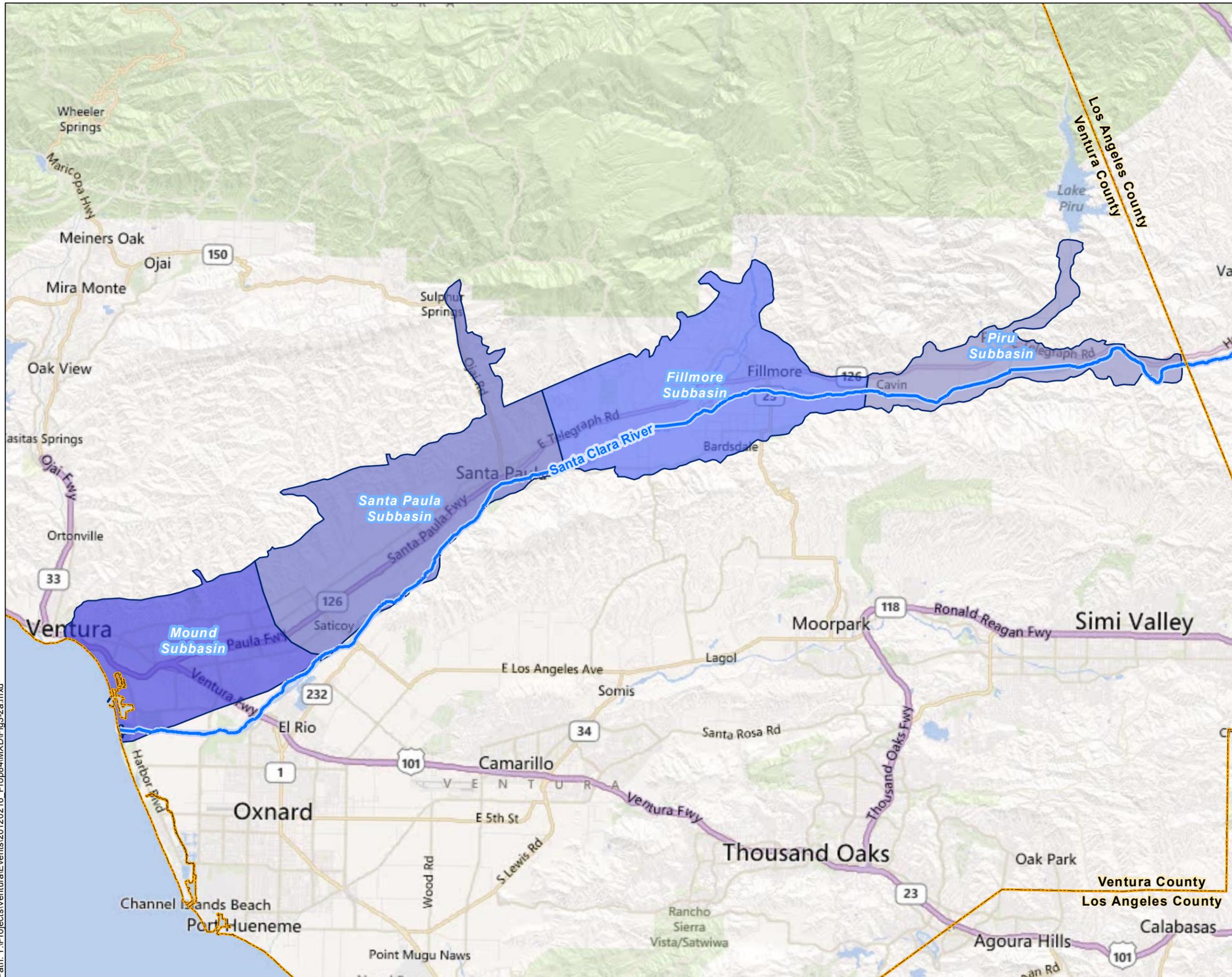
K/J 1289003*00
March 2012

Figure 3-1

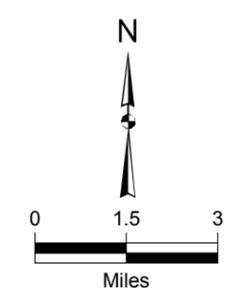


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Attachment 3 – Work Plan**

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Vicinity Map



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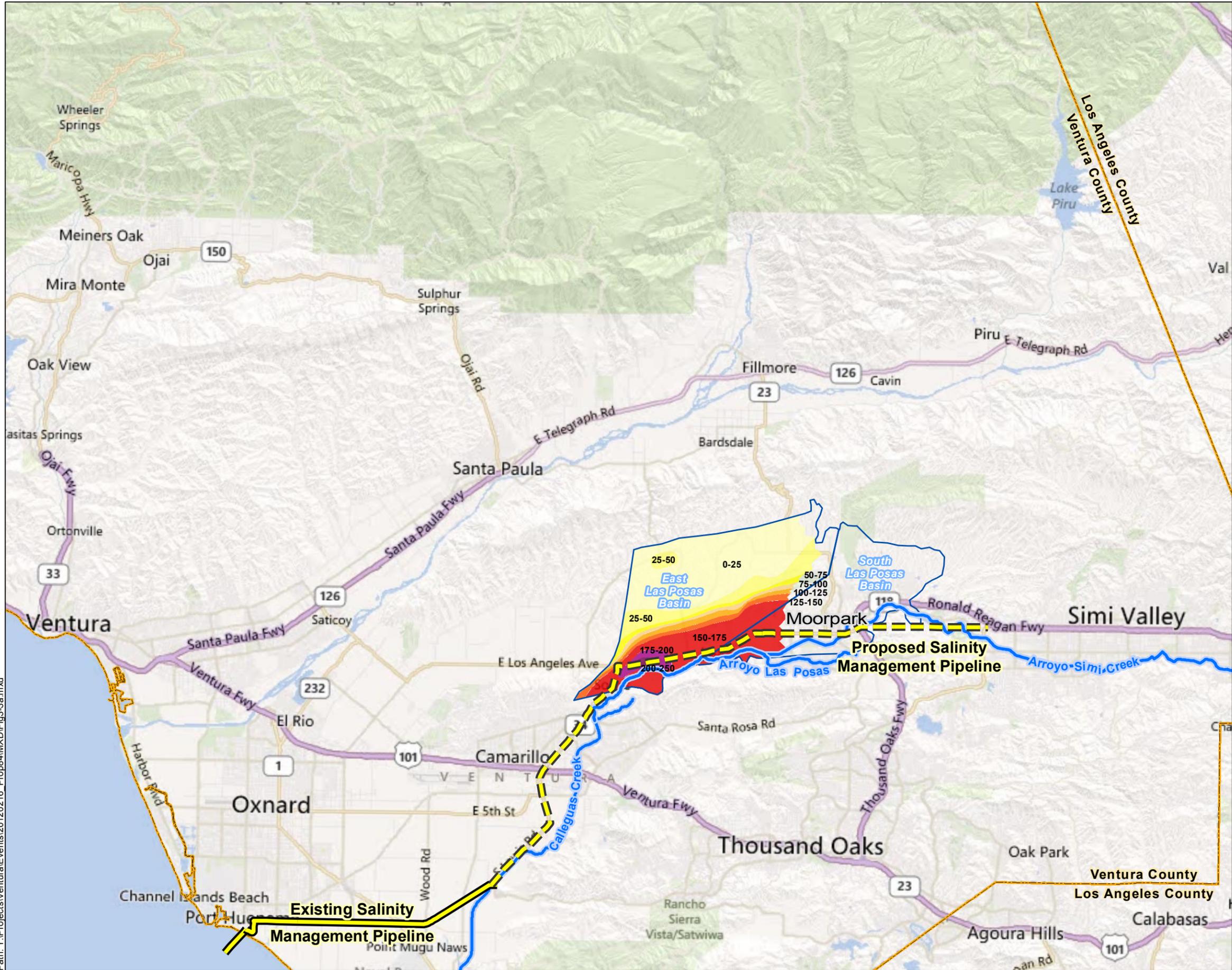
Prop 84 Planning Grant
Ventura County, California

**Groundwater Basins of the
Lower Santa Clara River**

K/J 1289003*00
March 2012

Figure 3-2

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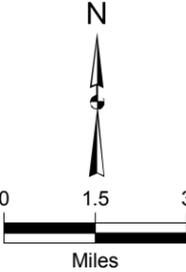


Vicinity Map

2010 Chloride In Lower Aquifer

**Chloride 2009-10
Concentration (mg/L)**

- 0-25
- 25-50
- 50-75
- 75-100
- 100-125
- 125-150
- 150-175
- 175-200
- 200-250



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East and South Las Posas Basins

K/J 1289003*00
March 2012

Figure 3-3

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Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant

Attachment 3 – Work Plan

Further, the special studies will better define the scale of local resource issues (e.g., extent of salt and nutrient concerns).

Objectives. One of the key objectives in the Santa Clara River Watershed as described in the IRWMP is to:

- Reduce dependence on imported State Water, protect, conserve, and augment water supplies and improve water supply reliability.

The objectives in the Calleguas Creek Watershed in the IRWMP are to:

- Reduce dependence on imported water;
- Improve water supply reliability; and
- Manage and remove salts in the Watershed and comply with total maximum daily load (TMDL) requirements.

The special studies will help improve the IRWMP's ability to meet these objectives. In addition the special studies will inform the review of objectives during the IRWMP Update and provide data necessary to develop quantitative objectives.

Resource Management Strategies. The results of the special studies will guide the WCV in implementing the resource management strategies associated with Regional issues and objectives. The special studies will directly address resource management strategies described in the California Water Plan, including a strategy that is new to the California Water Plan. Specific strategies that will be addressed include, but are not limited to:

- Salt and Salinity Management – both studies will provide information on opportunities/constraints for dealing with these regional concerns.
- Matching Water Quality to Use – both studies will provide opportunities for efficiently using new or previously untapped sources of water for suitable beneficial uses.

The special studies will help determine what resource management strategies are applicable to improving water quality and may develop new resource management strategies.

Data Management. The special studies will have specific processes for collecting and assimilating data from diverse sources, associating these data with

geographic locations and then disseminating these data to appropriate stakeholders. This will greatly enhance the data management efforts of the IRWMP Update.

Technical Analysis. The special studies will provide updated geographic data on Regional water quality. This data will directly benefit this section of the IRWMP Update.

Relation to Local Water Planning. An IRWMP must coordinate its water management planning activities to address the groundwater management, urban water management, agricultural water management, and other resource planning efforts of its members. Work of the special studies continues many of the on-going regional and local water planning activities that have used the WCV forum. In the past WCV has served as the venue in which to discuss water conservation activities, water recycling activities, water treatment initiatives, and regulatory issues affecting water planning. The special studies are a direct link between local water planning (e.g., efforts to protect groundwater, actions to deal with salinity) and the IRWMP Update.

Stakeholder Process. The special studies will themselves directly engage stakeholders and increase the participation of many stakeholders in the broader IRWMP. The special studies project teams will reach out to and include disadvantaged communities (DACs), agricultural interests, communities that will benefit from the Regional LSCR Plan, the various entities that have been promoting recycled water use to improve Ventura River estuary water quality (Heal the Bay, Coast Keeper), and the Regional Water Quality Control Board.

Coordination. The WCV works collaboratively with neighboring IRWM regions. The Regional LSCR Plan will provide a direct forum in which coordination with the Upper Santa Clara IRWMP Region can occur.

Climate Change. The climate change analysis requires an evaluation of both regional vulnerabilities to climate change and to identify “no regret strategies”. Data from the special studies will directly provide information to these two aspects of the climate change evaluation.

Fill Data Gaps. The IRWMP has identified data gaps related to hydrogeology, aquifer properties, potential storage, and potential yield. The special studies will help to fill these data gaps.



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant Attachment 3 – Work Plan

Improve Outreach to Disadvantaged Communities.

DACs are dependent on the water supplies that will be protected and enhanced by the special studies. As detailed further in Attachment 6, there are large pockets of DACs in the community of Piru and city of Santa Paula. The Regional LSCR Plan will protect both the water quality and the water supply available to these communities. Importantly the Regional LSCR Plan will help balance the need for additional water supply made available through recycled water while protecting supply for agriculture, an important business supporting many of the DACs. The Regional LSCR Plan has an outreach task and this will be used to solicit input of DACs. There is also a pocket of DAC households in the Las Posas Basin, associated with local agricultural operations. That special study has an outreach component that will solicit input from the various groundwater users, including DACs and agricultural land owners and operators.

Grant Work Plan Content

As described above, the purpose of the special studies is to:

- Improve the IRWMP Update;
- Advance IRWMP Objectives;
- Fill Data Gaps; and
- Improve Outreach to Disadvantaged Communities.

The special studies were selected as priority efforts at the Watershed Committee level and then brought for consideration to the entire WCV. The WCV voted to seek grant funding for the two special studies at its December 2011 Stakeholder Meeting.

Task 1. Regional Salt and Nutrient Management Plan (Regional LSCR Plan)

This task is the preparation of a Salt and Nutrient Management Plan for the four groundwater basins on the lower Santa Clara River – the Mound, Santa Paula, Fillmore, and Piru basins. See Figure 3-2. This effort will be led by the Ventura County Watershed Protection District (WPD), in partnership with the Cities of Ventura, Santa Paula, and Fillmore and community of Piru (represented by Ventura County Waterworks District No. 16). Pursuant to the State Water Resources Control Board (State Water Board) adopted statewide Recycled Water Policy, a stakeholder-driven Salt and Nutrient Management Plan for each basin/sub-basin in California is recommended to address salt and nutrient issues applicable to all users

of water and contributors of salts and nutrients in the basin/sub-basin rather than impose requirements solely on individual recycled water projects. The area of focus of the Regional LSCR Plan is the protection of water quality in the groundwater basins underlying current and future water recycling projects in the lower Santa Clara River. The Regional LSCR Plan will include components as described in the Recycled Water Policy, and will be coordinated through the Los Angeles Regional Water Quality Control Board (LA Water Board). The Regional LSCR Plan will compile previous work related to hydrogeology and water quality in the lower Santa Clara River, including information contained in the IRWMP.

Background: The State Water Board in adopting a statewide Recycled Water Policy in February 3, 2009 established uniform requirements for the use of recycled water. The purpose of this Policy was to increase the use of recycled water from municipal wastewater sources that meets the definition in Water Code section 13050(n), in a manner that implements state and federal water quality laws.

As part of this policy, the preparation of a Salt and Nutrient Management Plan for each basin/sub basin in California, including compliance with the California Environmental Quality Act (CEQA) and participation by Regional Water Board staff, is required by May 2014. The policy states that salts and nutrients from all sources should be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses.

The Regional LSCR Plan will include:

- researching existing data, studies and reports;
- preparing a basin/sub-basin-wide groundwater monitoring plan;
- conducting a salt and nutrient source identification;
- preparing an anti-degradation analysis;
- completing a hydrogeology and basin understanding evaluation; and
- conducting a stakeholder process.

The scale of the basin/sub-basin monitoring and plan analysis will be dependent upon site-specific conditions and focusing on a reasonable and cost-effective means of determining whether the concentrations of salt, nutrients, and other constituents of concern are consistent with applicable water quality



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant

Attachment 3 – Work Plan

objectives, and the promotion of water recycling in Ventura County.

Currently no individual or regional Salt and Nutrient Management Plan(s) exists for any of the lower Santa Clara River groundwater basins. By working together, the identified parties intend to pool their resources toward common data sharing, analyses and report writing. Multiple benefits will be realized by all (community, regulatory and resource agencies) with this regional approach versus individual basin plan development. In addition, LA Water Board staff supports this approach, as demonstrated by their presentation at the Salt and Nutrient Management Plan workshop in Fall 2011: *“What are the benefits of a stakeholder-led plan? 1. Stakeholder opportunity to collaboratively develop basin-wide management approach, and more cost-effective plan implementation; 2. Coordinated basin-wide monitoring, coordinated mitigation requirements by basin, and 3. Satisfies General Waste Discharge Requirement Irrigation Permit monitoring requirements.”*

In addition to the benefits laid out by the LA Water Board, the Regional LSCR Plan will create consistency in planning and actions along the Santa Clara River, increase local agency confidence in the plan, and improve the probability of regulatory acceptance of the plan. The importance of the Regional LSCR Plan cannot be understated given the significant local investment in recycled water and the heavy dependence on groundwater in the Region (groundwater makes up over 65 percent of local supplies). There is a great need to balance use of recycled water with groundwater basin protection.

The Regional LSCR proposal received widespread stakeholder support among the individual sponsoring entities, as well as the community at large, as evidenced by the overwhelming support at the November 2011 Santa Clara River Watershed Committee meeting, and the December 2011 Watershed Coalition of Ventura County's meeting.

City of Ventura/Mound Basin. The City of Ventura serves water from local surface and groundwater sources to approximately 113,400 residents in a 22 square mile area. Groundwater sources available to the City include the Mound and Santa Paula groundwater basins. Currently, tertiary treated effluent from the Ventura Water Reclamation Facility is discharged to the Santa Clara River Estuary. To improve estuary health, the City of Ventura intends to divert between 50 to 100 percent of the treated wastewater from the estuary for non-potable uses. This significant leap in recycled water use will greatly

offset current potable water use, but will necessitate management of salt and nutrients.

City of Santa Paula/Santa Paula Basin. For the City of Santa Paula, the Santa Paula groundwater basin is this City's sole source of water supply. In 2010, the new City Water Recycling Facility was completed. Due to a lack of infrastructure, recycled water is not yet delivered within the City; however, substantial demand has been identified and the City plans to have a recycled water program developed within the next few years. The planned use of recycled water will require a plan for the management of salt and nutrients.

City of Fillmore/Fillmore Basin. In the City of Fillmore drinking water supplies exclusively consist of groundwater from the Fillmore Basin, however the City has been focusing strongly on increasing recycled water use for non-potable applications. For example, as part of its \$70 million water recycling plan, a zero-discharge water recycling facility has enabled the City to recycle 100 percent of its treated water. Nevertheless, salinity issues are already a concern in the City's groundwater basin, making efforts to continue its recycling effort potentially problematic. There is a great need for a salt and nutrient management plan in the Fillmore Basin.

County Waterworks District No. 16/Piru Basin. Water demands in Piru are met from local groundwater, and particularly during periods of drought, these water supplies can be limited. Furthermore, as a DAC, the community of Piru is particularly vulnerable to competition between potable water uses and agricultural needs.

As part of the upgrade/expansion project of the Piru Wastewater Treatment Plant, the Waterworks District is currently pursuing implementation of the Piru Tertiary Treatment Facility. The construction of the tertiary treatment facilities will assist in providing a more reliable, drought-proof source of tertiary-treated recycled water to agriculture in lieu of groundwater. As in the other Santa Clara River basins, in the Piru Basin, there is a need to balance the development of recycled water with protection of groundwater.

Work Plan Tasks. The tasks shown below have been agreed to by the agencies that will be participating in the Regional LSCR Plan.

1.1 Establish Stakeholder Group

A Regional LSCR Plan Stakeholder Group will be convened to work with the WPD and LA Water Board. WPD will actively solicit ongoing participation from the



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant Attachment 3 – Work Plan

County, Cities (Ventura, Santa Paula, Fillmore and Oxnard), Water Purveyors (United Water Conservation District, small mutuals), Ventura Regional Sanitation District (representing several smaller sanitation districts), Ventura County Farm Bureau, local universities (University of California Santa Barbara, California State University Channel Islands), neighboring regions (Upper Santa Clara River Salt and Nutrient Management Plan Task Force, Upper Santa Clara River IRWMP), and others. The Stakeholder Group will convene in a collaborative process to facilitate meetings with technical experts. The activities of the Regional LSCR Plan Stakeholder Group will be open to any interested party and will be regularly reported to the broader WVCV membership and Santa Clara River Watershed Committee. The Stakeholder Group, or the WPD as its representative, will engage the LA Water Board at various points in the Regional LSCR Plan development, described below, to ensure acceptance of the Final Regional LSCR Plan.

1.2 Establish Objectives

The Stakeholder Group will be tasked with developing clear and specific objectives for the Regional LSCR Plan. These objectives will be developed consistent with the State Recycled Water Policy and the SWRCB "Salt/Nutrient Management Plans – Suggested Elements."

1.3 Characterize Groundwater Basins (Hydrogeology and Physical Data)

This task will evaluate several physical factors, including an overview of hydrology and hydrogeologic conditions of the lower Santa Clara River watershed, groundwater flow and ambient groundwater characteristics, surface water drainage systems, and recycled water projects. Furthermore, physical factors will include aquifer uses, soil types, climate/evapotranspiration, land uses, water balance, water quality, salt and nutrient balances, and dominant transport pathways.

1.4 Salt and Nutrient Source Identification

This task will summarize salt and nutrient sources and loadings in each of the groundwater basins. Salt and nutrient data will be collected from existing databases, individual facilities, and stakeholders. Available data will be identified and collected to describe the fate and transport of salt and nutrient contributions from imported and recycled water, gray water, rainfall, storm water, agriculture, industrial users, and other land applications. Data gaps will also be identified. Known data sources include Upper Santa Clara River Chloride TMDL, Lower Santa Clara River Nitrogen

TMDL, current urban water management plans, drinking water source assessment plans, AB 3030 groundwater management plans, and recycled water master plans. These data will be supplemented with land use data, and information from the County Agricultural Commissioner's Office.

A map will be created to provide a geospatial representation of salt and nutrient management loads for all the groundwater basins. Supporting tables relating possible land use changes that could affect salt and nutrient loads will be provided.

1.5 Summarize Existing Groundwater Monitoring Programs

This task will summarize existing monitoring activities within the groundwater basins that can be used to meet the requirements of the Regional LCSR Plan. A map will be created to illustrate existing monitoring locations. WPD will identify areas where additional monitoring may need to be implemented to meet the requirements of the Regional LCSR Plan.

1.6 Summarize Existing Groundwater Quality Data

This task will assess ambient groundwater quality by reviewing existing monitoring reports and data. This task will tabulate and analyze the water quality parameters presently being monitored and include a summary of wells that exceed any drinking water standard. The quality and appropriateness of the data will be assessed and noted in the data summary. This task will also identify water supplies proximate to existing or planned recycled water projects. The evaluation of ambient groundwater quality will differentiate between natural background quality (if unaffected by human activities) and existing background quality of the groundwater (if affected by human activities).

1.7 Evaluate Constituent Effects on Groundwater

Based on the information gathered in the previous tasks, this task will evaluate the assimilative capacity of groundwater basins, identify the salt and nutrient sources that are likely to affect groundwater in the basins, determine the fate and transport of these constituents, and quantify the potential impacts of each source on groundwater quality. This task will include an evaluation of current irrigation practices and management of nutrient application based on soil type and rainfall to determine the potential for groundwater degradation. This task will also include an evaluation of land management practices to assess potential



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant Attachment 3 – Work Plan

groundwater impacts, if any, and the cumulative effects of these various activities.

1.8 Develop Recommended Groundwater Monitoring Program

Considering the existing groundwater monitoring programs documented in Task 1.5, this task includes the development of a groundwater monitoring plan for each basin, identification of additional monitoring required to fill data gaps (if any), and provisions for monitoring chemicals of emerging concern. This will involve identifying potential and existing beneficial uses of each basin and basin characteristics and context (hydrogeology, soil, land uses, water balance, dominant transport pathways). Using this information, as well as information developed in Tasks 1.3 through 1.7, a groundwater monitoring program describing recommended monitoring locations, frequency, and parameters will be proposed. A map will be created to illustrate areas of adequate monitoring and to identify areas, if any, where increased monitoring coverage is needed.

1.9 Anti-Degradation Analysis

Under this task, the threshold for significant degradation will be defined. Salt and nutrient sources that result in groundwater impacts will be further evaluated to determine the potential level of degradation that would occur within the groundwater basins due to existing and future projects, with particular attention to recycled water projects. The objective of the evaluation is to determine whether an anti-degradation analysis is required for a source or combination of sources, and to simplify the anti-degradation analysis if it is found that no significant degradation of groundwater quality is likely to occur. Further evaluation will be conducted only if potential significant degradation appears likely based on the analysis.

1.10 Prepare Regional Salt and Nutrient Management Plan

Utilizing the information obtained in the tasks above, a Draft Regional LSCR Plan will be submitted to the LA Water Board. The Regional LSCR Plan will identify implementation measures to manage salt and nutrient loadings on a sustainable basis for each of the groundwater basins. The Draft and Final Regional LSCR Plan will address the key issues identified in the approach, and will integrate the elements discussed in Tasks 1.1 through 1.9 and requirements of the State's Recycled Water Policy.

1.11 California Environmental Quality Act and Environmental Alternatives Analysis for a Basin Plan Amendment (if necessary)

If the Regional LSCR Plan is fully consistent with the existing Los Angeles Region Basin Plan, it will not be necessary to prepare a Basin Plan Amendment. However, the WPD is anticipating that a Basin Plan Amendment and associated environmental documentation will be necessary. WPD will initiate and oversee consultant services for the preparation of the appropriate Environmental Document that complies with CEQA, and meets the needs of the LA Water Board in completing their Basin Plan Amendment/Functional Equivalent Document for the Regional LSCR Plan. Basin planning is a "certified regulatory program" exempt from the requirement to prepare an Initial Study, Negative Declaration, or Environmental Impact Report. However, a Basin Plan Amendment does require preparation of a "substitute environmental document" that fulfills the same information needs as traditional CEQA documents.

The Environmental Document may include a description of baseline conditions, thresholds of significance, impact analyses, and alternatives analysis, mitigation measures and a mitigation monitoring and reporting program. The LA Water Board will be the lead agency for purposes of CEQA compliance.

Task 1 Deliverables:

- Stakeholder List, Stakeholder Meeting Agenda, & Minutes;
- Groundwater Monitoring Program;
- Draft and Final Salt and Nutrient Management Plan; and
- CEQA Environmental Documents/Documentation.

Task 2. Las Posas Basin Conjunctive Use Study (Las Posas Study)

The primary purpose of this special study is to better understand the opportunities and constraints to developing the shallow brackish groundwater in the East and South Las Posas basins (Figure 3-3) so as to resolve water-related conflicts in the Region. One of the goals of the Las Posas Study is to prevent the need for basin adjudication.

Ventura County, and the Calleguas Creek Watershed in particular, have experienced increasing salinity levels in both groundwater and surface water.



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant Attachment 3 – Work Plan

Increasing salinity poses a number of problems for the beneficial uses within the watershed, including municipal, industrial, and agricultural water supply, and habitat. Rising salinity is harmful to agriculture, primarily for growers of high-value strawberries and avocados, who are increasingly unable to use local surface water or groundwater for irrigation without reducing agricultural productivity. High salinity levels in soils and surface water can also be detrimental to sensitive habitat.

In addition to water quality issues, there are also water supply issues. Like much of Southern California, southern Ventura County is dependent on imported water sources while also facing the challenge of groundwater overdraft. Unfortunately, some local groundwater resources are not readily usable due to water quality concerns, primarily salts. To address these issues, a Salinity Management Pipeline is being constructed by Calleguas Municipal Water District to collect concentrate from desalting of brackish groundwater for municipal, industrial, and agricultural purposes; concentrate from desalting of potable water for high-tech industrial purposes; and excess high quality recycled water from municipal wastewater treatment plants. Ultimately, the pipeline will extend from the City of Simi Valley, at the most easterly point, through the cities of Moorpark, Camarillo, Oxnard, and areas of unincorporated Ventura County. To date nearly all of the westerly 10 miles of the pipeline have been constructed including the outfall in the City of Port Hueneme (see Figure 3-3).

It is estimated that with the Salinity Management Pipeline it will be possible to develop up to 40,000 acre-feet of new local water supplies, a portion of which will be from desalting of brackish groundwater. However, several key challenges related to brackish groundwater use must be addressed. First, in some areas like the Las Posas Basin, water supply infrastructure that would make use of this new supply is highly decentralized. Thus, a coordinated and cooperative approach to developing the brackish groundwater resource is needed to avoid potential conflict amongst water users and to match water quality to use. Secondly, in many basins, like the Las Posas Basin, the brackish groundwater zones are directly connected to the main pumping zones of the basins. Thus, brackish groundwater resources must be developed in the overall groundwater management context for a given basin. Lastly, in many basins, like the Las Posas Basin, the brackish groundwater zones are intimately connected to the surface water system. Thus, development of the brackish groundwater resource can create aquifer storage for future conjunctive use projects. Currently the IRWMP does not fully develop these concepts and the Las Posas

Study will take the first step in updating IRWMP to include these important water management aspects.

In summary, the Las Posas Study builds upon the significant effort and investment of the Salinity Management Pipeline by creating a framework for how local brackish groundwater can be treated and distributed in combination with the Salinity Management Pipeline. The study will help reduce conflict amongst water users by developing a coordinated approach for sharing the costs and benefits of developing this resource. This approach will also help address the above-described groundwater management issues, provide opportunities to create aquifer storage, and develop potential opportunities for conjunctive use projects.

Specific information will be gathered related to existing groundwater quality, aquifer properties, existing infrastructure, and water demands, including quality of water needed.

The tasks shown below have been agreed to by the agencies that will be participating in the Las Posas Study.

2.1 Perform Outreach Activities

Outreach activities will be performed in order to involve key constituencies in the planning process. Participants will attend existing meetings and/or conduct project-specific meetings in order to seek input on Tasks 2.2 through 2.5 described below. Outreach activities will target agricultural interests (via the Ventura County Farm Bureau, Fox Canyon Groundwater Management Agency, and the Las Posas Users Group) and DACs within the Las Posas Basin.

2.2 Identify Existing Infrastructure

This task will identify existing water infrastructure, including wells, pipelines, pump stations, and reservoirs, that could be used to extract groundwater and transport both untreated groundwater and desalted groundwater to potential end users within the South and East Las Posas Basins. The locations, sizes, capacities, and operating pressures of the facilities will be identified through the acquisition of maps and documents showing existing infrastructure and through field investigations accompanied by knowledgeable water company representatives. All information gathered will be compiled and documented. The distribution systems to be studied may include, but are not limited to, those owned and operated by Zone Mutual Water Company, Berylwood Heights Mutual Water Company, Thermic Mutual



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant

Attachment 3 – Work Plan

Water Company, Arroyo Las Posas Mutual Water Company, and Ventura County Waterworks Districts 1 and 19.

2.3 Obtain Groundwater Data

This task will compile data regarding the hydraulic properties of the South and East Las Posas shallow aquifer from existing available sources. In addition, three monitoring wells will be installed in the Las Posas Basin Shallow Aquifer to gather data about existing brackish groundwater resources in the basin. Once the wells are installed, tests will be performed, as needed, to determine aquifer transmissivity. Well spacing and well interference will be evaluated using the transmissivity results. This information is essential to establish the aquifer properties necessary to identify potential future well locations and spacing and to determine what production may be achieved from them in order to support Task 2.4.

2.4 Develop Potential Alternatives for New Infrastructure

This task will evaluate the existing water conveyance infrastructure identified in Task 2.2 and the groundwater data gathered in Task 2.3 to develop potential alternatives for new infrastructure, including wells, desalters, and conveyance, to produce brackish groundwater, treat it, and distribute it to agricultural and other users. Alternatives will be identified with the goal of maximizing the number of agricultural and other customers receiving desalted water while minimizing project costs. The costs associated with achieving different alternative water quality goals will be developed and evaluated. Potential alternatives include one suitable for chloride-sensitive crops and one suitable for crops that are less sensitive to chloride. Finally, a range of infrastructure configurations will be developed and ranked from lowest cost and smallest number of users to highest cost and highest number of users.

2.5 Evaluate Infrastructure Alternatives

This task will evaluate the alternatives developed in Task 2.4 with respect to the following criteria:

1. Ability to meet desired goals and objectives
2. Amount of irrigated acreage which receives desalted water
3. Volume of water generated and/or transferred
4. Operational flexibility
5. Construction cost
6. Operations and maintenance costs

This task will identify and recommend the most effective system of wells, desalter(s), and infrastructure to deliver desalted water within the basin.

2.6 Prepare Final Report

A final engineering report documenting the work performed in Tasks 2.2 through 2.5. The report is anticipated to include the following sections:

1. Goals and Objectives
2. Existing Infrastructure
3. Alternatives
4. Evaluation of Alternatives
5. Recommended Alternative
6. Conclusions and Next Steps

The final report will identify appropriate projects to best utilize the groundwater resources of the East and South Las Posas basins. The final report will form the basis to share project information with other interested agencies, both informally and in more formal venues, such as the WVCV IRWMP, meetings of water-related and civil engineering professional organizations, and conferences and published papers.

Task 2 Deliverables:

- List of outreach activities, including participants attending outreach activities;
- Agenda and Minutes from outreach meetings; and
- Draft and Final engineering reports.

Task 3. Integrate Findings into IRWMP

The timing of the special studies will allow information generated to benefit many aspects of the IRWMP Update, including:

- Region Description. It is anticipated that the major data collection and characterization steps of the two special studies will be completed in time to be included in the IRWMP Update. The special studies will provide information on both local water supplies (both from recycled water and increased desalting) as well as surface and groundwater quality.
- Objectives. The special studies will provide an understanding of the challenges and opportunities for managing Regional resources, including recycled water and brackish groundwater. In this way, the special



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant

Attachment 3 – Work Plan

studies will inform the review of objectives during the IRWMP Update and provide data necessary to develop quantitative objectives. For example, the Regional LSCR Plan may identify high salt loading from certain sources in the Santa Clara River. This may prompt the WCVV Stakeholders to create an objective focusing on salt management. Further, the Regional LSCR Plan will outline the beneficial uses and the salt tolerances of these uses. This in turn will help the Stakeholders quantify the objectives related to salt management.

- **Resource Management Strategies.** The special studies will help determine what resource management strategies are applicable to improving water quality and may develop new resource management strategies.
- **Data Management.** The special studies will gather, assimilate, and evaluate data from diverse sources. These data will be tied to specific geographies and will be disseminated to the specific watershed committees and the overall WCVV membership. This will greatly facilitate the data management efforts of the IRWMP Update.
- **Relation to Local Water Planning.** The section on Local Water Planning will be updated to describe the new salt and nutrient management efforts and desalting activities that are being undertaken by local agencies.
- **Stakeholder Outreach.** The Stakeholder Outreach section will be augmented with a discussion of the stakeholder processes and participation related to the two special studies.
- **Coordination with Neighboring IRWMPs.** As described earlier, the special studies, particularly the Regional LSCR Plan, are an opportunity to better to coordinate with adjacent regions. A discussion of the interregional collaboration undertaken as part of the special studies will be added to the IRWMP.
- **Climate Change.** The special studies will help characterize local water resources, including data on streamflow, groundwater hydrology, land use, water users, agricultural crops, and seasonal water demand. These are all inputs used to evaluate climate change vulnerability and will enhance the IRWMP climate change discussion.

The IRWMP is a dynamic planning document. There is an ongoing process for keeping the proposed project list up-to-date through regular updates with additional revision as needed as conditions change, funding is identified, projects are implemented and objectives refined. Ultimately the two special studies will identify specific projects that will assist the Region in meeting various goals and objectives. It is anticipated that any projects proposed by the special studies will be vetted through the applicable watershed committees and ultimately the WCVV general membership, consistent with the WCVV Charter.

Task 4. Grant Project Management

The primary objectives of the grant management task are to: 1) ensure coordination among the Stakeholders, the project team, the WCVV, and the IRWMP Update; and 2) perform grant reporting (including progress reports and final reports) and invoicing.

Additional IRWM Plan Work

As described earlier, WCVV has secured a \$485,684 Round One Proposition 84 Planning Grant to update its IRWMP. These funds will be combined with local funding and in-kind services to complete the update. Activities undertaken as part of the IRWMP Update will address those aspects of the existing IRWMP that are not fully compliant with current IRWMP standards (see Table 3-1). In addition, the IRWMP Update will add the latest data and knowledge to the Plan. This “refresh” is necessary as the existing plan was prepared in 2006 and significant new studies and data have been generated since that time.

Activities, including stakeholder outreach, have been on-going since 2006. Initial work to update the WCVV IRWMP began in 2009 with the help of the Draft Proposition 84 IRWMP Guidelines and associated Plan Standards. A revised draft of the WCVV IRWMP is anticipated in July 2013. A schedule showing the IRWMP update is shown in Table 3-2 below.



Watersheds Coalition of Ventura County Proposition 84 IRWMP Planning Grant
Attachment 3 – Work Plan

TABLE 3-2
SCHEDULE FOR ADDITIONAL IRWMP WORK

Task	Schedule
Initiate IRWMP Plan Update	October 2008 to July 2012
Ongoing DAC Outreach	September 2011 to September 2013
Outreach to Native American Tribes	September 2011 to September. 2013
Prepare Draft WCVV IRWMP Update	September 2011 to July 2013
Circulate Draft IRWMP Update	July 2013
Prepare Final WCVV IRWMP Update	August 2013
Coordinate Adoption of IRWMP Update	September 2013