Pajaro River Watershed
Integrated Regional Water Management Region

Proposition 84
Planning Grant Application
September 28, 2010

RESOLUTION NO. 2010-14

A RESOLUTION OF THE SAN BENITO COUNTY WATER DISTRICT BOARD OF DIRECTORS GRANTING SAN BENITO COUNTY WATER DISTRICT MANAGER AUTHORIZATION TO EXECUTE A GRANT AGREEMENT WITH CALIFORNIA DEPARTMENT OF WATER RESOURCES PAJARO RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLANNING GRANT

BE IT RESOLVED by the Board of Directors of the San Benito County Water District that an application be made to the California Department of Water Resources to obtain an Integrated Regional Water Management Planning Grant pursuant to the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resource Code (PRC) Section 75001 *et seq.),* and to enter into an agreement to receive a grant for the Pajaro River Watershed Integrated Regional Water Management Planning Grant.

BE IT FURTHER RESOLVED that the District Manager of San Benito County Water District, Jeff Cattaneo, is hereby authorized and directed on behalf of this Board of Directors, to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with California Department of Water Resources.

PASSED AND ADOPTED by the Board of Directors of the San Benito County Water District, this 22nd day of September 2010, by the following vote:

AYES:	DIRECTORS:	Swanson, Tobias & Flores
NOES:	DIRECTORS:	None
ABSENT:	DIRECTORS:	Bettencourt & Tonascia

Sonny Flores
Vice President

ATTEST: _____

Sara Singleton
Manager of Administration and Finance

Attachment 2. Eligible Application Documentation

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

Answer: Yes. The applicant for the Pajaro River Watershed Integrated Regional Water Management Plan Update is San Benito County Water District (SBCWD). The SBCWD is a public agency, as defined in Section III of the Guidelines, which is defined as a city, county, city and county, district, joint powers authority, a state agency or department, or other political subdivision of the State. The SBCWD is a special purpose district formed under State law (California Water Appendix Code Section 70) pursuant to the San Benito County Water District Act.

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

Answer: SBCWD is a California Special District formed in 1953 by the San Benito County Water Conservation and Flood Control Act. At that time, SBCWD merged with the Hollister Irrigation District, becoming the successor to the water rights, water facilities and land interests of the Hollister Irrigation District. The name was changed from the San Benito County Water Conservation and Flood Control District to SBCWD in 1988.

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

Response: Yes. The Applicant has legal standing to enter into contractual relationships with the State of California, DWR and SWRCB. On September 22, 2010 the San Benito County Water District Board of Directors adopted the authorizing Resolution No. 2010-14 giving explicit authority to submit this Planning Grant, and enter into and implement the grant agreement on behalf of the Pajaro River Watershed IRWM Regional Water Management Group.

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

Response: San Benito County Water District (District), on behalf of the Pajaro River Watershed IRWM Regional Water Management Group (RWMG), will negotiate sub-contractor agreements with participating entities and perform the contract management and administration and fiscal agent role for the grant, in order to ensure performance of the proposal and tracking of funds. Contract agreements with partner agencies will be approved by the Board of Directors, will include DWR and State Water Board required provisions and will be consistent with the grant agreement. The District, Santa Clara Valley Water District (SCVWD), and Pajaro Valley Water Management Agency (PVWMA) entered into a Memorandum of Understanding creating a partnership “for the purpose of coordinating water resource planning activities.” The MOU describes the intent of the partners to collaborate, share information, and meet at least on a quarterly basis. Recognizing the need for future agreements, the MOU specifically notes the potential for future agreements.

Pajaro River Watershed
Integrated Regional Water Management Region

Proposition 84
Planning Grant Application
Background Section
September 28, 2010

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Section 1 Regional Water Management Group (RWMG)

The Pajaro River is the largest coastal stream between San Francisco Bay and the Salinas River Watershed. The watershed is approximately 1,300 square miles and it includes portions of Santa Cruz, Santa Clara, San Benito, and Monterey Counties. Its large size contributes to the number of diverse environments, physical features, and land uses within the watershed. Tributaries to the Pajaro River, the largest of which is the San Benito River, serve as the major routes for surface flow and drainage throughout the watershed. San Benito County Water District (SBCWD) and Santa Clara Valley Water District (SCVWD) service areas encompass the major tributaries to the Pajaro River and form the upper portion of the watershed. The Pajaro Valley Water Management Agency (PVWMA) service area, which lies at the mouth of the watershed, forms the lower portion of the watershed.

The Pajaro River Watershed Integrated Regional Water Management (IRWM) effort is a collaborative effort to identify and implement regional and multi-beneficial projects for the Pajaro River Watershed. The Pajaro River Watershed IRWM Regional Water Management Group (RWMG) consists of:

- Santa Clara Valley Water District (SCVWD)
- San Benito County Water District (SBCWD)
- Pajaro Valley Water Management Agency (PVWMA)

In October 2004, SCVWD, SBCWD, and PVWMA entered into a Memorandum of Understanding (MOU) for the purpose of coordinating water resources planning and implementation activities watershed-wide. These three agencies led development of the Pajaro River Watershed IRWM Plan, are continuing to lead its implementation, and satisfy the role of the RWMG, as defined by the State. The existing IRWM Plan is envisioned to be a living document that shall evolve and be updated in the future as projects are implemented and watershed priorities change.

The RWMG signed an MOU which memorializes their intent to coordinate and share information concerning water supply planning programs and projects and other information, and to improve and maintain overall communication among the parties involved and stakeholders in the watershed. The RWMG has met and will continue to meet regularly in order to formulate and carry out the mission, goals, objectives and strategies of the IRWM Plan and to solicit and encourage participation from other agencies and stakeholders in the watershed. Each of the RWMG agencies has adopted the IRWM Plan.

Each of the RWMG members' water management responsibilities is described below.

Santa Clara Valley Water District (SCVWD)

SCVWD is a special purpose district formed under State Law pursuant to the Santa Clara Valley Water District Act. SCVWD provides wholesale water supply, stream and watershed stewardship, and flood protection for Santa Clara County. In addition, SCVWD manages the

County's groundwater subbasins. The mission of the SCVWD is a healthy, safe, and enhanced quality of living in Santa Clara County through watershed stewardship and comprehensive management of water resources in a practical, cost-effective, and environmentally-sensitive manner. SCVWD is a CVP and State Water Project (SWP) contractor and receives water from the San Felipe Division facilities through the Pacheco and Santa Clara Conduits.

San Benito County Water District (SBCWD)

SBCWD is a special purpose district formed under State Law pursuant to the San Benito County Water District Act. As a water conservation and flood control district, the SBCWD mission is to preserve the economic and environmental wealth and well-being of San Benito County through the control, management and conservation of waters and the provision of water services in a practical, cost-effective and responsible manner. The SBCWD is a CVP contractor and receives water from the San Felipe Division facilities through the Pacheco and Hollister Conduits.

Pajaro Valley Water Management Agency (PVWMA)

PVWMA is a state-chartered special purpose district formed under State Law pursuant to the Pajaro Valley Water Management Agency Act. PVWMA was formed to efficiently and economically manage existing and supplemental water supplies in order to prevent further increase in, and to accomplish continuing reduction of, long-term overdraft and to provide and ensure sufficient water supplies for present and anticipated needs within its boundaries. PVWMA has the authority to adopt ordinances for the purpose of conserving local groundwater supplies that all public and private water purveyors within the Agency's boundaries must adhere to. The PVWMA service area is comprised of portions of three counties, which are Santa Cruz, Monterey, and San Benito Counties.

PVWMA is a Central Valley Project (CVP) water contractor that has the option to connect to the Santa Clara Conduit of the San Felipe Division facilities in the future to provide CVP water to its service area. Along with SCVWD and SBCWD, PVWMA has an assigned delivery capacity from the San Felipe Division facilities.

1.1 Pajaro IRWM Region Governance

Much of the success of the Pajaro River Watershed IRWM effort can be attributed to the RWMG's structure. During development of the IRWM Plan, the RWMG found that the small size of the RWMG provided the flexibility necessary to adapt to changes quickly and efficiently and allowed for more frequent meetings when necessary. Additionally, the RWMG found that pairing their small group with a wide range of stakeholders was important in ensuring differing viewpoints were captured in the planning process. By conducting an extensive stakeholder and public outreach process, the RWMG has provided opportunities for all interested to be involved. Given the effectiveness of the RWMG during development of the IRWM Plan, the RWMG intends to maintain the same organizational structure during implementation.
The RWMG is in the process of formalizing the role of the Stakeholder Steering Committee in the governance process. It is anticipated the Stakeholder Steering Committee will advise the

RWMG in IRWM decisions and strategies. Updating the roles and responsibilities of the Stakeholder Steering Committee will be included in the IRWM Plan update.

Section 2 Region Description

The Pajaro River Watershed IRWM region boundary is the Pajaro River Watershed boundary, as illustrated in Figure 2-1. The Pajaro River Watershed is an appropriate area for integrated regional water management because of the mutual needs and shared resources that link the region. Many of the water supply, water quality, flood management and environmental enhancement challenges within the watershed are best addressed through cooperation of the agencies and stakeholders found within its boundaries.

Figure 2-1 illustrates the RWMG agencies' jurisdictions in relation to the Pajaro River Watershed. SBCWD and SCVWD service areas encompass the major tributaries to the Pajaro River and form the upper portion of the watershed. The PVWMA service area, which lies at the mouth of the watershed, forms the lower portion of the watershed. The relevance of the watershed as an IRWM region in addressing specific water management issues is discussed below.

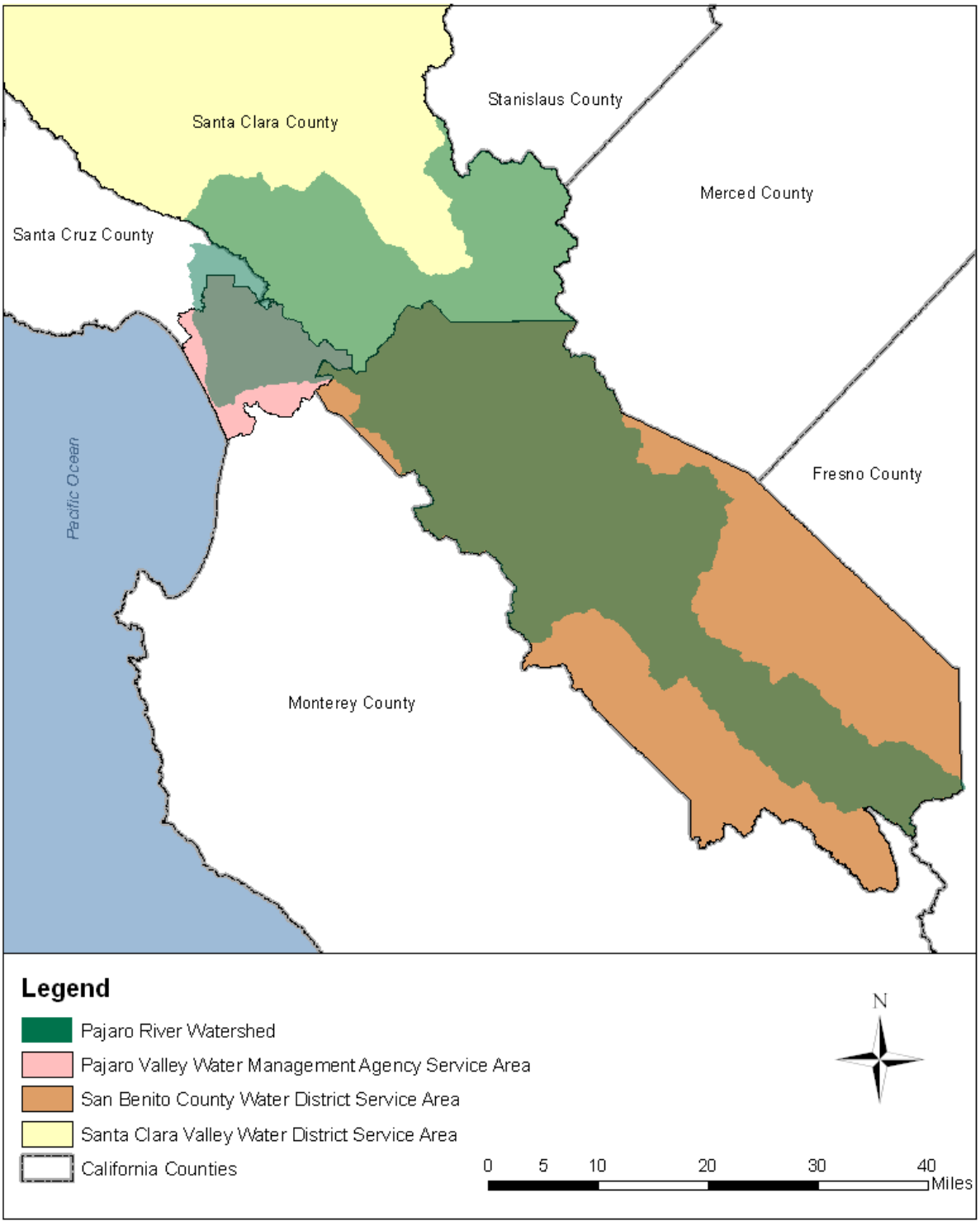
2.1 Water Supply

Ensuring an adequate water supply is a critical need for the watershed. The ability to meet future demands is impacted by the heavy reliance on groundwater throughout the watershed, which has led to overdraft in some areas, as well as by the varying reliability of imported Central Valley Project (CVP) water. Successfully meeting future water supply challenges will require the coordination of the agencies within the watershed that share these issues and that can work together to develop solutions that could not be implemented on an individual agency basis.

The primary impetus for initiating the Pajaro River Watershed IRWM program was to determine how to better manage the shared water resources within the watershed. The most notable water supply connection among the RWMG agencies is that PVWMA, SBCWD and SCVWD are each entitled to CVP deliveries through the San Felipe Division of the CVP system. Because of their common connection to the San Felipe Division, the RWMG shares an interest in improving the system reliability, efficiencies and operational flexibility.

Natural linkages exist where surface waters and groundwater bodies cross agency boundaries. As an example, in the upper watershed, SCVWD and SBCWD share a connection to the Gilroy-Hollister Valley Groundwater Basin. This groundwater basin connection is a linkage between the two agencies in regards to groundwater management activities. The Pajaro Valley Groundwater Basin, which PVWMA relies upon, is bound by the San Andreas Fault to the east, separating PVWMA from the SCVWD and SBCWD. However, the Pajaro Valley Groundwater Basin is influenced by the Pajaro River, which drains South SCVWD and SBCWD service areas.

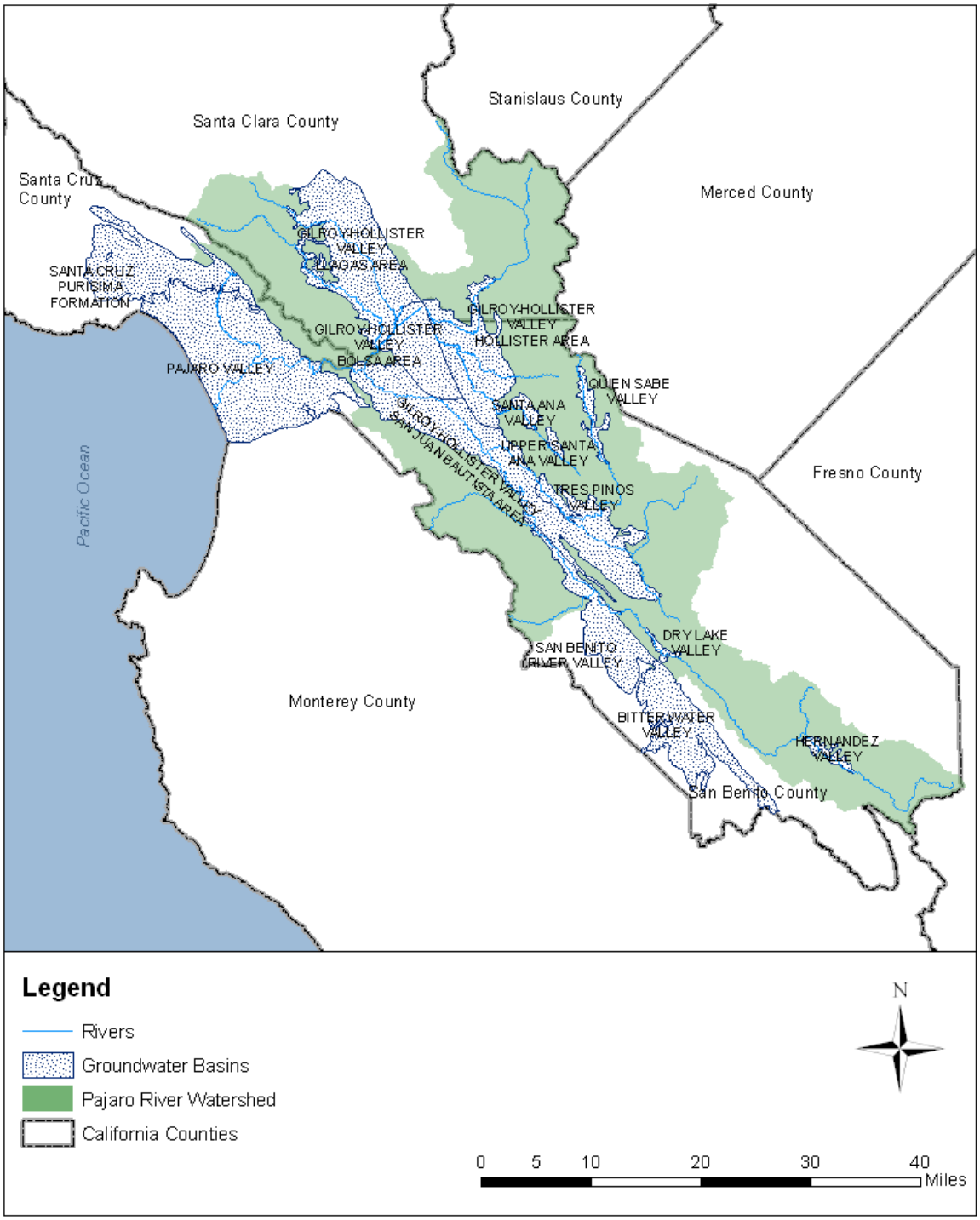
Figure 2-1: Pajaro River Watershed IRWM Region Boundary and Setting



Therefore, drainage activities within the SCVWD and SBCWD service areas influence groundwater in the PVWMA service area. The groundwater basins are illustrated in Figure 2.2.

In their MOU for Coordination of Water Resources Planning, the RWMG identified water conservation, water recycling, desalination, groundwater basin management, water banking, conjunctive use, transfer agreements and storage development as common issues that could be addressed through joint long-term water supply planning.

Figure 2-2: Groundwater Basins



2.2 Water Quality

Water quality needs within the watershed are influenced strongly by the agricultural nature of the area. The most significant surface water quality pollutants are sediment, pesticides and nutrients, which can be generated through agricultural activities near rivers and creeks that run through the watershed. These pollutants are eventually carried downstream and cause water quality degradation throughout the watershed drainage area. Improving surface water quality requires the cooperation of stakeholders and agencies in all parts of the watershed. Figure 2-3 shows the major surface waters in the watershed, including reservoirs, rivers and creeks.

The Central Coast Regional Water Quality Control Board (Regional Board) has listed several of surface waters as impaired water bodies in accordance with Clean Water Act (CWA) Section 303 (d). The Regional Board has completed the following six Total Maximum Daily Loads (TMDLs) in the Pajaro River Watershed:

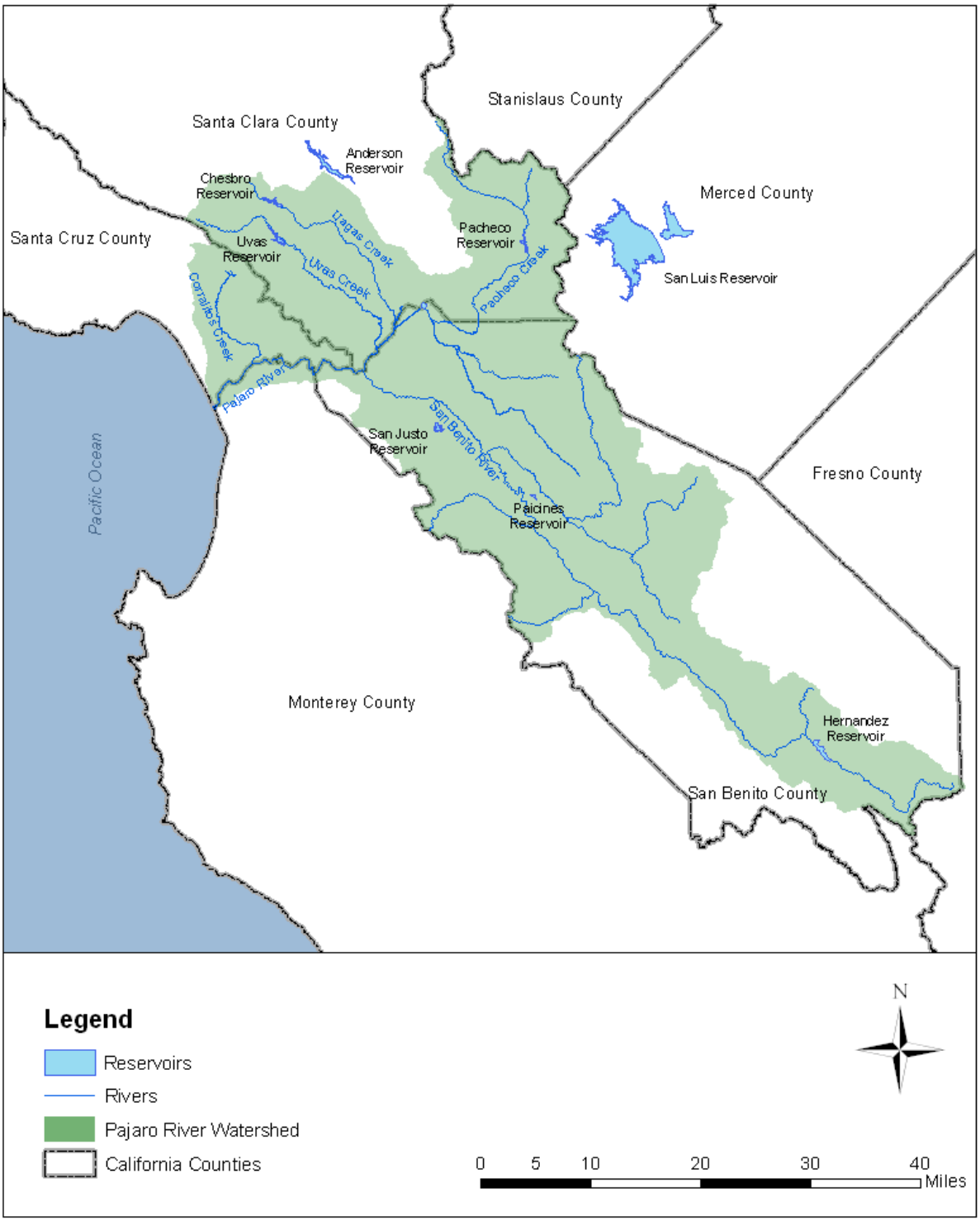
- Pajaro River (including Llagas Creek) Nitrate TMDL,
- Pajaro River (including San Benito River, Llagas Creek and Rider Creek) Sediment TMDL,
- Watsonville Slough Pathogens TMDL,
- Clear Creek and Hernandez Reservoir Mercury TMDL,
- Corralitos and Salsipuedes Creeks Watershed Fecal Coliform TMDL, and
- Pajaro River Watershed Fecal Coliform TMDL.
- Additional impairments (e.g. pesticides and dissolved oxygen in Pajaro River, Cyanobacteria in Pinto Lake) exist, and have been recommended for listing by the Regional and State Water Board.

The nitrate and sediment TMDLs, which were completed in 2005, will have the most widespread impact on stakeholders and agencies in the watershed. These two TMDLs have identified irrigated agriculture as a significant anthropogenic source of both nitrate and sediment loading.

Long-term watershed protection is important throughout the region. To ensure healthy watersheds, strategies include improving municipal development review and approval, stormwater management improvement through development of hydromodification controls, groundwater recharge area protection, riparian habitat improvement in urban and agricultural areas, elimination and reduction in pollution from agricultural discharges, and salt and nutrient management efforts.

Additionally, the quality of groundwater is an issue throughout the region. Common challenges throughout the watershed with respect to groundwater quality include salinity and nitrate management. Because the entire region relies heavily upon its groundwater resources, the various agencies have a common objective to protect and improve the quality of the groundwater basins. Salt and nutrient management planning to develop strategies to manage salt and nutrient loading to groundwater supports this objective.

Figure 2-3: Major Surface Water Features in the Pajaro River Watershed



2.3 Flood Management

Although flooding is of the highest concern in the lower portion of the Pajaro River Watershed, effective flood management solutions must consider the entire river and its drainage area, as there are opportunities to influence downstream outcomes through upstream modifications. Because of this, the watershed is a natural boundary for flood protection efforts. This is evident upon examining the composition of the Pajaro River Flood Prevention Authority (FPA), which is a joint powers authority active in the watershed that includes representatives from the following agencies:

- Monterey County Water Resources Agency
- SBCWD
- SCVWD
- Santa Cruz County Flood Control and Water Conservation District, Zone 7
- Monterey County
- San Benito County
- Santa Clara County
- Santa Cruz County

The FPA boundary is coterminous with the IRWM watershed boundary. All of these agencies are working together towards solving flood management issues in conjunction with providing other watershed benefits including water supply, groundwater recharge, water quality and wildlife and riparian habitat. The United States Army Corps of Engineers is a federal agency which is also involved in flood management for the region.

The FPA was originally formed to help resolve the flood conflicts in the region. Most of the Pajaro River drainage area is within the upper watershed while the flood impacts occur in the lower watershed. Prior to the formation of the FPA, the upper and lower watershed agencies would not work together to evaluate the flood conditions or identify watershed based flood protection strategies. The FPA has created an opportunity for the watershed agencies to work collaboratively. The FPA has completed numerous flood studies in the watershed that led to the identification and support for a flood protection strategy and identified additional work that was needed to address data gaps and continue to resolve the conflicts in the watershed. The additional study is included in this planning grant application.

2.4 Environmental Enhancement

There are significant opportunities for working to address riparian habitat, open space and recreation needs in the process of meeting the other water management needs of the watershed. Stakeholders have voiced the desire to make proactive lasting policies and decisions that will sensitize and educate the public about the importance of the Pajaro River Watershed and enhance the public's role as custodians of the riparian environment.

Water management policies and decisions can incorporate elements that provide for the protection, preservation and restoration of native plants, wetlands, open space, terrestrial and

aquatic wildlife habitat, and riparian forest. This will require agencies involved in water supply, water quality and flood management issues in the watershed to take proactive steps to work with environmentally-focused agencies and municipalities to incorporate environmental benefits to the maximum extent possible when implementing water management projects.

This planning grant application includes a multi-agency study that will evaluate water supply, flood protection, water quality, steelhead migration and rearing, wetlands enhancement and recreational education opportunities at College Lake. The College Lake Study will be cooperative effort between the County of Santa Cruz, the Resource Conservation District of Santa Cruz County and the Pajaro Valley Water Management Agency. The study will help meet all the goals of the IRWMP: Water Supply, Water Quality, Flood Protection and Environmental Enhancement. The study goals and approach are similar to an IRWMP but on a smaller, sub-watershed basis.

2.5 Neighboring IRWM regions

The Pajaro River Watershed IRWM Region is adjacent to several IRWM regions. Table 2-1 summarizes the relationships between the Pajaro River Watershed IRWM region and its adjacent regions.

Table 2-1: Relationship with Adjacent Regions

Hydrologic Region	IRWM Region	Relationship
Central Coast	Greater Monterey County	The regions' boundaries are contiguous along much the southwestern side of Pajaro River Watershed, from the Pacific Ocean to southern end of Pajaro River Watershed. The Greater Monterey County IRWM region includes the Salinas River Watershed, which is adjacent to the Pajaro River Watershed.
	Santa Cruz	The regions' boundaries are contiguous along the northern portion of the Pajaro River Watershed area in Santa Cruz County, with an overlap in the Watsonville Sloughs area.
San Francisco Bay	San Francisco Bay Area (Bay Area)	The regions' boundaries are contiguous in Santa Clara County, at the boundary between the San Francisco Bay Hydrologic Region and the Central Coast Hydrologic Region.

Significant coordination exists between adjacent regions. Much of this coordination is result of different regions participating in other regions' IRWM programs. For instance, a member of the Pajaro River Watershed IRWM RWMG participates in the Bay Area IRWM effort. Likewise, members of the RWMGs from the Santa Cruz and Greater Monterey County regions participate

in the Stakeholder Steering Committee for the Pajaro River Watershed region and the Pajaro River Watershed RWMG is a stakeholder for those regions.

2.6 Overlap with other IRWM regions

The Pajaro River Watershed IRWM Region and the Santa Cruz IRWM Region currently overlap in the Watsonville Sloughs area. The Watsonville Sloughs system drains a 12,500-acre watershed from the coastal plain and foothills of southern Santa Cruz County into Monterey Bay. The Watsonville Sloughs Watershed includes six individual sloughs: Watsonville, Harkins, Struve, West Branch, Gallighan and Hanson. These are located around the mouth of the Pajaro River. These sloughs sustain large wetland marsh and riparian habitats, economically important agricultural lands, and the fastest-growing area in Santa Cruz County in terms of development. There are significant water issues in and around the Sloughs and a long history of management of these issues. Agencies participating in both the Pajaro River Watershed and Santa Cruz IRWM regions have a history of significant management activity in the Watsonville Sloughs.

Because of the extensive wetland habitats and unique pressures in the Watsonville Sloughs Watershed, considerable effort has been placed on implementing watershed conservation and restoration plans. This watershed restoration effort is coordinated by the Resource Conservation District of Santa Cruz County (RCD) through its Integrated Watershed Restoration Program. The program is centered on watersheds in the Santa Cruz IRWM Region. The RCD has worked in close partnership for many years with the City of Watsonville, Watsonville Wetlands Watch and the County of Santa Cruz to assess, plan and implement water quality and habitat improvements. More recently the City of Watsonville and the County and RCD are also coordinating a new approach to stormwater management. Watsonville Sloughs is included in the Santa Cruz IRWM region primarily to facilitate funding and coordination of watershed restoration, stormwater management and water quality improvement efforts.

The Watsonville Sloughs drain to the Pajaro River and, therefore, impact water supply, water quality, and flood protection in the Pajaro River Watershed IRWM region. The Santa Cruz County Flood Control and Water Conservation District Zone 7 (Zone 7) operate several pump stations to control localized flooding in the Watsonville Sloughs area. The Pajaro Valley Water Management Agency (PVWMA), in coordination with Zone 7, developed a water supply project in the Watsonville Sloughs area whereby the flood water is pumped from Harkins Slough, recharged to temporary shallow groundwater storage, and later extracted and distributed to coastal farmers. Additional Watsonville Sloughs water supply opportunities will be considered by the Pajaro River Watershed IRWM Conjunctive Water Supply Management Implementation Team. Likewise, the Watsonville Sloughs impact on Pajaro River flooding will be considered by the Pajaro River Watershed IRWM Flood Protection Team.

The Pajaro River Watershed and Santa Cruz IRWM efforts both acknowledge the overlap in regions and have reached agreement on how to manage the overlap. The Watsonville Sloughs area is a complex system with significant environmental and water resource challenges and

opportunities. The environmental conservation and restoration issues are best coordinated and managed by the Santa Cruz IRWM, while the water supply and flood protection issues are best coordinated and managed by the Pajaro IRWM. Both regions manage water quality issues, but coordinate on which region should lead specific issues. For instance, the Pajaro River Watershed IRWM Agricultural Water Quality Implementation Team includes representatives from the regional water management groups (RWMGs) of both the Pajaro River Watershed and Santa Cruz IRWM efforts.

Section 3 Description of Existing IRWM Plan

The Pajaro River Watershed Integrated Regional Management (IRWM) Plan was completed and adopted in May 2007, in part with Proposition 50 planning funds. The existing IRWM Plan is consistent with the Proposition 50 Integrated Regional Water Management Grant Program Guidelines jointly issued by the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) on November 18, 2004. The sections included in the IRWM Plan are as follows:

1. **Regional Water Management Group.** This section describes the Pajaro River Watershed regional water management group, including member agencies and their management responsibilities related to water.

2. **Regional Description.** This section explains why the Pajaro River Watershed is an appropriate region for integrated regional water management, and describes internal boundaries within the region, major water related infrastructure, and major land-use divisions; quality and quantity of water resources within the region, including surface waters, groundwater, reclaimed water, imported water, and desalted water; water supplies and demand for a minimum 20-year planning horizon; important ecological processes and environmental resources within the regional boundaries and the associated water demands to support environmental needs; the social and cultural makeup of the regional economy; important cultural or social values; economic conditions and important economic trends within the regions.

3. **IRWM Plan Objectives**. This section identifies the IRWM Plan objectives for the Pajaro River Watershed and the manner in which they were determined.

4. **Water Management Strategies**. This section documents the range of water management strategies considered to meet the region's objectives.

5. **Integration**. This section presents the mix of water management strategies selected for inclusion in the Plan and discusses the added value and benefits associated with integrating these strategies.

6. **Regional Priorities**. This section presents the near-term and long-term priorities for implementation of the Plan, and discusses the process for modifying priorities in response to regional changes.

7. **Implementation**. This section identifies specific actions, projects and studies, by which the Plan will be implemented, and identifies the agencies responsible for project implementation, and linkages or interdependence between projects.

8. **Impacts and Benefits**. This section presents a screening level discussion of the impacts and benefits from Plan implementation.

9. **Technical Analysis and Plan Performance**. This section discusses the data, technical methods, and analyses used in the development of the Plan, and includes measures that will be used to evaluate project and plan performance, monitoring systems that will be used to gather performance data, and mechanisms to adapt project operations and Plan implementation based on performance data collected.

10. **Data Management**. This section presents mechanisms by which data will be managed and disseminated to stakeholders and the public, and discusses how data collection will support statewide data needs.

11. **Financing**. This section identifies beneficiaries of Plan implementation, and identifies the capital and operation and maintenance costs and potential funding sources of implementation projects.

12. **Statewide Priorities**. This section identifies the statewide or State agency priorities that will be met or contributed by implementation of the Plan and specific projects.

13. **Relation to Local Planning**. This section discusses how the IRWM Plan relates to planning documents and programs established by local agencies, and demonstrates coordination with local land-use planning decision makers.

14. **Stakeholder Involvement**. This section identifies stakeholders included in developing the Plan, the manner in which stakeholders were identified, how they participate in planning and implementation efforts, and how they can influence decisions regarding water management.

15. **Agency Coordination**. This section identifies State or federal agencies involved with strategies, actions, and projects and areas where a State or other agency may be able to assist in communication or cooperation, or implementation of Plan components or processes, or where State or federal regulatory decisions are required for implementation.

Section 4 Public Outreach Process and Stakeholder Involvement

4.1 Public Outreach Process

The Pajaro River Watershed IRWM effort is built upon the premise that future implementation of an IRWMP would not be possible unless the strategies and options were first identified, prioritized and developed by the affected stakeholders. As a result, stakeholder involvement is a central element to the Pajaro River Watershed IRWM effort and implementation success will necessarily involve water management strategies that address the concerns of local communities and reflect the public's interests and values within the watershed.

Stakeholders were identified through discussions with local agencies and organizations with jurisdiction, projects, and stakeholder experience in the Pajaro River Watershed. The stakeholders list will continue to expand as additional stakeholders are identified during the implementation of the IRWMP. A special effort has been made to identify and involve disadvantaged communities in the region, such as residents of the City of Watsonville, and the county-level disadvantaged communities of Freedom, Pajaro, Paicines, and San Juan Bautista. These communities were encouraged to be actively involved in the planning process and to proactively address environmental justice concerns. Stakeholder meetings were held in locations throughout the watershed to encourage widespread participation and to accommodate stakeholders with limited resources and opportunities to travel to meetings. More information on disadvantaged communities is detailed in Section 5.

The IRWM effort has focused on identifying as broad a range of stakeholders as possible. Previously, stakeholder groups coalesced around project- or community-driven efforts which tended to be more narrowly focused on specific water management strategies developed by various agencies and organizations in the watershed. There is increasing awareness that it is beneficial to integrate the efforts of these stakeholders groups. Catastrophic events, such as Pajaro River flooding, have heightened awareness of the necessity of local communities to collaborate in developing effective water management strategies throughout the region. Furthermore, stakeholders recognize the need to work together given their shared dependence on limited local water supplies in the watershed. Additionally, stakeholders are already teaming up to maintain water quality levels that meet various beneficial uses by implementing such programs as agricultural water quality and irrigation mitigation programs. Other stakeholders have demonstrated a desire to collaboratively implement environmental restoration and habitat protection in the Pajaro River Watershed. All of these efforts demonstrate willingness to pool resources and act collaboratively to develop water management strategies that provide multiple benefits to the watershed and its communities.

The Pajaro River Watershed IRWM effort has created a forum for many of these stakeholders to come together to work collaboratively on their shared and/or overlapping issues. In order to make this forum most effective, steps have been taken to identify as many of the potential

stakeholders with water management interests in the Pajaro River Watershed as possible, and to make them aware of the IRWM effort.

A Stakeholder Steering Committee was assembled in February 2005 to facilitate Pajaro River Watershed IRWMP coordination and collaboration with the most interested parties during initial IRWM Plan development. This committee provided a forum for on-going discussion and stakeholder input, and provided review and stakeholder oversight throughout the initial IRWMP development process. Participating entities of the Stakeholder Steering Committee included representatives of each of the RWMG agencies (PVWMA, SBCWD, and SCVWD) and members of other agencies and organizations. The RWMG is in the process of expanding the Stakeholder Steering Committee to include broader representation of the region and targeted representation of DACs. The RWMG is also seeking to formalize the role of the Stakeholder Steering Committee in IRWM governance.

On a community scale, Action Pajaro Valley (APV) was formed in September 1998 with an Advisory Board of over 50 community leaders representing over 20 stakeholder groups. The mission of APV is "creating a positive future for the residents of the Pajaro Valley by facilitating an on-going collaborative process for planning, informing and serving as a resource for community decision making."". APV has grown into an organized effort involving a partnership of people from many sectors of the Pajaro Valley. The RWMG began working with APV in early 2005 as an avenue for greater community exposure and stakeholder involvement.

On a regional scale, the RWMG has been working with the Pajaro River Watershed Flood Prevention Authority (FPA), an eight-agency Joint Powers Authority spanning the four counties and four water districts of the Pajaro River Watershed. Two members of the RWMG, SCVWD and SBCWD, are members of the FPA. This organization was established to provide flood protection and promote general watershed interests such as identifying and prioritizing strategies and projects that will provide multiple benefits with regard to water supply, groundwater recharge, and environmental restoration and protection benefits. The FPA is another key working group that has assisted the IRWMP effort in developing water management strategies that meet multiple stakeholders' goals and objectives.

Another partnership formed during IRWM Plan development was the integration of the Resource Conservation Districts (RCDs). The RCDs previously developed water management strategies for implementation within the Pajaro River Watershed with support mainly from the Natural Resources Conservation Service (NRCS). The RCDs have now joined the efforts of the RWMG, APV, and the Stakeholder Steering Committee to implement those strategies on a broader scale as part of the integrated programs developed through the IRWM effort. It was important to the RWMG and all stakeholders that RCDs needs were heard and their water management strategies considered. A demonstration of this continued collaboration and partnership is the College Lake Study included in this grant application. The RCD, with the County of Santa Cruz and PVWMA, will help evaluate the integrated project opportunities associated with a College Lake water supply and flood protection project.

The RWMG agencies continue to coordinate water supply efforts in their service areas through existing forums. One example is the joint effort by SBCWD, City of Hollister, County of San Benito, and Sunnyslope County Water District to develop the Hollister Urban Area Water and Wastewater Master Plan. The plan integrates water supply, water quality, and wastewater management strategies and was completed in November 2008. SCVWD has partnered with the Cities of Gilroy and Morgan Hill and the County of Santa Clara to analyze long-term water supply strategies for the portion of Santa Clara County in the Pajaro River Watershed. Most recently, PVWMA has been collaborating with the Pajaro Sunny Mesa Community Services District, which is now participating in the IRWM effort.

4.2 Stakeholder Involvement in IRWM Plan Decision Making Process

Since formally launching the Pajaro River Watershed IRWM planning effort in early 2005, the RWMG has conducted periodic stakeholder workshops. Work generated during the IRWM planning process was formally presented and reviewed by stakeholder groups and the general public through these stakeholder workshops. Less formal communications and regular correspondence, such as telephone calls, emails, and letters, were another method of stakeholder input and cooperation.

Stakeholder participation has been, and will continue to be, essential to the Pajaro River Watershed IRWM effort and stakeholders have participated in all phases of IRWMP development and implementation. Stakeholder participation has been influential in determining the path of the IRWM effort, aiding in the decision making process from initial planning stages through strategy integration, and will aid in the RWMG's efforts to identify the most advantageous water management strategies to be implemented for years to come. In fact, initial decisions to pursue an immediate-term implementation phase were initiated by the readiness of stakeholder-led efforts/projects and joint efforts to collaborate on the development of water management programs. The current stakeholder list is shown below in Table 4-1. Many of these stakeholder agencies also have statutory authority over water supply or water management in the Pajaro River Watershed region and are critical to the successful implementation of the IRWMP.

The involvement of regional stakeholders was integral to the development of the IRWM Plan and is continuing with IRWM Plan implementation. Because the RWMG main interests are in water supply and water quality, coordination with other agencies and organizations helps to ensure that the IRWM effort accurately captures other water resource interests in the region. The stakeholder list includes organizations dealing with all aspects of water resource management, including water supply, water quality, flood protection and environmental protection and enhancement. The stakeholder list is expected to evolve over time; therefore, additional stakeholders are expected to be identified and contacted for their participation in future IRWM planning.

Table 4-1: Pajaro River Watershed Stakeholders

Pajaro River Watershed IRWM Stakeholders	
●Action Pajaro Valley	●Pajaro River Watershed Flood Prevention Authority
●Ahmah Mutsun Tribal Band	●Pajaro River Watershed Council
●Aromas Water District	●Pajaro/Sunny Mesa Community Services District
●Association of Monterey Bay Area Governments	●Pajaro Valley Chamber of Commerce
●California Coastal Commission	●Planning and Conservation League Foundation
●California Department of Water Resources	●Resource Conservation Districts
●Central Coast Agricultural Water Quality Coalition	●San Benito County Agricultural Land Trust
●Central Coast Regional Water Quality Control Board (RWQCB) – Region 3	●San Benito County Business Council
●Central Coast Resource Conservation & Development Council	●San Benito County Chamber of Commerce
●CHEER	●San Martin Neighborhood Alliance
●City of Gilroy	●Santa Clara County Open Space Authority
●City of Hollister	●Santa Cruz County Flood Control and Water Conservation District, Zone 7
●City of Morgan Hill	●Sierra Club, Loma Prieta Chapter
●City of San Juan Bautista	●Sierra Club, Ventana Chapter
●City of Watsonville	●Silicon Valley Land Conservancy
●Coastal Conservatory	●Soquel Creek Water District
●Coastal Habitat Education & Environmental Restoration	●South County Regional Wastewater Authority
●County of Monterey	●South Valley Streams for Tomorrow
●County of San Benito	●Sunnyslope County Water District
●County of Santa Clara	●The Nature Conservancy
●County of Santa Cruz	●Tres Pinos County Water District
●CSU Monterey Bay	●U.S. Army Corps of Engineers
●Elkhorn Slough National Estuarine Research Reserve	●Water Resources Association of San Benito County
●Environmental Justice Coalition for Water	●Watsonville High School
●Farm Bureaus (Monterey County, San Benito County, Santa Clara County, and Santa Cruz County)	●Watsonville Wetlands Watch
●Land Trust of Santa Cruz County	●Wildlands, Inc
●Monterey Bay National Marine Sanctuary	
●Monterey County Water Resources Agency	
●Pacheco Pass Water District	

A series of public stakeholder meetings were held in 2006 and 2007 to allow interested parties a forum in which to share their ideas and concerns and to address the RWMG on IRWM Plan development. The meetings were organized along major IRWM Plan topics as shown in Table 4-2.

Table 4-2: IRWM Plan Public Meetings

Date	Meeting Topic	Agenda
8/02/06	IRWMP Mission, Goals and Objectives	Pajaro River Watershed Issues IRWMP Process Overview IRMWP Goals and Objectives
9/21/06	Water Management Strategies	Revised Goals and Objectives Water Management Strategies Overview of Prioritization Process
11/30/06	Integration and Prioritization	Project Prioritization Recommendation Process
2/15/07	Recommendations	Recommended Programs
3/14/07	Draft IRWMP	Presentation of Draft IRWMP

The stakeholder meetings provided a forum to identify, discuss, and resolve regional conflicts associated with projects. These meetings also provided provide an opportunity to share information, discuss IRWM Program progress, review key deliverables, collect comments and input, and gain consensus. Stakeholders were provided ample opportunities to shape the IRWM Plan, including a period of public review of the Draft IRWM Plan prior to adoption.

Stakeholders were kept well informed of opportunities for involvement in IRWM Plan development. Phone and email contact lists were used to distribute information and notices of upcoming meetings. The IRWM Plan stakeholder meetings were advertised in five major newspapers with coverage spanning all the communities in the watershed. Each of these notifications clearly identified a contact person and phone number for each of the RWMG agency representatives. Meetings were typically announced at least three weeks in advance.

Numerous letters of support were received by the RWMG for the Pajaro River Watershed IRWM Program effort. These letters demonstrate and confirm that stakeholders are on-board and have a willingness to participate, engage, and work diligently to develop an integrated management plan for the water resources of the Pajaro River Watershed. The RWMG also received several comment letters on the IRWM Plan. In addition to hosting a series of workshops through which stakeholder input was solicited, following the completion of the Draft IRWM Plan, the RWMG provided a three week public review period during which stakeholders were invited to provide additional comments.

In addition to the dedicated IRWM Plan meetings, stakeholder involvement has been facilitated through a variety of events and activities, including workshops, board meetings and presentations, group meetings, and personal communications. Table 4-3 summarizes the major stakeholder coordination activities held during the development of the IRWM Plan.

Table 4-3: Stakeholder Coordination Activities

Stakeholder Coordination Activity	Agenda	Stakeholders Involved
Meeting with South County Regional Wastewater Authority TAC	Inform Stakeholders of IRWMP. Discuss projects.	SCVWD SCRWA City of Gilroy City of Morgan Hill
Pajaro River Watershed Flood Prevention Authority	Inform Stakeholders of IRWMP. Discuss projects and development of Pajaro River Flood Protection program.	SCVWD SBCWD Santa Cruz County The Nature Conservancy Monterey County Water Resources Agency (MCWRA) Association of Monterey Bay Area Governments (AMBAG)
Water Resources Association of San Benito County Board Meeting	Inform Stakeholders of IRWMP. Discuss on projects.	SBCWD City of Hollister Sunnyslope County Water District City of San Juan Bautista General Public
San Benito County Water District Board Meetings	Inform Board and Public of IRWMP. Discuss projects and development of regional water management programs.	SBCWD General Public
Pajaro Valley Water Management Agency Board Meetings	Inform Board and Public of IRWMP. Discuss projects and development of regional water management programs.	PVWMA General Public
Santa Clara Valley Water District Board Meetings and Board Advisory Committee Meetings	Inform Board and Public of IRWMP. Discuss projects and development of regional water management programs.	SCVWD General Public
Santa Cruz County Board of Supervisors Meetings	Inform Board and Public of IRWMP. Discuss projects and development of the Pajaro River Flood Protection Program.	Santa Cruz County Board of Supervisors Santa Cruz County Planning, Public Works & Environmental Health Services General Public

Stakeholder Coordination Activity	Agenda	Stakeholders Involved
Pajaro River Watershed Council Meetings	Inform Stakeholders of IRWMP. Discuss on projects.	San Benito County Farm Bureau SBCWD San Benito County SCVWD Watershed Institute CSUMB Santa Cruz County Monterey Bay National Marine Sanctuary City of Gilroy Monterey County Farm Bureau USDA, NRCS Sierra Club, CNPS TNC General Public
Action Pajaro Valley Stakeholder Workshop	Inform Stakeholders of IRWMP process and Prop. 50 Chapter 8 Funding Processes. Discuss projects. Collect information and data on other potential projects. Discuss strategies for ongoing collaboration for IRWMP process. Discuss Mission, Goals, and Objectives. Discuss Projects and Strategies. Discuss Stakeholder Process. Discuss Implementation Grant Proposal. Discuss project prioritization, project benefits, and matching funds.	PVWMA SCVWD SBCWD Action Pajaro Valley Santa Cruz County Board of Supervisors – Districts 2 & 4 SCCFC&WCD City of Watsonville The Nature Conservancy Resource Conservation District Monterey County Water Resources Agency (MCWRA) AMBAG

Other stakeholder outreach efforts have included presentations and attendance at related conferences, workshops, board meetings, and other venues that include audiences with potential interest in Pajaro River Watershed activities such as regional agencies, organizations and community members. Such presentations and attendance provided wide dissemination to the public about the efforts of the RWMG to develop and implement the IRWM Plan.

The RWMG's IRWM implementation plan also provides a mechanism for stakeholders to participate in Pajaro River Watershed IRWM efforts. The first step in IRWM Plan implementation was to form Implementation Teams for moving the IRWM Plan recommendations forward. The most active team was the team formed to address agricultural water quality issues. While the RWMG initiated the team and one of the RWMG agencies participates in the team, the team was led by a representative of the Central Coast Agricultural Water Quality Coalition. Other team members included the RCDs, University of California Cooperative Extension Farm Advisors, NRCS, and others. Land trusts and open space agencies have been invited to participate in the team and provide input on projects and priorities. The Implementation Teams were a critical component of the Pajaro River Watershed IRWM effort and provide an additional way to engage and include stakeholders. It is anticipated that the teams will evolve and change over time, depending on the needs of the watershed. For instance, the RWMG anticipates forming special committees or teams to conduct salt and nutrient management planning and the RWMG will be working with the County of Santa Cruz and others to develop an integrated resource management plan for the College Lake area.

Additional stakeholder engagement since IRWM Plan adoption has included stakeholder meetings and coordination to discuss:

- Documentation and preparation for DWR's Region Acceptance Process
- Expanding membership in the Stakeholder Steering Committee
- Development of the Communication Plan and Stakeholder Engagement Plan
- Project solicitation to update the IRWM project list and discuss IRWM implementation grant funding opportunities
- The IRWM Plan update and association planning grant application

The stakeholder efforts conducted during IRWM Plan development and implementation, combined with State and Federal funding, has resulted in great momentum in the region to continue to evaluate and partner on improvements in the watershed.

Ongoing stakeholder coordination and involvement will be necessary to support the vision and efforts outlined in the plan as well as implementation of the regional water management programs. Various stakeholder collaboration activities are anticipated to support this including: formation of a stakeholder steering committee with clearly defined roles and responsibilities, inclusion of stakeholders in the Implementation Teams for each regional water management program, periodic meetings with stakeholders to present planning and implementation updates, and solicitation of new stakeholder projects as they emerge. The RWMG will keep stakeholders informed of these workshops by sending announcements to the regularly updated stakeholder distribution list and periodically publishing public notices. Ultimately, stakeholders involved in the IRWM Program will play a key role in effective implementation of the regional water management programs.

Section 5 Process Used to Identify and Engage Disadvantaged Communities

A "disadvantaged community" is defined by the State of California as a community with an annual median household income (MHI) that is less than 80% of the statewide MHI [CA Water Code, Section 79505.5(a)]. Census data from 2000 were collected and reviewed to identify any disadvantaged communities in the region. The 2000 State MHI was $47,493; therefore, communities with an average MHI of $37,994 are considered disadvantaged communities. Based on the 2000 census data, the City of Watsonville is a disadvantaged community.

The City of Watsonville is an active stakeholder in the IRWM effort and is involved in the planning and implementation of the integrated water management strategies. Since Watsonville's economy is tightly linked to local agricultural activities, which are threatened by seawater intrusion, groundwater basin water supply imbalance and flooding, the development of a sustainable water supply and flood mitigation projects will aid in the sustainability of the local economy and well-being of the community in the future. Targeted outreach to this DAC has been accomplished through the efforts of the Action Pajaro Valley (APV). APV sponsors public meeting and distributes public information on the water management and flood protection issues and projects in the Watsonville area. The information and the meetings are presented in Spanish to reach as many stakeholders as possible.

The City of Watsonville is actively participating as a stakeholder and implementation partner in the IRWM effort. IRWMP implementation is providing disadvantaged community benefits, such as water supply reliability, water quality management, and flood protection, to the City of Watsonville and its economy.

There are other communities within the watershed that, although not a DAC as defined by the State, are truly disadvantaged and require special consideration and support to ensure adequate representation in the IRWM planning process. The community of Pajaro is severely disadvantaged. Many of the Pajaro community members live with multiple families per household to reduce living costs. This often leads to multiple wage earners per household which then leads to a MHI above the DAC threshold. The RWMG has made it a priority to identify and support these communities regardless of state DAC status.

The Pajaro Sunny Mesa Community Services District has been invited to participate in the Stakeholder Steering Committee. The District has agreed to participate to the extent that they are financially able to commit staff resources to participate in the effort. Acknowledging that the District has strained staff resources, the RWMG has agreed to provide additional support to ensure their issues, needs and projects are appropriately considered in the IRWMP. The District falls within the PVWMA service area and the PVWMA has provided additional support to keep the District informed and participating in the process.

There are other communities or groups within the watershed that, although not technically a DAC, are disadvantaged and will require additional support. This planning grant includes services to be provided by the Environmental Justice Coalition for Water (EJCW). The goal of EJCW's services is to ensure that the water-related needs and priorities of DACs are considered and addressed in the Pajaro River Watershed IRWMP. Planning Grant funds will enable the RWMG to significantly expand its outreach to DACs through EJCW in the Pajaro River region and to enable them to participate in the planning process in a more significant and meaningful way. EJCW will participate as a member in the Stakeholder Steering Committee.

Section 6 Process Used to Identify the Region's Water-related Objectives and Conflicts

6.1 Process Used to Identify Objectives

Development of objectives was a key step in development of the IRWM Plan, as objectives provide a basis for decision making, guide work efforts, and can be used to evaluate project benefits. A mission, goals, and objectives were developed as part of the Pajaro River Watershed IRWM Plan process. The planning objectives are targeted outcomes that benefit the region. When implementing projects, the RWMG will strive to meet as many of the objectives as possible.

A consensus based approach was used in the development of a mission statement, goals, and objectives for the region and were used to evaluate project benefits and develop project priorities. To develop the mission, goals, and objectives, the RWMG first reviewed the region description for needs and issues. The RWMG also considered objectives developed by the RWMG agencies' Board and objectives developed by other agencies with jurisdiction in the watershed. The needs, issues, and objectives for the region formed the basis for the IRWM mission, goals, and objectives. The mission, goals, and objectives were presented to stakeholders and then refined based on stakeholder input and consensus.

The mission, goals, and objectives for the Pajaro River Watershed are presented below.

MISSION: The mission of the Pajaro River Watershed RWMG is to preserve the economic and environmental wealth and well-being for the Pajaro River watershed through watershed stewardship and comprehensive management of water resources in a practical, cost effective and responsible manner.

Water Supply Goal: Lead Integrated Regional Water Management Planning effort to improve regional water supply reliability, reduce dependence on imported water, and protect watershed communities from drought with a focus on interagency conjunctive use of regional water resources.

Objectives:

- Meet 100% of M&I and agriculture demands (both current and future conditions) in wet to dry years including the first year of a drought
- Meet 85% M&I and 75% agriculture demands (both current and future conditions) in second and subsequent years of a drought
- Provide a variety of water supply sources to meet demand
- Optimize and sustain use of existing import surface water entitlements from the San Felipe Division
- Optimize the use of groundwater and aquifer storage

- Target recycled water use to make up 5% of total water use by 2010 and 10% of total water use by 2020
- Implement water conservation programs for both M&I and agricultural uses consistent with the CVPIA
- Protect existing appropriated surface water rights

Water Quality Goal: Lead Integrated Regional Water Management Planning effort to protect and improve water quality for beneficial uses consistent with regional community interests and the RWQCB basin plan through planning and implementation in cooperation with local and state agencies and regional stakeholders.

Objectives:

- Meet or exceed all applicable groundwater, surface water, wastewater, and recycled water quality regulatory standards
- Protect or improve the quality of water supply sources
- Meet or exceed water quality targets established by stakeholders
- Aid in meeting TMDLs established for the Pajaro River Watershed
- Minimize impacts from stormwater through implementation of established Best Management Practices or other stormwater management projects

Flood Protection Goal: Lead Integrated Regional Water Management Planning effort to ensure flood protection strategies are developed and implemented through a collaborative and watershed-wide approach and are designed to maximize opportunities for comprehensive management of water resources.

Objectives:

- Implement flood protection projects throughout the watershed that provide multiple benefits
- Reach consensus on the Pajaro River Flood Protection Project necessary to protect existing infrastructure and land uses from flooding and erosion from the 100-year event
- Work with stakeholders to preserve existing flood attenuation by implementing land management strategies throughout the watershed
- Develop approaches for adaptive management to minimize maintenance requirements and protect quality and availability of water while preserving ecologic and stream functions, and enhancing when appropriate
- Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development

Environmental Protection and Enhancement Goal: During the IRWM planning effort, the RWMG will work with the community and environmental stewards to preserve the environmental wealth and well-being of the Pajaro River watershed by identifying opportunities to restore and enhance natural resources of streams and watersheds when developing water supply, water quality, and flood protection strategies.

Objectives:

- Identify opportunities to enhance the local environment and protect, enhance, and/or restore natural resources, consistent with urban and agricultural land uses, when developing water management strategies
- Minimize adverse effects on biological and cultural resources, including riparian habitats, habitats supporting sensitive plant or animal species and archaeological/historic sites when implementing strategies and projects
- Identify opportunities to protect, enhance, or restore habitat to support Monterey Bay marine life in conjunction with water supply, water quality or flood protection projects
- Identify opportunities for open spaces, trails, parks along creeks and other recreational projects in the watershed that can be incorporated with water supply, water quality or flood protection projects, consistent with public use and property rights

6.2 Process Used to Identify Conflicts

Regional water management conflicts within the Pajaro River watershed arise where inconsistencies between proposed water management strategies and watershed objectives exist. Recognizing these inconsistencies is a step toward cooperative planning that will aid in the prioritization of integrated water management strategies for the region and will allow the RWMG to minimize and resolve potential conflicts.

The major potential for conflict between water management strategies and watershed objectives exists under the environmental protection and enhancement objective to “minimize adverse effect on biological and cultural resources, including riparian habitats, habitats supporting sensitive plant or animal species and archaeological/historic sites when implementing strategies and projects.” Generally, water management strategies that include construction or involve infrastructure as potential projects have the potential to conflict with biological and cultural resources; strategies which will likely involve construction efforts include water supply reliability, groundwater management, water recycling, desalination, imported water, surface storage, water and wastewater treatment, conjunctive use, storm water capture and management, flood management and recreation and public access. Though efforts will be made to minimize the effects of construction, to avoid sensitive habitat and to enhance the environment where practicable, the potential for conflict does exist.

Other conflicts between water management strategies and watershed objectives can arise where projects which are focused on addressing the objectives within one goal fail to meet key objectives within other goals. For example, a desalination or recycled water project that is developed to increase water supply for the region may meet numerous water supply objectives; however it should also take into account associated water quality objectives. Proposed water supply projects which cannot meet the water quality objective of “meeting or exceeding water quality targets established by stakeholders” can lead to conflicts between suppliers and their proposed markets. The imported water strategy, which is intended to meet water supply objectives, can conflict with water quality objectives through the introduction of

foreign salts into the basin; this may be viewed as a conflict with the objective to "protect or improve the quality of water supply sources." Similarly, water and wastewater treatment and recycled water strategies that lead to increased salt loading to the groundwater basin can cause conflict with that water quality objective.

Additionally projects which are focused on local solutions without considering the regional perspective or projects competing for the use of common resources can be a source of conflict. Examples of projects which may run into this type of conflict in implementation are the Levee Reconstruction Project, the North San Benito County Regional Recycled Water Project and the San Juan Bautista Surface Water Treatment Plant. The Levee Reconstruction Project is an example of a project that some stakeholders feel is too narrowly focused; these stakeholders have expressed concern that the project, which is intended to provide flood protection along the lower Pajaro River Watershed, should be expanded to include studies to reduce flows and sediment loads in the upper watershed. The North San Benito County Regional Recycled Water Project and the San Juan Bautista Surface Water Treatment Plant are two projects that have conflicting project plans. Both projects are considering the use of the CVP distribution system in SBCWD for water deliveries; however, because recycled water and potable water distribution systems cannot be connected, these two projects cannot both be implemented as originally envisioned by their proponents.

A growing area of concern is the potential for conflicts between agricultural food safety interests and various types of water management strategies. Additional research is needed to evaluate potential sources of crop contamination and the relationship between environmental protection strategies and food safety. However, various agricultural industry guidelines are now encouraging growers to develop "clean" fields by removing any non-crop vegetation that could attract wildlife; these guidelines are being created in response to the increasing pressure to address food safety problems and the fear that wildlife near cropland is a significant threat. At the same time that growers are being asked to consider the use of bare soil buffers, they are also being regulated by the Central Coast RWQCB to reduce the water quality impacts from their operations. Unfortunately best management practices such as filter strips, vegetative buffer strips, grassed waterways and constructed wetlands, which have been implemented by farmers to comply with the RWQCB's Conditional Agricultural Waiver program and which continue to be promoted by local agencies and conservation organizations, directly conflict with the push to remove non-crop vegetation. The development of recreation and public access trails alongside croplands is also viewed as a potential threat to food safety. Conflicts could arise if recreational projects fail to consider the surrounding urban and agricultural land uses.

Flooding along the Pajaro River has historically been a major point of conflict in the watershed. The river and its drainage area spans four counties, but the most significant flooding occurs in the lower watershed counties of Santa Cruz and Monterey. Effective and sustainable flood management solutions must consider the entire river and its drainage area, as there are opportunities to influence downstream outcomes through upstream modifications.

Hindering the progress of resolving the conflict and reaching consensus on the Pajaro River Flood Protection Project is a gap in the understanding of how the San Benito River, the main tributary to the Pajaro River, affects the sediment deposition and flows in the Lower Pajaro River. Understanding how the San Benito River operates and interacts with the Pajaro River will:

- Help identify upper watershed efforts that can support a sustainable 100-year flood protection project for the lower watershed,
- Resolve the remaining conflict in the watershed, and
- Ultimately meet the IRWMP objective of reaching consensus on the Pajaro River Flood Protection Project.

The sediment study is included in this planning grant application and will fill the IRWM planning gap that can lead to consensus.

It is clear that there exists the potential for regional water management conflicts within the Pajaro River watershed. Identifying these conflicts early in the process and working together to develop solutions to minimize or eliminate the conflict could result in a mutually acceptable or enhanced solution that furthers the goals and objectives of the originally conflicted parties.

It is envisioned that the stakeholder process will bring together conflicting parties, foster conflict understanding and discussion, provide a forum for conflict resolution, build consensus, and identify mutually beneficial strategies. Ultimately, the hope is to mitigate conflict to the extent practicable while optimizing the potential for integrated strategies with multiple benefits. Resolution of conflicts is a critical task in the implementation of the IRWM Plan.

Section 7 Process Used to Determine Criteria for Developing Regional Priorities

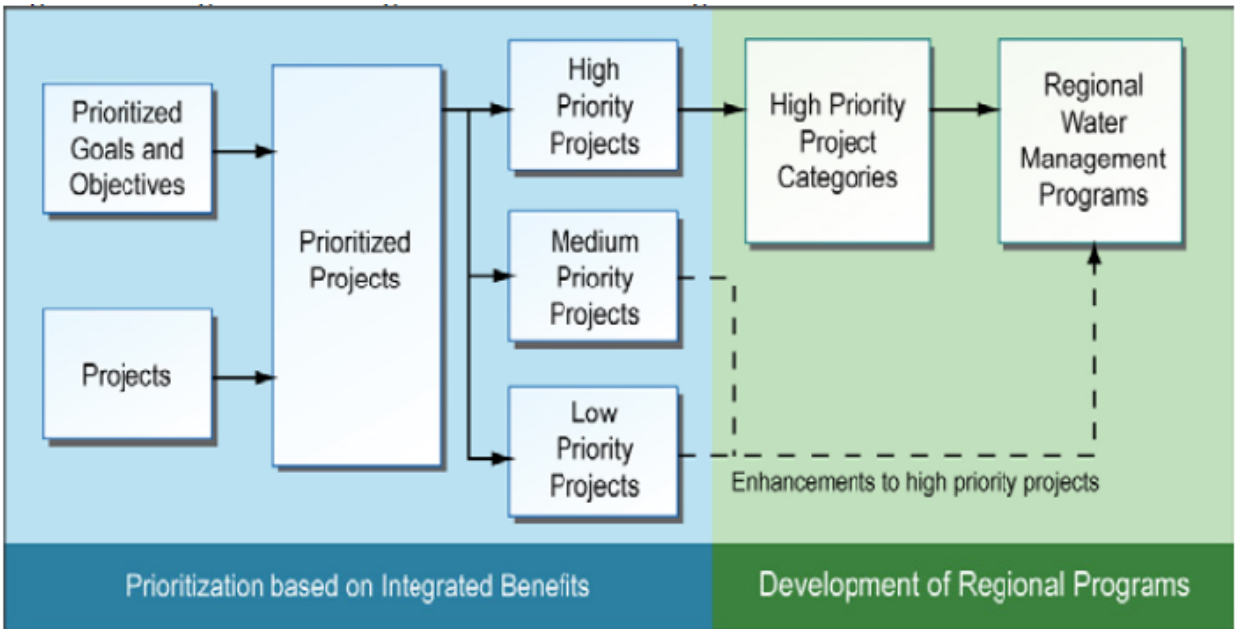
To ensure the long-term usefulness of the IRWM Plan, the Collaborative worked to create a well-defined integration and regionalization process, illustrated in Figure 7-1 that can be applied consistently over time. As regional needs change or as projects are implemented, the list of water management projects will evolve and the IRWM Plan will have to be dynamic to accommodate these changes. Some projects will be removed from the list after they have been implemented, and others may be removed from the list if future analyses determine they are infeasible. Still other projects may be added to the list as new alternatives are developed to meet unsolved regional needs or conflicts. While the list of projects included in the IRWM Plan will continually change, the process for identifying integrated projects and further integrating projects to develop regional programs will not change. The integration process provides an objective method by which to identify multi-benefit integrated programs and projects that meet the regions priorities.

This regional priority process will be enhanced by adding a second process designed to incorporate the project evaluation criteria specified in the new IRWM guidelines. The second process will focus on evaluation of the project implementation feasibility. The evaluation will include consideration of the following project elements:

A. How the project contributes to the IRWM objectives
B. How the project is related to resource management strategies
C. Technical feasibility of the project
D. Specific benefits to critical DAC water issues
E. Specific benefits to critical water issues for Native American tribal communities
F. Environmental Justice Considerations
G. Project Costs and Financing
H. Economic Feasibility
I. Project Status
J. Strategic considerations for IRWM Plan Implementation
K. Purposefully implementing projects with multi-benefits
L. Contribution of the project in adapting to the effects of climate change
M. Contribution of the project in reducing GHG emissions as compared to project alternatives

The development of the process and the specific scoring approach for the process will be included as a task in the IRWM Plan update Work Plan.

Figure 7-1: Integration and Regionalization Process Diagram



For the currently adopted IRWMP, the integration and regionalization process was applied and the RWMG identified four Implementation Programs or program to address the highest priority needs in the watershed and address potential areas of conflict. The Implementation Programs are discussed below.

Conjunctive Water Supply Management: The Conjunctive Water Supply Management Program is an integrated regional water supply program that combines a variety of water management and infrastructure projects to provide flexibility in water supply, increase storage and distribution and enhance water supply management throughout the region. The potential for intraregional water transfers was the original impetus for the regional partnership among PVWMA, SBCWD and SCVWD. The Conjunctive Water Supply Management Program honors this concept by bringing together water supply projects that provide opportunities for regional water transfers with the infrastructure necessary to accommodate the transfer and banking. Coordination of the projects within this program will also optimize the use of water supplies sources available throughout the watershed.

Water Supply/Salt Management: The Water Supply/Salt Management program is an integrated water supply program that encompasses a variety of water supply projects that all address salinity management issues. For the upper watershed, salinity management is focused on water supply and wastewater disposal projects that without proper management can intensify salt loading in the Gilroy-Hollister Groundwater Basin, where use of groundwater is hindered by high salinity levels. In the lower watershed, salinity management is mainly in response to overdraft of the Pajaro Valley Groundwater Basin, which has resulted in seawater intrusion. The Water Supply/Salt Management Program promotes coordination among the agencies considering projects to address these salinity issues. Though the physical sources of

the salinity differ between the basins, there is potential to implement regional facilities to address both areas as well as for information sharing and coordination between agencies. This program brings the appropriate players together to collaborate on these issues.

The Water Supply/Salt Management and Conjunctive Water Supply Management programs are closely tied. The decision to form these two distinct programs as opposed to establishing one overarching water supply program was made in order to make more manageable and focused sets of projects. The distinction between the two programs is that the Water Supply/Salt Management program addresses the impact of groundwater salinity on water supply management, whereas the Conjunctive Water Supply Management program focuses more on water supply reliability issues and the role of regional water management in addressing supply reliability. A number of the water supply projects in the Water Supply/Salt Management program could have been included in the Conjunctive Water Supply Management program due to their potential to make new water supplies available for regional transfers. However, these projects were placed in the Water Supply/Salt Management to first allow for evaluation of the projects in relation to the other salinity management projects proposed for the region.

During the IRWM Plan update, the RWMG anticipates further refining the Water Supply/Salt Management Program to clarify the relationship with the Agricultural Water Quality Program discussed below. These programs share objectives and the Salt and Nutrient Planning proposed as part of the IRWM Plan will refine the objectives. In addition, the strategies that will be developed to implement the salt and nutrient management objectives will address elements of both the Water Supply/Salt Management and Agricultural Water Quality Programs.

Agricultural Water Quality: The Agricultural Water Quality program was built around the Regional Mobile Lab that began as a five county program that included Santa Clara, San Benito, Santa Cruz, Monterey and San Mateo Counties. Funding for this program ended in March 2007. SCVWD, SBCWD and PVWMA and a wide range of stakeholders are interested in continuing this successful type of program within the Pajaro River Watershed. The Regional Water Quality Control Board is currently updating its regulations related to irrigated agriculture. The Agricultural Water Quality Program will need to be revisited based on the new requirements and to meet nutrient management objectives. As its name suggests, the program's main benefit will be in the area of water quality; however, it also provides opportunities to integrate water supply and environmental projects.

Pajaro River Flood Protection: The Pajaro River Flood Protection Program is a comprehensive program that was developed to prevent flood damage to homes, businesses and agricultural lands along the Pajaro River and capitalizes on opportunities to address multiple objectives including environmental restoration, economic development, and appropriate public access and use of the Pajaro River corridor. The program is built upon a combination of the high priority flood related projects that represent the type of watershed planning approach necessary to manage flooding along the Pajaro River. This program is also closely aligned with the integrated regional process completed by FPA. The FPA goal was to identify, evaluate, fund,

and implement 100-year flood prevention and control strategies in the Pajaro River watershed on an intergovernmental basis.

Section 8 Data Collection, Technical Analysis, and Data Management

8.1 Data Collection and Technical Analysis

Data collection and technical analysis used in the development of the existing IRWM Plan focused on the following programs:

- Conjunctive Water Supply Management Program
- Water Supply/Salt Management Program
- Agricultural Water Quality Program
- Pajaro River Flood Protection Program

8.1.1 Conjunctive Water Supply Management Program

The PVWMA Revised Basin Management Plan (Revised BMP), the Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Groundwater Basin (GWMP Update) and the SCVWD Integrated Water Resources Plan (IWRP) provided the technical basis for the formation of the Conjunctive Water Supply Management Program. These plans document water supply options available to PVWMA, SBCWD and SCVWD, respectively, and discuss constraints involved with the use of each of the agencies' current water supplies.

The RWMG developed the specific targets below for evaluating the performance of the Conjunctive Water Supply Management program. The measures used to evaluate the program progress will include groundwater modeling, comparisons of the current water supply portfolios against corresponding water supply portfolios following implementation of the program, and comparisons of the water supply portfolios after implementation with water demand projections. Specific targets for the program are outlined in Table 8-1.

The monitoring system necessary for this program is already in place since each of the RWMG agencies already has a groundwater monitoring program that is used to collect groundwater level data. No other hard infrastructure/monitoring equipment is necessary to measure program performance.

Table 8-1: Conjunctive Water Supply Management Targets

Program Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Targets
Increase water supply reliability through increased flexibility in water management	Optimize the use of locally available supplies	Water supply portfolios	Diversification of water supply portfolios Proportion of supplies that are imported versus local	Maintain at least 3 different water supplies in each of the RWMG agencies' portfolios Develop uses for local water sources that have not yet been captured
	Optimize storage capacity	Annual groundwater reports documenting sustainable yield	Change in groundwater sustainable yields	Maintain or increase groundwater sustainable yields
	Avoid groundwater overdraft	Annual groundwater reports documenting groundwater elevations	Change in groundwater levels	Maintain or increase groundwater elevations

8.1.2 Water Supply/Salt Management Program

The Revised BMP and GWMP Update are the two main plans that provided the technical basis for the Water Supply/Salt Management program. These plans document water supply management challenges within the region resulting from water quality constraints. The measures used to evaluate the program progress included groundwater modeling, recycled water production and stakeholder feedback. Specific targets for the program are outlined in Table 8-2.

The main monitoring system necessary for this program is already in place since each of the RWMG agencies already has a groundwater monitoring program that is used to collect groundwater level and water quality data. Additional infrastructure that should also be installed is recycled water meters for monitoring the use of recycled water. No other hard infrastructure/monitoring equipment is necessary to measure program performance. However, a method of surveying customers will be necessary to monitor changes in behavior. Additional data on the impacts of future recycled water projects, as well as other sources of salts, should

be collected and analyzed to provide a basis for analyzing the effectiveness of the program in meeting water quality objectives as wells as water supply objectives.

Table 8-2: Water Supply/Salt Management Targets

Program Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Targets
Increase water supply reliability through salt management	Seawater intrusion front stays at the 2008 location	Water quality data from PVWMA monitoring wells in and near the seawater intrusion front	Percent change in chloride concentrations each year	5 or less wells in the coastal zone taken out of production between 2008 and 2012 due to adverse water quality
	Preserve the use of groundwater resources	Annual groundwater reports documenting water quality and sustainable yield	Percent change in TDS concentrations each year	Increase use of Gilroy-Hollister subbasins with high TDS Maintain or increase groundwater sustainable yield
	Help customers to take ownership of their role in salt management	Recycled water deliveries Customer surveys	Acre-feet of recycled water delivered Changes in customer behavior/attitude	Recycled water use to make up 5% of total water use by 2010 Majority of customers surveyed to acknowledge importance of salt management

8.1.3 Agricultural Water Quality Program

The Agriculture Water Quality program was developed to respond to the finding of the Central Coast RWQCB that agricultural activities represent one of the most significant impacts to water quality in the watershed. This conclusion is supported by a wealth of monitoring data and has been confirmed by source analysis and modeling performed during development of TMDLs established in the watershed. The RWQCB, in conjunction with federal and university sponsored research, has identified areas in which to focus efforts and have developed a number of technically sound and proven methods and practices that growers and landowners can implement to minimize their impacts on water quality. Additionally, as part of the implementation plans for the TMDLs, the RWQCB has identified parties responsible for implementing actions that will reduce pollutant loading, and agricultural and rural land users

are among those facing increased regulation. The Agricultural Water Quality program has been developed around efforts to improve agricultural operations and to help agricultural and rural land owners meet regulations resulting from the RWQCB's TMDL implementation plans.

The RWQCB Watershed Management Initiative (WMI) and the Nitrate, Sediment and Pathogen TMDLs contain the majority of data and analyses that support the need for the Agricultural Water Quality Program. These documents also contain potential activities and projects, including those incorporated into the conditional agriculture waiver requirements, that will address the impacts of agriculture on water quality and which form the basis of the Agricultural Water Quality Program.

The WMI is a document that sets priorities and guides the near term efforts and focus of the RWQCB. It is based on a watershed approach and recognizes that non-point sources must be addressed across the watershed in coordinated fashion to meet the water quality objectives of the RWQCB Basin Plan. The Pajaro River watershed is identified as one of six targeted watersheds in the WMI. The most recent WMI update (2004) targeted the effects of agricultural on water quality as a first priority, based on a synthesis of a number of documents, including the 303(d) listings and the associated TMDLs.

The Nitrate, Sediment and Pathogen TMDLs cite a number of sources for monitoring data and analysis that support the 303(d) listings for the Pajaro River, Llagas Creek and San Benito River. These include the Central Coast Ambient Monitoring Program (CCAMP), *The Establishment of Nutrient Objectives, Sources and Impacts, and Best Management Practices for the Pajaro River Llagas Creek*, *Pajaro River Nutrient Loading Assessment, Qualitative and Quantitative Analysis of Degradation of the San Benito River* and the *Pajaro River Watershed Water Quality Management Plan*. Land use analysis and modeling was performed during TMDL development using resources such as the Multi-Resolution Land Characteristics (MRLC) data set and EPA pollutant models to establish the link between the observed water quality data and pollutant sources identified in the watershed. This confirmed the strong correlation between agricultural and rural land use and nitrate and sediment loading and corresponding impacts on water quality. For example, the Nitrate TMDL concluded that cropland was the primary source of nutrients to the Pajaro River based on data that showed that elevated nitrate levels were found adjacent to croplands. The TMDLs also provide implementation plans that present potential actions and activities that can be considered to implement the TMDL requirements. These recommendations are guided by the earlier technical analysis and will be focused on targeting the pollutant sources, activities and locations that are determined to have the most impact on water quality.

The Agriculture Water Quality Program supports achieving the TMDLs and addressing the impacts of agriculture on water quality through a number of projects designed to assist land users and agricultural growers in voluntarily implementing best management practices or in meeting regulatory requirements. These projects have been developed in part based on

research conducted by a variety of organizations that exist to support the attainment of improved water quality through improved practices.

Other water quality plans expand upon the implementation plans presented in the TMDLs. The Pajaro River Watershed Water Quality Management Plan is an endeavor by AMBAG. It includes (1) identification and assessment of the most significant NPS pollutant types and sources throughout the watershed; (2) identification of recommended strategies for minimizing NPS pollution and (3) includes a watershed-wide plan for implementation of the recommended strategies. The Lower Pajaro River Enhancement Plan is a plan for reducing the effects of sedimentation on the Lower Pajaro River. The Santa Cruz Partners in Restoration Permit Coordination Program will facilitate the implementation of this plan, and the San Benito and South Santa Clara Permit Coordination Program will build upon successful implementation of NPS pollution prevention in the lower watershed to assist the upper watershed.

The RWMG developed the measures and targets in Table 8-3 to evaluate the performance of the Agricultural Water Quality Program. The measure used to evaluate the program progress was intended to be TMDL monitoring. However, while the TMDL monitoring will directly evaluate performance related to surface water loading, it only provides an indirect evaluation of performance related to groundwater quality. Additional measures and targets related to groundwater will be developed during salt and nutrient management planning.

Table 8-3: Agricultural Water Quality Targets

Program Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Targets
Aid in meeting TMDL requirements and improve water quality currently impacted by agricultural practices	Reduce agricultural non-point source pollution and achieve TMDL implementation milestones	Water quality data from stream monitoring and TMDL monitoring	Percent reductions in nitrate, sediment, coliform and pesticide levels.	Meet TMDL milestones established for the Pajaro River Watershed

8.1.4 Pajaro River Flood Protection Program

The Pajaro River Flood Protection Program is supported by the Pajaro River Watershed Flood Prevention Authority's Pajaro River Watershed Study, numerous flood studies performed to evaluate and support the Army Corps of Engineers Pajaro River Levee Reconstruction Project, and the Pajaro River Parkway Plan.

The Pajaro River Watershed Study is a four phased evaluation. The four phases included stream flow modeling, identification and evaluation of alternatives, selection of projects, and

preliminary design of projects. Phase 1 of the study included development and calibration of a hydrologic and sediment model to evaluate flood conditions, various land use scenarios, and sediment impacts. The models were also developed to facilitate evaluation of flood protection alternatives and to inform decision makers on the hydraulic aspects of alternatives. The hydrologic model developed for the watershed study was named the Pajaro River to the Ocean Flood Model (PRO-FLO). PRO-FLO is a combination of two existing models, Hydrologic Engineering Center Flood Hydrograph Package (HEC-1) and Hydrologic bay Engineering Center River Analysis System (HEC-RAS). These models were chosen for their proven track record as being appropriate tools in cases such as this study, for their general acceptance by the public, engineers and planning experts, and also because they are publicly available. The sediment model developed for the watershed study was named the Pajaro River to the Ocean Sediment Generation and Transport Model (PRO-SED). The model was designed to generate river reach profiles to determine where sediment scour and deposition occur during flooding events of various intensities. The model creates a hydrograph and, based on initial sediment data, calculates the location and magnitude of the sediment transport. PRO-SED uses MIKE11 software to model the sediment transport. MIKE11 consists of a one-dimensional, unsteady-flow hydrodynamic module coupled with a sediment transport module. The model is widely accepted, both internationally and within California, and has been approved by FEMA for use in flood studies.

The Phase 2 Study identified project alternatives that would provide flood protection for the Lower Pajaro River from the 100-year flood flows identified in Phase 1. The Phase 2 Study projects were developed to coordinate with a concurrent Corps' Project. Phase 2 was a preliminary evaluation and did not involve any additional data collection.

After the conclusion of Phase 2, the Corps identified a 100-year flood protection project for the Lower Pajaro River. The Corps' project was based on the assumption that the watershed conditions (or current level of flood attenuation provided in the upper watershed) were maintained. The Phase 1 model results highlighted the natural flood attenuation benefits of Soap Lake and the critical importance of maintaining those benefits as part of any Pajaro River flood protection solution. Therefore, the focus of the Authority work shifted to ensure that the flows passing through the Lower Pajaro River Project would not increase above the currently predicted levels. The most direct way to achieve this goal was to preserve the Soap Lake Floodplain and its attenuation capabilities.

The Phase 3 and 4a Studies defined and documented the preferred method to maintain the Soap Lake attenuation and storage capacity, known as the Soap Lake Floodplain Preservation Project (Soap Lake Project). In Phase 3, Soap Lake was hydraulically modeled and the floodplain boundaries defined. The impacts of flooding and land use preservation were examined in compliance with the California Environmental Quality Act (CEQA) and the cost of the Project estimated.

The Phase 4b Study included a three part sediment study designed to complement the Corps' Project by partially addressing some of the channel maintenance concerns and further the Authority's understanding of how various processes operate and interact within the entire watershed but primarily focusing on the San Benito River. The San Benito River is believed to be the main source of sediment in the Pajaro River. Though a sediment transport model of the San Benito River was previously developed, work showed that the river has widened by an average of 277 feet since 1986, the date of the topographic survey used in the former model. Thus, there is a need to update the model to account for the changed geometry and sediment transport capacity. Additional sediment data collection and analysis is included in this planning grant application to fill this data gap.

There have been numerous studies and data collection efforts along the Pajaro River since the Pajaro River Levee Project was federally authorized under the authority of Flood Control Act of 1966 (Public law 89-789, 89TH Congress, 2ND Session, November 7, 1966). Under this federal authority, the Corps began work planning the levees' reconstruction. The guiding planning document for the Pajaro River Levee Project is the Corps' GRR. The GRR includes all of the project's planning, engineering, and design (PED), as well as its environmental compliance documentation under both the National Environmental Quality Act (NEPA) and the California Environmental Quality Act (CEQA). The three main work tasks for the project are PED and Environmental Compliance, both governed by the GRR, and construction, governed by the completed GRR. The problem of inadequate flood conveyance capacity within the Pajaro River levee system is documented in the Corps, San Francisco District report: Pajaro River at Watsonville, CA; Preconstruction Engineering and Design Phase General Reevaluation Report Pre-Conference Materials for F3 Milestone feasibility Scoping Meeting (November 2000).

The threat of significant flooding is the primary problem that has been identified in the study area. The City of Watsonville, the unincorporated town of Pajaro, and surrounding agricultural areas in Monterey and Santa Cruz Counties are subject to flooding from the Pajaro River and its tributaries. The expected annual exceedance probabilities (probability weighted averages incorporating uncertainties associated with hydrologic, hydraulic, and levee failure in all of the model simulations) are estimated to be 6.5 to 7.8 percent (15- to 13-year events) on the Pajaro River Main stem (in the 11.5 mile long leveed portion of the river below Murphy Road Crossing).

Due to inadequate federal funding, the PED and the GRR have been delayed over the past few years. However, additional funding from Prop 1E will help accelerate completion of the PED and the final GRR document. Completion of the PED and GRR will involve additional data collection and monitoring, including geotechnical data, flow monitoring, and final design.
The Pajaro River Parkway Plan is a technical evaluation to identify public access and recreational opportunities that can be incorporated into the Levee Reconstruction Project. The plan will include an evaluation of expanding recreational opportunities within the Pajaro River levee reconstruction project area, engaging with the public, outreach and negotiation with land-owners, development of alternatives, cost estimates, benefit analysis, environmental

constraints analysis, and implementation plan. The San Benito River Parkway Plan similarly studied opportunities for expanding recreational opportunities along the San Benito River, potentially in conjunction with a mine restoration project along the San Benito River. Projects in the Pajaro River Flood Protection Program that are manifestations of these plans are the Pajaro River Parkway and San Benito River Parkway projects.

The performance of the Pajaro River Flood Protection program will be evaluated based on its ability to meet the primary objectives of the program. The measures used to evaluate the program progress will include flow and water level monitoring, damage reports after flooding events and stakeholder feedback on enhanced recreational and habitat viewing opportunities. Specific targets for the program are outlined in Table 8-4.

Table 8-4: Pajaro River Flood Protection Targets

Program Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Targets
To minimize the risk of flooding in the Lower Pajaro River	Protect from the 100 year flood event	Acres of floodplain preserved	Reduced flood damage reports and claims	Elimination of flood damages for less than 100 yr. flood

A monitoring protocol for the Pajaro River Flood Protection would include provisions for measuring sediment deposition and erosion, vegetation growth or loss, and levee wear. The proposed sediment data collection and analysis study along the San Benito River will support the Pajaro River levee design and maintenance plans to help meet the program goals and objectives. Other monitoring measures include the amount of damage claims and overtopping sightings experienced during wet weather events. A key measure of project success involves removal of the area from the FEMA 100 year floodplain. For floodplain preservation, monitoring includes tracking the total acreage acquisition of property or development rights in the Soap Lake area.

8.2 Data Management

The Pajaro River Watershed IRWM program has not fully implemented a data management system. During IRWM Plan development, it was envisioned that data collection and review would be an on-going activity. Regionalization of stakeholder efforts will be the primary focus of this process in order to reduce duplicate data collection efforts, to identify opportunities for partnership, and to reduce costs. An example is the Regional Mobile Lab, which was developed to assist and educate growers on water conservation and nitrate management practices throughout the watershed.

In the Plan update, the RWMG will establish a data management system and protocol. It is anticipated that project proponents will be responsible for collecting data at the project-level and submitting it to the RWMG as part of plan and project performance evaluation. The RWMG collates and manages regional data for the preparation of documents for the Pajaro IRWM region, i.e., documentation for the Region Acceptance Process. Dissemination of information to stakeholders, agencies, and the public is integrated into the IRWMP process through stakeholder and RWMG meetings, handouts at stakeholder meetings, emails, RWMG agency website links, and a list of agency contacts available to address data requests. The data management protocol will also provide for dissemination of data to stakeholders and the State.

Managing the list of projects in the IRWMP is another component of data management that will be updated in the IRWM Plan. The existing Plan identifies a long-term implementation process where project proponents and the RWMG will keep each other informed, at quarterly stakeholder meetings, of new projects being proposed, implemented and/or other projects which can be removed from the list, and the RWMG will publish the updated list on an annual or as needed basis. This process to update the project list will be refined and clarified in the Plan update, and will include a description of the recently developed tools such as the project update/submittal template to facilitate the addition and update of projects in the IRWM Plan.

The RWMG is currently in the process of updating and reprioritizing its project list.

8.3 Data Coordination with State Database Standards

The existing IRWM Plan identifies opportunities for coordinating Pajaro IRWMP monitoring and data management efforts with three Statewide databases (Table 8-5). The intent was that data received during the IRWMP process would be formatted to be compatible with these databases to facilitate efficient submission. The development of the data management system and protocol during the Plan update will include ensuring proper quality control and quality assurance of data and compatibility with additional State databases.

Table 8-5: State Monitoring and Data Management Programs

Program	Program Manager	Description
California Environmental Resources Evaluation System (CERES)	California Resources Agency	The goal of CERES is to improve environmental analysis and planning by integrating natural and cultural resource information from multiple contributors. It includes an environmental information catalog and a natural resources project inventory.
Groundwater Ambient Monitoring and Assessment (GAMA)	SWRCB	The GAMA program monitors groundwater for a broad suite of chemicals at very low detection limits. Monitoring and assessments for priority groundwater basins are to be completed every 10 years.
Surface Water Ambient	SWRCB	SWAMP is a statewide monitoring effort to assess the

Monitoring Program (SWAMP)		conditions of surface waters. In addition to monitoring conducted under the program, SWAMP also hopes to capture information collected under TMDL, Non-Point Source and Watershed Project Support systems.

Data from implementation projects and programs in the existing IRWM Plan are currently not coordinated with data requirements of CERES, GAMA, SWAMP and/or other Statewide databases. As part of the Plan update, the RWMG will review the data formatting and procedural standards for State databases (including CERES, GAMA and SWAMP) to better understand the linkages between the region's data and the State databases and identify the steps needed to effectively integrate project and regional data into State databases.

Section 9 Employment of Integrated Resource Management Strategies

9.1 Water Management Strategies and Integration of Strategies

In order to meet the many objectives identified for the Pajaro River Watershed IRWMP, several water management strategies were considered. Strategies can address multiple IRWMP objectives and each represents a different approach towards addressing needs in water supply, water quality, flood management and environmental protection and enhancement. The strategies considered for inclusion in the existing IRWMP include all of the strategies suggested in the IRWM Prop 50 Grant Program Guidelines. They were:

- Water Supply Reliability
- Groundwater Management
- Water Recycling
- Desalination
- Imported Water
- Surface Storage
- Water and Wastewater Treatment
- Water Transfers
- Conjunctive Use
- Water Conservation
- Water Quality Protection and Enhancement
- Stormwater Capture and Management
- NPS Pollution Control
- Flood Management
- Ecosystem Restoration
- Environmental and Habitat Protection and Improvement
- Recreation and Public Access
- Wetlands Enhancement and Creation
- Watershed Planning
- Land Use Planning

To begin the process of strategy development, the RWMG reviewed planning efforts previously completed throughout the watershed and coordinated with stakeholders to identify additional planning efforts and projects being considered. The list of identified projects was then categorized by water management strategy. Most projects employ a combination of water management strategies; however, each project was categorized based on the water management strategy it most effectively addresses. Strategies and projects were then compared to the IRWMP objectives. A screening matrix (Figure 9-1) was developed, comparing strategies and projects versus objectives. This matrix was used by the RWMG to identify

strategies and projects that meet multiple objectives and provide integrated benefits. This matrix also provided the basis for prioritizing projects.

Recently the RWMG initiated the next cycle of planning and project identification. These new projects will be evaluated consistent with the adopted IRWM process for consideration in the next round of implementation funding. Additionally, several new planning efforts were identified. Two of these planning efforts, the Sediment Study along the San Benito River and the College Lake Study, have been included in this planning grant application.

THIS PAGE INTENTIONALLY LEFT BLANK

Figure 9-1: Screening Matrix to Identify Projects that Integrated Strategies and Addressed Multiple Objectives

Strategies/ Project \ Objectives	1) Water Supply								2) Water Quality					3) Flood Management						4) Environmental Protection and Enhancement			
	Meet 100% of M&I and agriculture demands (both current and future conditions) in wet to dry years including the first year of a drought	Meet 85% M&I and 75% agriculture demands (both current and future conditions) in second and subsequent years of a drought	Provide a variety of water supply sources to meet demand (current and future)	Optimize and sustain use of existing import surface water entitlements from the San Felipe Division	Optimize the use of groundwater and aquifer storage	Target recycled water use to make up 5% of total water use by 2010 and 10% of total water use by 2020	Implement water conservation programs for both M&I and agricultural uses consistent with the CVPIA	Protect existing appropriated surface water rights	Meet or exceed all applicable groundwater, surface water, wastewater, and recycled water quality regulatory standards	Protect or improve the quality of water supply sources	Meet or exceed water quality targets established by stakeholders	Aid in meeting TMDLs established for the Pajaro River Watershed	Minimize impacts from stormwater through implementation of established Best Management Practices or other stormwater management	Implement flood protection projects throughout the watershed that provide multiple benefits	Reach consensus on the Pajaro River Flood Protection Project necessary to protect existing infrastructure and land uses from flooding and erosion from the 100-year event	Work with stakeholders to preserve existing flood attenuation by implementing land management strategies throughout the watershed	Develop approaches for adaptive management to minimize maintenance requirements and protect quality and availability of water while preserving ecologic and stream functions, and enhancing when appropriate	Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development	Identify opportunities to enhance the local environment and protect, enhance, and/or restore natural resources, consistent with urban and agricultural land uses, when developing water management strategies	Minimize adverse effects on biological and cultural resources, including riparian habitats, habitats supporting sensitive plant or animal species and archaeological/historic sites when implementing strategies and projects	Identify opportunities to protect, enhance, or restore habitat to support Monterey Bay marine life in conjunction with water supply, water quality or flood protection projects	Identify opportunities for open spaces, trails, parks along creeks and other recreational projects in the watershed that can be incorporated with water supply, water quality or flood protection projects, consistent with public
Water Supply Reliability																							
South County Resources Management Program	✓							✓												✓	✓	✓	
Corralitos Creek Surface Fisheries Enhancement Project	✓		✓					✓	✓	✓	✓									✓	✓	✓	
Groundwater Management																							
SBCWD Groundwater Recharge with CVP and Local Sources	✓	✓		✓	✓			✓															
Tres Pinos Water Improvement Project	✓	✓	✓		✓																		
Tile Drains for Localized Groundwater Level Management										✓													
Tree Belt Evapotranspiration																				✓			
SCVWD Groundwater Recharge with CVP and Local Sources	✓	✓		✓	✓			✓		✓													
Main Avenue and Coyote-Madrone Pipeline Repair	✓	✓		✓	✓			✓		✓	✓												
Church Avenue Diversion	✓	✓			✓			✓		✓	✓										✓		
San Pedro Rock Columns	✓	✓		✓	✓						✓												
East Little Llagas Dams	✓	✓			✓																		
PVWMA Groundwater Recharge with CVP and Other Imported Supplies	✓	✓	✓	✓	✓																		
Coastal Distribution System	✓	✓	✓	✓	✓			✓		✓	✓									✓			
Inland Distribution System	✓		✓	✓	✓			✓															
Harkins Slough	✓		✓		✓			✓		✓													
Artesian Well Water Recovery	✓	✓	✓		✓																		
Well Recovery along Pajaro River	✓		✓		✓																		
Water Recycling																							
Watsonville Recycled Water Treatment Facility	✓	✓	✓			✓			✓	✓	✓											✓	
South County Recycled Water Program	✓	✓	✓			✓			✓	✓	✓												
North San Benito County Regional Recycled Water Project	✓	✓	✓			✓			✓	✓	✓												
Sunnyslope Recycled Water Project	✓	✓	✓			✓			✓	✓	✓												
Desalination																							
SBCWD Groundwater Demineralization	✓	✓	✓		✓				✓	✓	✓												
Sunnyslope Groundwater Demineralization	✓	✓	✓		✓				✓	✓	✓												
North Monterey County Desalination Project	✓	✓	✓						✓	✓													
Imported Water																							
PVWMA CVP Contract Reservation	✓		✓	✓							✓												
Mercy Springs Option Agreement	✓	✓	✓	✓							✓												
Pajaro Valley Import Pipeline	✓	✓	✓	✓						✓	✓												
San Luis Reservoir Low Point Project	✓	✓		✓						✓	✓												
Spot Market Transfers and Other Option Agreements	✓	✓	✓							✓	✓												
Purchase of Additional CVP, SWP or Other Water Contracts	✓	✓	✓							✓	✓												
San Felipe Division Operation and Maintenance Improvements	✓	✓		✓																			
Surface Storage																							
Uvas Reservoir Reoperation	✓				✓			✓						✓			✓			✓	✓		
Chesbro Reservoir Reoperation	✓				✓			✓						✓									
Pacheco Reservoir Reoperation	✓	✓			✓			✓						✓						✓	✓		
San Justo Reservoir Rehabilitation	✓	✓		✓	✓																		
Hernandez Reservoir Reoperation	✓	✓			✓			✓						✓						✓	✓		
Paicines Reservoir Rehabilitation	✓	✓			✓			✓												✓	✓		

Strategies/ Project / Objectives	1) Water Supply								2) Water Quality					3) Flood Management					4) Environmental Protection and Enhancement			
	Meet 100% of M&I and agriculture demands (both current and future conditions) in wet to dry years including the first year of a drought	Meet 85% M& and 75% agriculture demands (both current and future conditions) in second and subsequent years of a drought	Provide a variety of water supply sources to meet demand (current and future)	Optimize and sustain use of existing import surface water entitlements from the San Felipe Division	Optimize the use of groundwater and aquifer storage	Target recycled water use to make up 5% of total water use by 2010 and 13% of total water use by 2020	Implement water conservation programs for both M&I and agricultural uses consistent with the CVPIA	Protect existing appropriated surface water rights	Meet or exceed all applicable groundwater, surface water, wastewater, and recycled water quality regulatory standards	Protect or improve the quality of water supply sources	Meet or exceed water quality targets established by stakeholders	Aid in meeting TMDLs established for the Pajaro River Watershed	Minimize impacts from stormwater through implementation of established Best Management Practices or other stormwater management	Implement flood protection projects throughout the watershed that provide multiple benefits	Reach consensus on the Pajaro River Flood Protection Project necessary to protect existing infrastructure and land uses from flooding and erosion from the 100-year event	Work with stakeholders to preserve existing flood attenuation by implementing land management strategies throughout the watershed	Develop approaches for adaptive management to minimize maintenance requirements and protect quality and availability of water while preserving ecologic and stream functions, and enhancing when appropriate	Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development	Identify opportunities to enhance the local environment and protect, enhance, and/or restore natural resources, consistent with urban and agricultural land uses, when developing water management strategies	Minimize adverse effects on biological and cultural resources, including riparian habitats, habitats supporting sensitive plant or animal species and archeological/historic sites when implementing strategies and projects	Identify opportunities to protect, enhance, or restore habitat to support Monterey Bay marine life in conjunction with water supply, water quality or flood protection projects	Identify opportunities for open spaces, trails, parks along creeks and other recreational projects in the watershed that can be incorporated with water supply, water quality or flood protection projects, consistent with public use and property rights
Water and Wastewater Treatment																						
Morgan Hill Package Plant	✓		✓	✓					✓													
San Juan Bautista Surface Water Treatment Plant	✓			✓		✓			✓	✓	✓											
Morgan Hill Wellhead Treatment	✓	✓			✓				✓	✓	✓											
Aromae Water District Wellhead Treatment	✓	✓			✓				✓	✓	✓											
Hollister Groundwater Softening	✓	✓	✓		✓				✓	✓	✓											
Hollister Wastewater Treatment Plant Improvements						✓			✓	✓	✓											
Sunnyslope Wastewater Treatment Plant Improvements						✓			✓	✓	✓											
Tres Pinos Wastewater Improvement Project									✓	✓												
SCRWA Discharge Pipeline						✓			✓	✓												
Water Transfers																						
CVP water transfers within the San Felipe Division	✓		✓	✓																		
Non-CVP Water Transfers and Banking Agreements	✓	✓	✓	✓	✓			✓														
River Conveyance	✓		✓		✓															✓		
Conjunctive Use																						
Groundwater and Surface Water Blending	✓	✓	✓		✓				✓	✓	✓											
Arroyo Dos Picachos	✓		✓					✓		✓	✓										✓	
Arroyo Los Viboras	✓		✓					✓		✓	✓										✓	
Pacheco Creek	✓		✓							✓	✓										✓	
Clenega Valley	✓	✓	✓		✓					✓	✓										✓	
Water Conservation																						
Agricultural Water Conservation	✓	✓					✓			✓		✓										
Urban Water Conservation	✓	✓					✓															
Water Conservation Studies, Research, Pilot Programs and Future Projects	✓	✓					✓															
Water Quality Protection and Improvement																						
Regional Mobile Lab	✓	✓					✓		✓	✓	✓	✓								✓	✓	✓
Ranchette Series							✓		✓	✓	✓	✓	✓					✓		✓	✓	✓
Nitrate Management Program									✓	✓	✓	✓	✓									✓
Salinity Education Program										✓	✓											
Water Softener Rebate Program										✓	✓											
Solvent and Toxins Liaison Program									✓	✓												
Pumped Groundwater Placed into Pajaro River					✓					✓	✓											
Export Pipeline					✓					✓	✓											
Recharge Area Protection Program					✓					✓			✓									
Stormwater Capture and Management																						
Constructed Wetlands Treatment									✓	✓	✓	✓	✓							✓	✓	✓
Tequisquite Slough Wetland Treatment Project									✓	✓	✓	✓	✓							✓	✓	✓
Stormwater Treatment through Industrial WWTP									✓	✓	✓	✓	✓									
NPS Pollution Control																						
Santa Cruz Partners in Restoration Permit Coordination Program									✓	✓	✓	✓	✓			✓	✓			✓	✓	
San Benito and South Santa Clara Permit Coordination Program									✓	✓	✓	✓	✓			✓	✓			✓	✓	
Conditional Agricultural Waiver							✓		✓	✓	✓	✓	✓			✓	✓			✓	✓	✓
Green Valley Watershed Stream Bank Stabilization									✓	✓	✓	✓	✓				✓			✓	✓	✓
Coward Creek Stream Bank Stabilization									✓	✓	✓	✓	✓				✓			✓	✓	✓
Vegetative Buffer Strips									✓	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓

Strategies/ Project \ Objectives	1) Water Supply								2) Water Quality					3) Flood Management					4) Environmental Protection and Enhancement			
	Meet 100% of M&I and agriculture demands (both current and future conditions) in wet to dry years including the first year of a drought	Meet 85% M&I and 75% agriculture demands (both current and future conditions) in second and subsequent years of a drought	Provide a variety of water supply sources to meet demand (current and future)	Optimize and sustain use of existing import surface water entitlements from the San Felipe Division	Optimize the use of groundwater and aquifer storage	Target recycled water use to make up 5% of total water use by 2010 and 10% of total water use by 2020	Implement water conservation programs for both M&I and agricultural uses consistent with the CVPIA	Protect existing appropriated surface water rights	Meet or exceed all applicable groundwater, surface water, wastewater, and recycled water quality regulatory standards	Protect or improve the quality of water supply sources	Meet or exceed water quality targets established by stakeholders	Aid in meeting TMDLs established for the Pajaro River Watershed	Minimize impacts from stormwater through implementation of established Best Management Practices or other stormwater management needs	Implement flood protection projects throughout the watershed that provide multiple benefits	Reach consensus on the Pajaro River Flood Protection Project necessary to protect existing infrastructure and land uses from flooding and inundation from the 100-year event	Work with stakeholders to preserve existing flood attenuation by implementing land management strategies throughout the watershed	Develop approaches for adaptive management to minimize maintenance requirements and protect quality and availability of water while preserving ecologic and stream functions, and enhancing when appropriate	Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development	Identify opportunities to enhance the local environment and protect, enhance, and/or restore natural resources, consistent with urban and agricultural land uses, when developing water management strategies	Minimize adverse effects on biological and cultural resources including riparian habitats, habitats supporting sensitive plant or animal species and archaeological/historic sites when implementing strategies and projects	Identify opportunities to protect, enhance, or restore habitat to support Monterey Bay marine life in conjunction with water supply, water quality or flood protection projects	Identify opportunities for open spaces, trails, parks along creeks and other recreational projects in the watershed that can be incorporated with water supply, water quality or flood protection projects, consistent with public
Flood Management																						
Soap Lake Floodplain Preservation Project					✓				✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Levee Reconstruction Project									✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		
ALERT station monitoring														✓				✓				
Upper Llagas Creek Flood Protection Project										✓		✓		✓			✓		✓	✓		✓
Lower Llagas Creek Flood Protection Project (Capacity Restoration)												✓	✓	✓			✓	✓	✓	✓	✓	✓
Uvas Creek Flood Protection												✓	✓	✓			✓	✓	✓	✓	✓	✓
San Juan Basin Surface Drainage									✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	
Ecosystem Restoration																						
Restoration of the Upper Pajaro River Floodplain					✓												✓	✓	✓	✓	✓	✓
Tar Creek Bridge Replacement and Bank Stabilization											✓	✓					✓		✓	✓	✓	
Pajaro River Lagoon Monitoring																			✓	✓	✓	
Coroto Pit Restoration																			✓	✓		✓
Environmental and Habitat Protection and Improvement																						
Watsonville Slough Enhancement																			✓	✓		✓
Tick Creek Riparian Enhancement											✓	✓	✓				✓		✓	✓		
Uvas Creek Fish Passage at Silva Crossing														✓			✓	✓	✓	✓	✓	✓
Bolsa Road Fish Ladder																			✓	✓	✓	✓
Stream and Watershed Protection Program										✓							✓	✓	✓	✓	✓	
Adopt-a-Creek											✓								✓	✓		
Watershed Stewardship Grant Program										✓	✓							✓	✓	✓	✓	
Recreation and Public Access																						
Open Space Authority Acquisitions																			✓			✓
Trails, Parks & Open Space Grant																			✓			✓
Pajaro River Access at the Watsonville Treatment Plant																			✓	✓		✓
Pajaro River Parkway														✓				✓	✓	✓		✓
San Benito River Parkway																			✓			✓
Wetlands Enhancement and Creation																						
College Lake Wetland and Stream Restoration										✓									✓	✓		
Watershed Planning																						
Groundwater Study & Biological Assessment of the Upper Pajaro River					✓													✓	✓	✓	✓	
Historic Ecological Study of the Upper Pajaro																	✓		✓	✓	✓	
Pajaro River Watershed Council																			✓	✓	✓	
Pajaro River Watershed Study									✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

THIS PAGE INTENTIONALLY LEFT BLANK

Section 10 IRWM Plan Implementation and Expected Impacts and Benefits

10.1 Plan Implementation

Significant progress has been made on high priority projects in the watershed due in part to the Proposition 50 Implementation funding received. As those projects are completed, the near-term priority for implementation of the IRWMP recommendations is continued development and implementation of the four water management programs that were formed through the integration and regionalization process. The long-term priority for implementation of the IRWMP recommendations is for the RWMG to continue to work together to ensure the goals and objectives of the IRWMP are met and that changes in regional priorities and needs are reflected in future updates to the IRWMP. Central to the success of the IRWMP in the near-term and long-term is the continued coordination among the RWMG.

10.1.1 Implementing Agencies and Responsibilities

The Pajaro River Watershed RWMG initially came together under an MOU in October 2004 that formalized PVWMA, SBCWD and SCVWD's intent to work together to coordinate water resources planning in the Pajaro River Watershed. In this MOU the RWMG committed to meet at least quarterly in order to coordinate and share information. During the development of the IRWMP, the RWMG chose to convene more often, meeting on a biweekly and sometimes weekly basis. These frequent meetings exemplify the rigor of the process the RWMG undertook to ensure they developed a practical and long-lasting roadmap for the region. As the focus of the IRWM process shifted from plan development to implementation, the RWMG returned to quarterly meetings and their role as the RWMG was to facilitate the implementation of the Conjunctive Water Supply Management, Water Supply/Salt Management, Agricultural Water Quality and Pajaro River Flood Protection programs. The RWMG is responsible for coordinating overall IRWMP implementation.

The current IRWM implementation plan was designed to provide a mechanism for stakeholders to continue to participate in Pajaro River Watershed IRWM efforts. The first step in IRWM Plan implementation was to form Implementation Teams for moving the IRWM Plan recommendations forward. Each of regional water management programs was associated with an Implementation Team that was to assist with implementation of the IRWMP recommendations. The role of the Implementation Teams was to further evaluate the projects within their respective regional water management programs, to make final program recommendations and to lead implementation efforts for the projects included in their final recommendations. Because the Implementation Teams were responsible for coordinating implementation efforts for their recommended projects, it was important for each team to have representation from the agencies or organizations sponsoring those projects.

The most active team was the team formed to address agricultural water quality issues. While the RWMG initiated the team and one of the RWMG agencies participated in the team, the team was led by a representative of the Central Coast Agricultural Water Quality Coalition. Other team members included the RCDs, University of California Cooperative Extension Farm Advisors, NRCS, and others. Land trusts and open space agencies were invited to participate in the team and provide input on projects and priorities. The Implementation Teams are supposed to be a critical component of the Pajaro River Watershed IRWM effort and provide an additional way to engage and include stakeholders.

Unfortunately, due to a lack of financial and staff resources, it was difficult for project sponsors to dedicate the time necessary to meet the objectives of the IRWM implementation plan. Part of this plan update will include an improvement to the implementation plan in hopes of establishing an implementation framework that is more structured and defined. The implementation plan may include more rigorous participation from the Stakeholder Steering Committee but ultimately, stakeholders and project sponsors involved in the IRWM Program will be responsible for the effective implementation of the regional water management programs.

10.2 Expected Impacts and Benefits

Pajaro River Watershed IRWMP partners and stakeholders recognize the importance of pursuing and integrating multiple water management strategies to achieve the greatest amount of, and most equitable benefit for, the region. The benefits of implementing the IRWMP recommendations will be provided through the newly defined water management programs, each of which will be developed around a core of related objectives. Implementation of the integrated program strategies are expected to lead to numerous benefits including, at a minimum:

- **Reliable and high quality water supply.** Water supply projects, water transfer and banking agreements lead to enhanced water supply reliability and assist with protection of water quality. Reliable and high quality water supply is directly linked to economic and environmental wealth and well-being, which is directly from the Pajaro River Watershed IRWMP Mission statement.
- **Protection of people and economy within a disadvantaged community.** Working in conjunction, the Watsonville Recycled Water Treatment Facility Project and the Coastal Distribution System assisted in protecting the economy of the City of Watsonville, a disadvantaged community. The Lower Pajaro River Levee Project will protect the City and the agricultural community from disastrous flood damage, as was most recently experienced in 1995. The newly engaged Pajaro Sunny Mesa Community Services District will participate in the Stakeholder Steering Committee to ensure the issues, needs and projects of the disadvantaged community of Pajaro are appropriately considered in the IRWM process. The Environmental Justice Coalition for Water will take a more active role in the IRWM process to help identify and support additional disadvantaged communities.

- **Multi-beneficial projects.** Opportunities for multi-beneficial projects, which can achieve a multitude of goals and objectives for several stakeholders rather than a single entity, will increase value for stakeholders and the communities served by projects. The proposed sediment study along the San Benito River provides data that will support water quality data gaps along the San Benito River and provides data that will support flood protection data needs for the Pajaro River. The proposed College Lake Study will result in a set of management measures for College Lake that maximizes benefits for water supply and flood management while preserving steelhead migration and supporting other environmental and community benefits
- **Cost effectiveness.** Integrated planning and collaboration can lead to multi-beneficial projects that achieve cost savings through cost sharing opportunities, economies of scale, resource sharing, etc. The proposed sediment study will be led and financially supported by the Pajaro River Watershed Flood Prevention Authority but the information will be shared with the Army Corps of Engineers and Counties of Monterey and Santa Cruz. The proposed College Lake Study will be led and financially supported by the County of Santa Cruz but the information will be shared with numerous agencies including the Pajaro Valley Water Management Agency and will support the development of the Revised Basin Management Plan.
- **Sharing experience, resources, and facilities.** Integrated planning and collaboration facilitates sharing of experience, resources and facilities and better equips agencies to overcome future challenges.

The ultimate purpose of plan implementation is to provide watershed benefits that support and achieve the overall IRWMP mission to preserve the economic and environmental wealth and well-being of the Pajaro River watershed. It is envisioned that this mission will be accomplished through watershed stewardship and comprehensive management of water resources in a practical, cost effective and responsible manner.

Section 11 How Existing Plan Meets Current IRWM Plan Standards

The following tables (Tables 11-1 through 11-16) compare how the existing IRWM meets each of the current Prop 84 Plan standards, and identifies gaps that will be addressed in the Plan update.

Table 11-1: How existing Plan meets Governance Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
GOVERNANCE	
Group responsible for development of the plan	The existing Plan meets this standard.
Plan adoption	The existing Plan meets this requirement. The updated Plan will be presented to governing bodies of the RWMG members for adoption.
Description of chosen governance structure	The existing Plan meets this standard, but the description needs to be updated to reflect the role of the Stakeholder Steering Committee in decision making.
Public outreach and involvement process	The existing Plan meets this standard with a description of public outreach and involvement process, but some of the information is dated and will be updated with information from the RAP and the Stakeholder Engagement Plan developed by the RWMG.
Effective decision making	The existing Plan meets this standard to the extent that it describes consensus building as the basis for decision-making in the region; however, there are examples in the RAP that will be incorporated to further illustrate the effectiveness in decision-making in the region.
Balanced access and opportunity for participation in the IRWM process	The existing Plan meets this standard.
Effective communication – internal and external to the IRWM region	The existing Plan meets this standard, but will be updated with new information developed in the RAP and Stakeholder Engagement Plan.
Long-term implementation of the IRWM Plan	The existing Plan meets this standard.
Coordination with neighboring IRWM efforts and State and federal agencies	The existing Plan meets this standard, but will be updated to incorporate information from the RAP.
The collaborative process(es) used to establish Plan objectives	The existing Plan meets this standard.
How interim changes and formal changes to the IRWM Plan will be performed	The existing Plan does not fully meet this standard.
Updating or amending the IRWM Plan	The existing Plan does not meet this standard and will describe the process in the Plan update.

Table 11-2: How existing Plan meets Region Description Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
REGION DESCRIPTION	
Description of the watersheds and the water systems • Major infrastructure (water related, flood management) • Major land use divisions • Quality and quantity of water resources within the region • Areas and species of biological significance and other sensitive habitats (e.g. MPAs and impaired water bodies within the region)	The existing Plan meets this standard, but will be reviewed to ensure the information is up to date.
Description of the internal boundaries	The existing Plan meets this standard.
Description of water supplies and demands for a minimum 20-year planning horizon, including a discussion of important ecological processes and environmental resources and environmental water demands, and potential effects of climate change on water demand and supplies.	The existing Plan meets this standard in terms of describing water supplies and demands for 20-year planning horizon, but does not evaluate the impacts of climate change. This information will be updated to reflect the current planning horizon, and evaluate the effects of climate change.
Comparison of current and future water quality conditions in the region	The existing Plan describes current water quality and water quality improvement needs, but not future water quality conditions. The Plan update will include updating current water quality conditions and the list of impaired water bodies and TMDLs in the Pajaro River Watershed. The Plan update will also include adding additional detailed information on salt and nutrient conditions, now and in the future, to support efforts to address groundwater salinity and agricultural water quality.
Description of the social and cultural makeup of the regional community • Identify important socio-cultural values • Identify DACs • Economic conditions and trends • Efforts to involve and collaborate with tribal governments	The existing Plan does not fully meet the current standard in that it does not identify Native American tribal communities or describe efforts to involve or collaborate with tribal governments. The Plan update will address this gap and also provide updated information/statistics on economic conditions and trends and demographic information.

Description of major water-related objectives and conflicts • Identify problems • Identify objectives, implementation strategies and projects that provide resolution	The existing Plan meets this standard.
Explanation of how the IRWM boundary was determined and why the region is an appropriate area for IRWM planning	The definition and explanation of the IRWM boundary meets the current standard and will not require an update.
Identification of neighboring and/or overlapping IRWM efforts and explanation of the planning/working relationship that promotes cooperation and coordination between regions	The existing Plan meets this standard, but will be updated to incorporate information from the RAP.

Table 11-3: How existing Plan meets Objectives Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
OBJECTIVES	
Clearly present Plan objectives	The existing Plan meets this standard in terms of presenting goals and objectives; however, the objectives currently do not incorporate the climate change standard. As part of the Plan update, the objectives will be reviewed against the climate change standard and revised to address this gap. Existing objectives will also be reviewed and, if necessary, updated.
Describe the process used to develop the objectives	The existing Plan this standard.
Plan objectives must address major water-related issues and conflicts of the region	The existing Plan meets this standard in terms of presenting conflicts in the region, but some information is dated and will be reviewed and updated.
Objectives must be measurable by some practical means so achievement of objectives can be monitored	The existing Plan meets this standard.
Explain methodology for prioritizing objectives in the region. If not prioritized, explain why.	The existing Plan meets this standard.

Table 11-4: How existing Plan meets Resource Management Strategies Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
RESOURCE MANAGEMENT STRATEGIES	
Document the range of RMS considered to meet the IRWM objectives and identify which RMS were incorporated into the IRWM Plan	The existing Plan lists the range of Water Management Strategies considered and identifies strategies that are incorporated into the Plan; this list will be updated to include RMS listed in the CWP Update 2009.
The effects of climate change on the IRWM region must factor into the consideration of RMS	The existing Plan does not meet this standard and it will be incorporated into the Plan update.
RMS to be considered must include, but are not limited to, the RMS found in Vol 2 of the CWP Update 2009	The existing Plan does not meet this standard and it will be incorporated into the Plan update.

Table 11-5: How existing Plan meets Integration Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
INTEGRATION	
The IRWM Plan must contain structure and processes that provide opportunities to develop and foster integration.	The existing IRWM Plan meets this standard. The regional goals and objectives, which address all aspects of water resource management, provide a structure that fosters integration. The regionalization and integration process provides a mechanism for integrating projects. The broad range of stakeholders involved in the various committees provides another means of integration. The Pajaro River Watershed IRWM Plan was developed on the premise that regionalization and integration of projects and programs, combined with stakeholder engagement and support, is necessary to address the region's water resource management needs.

Table 11-6: How existing Plan meets Project Review Process Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
PROJECT REVIEW PROCESS	
Describe procedures for submitting a project to the RWMG	The existing Plan does not meet this standard. The RWMG recently developed a process for submitting projects to the RWMG for the Implementation grant round; this process will be documented in the Plan update.
Describe procedures for review of projects considered for inclusion into the IRWM Plan.	The existing Plan includes review factors for how the project contributes to Plan objectives, and how the project is related to a RMS selected for use in the Plan, but does not fully address the other review factors listed below: • Technical feasibility of the project • Specific benefits to DAC water issues • Environmental Justice (EJ) concerns • Project costs and financing • Economic feasibility, including water quality and water supply benefits and other expected benefits and costs • Project status • Strategic considerations for IRWM Plan implementation • Contribution of the project in adapting to the effects of climate change in the region • Contribution of the project in reducing greenhouse gas emissions as compared to project alternatives
Displaying the list of selected projects	The existing Plan meets this standard and displays a list of selected projects; however this list is now old and will be updated in the Plan update.

Table 11-7: How existing Plan meets Impacts and Benefits Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
IMPACTS AND BENEFITS	
Discuss potential impacts and benefits of Plan implementation: • Within the IRWM Region • Between regions • Directly affecting DAC, EJ related concerns and Native American tribal communities	The existing Plan meets this standard but does not discuss impacts and benefits to Native American tribal communities. This gap will be addressed in the Plan update. The impacts and benefits will be updated based on the updated project list.

Table 11-8: How existing Plan meets Plan Performance and Monitoring Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
PLAN PEFORMANCE AND MONITORING	
Describe a method for evaluating and monitoring the RWMG's ability to meet the objectives and implement the projects in the Plan	The existing Plan contains performance metrics for measuring implementation performance for each project in the Plan, as well as performance measures and monitoring for program evaluation. As part of the Plan update, the RWMG will review the Plan performance and monitoring measures to be consistent with the updated objectives and projects
Contain policies and procedures that promote adaptive management	The existing Plan discusses adaptive management in terms of Plan implementation but does not contain policies or procedures; this will be addressed in the Plan update.

Table 11-9: How existing Plan meets Data Management Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
DATA MANAGEMENT	
Describe the process of data collection, storage and dissemination to IRWM participants, stakeholders, the public, and the State (Data in this standard includes technical information such as designs, feasibility studies, reports, and information gathered for a specific project in any phase of development including the planning, design, construction, operation and monitoring of a project	The existing Plan provides a general description of data collection and dissemination efforts to date, but does not fully meet current standards in terms of listing a process for data collection, storage and dissemination. As part of the Plan update, the RWMG will re-evaluate the data gaps noted in the existing Plan based on current data available, and develop a process or framework for future data management.

Table 11-10: How existing Plan meets Finance Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
FINANCE	
List known as well as possible funding sources, programs, and grant opportunities for the development and ongoing funding of the IRWM Plan	The existing Plan meets this standard; but some of the information on projects and funding sources is no longer current and will be updated in the Plan update.
List the funding mechanisms, including water enterprise funds, rate structures, and private financing options, for projects that implement the IRWM Plan	The existing Plan meets this standard; but some of the information on projects and funding sources is no longer current and will be updated in the Plan update.

Explain the certainty and longevity of known or potential funding for the IRWM Plan and projects that implement the Plan	The existing Plan does not meet this standard and will address this in the Plan update.
Explain how operation and maintenance (O&M) costs for projects that implement the IRWM Plan would be covered and the certainty of operation and maintenance funding	The existing Plan identifies the O&M costs and sources of funding for implementation projects, but not the certainty of O&M funding.

Table 11-11: How existing Plan meets Technical Analysis Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
TECHNICAL ANALYSIS	
Document the data and technical analyses that were used in the development of the IRWM Plan	The existing Plan meets this standard, though additional data and analyses will be considered during the Plan update. The technical analysis will be updated in the Plan update.

Table 11-12: How existing Plan meets Relation to Local Water Planning Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
RELATION TO LOCAL WATER PLANNING	
Document the local water plans used in the IRWM Plan	The existing Plan meets this standard.
Discuss how the IRWM plan relates to planning documents and programs established by local agencies	The existing Plan meets this standard though some of the information may be need updating. This section will be reviewed and updated as necessary.
Describe the dynamics between the IRWM Plan and local planning documents	The existing Plan meets this standard.
Consider and incorporate water management issues and climate change adaptation and mitigation strategies from local plans into the IRWM Plan.	The existing Plan does not meet this standard and will be addressed in the Plan update.

Table 11-13: How existing Plan meets Relation to Local Land Use Planning Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
RELATION TO LOCAL LAND USE PLANNING	
Document current relationship between local land use planning, regional water issues and water management objectives	The existing Plan meets this standard, but does not include evaluating relationships with local land use planning in terms of climate change adaptation/mitigation. This will be addressed in the Plan update.

Document future plans to further a collaborative, proactive relationship between land use planners and water managers	The existing Plan describes coordination with land use decision makers but does not document future plans for collaboration. This will be addressed in the Plan update.

Table 11-14: How existing Plan meets Stakeholder Involvement Planning Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
STAKEHOLDER INVOLVEMENT	
Describe public process that provides outreach and an opportunity to participate in the IRWM Plan development and implementation	The existing Plan includes a description of the efforts to provide outreach and opportunities to participate in the Plan; however, this process was mainly for development of the Plan. As part of the Plan update, more recent ongoing public processes as documented in the Region Acceptance Process, as well as future public processes envisioned in the Stakeholder Engagement Plan will be included.
Describe process to identify, inform, invite, and inform stakeholder groups in the IRWM process, including mechanisms and processes	The existing Plan describes the process that was used to identify and involve stakeholders for development of the Plan. Since adoption of the Plan, the RWMG has continued and expanded efforts to identify and involve more stakeholders, for example, through the establishment of the Stakeholder Steering Committee and active updates to the stakeholder contact list. The description in the existing Plan will be updated to reflect improvements in the process since Plan adoption, and also, next steps necessary to address gaps in the process.
Discuss how the RWMG will endeavor to involve DACs and Native American tribal communities	The existing Plan includes discussion on how the RWMG identified and included DACs and EJ communities in Plan development and implementation, but did not discuss Native American tribal communities in the watershed. The Plan update will discuss specific ways to increase DAC engagement in IRWM planning and implementation in the region. In addition, Native American tribal communities are invited to participate in the Stakeholder Steering Committee.

Describe decision-making process including IRWM committees, roles or positions that stakeholders can occupy and how a stakeholder goes about participating	The existing Plan provides a general description of the consensus building approach for the region, but does not identify roles or positions that stakeholders can occupy or how a stakeholder goes about participating. The Plan update will discuss the establishment of the Stakeholder Steering Committee and development of the Stakeholder Engagement Plan and Communication Framework as part of continuing outreach efforts by the RWMG to better define the decision-making process to stakeholders and involve them in the process. The update will also include a discussion of new committees to support specific plan update efforts.
Discuss how stakeholders are necessary to address the objectives and resource management strategies of the IRWM Plan and are involved or invited to be involved in Plan activities	The existing Plan meets this standard; however, the discussion will be revised in the Plan update based on the updated RMS selected for the Plan.
Discuss how collaborative processes will engage a balance of the interest groups regardless of their ability to contribute financially to the IRWM process	Stakeholder meetings are open to all interested parties, and participants from non-profit organizations, DACs, Native American tribal community representatives attend these meetings even though they do not contribute financially to the IRWM process. However, the existing Plan does not discuss the process of engaging or providing support to interest groups to participate in the IRWM process if they are not able to contribute financially in the IRWM process. The RWMG recognized this as a gap in the Plan and will address this in the Plan update with specific measures to increase DAC involvement.

Table 11-15: How existing Plan meets Coordination Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
COORDINATION	
Identify a process to coordinate water management projects and activities of participating local agencies and local stakeholders to avoid conflicts and take advantage of efficiencies	The existing Plan meets this standard in terms of describing a process to coordinate with federal, State and local agencies, but some of the coordination activities identified in the existing Plan are not current and will be updated in the Plan update.
Identify other neighboring IRWM efforts and the way cooperation or coordination with these other efforts will be accomplished and discuss any ongoing water management conflicts with adjacent IRWM efforts	The existing Plan describes the region's relationship to other IRWM planning efforts, but does not reflect the current coordination and cooperation efforts taking place in the region since Plan adoption. This will be described in the Plan update.

Identify areas where a State agency or other agencies may be able to assist in communication, cooperation, or implementation of IRWM Plan components, processes, and projects, or where State or federal regulatory decisions are required before implementing the projects	The existing Plan meets the standard, but some of the project information described is dated and will need to be reviewed and updated in the Plan update.

Table 11-16: How existing Plan meets Climate Change Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
CLIMATE CHANGE	
Discuss the potential effects of climate change on the IRWM region, including an evaluation of the IRWM region's vulnerabilities to the effects of climate change and potential adaptation responses to those vulnerabilities	The existing Plan does not meet this standard.
Describe a process that discloses and considers GHG emissions when choosing between project alternatives	The existing Plan does not meet this standard.

Pajaro River Watershed
Integrated Regional Water Management Region

Proposition 84
Planning Grant Application
Work Plan
September 28, 2010

THIS PAGE INTENTIONALLY LEFT BLANK

Work Plan Content

Table of Contents

Work Plan Content

This work plan provides a narrative description of the tasks that will be conducted to update the Pajaro River Watershed Integrated Regional Water Management Plan (Plan). Please see the budget and schedule attachment for funding and scheduling information. The table below summarizes the Program Preferences addressed in this Work Plan and the existing IRWM Plan.

Program Preference	Addressed in Work Plan Section
Include regional projects or programs (CWC §10544)	• Task 5 will result in an updated prioritized list of regional projects and programs.
Effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; the Regional Water Quality Control Board (RWQCB) region or subdivision, or other region or sub-region specifically identified by DWR	• The Pajaro River IRWM boundary is coterminous with the Pajaro River Hydrologic Unit, which will be described in Task 2. • The project review and selection process in Task 5 identifies integrated regional projects and programs. • Salt and nutrient management planning in Task 17 will integrate efforts to address a variety of salt and nutrient sources.
Effectively resolve significant water-related conflicts within or between regions	• The Plan objectives that will be updated in Task 3 are partly based on evaluation of conflicts and challenges in the region. Thus, the objectives are designed to resolve significant water-related conflicts. These objectives will continue to be used to identify implementation projects that will effectively resolve conflicts. • Task 5 will identify project and programs to resolve significant water-related conflicts within the region. • Task 14.1 involves coordinating with local, regional, and federal agencies on IRWM planning and implementation, which will include identifying joint projects/programs or dialogues that can contribute to the resolution of significant water-related conflicts. • Task 16 (Watershed Study to Address Key Data Gaps) is designed to resolve conflicts over Pajaro River flood management, a significant issue in the region.
Contribute to the attainment of one or more of the objectives of the CALFED Bay-Delta Program: • Water Quality • Water Supply Reliability • Levee Protection • Ecosystem Restoration	• The Plan objectives in Task 3 include one or more objectives of the CALFED Bay-Delta Program. SBCWD and SCVWD both receive water imported from the Bay-Delta. • The salt and nutrient management planning proposed in Task 17 is designed to facilitate

Program Preference	Addressed in Work Plan Section
	recycled water expansion, which will improve water supply reliability for CVP contractors.
Address critical water supply or water quality needs of disadvantaged communities within the region	• Task 5 includes developing a project review and prioritization process that considers benefits to disadvantaged and tribal communities. Task 5 will also identify projects that will address critical water supply or water quality needs of DACs in the region. • In Task 20, the Environmental Justice Coalition for Water (EJCW) will conduct focused outreach to DACs and work with DACs to identify water supply or water quality needs in their communities and provide support for project development to address these needs.
Effectively integrate water management with land use planning	• Task 12 includes identifying links between the IRWM Plan and local land use planning, and developing ways to establish a proactive relationship between land use planning and water management. • Task 18 (College Lake watershed planning) is a collaborative planning effort between agencies with land use and water management responsibilities.
Address Statewide Priorities • Drought Preparedness • Use and Reuse Water More Efficiently • Climate Change Response Actions • Expand Environmental Stewardship • Practice Integrated Flood Management • Protect Surface Water and Groundwater Quality • Improve Tribal Water and Natural Resources • Ensure Equitable Distribution of Benefits	• Plan objectives address Statewide Priorities for **drought preparedness, use and reuse water more efficiently, expand environmental stewardship, practice integrated flood management,** and **protect surface water and groundwater quality**. The Plan objectives will be updated in Task 3.1 to incorporate **climate change response actions**. • The project review process in Task 5 will include project prioritization criteria for meeting the Plan objectives above, benefits to DACs and tribal communities, and environmental justice considerations. This will **improve tribal water and natural resources** and **ensure equitable distribution of benefits**. • Climate Change Response Action Statewide Priority is addressed in Task 15 which involves assessing impacts and region vulnerabilities, and developing adaptation and mitigation strategies to address the impacts. • Task 16 (Watershed Study to Address Key Data Gaps) addresses the Statewide Priority to practice integrated flood management.

Program Preference	Addressed in Work Plan Section
	• Task 17: Perform Salt and Nutrient Management Planning addresses the Statewide Priority of Protecting Surface Water and Groundwater Quality. Expanded recycled water use, which is facilitated by salt and nutrient planning, addresses the Statewide Priorities for drought preparedness, use and reuse water more efficiently, and climate change response actions. • Task 18: College Lake Improvement and Watershed Management Plan addresses the Statewide Priorities of Practicing Integrated Flood Management, Drought Preparedness, Expanding Environmental Stewardship, and Protecting Surface Water and Groundwater Quality. • The Statewide Priorities: Improved Tribal Water and Natural Resources, and Ensure Equitable Distribution of Benefits will be addressed in Task 20, which involves increasing DAC and tribal community involvement in IRWM planning in the region, and working with these communities to identify critical water needs, provide input to the Pajaro IRWM RWMG, and ensuring that the needs of these communities are considered and addressed in the IRWM planning process.

1. Update Governance Section

Guidelines Requirement(s)

- *Describe RWMG, list all entities responsible for Plan development, and identify members of the RWMG with statutory authority for water management.*
- *Describe governance structure.*
- *Describe how governance addresses and ensures various activities, such as public involvement processes.*
- *Describe decision-making process and how a decision is vetted with stakeholders and the RWMG.*
- *Describe the manner in which the governance structure ensures balanced access and opportunity for participation.*

- *Describe how governance would foster communication with the different functional groups within the RWMG, with project proponents, with general stakeholders, with neighboring RWMGs, government agencies, and the general public.*
- *Describe how governance helps ensure implementation of the Plan in the long-term.*
- *Explain how governance will help ensure coordination with neighboring IRWM efforts, State agencies and Federal agencies.*
- *Explain whether the governance structure shows that a collaborative process was used to establish Plan objectives.*
- *Explain how the governance structure facilitates interim changes and formal changes to the Plan.*
- *Describe process involved in updating or amending the IRWM Plan.*

This task involves developing a new *Governance* section in the Plan update, which will be built upon the Regional Water Management Group section in the existing Plan and information in the Regional Acceptance Process submittal. In general, this section will describe the governance of the Pajaro IRWM established for implementation of the Plan, and highlight how it is effective in meeting the above Guidelines requirements.

Specific actions that need to be taken to further develop the *Governance* section in the Plan include:

Task 1.1 Formalize Stakeholder Steering Committee

The RWMG is in the process of formalizing a Stakeholder Steering Committee to advise the RWMG on decisions and assist with various aspects of governance and stakeholder engagement. This will expand the role of the entities involved in the region's governance structure. The Stakeholder Steering Committee will be comprised of the entities representing the 13 categories listed under Public Involvement Processes beginning on Page 37 of the Guidelines and will assist in effective decision making, balanced access and opportunity for participation, effective communication, and establishment of Plan objectives. This task will include documenting the specific roles and responsibilities for the Stakeholder Steering Committee with regards to governance, including the relationship between the Stakeholder Steering Committee and the RWMG with regards to decision-making and communication.

The role of the Stakeholder Steering Committee in ongoing IRWM plan development and implementation is discussed in Task 13.1 and its role in the IRWM Plan update process is discussed in Task 19.2.

Task 1.2 Develop Communication Plan

The RWMG will develop a communication plan that describes how the RWMG will communicate internally and externally, including points of contact, distribution of meeting materials, meeting frequency, access to IRWM information, and will identify other existing watershed groups that can assist the RWMG in disseminating IRWM information. In addition to communication with stakeholders, the plan will discuss how the RWMG will communicate with

the Santa Cruz IRWM region on the Watsonville Slough area that is in both regions. The goal of the Communication Plan is ensure balanced access and opportunity for participation in IRWM Plan development and implementation. The communication plan will be updated and enhanced as necessary to ensure all of the stakeholders are informed of the IRWM process.

Task 1.3 Document adaptive approach for future revisions to the Plan

The Pajaro River Watershed IRWM Plan is envisioned to be a living document that will be updated to meet the changing needs, objectives and priorities of the Pajaro region. The existing Plan describes updating the IRWM Plan at least every five years and reprioritizing projects based on project performance and new information. During the Plan update, the RWMG will document the adaptive management process for updating the Plan in response to changing conditions and new information (e.g., updating the region description and other sections with monitoring results from watershed studies included in this Work Plan and update of climate change impacts on the region when region-specific vulnerability assessment tools are available). The RWMG will also clarify and document the changes that require IRWM Plan re-adoption and how the RWMG will ensure the IRWM Plan is maintained and periodically updated. Additionally, the adaptive management process will identify the potential changes to the plan that shall require readoption of the Plan. This information helps demonstrate to stakeholders that significant changes cannot be made to the Plan without a public approval process.

Task 1.4 Compile governance section

The *Governance* section of the IRWM Plan Update will be based on information in the existing IRWM Plan and the Regional Acceptable Process submittal, and will be supplemented with information developed in Tasks 1.1, 1.2, and 1.3. This task involves compiling the information, reviewing and discussing the draft *Governance* section with the Stakeholder Steering Committee and entities involved in governance, and finalizing the *Governance* section.

Deliverables:

- Communication Plan
- Draft *Governance* section that provides a comprehensive description of the Pajaro River Watershed IRWM RWMG's governance, roles and responsibilities and decision-making process.
- Final *Governance* section

2. Update Region Description

Guidelines Requirement(s)

- *Describe watersheds/water system.*
- *Describe internal boundaries.*
- *Describe water supply and demand projections for at least a 20-year planning horizon.*

- *Describe the current and future (or proposed) water quality conditions. Describe any protection and improvement of water quality within the area of the IRWM Plan. Describe any Basin Plans, Watershed Management Initiatives, and water quality goals and objectives for watersheds in the region. Describe any projects or examples within the region matching water quality to water use.*
- *Describe social and cultural makeup of the regional community.*
- *Explain regional IRWM boundary and why it is an appropriate area for IRWM planning.*
- *Identify neighboring or overlapping IRWM regions.*
- *Describe likely climate change impacts on the region.*

This task involves updating the Region Description section and maps in the existing IRWM Plan for all the above items (refer to *Section B Region Description* in the Background Document).

Task 2.1 Update Region Description

The RWMG will allocate staff and/or a consultant to collate information/data and update existing descriptions of the following:

- The regional IRWM boundary, the process involved in determining the boundary, and why the region is appropriate as an IRWM region based on the RAP submittal
- Neighboring and overlapping IRWM regions
- Watersheds and water systems
- Internal boundaries
- Water supply and demand projections for at least a 20-year planning horizon, taking into consideration impacts of climate change and drought
- Water quality information
- Basin Plan, TMDLs, and regional board priorities (long-term watershed protection by improving municipal development review and approval, stormwater management improvement through development of hydromodification controls, groundwater recharge area protection, riparian habitat improvement in urban and agricultural areas, and elimination and reduction in pollution from agricultural discharges)
- Watershed flooding
- Ecological Process/Environmental Resources
- Social/cultural/economic information and statistics, including disadvantaged communities and environmental justice concerns
- Major water-related objectives and conflicts

Task 2.2 Compile Expanded Region Description Information

This work plan includes several tasks that will contribute new information to the *Region Description* section. Task 15.1 (Conduct Climate Change Analysis) will result in a discussion of likely climate change impacts on the region and its water resources, along with the region's vulnerabilities to climate change. Task 16 (Flood Study) will provide additional data on sediment loading to the Pajaro River and how that affects flooding. Pajaro River flood

management is one of the major water-related objectives in the region and sediment loading is a source of conflict. Task 17 (Salt and Nutrient Management Planning) will provide additional information on the water balance in the different groundwater subbasin, salt and nutrient loading, and assimilative capacity estimates. This information will be used to develop strategies for addressing saltwater intrusion/overdraft in the Pajaro basin, salinity in San Benito County groundwater, and agricultural water quality throughout the region. Task 20 (Disadvantaged Communities) will develop an inventory of disadvantaged communities and Native American tribes and an assessment of their water resources needs.

This task will combine the new information from Tasks 15, 16, 17, and 20 with the updated region description information from Task 2.1 into and expanded *Region Description* section.

Task 2.3 Update and develop new maps in the Region Description

The RWMG will allocate staff and/or a consultant to review the maps in the existing IRWM Plan and update the maps, e.g. land use maps which were developed using DWR 1997 land use survey data, and develop new maps to address data gaps or to improve communication of regional characteristics to stakeholders (e.g. agency boundaries for water supply, wastewater, flood protection, land use, and locations of disadvantaged communities at the census block level and Native American tribal lands, updated neighboring IRWM approved regions from the Region Acceptance Process).

Deliverables:

- Draft Updated *Region Description* section that provides a comprehensive description of the Pajaro River Watershed including its jurisdictional and physiographic boundaries, water supply/demand and quality information, water infrastructure, land use information, environmental resources, demographic characteristics, and areas susceptible to sea level rise as a result of climate change.
- Regional Maps
- Final *Region Description* section

3. Update Plan Objectives

Guidelines Requirement(s)

- *Determine IRWM Plan objectives.*
- *Describe the collaborative process and tools used to establish objectives.*
- *Describe metric the IRWM region can use to measure if objectives are being met as the IRWM Plan is implemented.*
- *Explain prioritization of Plan objectives.*

The May 2007 Pajaro River Watershed IRWMP est*ablished four key* regional goals:

1. Water Supply
2. Water Quality
3. Flood Protection
4. Environmental Protection and Enhancement

Each of these goals contained key measureable and prioritized regional objectives that established the intent of the IRWM Plan. These goals and objectives are based on the significant water-related needs and conflicts in the region. These objectives must be reviewed and updated per the August 2010 Guidelines.

The Pajaro IRWM Plan objectives address the Program Preference to effectively resolve water-related conflicts because they are, in part, based on conflicts, and provide a basis for prioritizing different programs, projects, and policies that address those conflicts. The objectives, which include water supply reliability, contribute to attainment of the CALFED Bay-Delta for water supply reliability. The Pajaro IRWM Plan objectives also address Statewide Priorities for drought preparedness, use and reuse water more efficiently, expand environmental stewardship, practice integrated flood management, and protect surface water and groundwater quality. The updated objectives will also address the climate change response actions State Priority.

The following tasks detail what is required to update the IRWM Plan objectives:

Task 3.1 Draft Updated Objectives

The 2007 Objectives will be reviewed and updated to ensure consistency with:

- Basin Plan Objectives
- 20x2020 Water Efficiency Goals
- Requirements of CWC §10540(c)
- Changes in the region's conditions and needs as developed in Task 2

Although the Basin Plan Objectives were considered during the 2007 IRWMP process, the objectives must be revisited to consider the updated Basin Plan. Additionally, the State has since established the goal to reduce water use by 20% per capita by the year 2020. The current IRWMP conservation objective calls for a 10% reduction of total water use by 2020. Additional aspects of SBx7-7, such as improving agricultural water use efficiency, must be considered in the revised objectives. The revised objectives must also consider inclusion of the requirements of CWC §10540(c), including:

- Protection and improvement of water supply reliability, including identification of feasible agricultural and urban water use efficiency strategies.

- Identification and consideration of the drinking water quality of communities within the area of the Plan.
- Protection and improvement of water quality within the area of the Plan consistent with relevant basin plan.
- Identification of any significant threats to groundwater resources from overdrafting.
- Protection, restoration, and improvement of stewardship of aquatic, riparian, and watershed resources within the region.
- Protection of groundwater resources from contamination.
- Identification and consideration of water-related needs of disadvantaged communities in the area within the boundaries of the Plan.

The objectives will also be updated to reflect any objectives for adapting to and mitigating climate change that are identified in Task 15.2.

Finally, any additional documents or changed regional conditions that could help define objectives, such as water management plans and local land use plans, will also be considered in the process of updating objectives.

All objectives established by this process will be measureable and contain metrics that will be used to determine if the objective is being met during implementation of the Plan. Metrics will be quantitative and/or qualitative, depending on the objective.

The RWMG will review and update the objectives in collaboration with the Stakeholder Steering Committee. The draft updated IRWM Plan objectives and metrics will be presented and discussed at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19. The updated objectives may also be presented to the Board's of the RWMG agencies or the Boards' advisory committees.

Deliverable:

- Draft updated IRWM Plan objectives and metrics that provide a basis for identifying resource management strategies, projects and programs

Task 3.2 Prioritize Objectives

The existing objective prioritization method is based on the four regional goals, listed in order of priority:

1. Water Supply
2. Water Quality
3. Flood Protection
4. Environmental Protection and Enhancement

The RWMG will review the existing objective prioritization method in collaboration with the Stakeholder Steering Committee. The RWMG will consider using the following prioritization

tools or other tools as developed by the Stakeholder Steering Committee to refine existing prioritization methods.

- Tiered or grouped together as one priority for implementation
- Grouped as short-term and long-term priorities for implementation
- Grouped as spatial or temporal priorities for implementation

The draft updated prioritization method will be presented and discussed at a stakeholder workshop. This workshop may be combined with the workshop on updated Objectives, depending on how extensive the updates are. Stakeholder workshops associated with the Plan Update are discussed in Task 19.

Deliverable:

- Draft updated Objective Prioritization Method

Task 3.3 Finalize Updated Objectives and Objectives Prioritization

Once stakeholder input is reviewed and addressed, the objectives and prioritization method will be revised as needed. This information will be used to develop an updated *Objectives* section that presents the prioritized objectives and their metrics, describes the process for establishing the objectives, and explains the hierarchy of goals and objectives.

Deliverable:

- Updated *Objectives* Section that has support of the RWMG and stakeholders

4. Develop Resource Management Strategies Section

Guidelines Requirement(s)

- *Document the process used to consider RMS in the IRWM Plan.*
- *Describe which RMS were considered (include all RMS listed in Table 3 of the Guidelines).*
- *Describe which RMS of those considered would be implemented to achieve the objectives of the IRWM Plan.*
- *Demonstrate how the effects of climate change on the region are factored into its resource management strategies.*

The IRWM Plan currently considers the following Water Management Strategies:

- Water Supply Reliability
- Groundwater Management
- Water Recycling
- Desalination

- Imported Water
- Surface Storage
- Water and Wastewater Treatment
- Water Transfers
- Conjunctive Use
- Water Conservation
- Water Quality Protection and Enhancement
- Stormwater Capture and Management
- NPS Pollution Control
- Flood Management
- Ecosystem Restoration
- Environmental and Habitat Protection and Improvement
- Recreation and Public Access
- Wetlands Enhancement and Creation
- Watershed Planning
- Land Use Planning

These strategies will be revised and refined as part of the Plan update, to ensure that all Resource Management Strategies in the Proposition 84 Guidelines are considered for incorporation into the Plan update.

This task involves updating the Water Management Strategies section in the existing Plan to a *Resources Management Strategies* section. The following tasks detail what is required in this effort:

Task 4.1 Document process used to consider RMS in Plan Update

The RWMG will review and consider each of the Resource Management Strategies (RMS) in the California Water Plan Update 2009 (Table 3 of the Guidelines) and document the process (i.e. technical analysis, stakeholder input, etc.) for deciding how applicable each strategy is in meeting IRWM Plan objectives and managing for uncertainty, employing the RWMG's decision-making framework. The RWMG will evaluate the list of Water Management Strategies (WMS) in the existing IRWM Plan against all the RMS in Table 3 of the Guidelines, list the RMS considered in the Plan update, and for each strategy considered, explain the reasoning behind the decision. The decision-making process will include consideration of the Governance, Region Description, and Objectives sections of the updated Plan.

Task 4.2 Identify RMS that will be implemented and identify gaps

The RWMG will list which RMS of those considered will be implemented to achieve the objectives of the IRWM Plan. The RWMG will review the existing list of projects and newly identified projects against the selected RMS and identify the RMS that will need further implementation. The RWMG will solicit input from stakeholders at a stakeholder workshop to review the selected RMS and identify projects to address the RMS that need further implementation. Stakeholder workshops associated with the Plan Update are discussed in Task

19. The "no regrets" package of resource management strategies identified in Task 15 for responding to climate change impacts and vulnerabilities will also be included in this section.

Deliverable:

- Draft *Resource Management Strategies* section that identified Resource Management Strategies that will help achieve the Objectives of the IRWM Plan.
- Final *Resource Management Strategies* section

5. Prepare Project Review and Selection Section

Guidelines Requirement(s)

- *Procedures for submitting a project to the IRWM Plan*
- *Procedures for review of projects to implement the IRWM Plan that considers:*
- *Procedure for communicating the list(s) of selected projects*

This task addresses multiple Program Preferences. This task will ensure regional project and programs are included in the IRWM Plan. The project review process effectively integrates water management programs and projects. The project review and prioritization process also provides a means for effectively resolving significant water-related conflicts within the Pajaro River Watershed. The project review process will consider benefits to disadvantaged and tribal communities, as well as environmental justice considerations. The projects selected through the project review process will address critical water supply and water quality needs of DACs in the region.

The development of the Project Review and Selection section will include the following:

Task 5.1 Document process for submitting a project for inclusion in the IRWM Plan

Regional project solicitations during the interim period between IRWM Plan updates have been conducted by the RWMG via email solicitations to stakeholders as well as announcements at stakeholder meetings and direct communication to agencies. The RWMG has developed project submittal guidance documentation in the form of a project template to guide project information submittal from project proponents, and a centralized email address to collate project submittals. As part of the Plan update, this process will be further defined and formalized to include a procedure for adding projects into the Plan, including specifying the format of the documentation, developing schedules for project solicitation and project review and ranking, and specifying the tools available to assist DAC project proponents with their project submittal.

Task 5.2 Update Project Review Process

The RWMG previously developed a two-stage project review process, consisting of prioritization based on how the project contributes to IRWM Plan objectives in the first stage,

and development of regional programs in the second stage. This process was effective in identifying projects to meet Plan objectives and implement the Plan. It is envisioned that the IRWM Plan objectives will continue to serve as the first step in the project review process. As part the Plan update, the RWMG will expand the project review process to include the following additional review factors:

A. *How the project is related to resource management strategies*
B. *Technical feasibility of the project*
C. *Specific benefits to critical DAC water issues*
D. *Specific benefits to critical water issues for Native American tribal communities*
E. *Environmental Justice Considerations*
F. *Project Costs and Financing*
G. *Economic Feasibility*
H. *Project Status*
I. *Strategic considerations for IRWM Plan Implementation*
J. *Purposefully implementing projects with multi-benefits*
K. *Contribution of the project in adapting to the effects of climate change*
L. *Contribution of the project in reducing GHG emissions as compared to project alternatives*

The RWMG will collaborate with the Stakeholder Steering Committee to determine how best to consider these additional review factors in the project review process, including whether various weights should be added to some factors. In addition, the draft updated project review process will be reviewed and discussed at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19.

Deliverable:

- Draft Project Review Process
- Final Project Review Process

Task 5.3 Update Project List

The RWMG will update the project list in the existing IRWM Plan as part of the Plan update. This task will involve updating and expanding the descriptions of existing projects. In addition, new projects may be added based on the review of RMS, outreach with DACs and other stakeholders, and coordination with other agencies and organizations. It is anticipated that projects proponents and EJWC will assist in developing project descriptions that are sufficient for evaluating projects in the project review process. All the projects under consideration will be reviewed and prioritized in accordance with the project review process developed in Task 5.2.

Deliverable:

- Updated and prioritized Project List

Task 5.4 Develop and implement procedure for communicating the list of selected projects
The RWMG will develop a procedure for communicating the updated prioritized list of projects to stakeholders. The RWMG anticipates reviewing and discussing the updated lists at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19. The RWMG will also begin posting the project list on at least one of the RWMG members' website and providing a hyperlink to the list in all stakeholder communications.

Deliverable:

- IRWM project list posted on RWMG member website that provides a comprehensive description of the IRWM projects that will be implemented to fulfill the objectives of the IRWM Plan.

Task 5.5 Compile Project Review and Selection Section
The RWMG will compile information and process developed in the preceding tasks into a *Project Review and Selection* section.

Deliverable:

- *Project Review and Selection* section that provides a comprehensive description of the Pajaro River Watershed IRWM project review process, updated project review criteria, and implementation project lists.

6. Update Impacts and Benefits Section

Guidelines Requirement(s)

- *Include a screening level discussion of the potential impacts and benefits of plan implementation*
- *Clearly state when more detailed project-specific impact and benefit analyses will occur*

This task involves updating the Impacts and Benefits section of the IRWM Plan to discuss the potential impacts and benefits of Plan implementation. The discussion will include both impacts and benefits within the IRWM region; between regions; and those directly affecting DAC, EJ related concerns, and Native American tribal communities. The existing Plan is organized into three subsections including 1) Benefits of the IRWMP process, 2) IRWMP Implementation Benefits and Impacts, and 3) Disadvantaged Community Benefits.

The following tasks detail what is required in this effort:

Task 6.1 Review and update screening-level discussion of impacts and benefits
The RWMG will evaluate the potential benefits and impacts to be gained by implementing the updated project list in the Plan, based on project information submitted by project proponents. The RWMG will work with staff and/or a consultant to develop a screening level discussion of

the potential impacts and benefits of plan implementation. This task will also involve reviewing the presentation of impacts and benefits in the existing Plan and creating a format to organize the impacts and benefits in such a way that will reflect the emphasis of the Pajaro IRWM region (e.g. by regional/local benefits, RMS, or objectives). Specific impacts and benefits from individual projects will be measured and tracked on a project-by-project basis, consistent with each project's monitoring and reporting plan. Each project sponsor is responsible for project specific impact analysis as required by CEQA and/or NEPA. Information from project specific CEQA/NEPA analyses will be incorporated into the IRWM Plan if available.

Task 6.2 Identify and analyze direct impacts and benefits affecting DAC, EJ concerns, and Native American tribal communities

The RWMG will consult local stakeholders and environmental justice organizations that are actively involved in working with DACs in the Pajaro watershed, such as the Environmental Justice Coalition for Water (EJCW), to identify and analyze potential direct impacts or benefits to DAC/EJ communities from Plan implementation. This task will leverage on the location analysis of DACs conducted in Task 2.3 (Update and develop new maps in the Region Description) to analyze impacts and benefits of projects located in or within the vicinity of disadvantaged communities and incorporate the outcomes of Task 20 (Disadvantaged Community Engagement in IRWM Planning) to include additional impacts and benefits into the IRWM Plan update. Project specific DAC/EJ impacts and benefits analysis from CEQA/NEPA documents will be incorporated if available.

Task 6.3 Develop benchmark for assessing impacts and benefits The RWMG will need to update the Impacts and Benefits section as the Plan is implemented, projects become more defined, and Plan performance data is gathered. The RWMG will coordinate with project sponsors to clearly describe in the Plan update when a more detailed project-specific impact and benefit analyses will occur, and clarify that the more detailed analysis will be conducted prior to any implementation activity.

The benchmark for assessing benefits and impacts of the IRWMP process and proposed projects will be linked to the goals and objectives established in Task 3. The benchmark may be objective or subjective. For example, a flood protection project may provide a reduction in downstream flows. This reduction may be equivalent to providing 10% of the 100-year flood protection solution (objective). The same project may also provide significant benefits to gaining consensus on a 100-year flood protection project (subjective). The RWMG will work with the stakeholders to develop appropriate objective and subjective benchmarks for assessing impacts and benefits.

Deliverable:

- Draft updated *Impacts and Benefits* section that identifies potential impacts and benefits associated with IRWM Plan implementation, the timeline for preparing project-specific impact and benefit analyses, and benchmarks for assessing the *Impacts and Benefits* section
- Final updated *Impacts and Benefits* section

7. Update Plan Performance and Monitoring Section

Guidelines Requirement(s)

- *Explain whom or what group within the RWMG will be responsible for IRWM implementation evaluation.*
- *List the frequency of evaluating the RWMG's performance at implementing projects in the IRWM Plan.*
- *Explain how IRWM implementation will be tracked with a Data Management System (DMS) and who will be responsible for maintaining the DMS.*
- *Discuss how findings or "lessons learned" from project-specific monitoring efforts will be used to improve the RWMG's ability to implement future projects in the IRWM Plan.*
- *Identify who has the primary responsibility for development of the project-specific monitoring plans and who is responsible for project-specific monitoring activities.*
- *Specify the stage of project development that a project-specific monitoring plan will be prepared.*
- *Provide an explanation of typically required contents of a project-specific monitoring plan including:*
  - *Clearly and concisely (in a table format) describe what is being monitored for each project. Examples include monitoring for water quality, water depth, flood frequency, and effects the project may have on habitat or particular species (before and after construction).*
  - *Measures to remedy or react to problems encountered during monitoring. An example would be to coordinate with the Department of Fish and Game if a species or its habitat is adversely impacted during construction or after implementation of a project.*
  - *Location of monitoring*
  - *Monitoring frequency*
  - *Monitoring protocols/methodologies, including who will perform the monitoring*
  - *DMS or procedures to keep track of what is monitored. Each project's monitoring plan will also need to address how the data collected will be or can be incorporated into Statewide databases. Note that standards and guidance related to the integration of data into Statewide databases is included in Data Management Standard.*
  - *Procedures to ensure the monitoring schedule is maintained and that adequate resources (funding) are available to maintain monitoring of the project throughout the scheduled monitoring timeframe*

Per PRC 75026.(a), all IRWM Plans "shall include performance measures and monitoring to document progress towards meeting plan objectives." Plan Performance and Monitoring Standards ensure that:

- The RWMG is efficiently making progress towards meeting the objectives in the IRWM Plan.
- The RWMG is implementing projects listed in the IRWM Plan.
- Each project in the IRWM Plan is monitored to comply with all applicable rules, laws, and permit requirements.

The existing plan needs to be updated to meet the August 2010 Guidelines.

Task 7.1 Review and update institutional structure for IRWM implementation evaluation

This task involves reviewing the effectiveness of the governance structure in terms of conducting IRWM Plan assessment, including designation of responsibilities and responsible parties, the frequency of assessment at both the IRWM Plan and project level, and the frequency of evaluating the performance of the IRWM Plan.

Task 7.2 Explain how IRWM implementation will be tracked with a Data Management System (DMS) and who will be responsible for maintaining the DMS

The RWMG will work with project proponents to develop a mechanism for assessing IRWM Plan performance in contributing to regional priorities and objectives. The RWMG will develop methods for maintaining an IRWM project database with project information, progress updates, and lessons learned.

Task 7.3: Draft Plan Performance and Monitoring Program

The RWMG will develop a plan performance and monitoring program that addresses:

- Responsibility for implementation evaluation
- Frequency of evaluation
- Data management system (DMS) tracking and maintenance
- Conducting "lessons learned" evaluations to improve plan performance
- Responsibility for project-specific monitoring
- Triggers for requiring a project-specific monitoring plan
- Typical contents of a project-specific monitoring plan

The "lessons learned" evaluations will be used to determine whether amendments to the updated Plan are appropriate. Significant changes in conditions in the region or the understanding of the region may necessitate updating resource management strategies or objectives. Changes maybe include more effects of climate change, development of new tools, and new information on climate change. Project implementation may also result in significant changes. The process for evaluating new information and conditions and determining how to

respond will be included in the Plan Performance and Monitoring section. The process for amending the plan will be described in the Governance section.

The draft plan performance and monitoring program will be developed in collaboration with project proponents. The program will also be presented and discussed at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19.

Deliverable:

- Draft Plan Performance and Monitoring Section that describes the procedure for evaluating plan implementation progress, including measures of performance, monitoring systems, and methods to adapt the IRWM Plan and its projects based on the findings of the evaluation.
- Final Plan Performance and Monitoring Section

8. Update Data Management Section

Guidelines Requirement(s)

- *Provide a brief overview of data needs within the IRWM region*
- *Describe typical data collection techniques*
- *Describe how stakeholder contribute data to a DMS*
- *Identify the entity responsible for maintaining data in the DMS*
- *Describe the validation or quality assurance/quality control measures that will be implemented by the RWMG for data generated and submitted for inclusion into the DMS.*
- *Explain how data collected for IRWM project implementation will be transferred or shared between members of the RWMG and other interested parties throughout the IRWM region, including local, State and federal agencies.*
- *Explain how the DMS supports the RWMG's efforts to share collected data*
- *Outline how the data saved in the DMS will be distributed and remain compatible with State databases.*

The 2007 IRWMP will need to be updated to reflect the requirements of the 2010 Guidelines. The existing IRWM Plan does not fully meet current standard to describe the process for data collection, storage and dissemination to IRWM participants, stakeholders, the public, and the State.

Task 8.1: Review Data Needs

The RWMG will identify data needs within the IRWM region based on the Objectives, prioritized project list, and plan performance and monitoring program. The RWMG will also determine typical data collection techniques in the region through discussions amongst the RWMG and

with project proponents and stakeholders. The RWMG will identify data collection activities and opportunities for collaboration of the neighboring IRWM regions. Lastly, the RWMG will also review the data formatting and procedural standards for State databases (i.e., SWAMP, GAMA, and CERES) so that the RWMG understands the linkages between IRWM region's data and the various State data programs, and future data submittals from the RWMG to the State databases will meet State database requirements for integration.

Deliverable:

- Technical memorandum of data needs for the region

Task 8.2 Assess Available Data Programs

The RWMG will use the information developed in Task 8.1 to assess available data management systems (DMSs). Different options that will be considered will be off-the-shelf project management applications that enable data sharing and customized web-based applications. The systems will be assessed for their ability to receive a variety of data from different sources, implementation and maintenance requirements, their ability to make data available to other parties, cost, and other factors. The purpose of the assessment will be to identify an effective and efficient DMS that supports the data needs of the region, provides for making data accessible to stakeholders, neighboring IRWM regions, and the State, and can be readily managed by the RWMG.

Deliverable:

- Selection of a DMS

Task 8.3: Establish DMS Protocol

Once data needs are evaluated and a DMS is selected, the RWMG can establish the DMS Protocol, including:

- Data collection techniques
- Description of how stakeholders contribute to a DMS
- Entity responsible for maintaining a DMS
- Validation and quality assurance/ quality control measures for data
- Data sharing and collection protocols
- Compatibility with State databases

The draft DMS protocol will be developed in collaboration with the Stakeholder Review Committee. It will also be reviewed and discussed at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19.

Deliverable:

- Draft updated *Data Management* Section that provides a comprehensive description of the DMS structure, roles and responsibilities, data sharing procedures, and steps taken to ensure that data is compatible with State databases.
- Final updated *Data Management* Section

9. Update Financing Section

Guidelines Requirement(s)

- *Provide program-level description of the sources of funding, which will be utilized for the development and ongoing funding of the IRWM Plan.*
- *Describe the potential funding sources for projects and programs that implement the IRWM Plan.*
- *Discuss the potential sources of funding for project O&M.*
- *Indicate the certainty and longevity of the funding sources.*
- *Include explanatory text that would help a stakeholder understand how the IRWM Plan would be financed.*

The 2007 IRWMP will be updated to include the components of the revised Finance Standard, per the August 2010 Guidelines. Financing must be considered on a programmatic level and documented in a transparent manner to project stakeholders. Since funding for IRWM planning and implementation projects will come from multiple sources, these sources must be clearly documented so that the RWMG and stakeholders can clearly understand how the funding pieces fit together and how the plan will be implemented. There are many funding sources, including:

- Ratepayers
- Operating funds
- Water Enterprise funds
- Special taxes, assessments, and fees
- State or federal grants and loans
- Private loans
- Local bonds

Task 9.1: Update IRWMP Finance Section and Finance Table

The draft IRWMP finance section will include a program-level description of the sources of funding, which will be utilized for the development and ongoing funding of the IRWM Plan. It will also include potential funding sources for projects and programs that implement the IRWM Plan. Many of the funding sources in the existing IRWM Plan are no longer current and need to be updated as part of this task.

The RWMG will identify program-level sources of funding that will be utilized for ongoing IRWM planning and plan maintenance. The RWMG will also work with project proponents to update the list of funding sources for projects and programs to implement the IRWM Plan. Most of the funding for implementing projects and programs comes from a combination of funding sources such as capital improvement programs, rate/revenue user charges, and service connection fees. O&M funding sources include water/wastewater/stormwater utility customer charges. The

certainty and longevity of these funds will be described, as for State and federal funding sources. This information will be summarized in a finance table that will include the following components:

- Activity Description
- Approximate Total Cost
- Funding Source and % of Total Cost
- Funding Certainty, Status, and Longevity (including status of grant agreement and date of submittal)
- O&M Finance Source
- O&M Finance Certainty

If the RWMG is targeting a State grant program to fund an implementation project, this section will include a discussion of whether the funding has been secured via a grant award with the State and the status of associated grant agreement, and whether an application for funding has or will be submitted at a future date.

The draft update Finance Section will be reviewed and discussed at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19.

Deliverable:

- Draft updated *Finance* Section and Finance Table that describes the sources of funding identified for IRWM planning and implementation and the certainty and longevity of this funding sources
- Final updated *Finance* Section and Finance Table

10. Update Technical Analysis Section

Guidelines Requirement(s)

- *Describe the technical information sources and/or data sets used to develop the water management needs in the IRWM Plan. Explain why this technical information is representative or adequate for developing the IRWM Plan.*
- *Identify data gaps where additional monitoring or studies are needed, and describe how the Plan will help bridge these data gaps.*
- *Describe studies, models, or other technical methodologies used to analyze the technical information and data sets. Explain how this information aid the RWMG's and stakeholders' understanding of the water management picture for the period of the planning horizon.*

By the time the IRWMP is updated, nearly five years will have passed since the 2007 version of the Plan was adopted. Much will have changed during this period and it is essential that the

latest technical information, analyses, and methods be incorporated into the Plan. Tasks 16, 17, and 18 of this workplan will also result in new data that will be incorporated into this section of the Plan update.

Task 10.1: Develop Technical Information Source Matrix

A Technical Information Source Matrix will be developed which contains the following information:

- Data sources/ data sets
- Adequacy of data
- Relevancy of data

Deliverable:

- Technical Information Source Matrix

Task 10.2: Identify Data Gaps

Data gaps will be identified and areas where additional monitoring or studies are needed will be noted for each of the Programs. This will include working with project proponents to identify data gaps and reviewing current information to ensure that it accurately reflects current and anticipated conditions.

Deliverable:

- List and description of data gaps

Task 10.3: Develop Technical Analyses and Methods

The RWMG will expand the matrix developed in Task 10.1 to include information on how the data was analyzed, including:

- Function of technical analysis
- Outcome of technical analysis
- Certainty
- Application of outcomes on the planning horizon

Deliverable:

- Summary matrix of data sources, technical analyses performed, and outcomes and uses the analyses

Task 10.4: Prepare Updated Technical Analysis Section

All of the information noted above will be brought together into the draft and final updated Technical Analysis Sections of the revised IRWMP.

Deliverable:

- Draft *Technical Analysis* Section that describes the technical analyses conducted and the outcomes of the analyses
- Final *Technical Analysis* Section

11. Update Relation to Local Water Planning Section

Guidelines Requirement(s)

- *Describe how the RWMG has or will coordinate its water management planning activities to address or incorporate member actions related to local water planning.*

The 2007 IRWM Plan was developed in coordination with local water agencies and the planning documents that have been produced for the Pajaro River Watershed region. These include Urban Water Management Plans, and other plans covering a number of areas such as recycled water, groundwater management, water resources, flood protection and environmental enhancement. The relevance of these documents to the IRWM Plan is discussed and summarized in the existing IRWM Plan.

Task 11. 1 Update description of IRWM Plan relationship with local planning documents

The RWMG will allocate staff and/or a consultant to consolidate the latest water management planning activities in the region into the IRWM Plan. This will accomplished through contacts with local agencies and reviews of updated planning documents (e.g. groundwater management plans, urban water management plans, water supply assessments, general plans, stormwater management plans, etc.) to ensure local resource management plans are adequately incorporated into the IRWM Plan and identify opportunities for developing integrated water management programs and projects. Climate change adaptation and mitigation strategies that are identified in Task 15 (Climate Change Analysis) will be incorporated into the update.

Deliverable:

- Updated *Relation to Local Planning* Section

12. Update Relation to Local Land Use Planning Section

Guidelines Requirement(s)

- *Describe the current relationship between local land use planning entities and water management entities. Describe how water management input is considered in land use decisions and vice-versa.*
- *Describe future efforts in the process of establishing a proactive relationship between land use planning and water management*

This task involves updating the *Relation to Local Planning* section in the IRWM Plan. Land use agency involvement in the IRWM Plan is currently coordinated through participation of local land use agency representatives at Stakeholder meetings and the project solicitation process.

The RWMG recognizes the need to link water system, water quality, and flood protection planning with land use planning within cities and counties to develop integrated strategies to address the impacts of climate change, e.g. increased flooding and variability of flooding. These may include encouraging adoption of the Ahwahnee Water Principles for Resource Efficient land use into local zoning codes, planning codes, specific plans or general plan elements; use of Low Impact Development (LID) as a planning tool and development of watershed management plans integrating land use policies and water management policies.

This work will address the Program Preference to effectively integrate water management with land use planning.

The update of the *Relation to Local Land Use Planning* section would include the following:

Task 12.1 Identify links between the IRWM Plan and local land use planning

The RWMG will identify objectives, resource management strategies, and projects that have a linkage with local land use planning. This effort will include strategies for adapting to climate change and, potentially, offset climate change impacts. Many local land use agencies are already incorporating strategies for addressing climate change.

Task 12.2 Describe the current relationship between local land use planning entities and water management entities

The RWMG will describe how water management and land use planning entities currently interact through participation by land use planners in the region's governance structure.

Task 12.3 Describe future efforts to establish a proactive relationship between land use planning and water management

Based on the potential linkages between the IRWM plan and land use planning and the existing relationship between water management and land use planning entities, the RWMG will identify opportunities for improving the relationship and information communication, as well as opportunities for communicating the linkages identified in Task 12.1 to local land use agencies. These opportunities will be evaluated and prioritized in collaboration with the Stakeholder Steering Committee and local land use planning agencies. The result of this evaluation will be included in the updated Relation to Local Land Use Planning section.

Deliverable:

- Draft *Relation to Local Land Use Planning* Section that describes how the RWMG will improve coordination of planning efforts with local land use agencies
- Final *Relation to Local Land Use Planning* Section

13. Update Stakeholder Involvement Section

Guidelines Requirement(s)

- *List the stakeholders participating in the IRWM planning effort.*
- *Describe the processes that provide outreach and an opportunity to participate in plan development and implementation.*
- *Discuss how DACs in the region have been identified and what efforts have been/will be taken to include them in the RWMG.*
- *Account for technology and information barriers to stakeholder participation.*
- *Describe decision making process, the committees and groups, and how stakeholders can provide input to the process.*
- *Describe how the stakeholders necessary to meet Plan objectives are involved in Plan activities or are being invited to participate in Plan activities.*
- *Discuss what mechanisms the Plan includes that describe how stakeholders not currently involved in the Plan will be invited to participate.*

Task 13.1 Expand description of the Stakeholder Steering Committee

A Stakeholder Steering Committee (SSC) was assembled in February 2005 to facilitate Pajaro River Watershed IRWMP coordination and collaboration with the most interested parties. This committee provided a forum for on-going discussion and stakeholder input, and provided review and stakeholder oversight throughout the initial IRWMP development process. As discussed in Task 1.1, the RWMG will be formalizing the role of the SSC in the governance process. This task will be to formalize the role of the SSC in the stakeholder involvement process.

The RWMG will collaborate with the SSC to define the roles and responsibilities of the SSC in stakeholder involvement. It is the RWMG's intent that the SSC will provide advice from diverse perspectives to the RWMG. The purpose of the SSC is to reflect the concerns and issues of various stakeholders, serve as a link to the community, serve as a "sounding board" for the RWMG, and provide review and recommendations on IRWMP documents. The RWMG will work with the SSC to ensure that SSC and public concerns and ideas are understood and considered in RWMG decisions.

Deliverable:

- Description of how the Stakeholder Steering Committee will be involved in IRWM plan development and implementation.

Task 13.2 Elaborate on Stakeholder Involvement Tactics

The RWMG will elaborate on stakeholder involvement tactics it is using and plans on using to support stakeholder involvement. These tactics include emailing meeting notices to all stakeholders, newspaper advertisements on upcoming meeting, public notices related to plan updates, use of the internet to make information available to stakeholders and interested parties, directed outreach to individual stakeholders to invite them to participate in the IRWM

plan development and implementation, programmatic implementation teams, and distribution of information on how stakeholders can participate in different IRWM-related groups and decision-making processes.

Task 13.3 Elaborate on Stakeholder Involvement in Decision-making Process

The Plan update will include a description of how stakeholders are incorporated into the decision-making framework of the RWMG, and a discussion of new stakeholder committees to support specific Plan update efforts and the process to set them up.

Task 13.4 Update Stakeholder Involvement Section

The RWMG will update the Stakeholder Involvement section to ensure it meets the Guidelines. The updated section will include the current list of stakeholders participating in the IRWM process, and an updated description of how stakeholders have been identified and invited to participate in Plan activities. Updated information on how disadvantaged communities have been identified and the efforts that have been made to involve them in the IRWM plan efforts will also be included based on the work performed as part of Task 20 (Disadvantaged Community Engagement in IRWM Planning). The update will also include information about the Communication Plan developed in Task 1.2, Stakeholder Steering Committee developed in Task 13.1, stakeholder involvement tactics identified in Task 13.2, stakeholder engagement process described in Task 13.3, and the SNMP Stakeholder Committees developed in Task 17.1.

The updated Stakeholder Involvement section will be developed in collaboration with the Stakeholder Steering Committee. The updated section will also be reviewed and discussed at a stakeholder workshop. Stakeholder workshops associated with the Plan Update are discussed in Task 19.

Deliverable:

- Draft updated *Stakeholder Involvement* section
- Final updated *Stakeholder Involvement* section

14. Update Coordination Section

Guidelines Requirement(s)

- *Identify the process for coordination of projects and activities with local participants and stakeholders.*
- *Identify neighboring IRWM efforts and describe the coordination between the various planning efforts.*

The coordination outlined in this task, as well as ongoing coordination within the region and with other regions, meets the Program Preference to effectively resolve significant water-related conflicts within or between regions.

Task 14.1 Update Coordination Section to ensure consistency with Guidelines

The RWMG will update the Coordination section to describe current coordination activities within the region, identification of and coordination with neighboring IRWM regions, and coordination with agencies. The RWMG will review this section with stakeholders, neighboring IRWM regions, and agencies such as DWR and the Regional Board. The RWMG has been effective in coordinating with stakeholders and local, regional, and federal agencies on IRWM planning and implementation.

Deliverable:

- Draft updated *Coordination* section
- Final updated *Coordination* section

15. Perform Climate Change Analyses

Guidelines Requirement(s)

- *Describe, consider, and address the effects of climate change on the region and disclose, consider, and reduce when possible GHG emissions when developing and implementing projects.*
- *Identify climate change impacts and address adapting to changes in the amount, intensity, timing, quality and variability of runoff and recharge.*
- *Consider the effects of sea level rise on water supply conditions and identify suitable adaptation measures.*
- *Describe policies and procedures that promote adaptive management.*

As noted in the California Water Plan Update 2009, the effect of climate change on floods in the Central Coast region could be significant. With less total rainfall and higher mean annual temperatures, watersheds could become more susceptible to wildfires, and the consequent loss of vegetative cover could lead to higher storm runoff.

Sea level rise is also anticipated to affect the Central Coast Hydrologic Region. Seawater intrusion into groundwater basins will be exacerbated by a sea level rise because the freshwater/saltwater transition zone would move inland under increased pressure from the sea. Seawater intrusion was first identified in the Pajaro groundwater basin in the 1940s, and current pumping now exceeds estimates of sustainable yield by more than 20,000 acre-feet per year. Floods from tidal surges would become more frequent as the ocean moves farther inland and closer to residences and businesses.

The region also needs to address anticipated changes in the amount, intensity, timing, quality and variability of runoff and recharge.

This task will involve development of a new section *Climate Change* to assess regional vulnerabilities to climate change , identify and measure impacts of climate change, evaluate strategies (including adaptation and mitigation) and disclose, consider and reduce when possible GHG emissions when developing and implementing projects.

This work element addresses the Statewide Priority for climate change response actions.

Task 15.1 Assess climate change impacts and regional vulnerabilities

The RWMG and/or consultant will leverage Statewide, regional, and local vulnerability, and include in the Plan update an assessment of the region's vulnerability to the long-term increased risk and uncertainty associated with climate change. The assessment would include an integrated flood management component and a drought component that assumes (until more accurate information is available), a 20 percent increase in the frequency and duration of future dry conditions. Once publicly accessible vulnerability assessment tools are available, the RWMG will use them to refine the preliminary vulnerability assessment.

The RWMG and/or consultant will use mapping tools developed by State or federal agencies or other regional organizations to conduct a preliminary evaluation of impacts by specific location (e.g. the CalAdapt mapping tool). This would help to locate focus areas with higher vulnerability (e.g. low-lying areas with disadvantaged communities), and prioritization of these focus areas (e.g. areas where flooding is a safety risk vs biological/ecological risk). Maps developed from this assessment will be included in the Plan update.

The RWMG will also coordinate with local water/wastewater agencies to identify vulnerable infrastructure based on agency assessments, and provide a summary list of infrastructure that may be affected by climate change and project opportunities in the Plan update.

Deliverable:

- Assessment of regional vulnerabilities that will be included in the updated Region Description

Task 15.2 Address region vulnerabilities in Plan Objectives

The RWMG will use results from the vulnerability assessment to develop Plan Objectives to address climate change impacts, targeting the region's highest ranked vulnerabilities. Specifically, the objectives will address how the region can adapt to climate change, including adapting to changes in runoff and recharge and the effects of sea level rise. The RWMG will also consider developing objectives related to reducing emissions or revising existing objectives to explicitly state their role in reducing emissions, i.e., increasing water conservation. Metrics for measuring success in meeting the objectives will also be developed.

Deliverable:

- Plan objectives and metrics addressing climate change will be incorporated into the Objectives section.

Task 15.3 Identify and develop regional adaptation strategies

The RWMG will work with the Stakeholder Steering Committee, and leverage on findings developed by the Bay Area/North Coast/Central Coast Water Quality and Sustainability Work Group and local/regional agencies to identify climate adaptation strategies for the region which could include (not an exhaustive list):

Near-term "No regret strategies"

- Implement aggressive water conservation and efficiency strategies
- Protect watersheds and natural resources and habitats; link habitat/riparian water issues with water quality and supply
- Identify integrated flood management programs

Longer-term Adaptation Strategies

- Address infrastructure needs for replacing aging systems and for new development
- Diversify regional water supply portfolio (e.g. conjunctive use, recycled water, stormwater/graywater reuse, etc.)
- Incorporate projected sea level rise into plans
- Integrate land use policies that will help restore natural processes in watersheds, and encourage Low Impact Development (LID) practices
- Address environmental justice groups and DACs
- Develop plan with regional partners to share water supplies and infrastructure during emergencies such as drought

Additional sources of adaptation strategies for consideration will include agency resource management plans, including local water supply plans, flood protection plans, general plans, and habitat conservation plans. These strategies will be identified as part of Task 11 Relation to Local Planning. The RWMG will discuss information sharing and collaboration with regional land use planning agencies in the updated Regional to Local Land Use Planning section.

Deliverable:

- List of adaptation strategies that will be incorporated into the Resource Management Strategies section of the Plan update and considered during the Project Review Process.

Task 15.4 Prepare GHG emissions analysis for implementation projects

The RWMG will work with project proponents to develop preliminary GHG emissions analysis for implementation projects to help the RWMG to evaluate the sustainability aspect of the project for the purposes of IRWM project selection. The project review section will also consider the contribution of the project in adapting to climate change.

If a project is selected to be included in a grant application, the project proponent will prepare a full project CEQA GHG emissions analysis which would include quantifiable estimates of emissions for each identified emission source.

Deliverable:

- Preliminary GHG emissions analyses for implementation projects that will be included in the Project Review section of the Plan.

Task 15.5 Identify triggers for changing or amending plan in response to climate change

The RWMG recognizes that the IRWM Plan will need to be updated as more effects of climate change manifest, new tools are developed, and new information becomes available. The RWMG will identify triggers for considering plan changes or amendments. These triggers will be incorporated into the Plan Performance and Monitoring section. The RWMG will also ensure that the adaptive management approach discussed in the Governance section facilitates changes in response to climate change.

Deliverable:

- Triggers for considering IRWM Plan changes and amendments in response to climate change

Task 15.6 Identify collaboration opportunities

The RWMG will identify methods for sharing information and collaborating on climate change with other agencies. This may include participating in the California Adaptation Strategy and expanding participating in the California Climate Action Registry. The opportunities and methods identified in this effort will be incorporated in the Coordination section.

Deliverable:

- Coordination opportunities related to climate change that will be incorporated into the Coordination section.

Task 15.7 Compile climate change information

The RWMG will compile information and data related to climate change into a Climate Change section in the updated IRWM Plan. The section will summarize the information that is included in the Plan and explain how the information is incorporated into different sections of the Plan. Climate change is similar to stakeholder involvement in that it is incorporated into many Plan elements and also warrants it own section to provide a quick reference to how the RWMG is addressing this important issue.

Deliverables:

- Draft *Climate Change* section
- Final *Climate Change* section

16. Watershed Study to Address Key Data Gaps

Flooding along the Pajaro River has historically been a major point of conflict in the watershed. The river and its drainage area spans four counties, but the most significant flooding occurs in the lower watershed counties of Santa Cruz and Monterey. Effective and sustainable flood management solutions must consider the entire river and its drainage area, as there are opportunities to influence downstream outcomes through upstream modifications.

Over the last decade, there have been significant advancements made in resolving the conflict in the watershed through the formation and progress made by the Pajaro River Watershed Flood Prevention Authority (Authority). However, recognizing there is additional work needed to fully resolve the conflict, the Pajaro River Watershed IRWMP included flood protection objectives to help support these watershed efforts.

The IRWMP objective to "reach consensus on the Pajaro River Flood Protection Project to protect existing infrastructure and land uses from flooding and erosion from the 100-year event" is worded specifically to stress the importance of achieving consensus in implementing a flood protection project for the Pajaro River. Developing a solution to the flooding issue of the Lower Pajaro River is a watershed-wide issue and requires upper watershed participation. Maintaining flood attenuation properties of the upper watershed is necessary to preventing further increases in storm flows. The objective to "work with stakeholders to preserve existing flood attenuation by implementing land management strategies throughout the watershed" addresses this need, and it also emphasizes the necessity of working with stakeholders to make land use decisions that are appropriate for the region.

Hindering the progress of reaching consensus on the Pajaro River Flood Protection Project is a gap in the understanding of how the San Benito River, the main tributary to the Pajaro River, affects the sediment deposition and flows in the Lower Pajaro River. Understanding how the San Benito River operates and interacts with the Pajaro River will:

- Help identify upper watershed efforts that can support a sustainable 100-year flood protection project for the lower watershed,
- Resolve the remaining conflict in the watershed, and
- Ultimately meet the IRWMP objective of reaching consensus on the Pajaro River Flood Protection Project.

This task, the Flood Study, meets the Program Preference to effectively resolve significant water-related conflicts within or between regions by providing the data necessary to resolve

conflicts over sediment loading and impacts on Pajaro River flooding. It also addresses the Statewide Priorities to practice integrated flood management.

Project Background

The Pajaro River is the largest coastal stream between the San Francisco Bay and the Salinas River Watershed. The watershed is approximately 1,300 square miles and covers portions of Santa Cruz, Santa Clara, San Benito, and Monterey Counties. The river drains into Monterey Bay and tributaries to the Pajaro River originate throughout the watershed. The largest tributary is the San Benito River, with a watershed area of 607-square miles. The large size contributes to the number of diverse environments, physical features, and land uses within the watershed boundary as well as the potential conflict between upper watershed agencies where most of the drainage area is located versus lower watershed agencies where most of the flooding occurs.

Flooding throughout the reaches of the Lower Pajaro River is a hazard to public and private property including residences, agriculture, highways, watercourses, and environmental resources. Flooding has been recorded in 1955, 1982, 1986, 1995, 1997 and 1998 causing millions of dollars in damage. The flood event of February 1998 produced the highest flows ever recorded on the Pajaro River at the U.S. Geological Survey gage at Chittenden. These high flows resulted in overtopping and a subsequent levee break downstream of Highway 1 on the Santa Cruz side of the river (Santa Cruz County 1998).

One factor in the flooding was an increase in vegetation that had grown in the channel, reducing flood capacity below the original level of the 1940s flood control project. Associated with vegetation growth, there is believed to have been sediment deposition in both the channel and on the floodplain within the levees, though the exact balance between sediment deposition and removal is not clear. In response, the U. S. Army Corps of Engineers (USACE) developed a flood plan for the lower 12 miles of the Pajaro River, the Lower Pajaro River Levee Reconstruction Project (Levee Project). The project also involves a vegetation management plan and a plan for periodic sediment removal from the channel. Watershed stakeholders found that sediment accumulation was a potential problem in terms of both project performance (loss of conveyance over time) and the associated difficulties obtaining permits and winning agency and stakeholder support for in-channel sediment removal. The mainstem Pajaro River is a steelhead migration zone, and channel clearing activities pose problems due to habitat destruction, sediment loading, and loss of riparian vegetation. Most of the sediment in the Pajaro River is believed to originate in the San Benito River.

The Levee Project is the highest priority flood protection project in the Pajaro River Watershed IRWMP. The Levee Project is currently being developed by the U.S. Army Corps of Engineers (Corps) and the Counties of Monterey and Santa Cruz. To support the sustainability and maintenance plan for the Levee Project and achieve consensus in the watershed, a better understanding of the sediment and flow impacts from the San Benito River is required.

In recognition of the conflict between the upper and lower watershed and the need to implement a watershed based flood protection strategy, the Authority was established in July 2000 by State Assembly Bill 807 in order to "identify, evaluate, fund, and implement flood prevention and control strategies in the Pajaro River Watershed, on an intergovernmental basis." The watershed covers areas of four counties and four water districts and the board is comprised of one representative from each:

- County of Monterey
- County of San Benito
- County of Santa Clara
- County of Santa Cruz
- Monterey County Water Resources Agency
- San Benito County Water District
- Santa Clara Valley Water District
- Santa Cruz County Flood Control and Water Conservation District

In addition to the Authority's primary goal of flood protection, other goals to promote general watershed interests include:

- Municipal, agricultural, and industrial water supply
- Groundwater recharge
- Support of rare, threatened, or endangered species
- Migration and spawning of aquatic organisms
- Preservation of wildlife habitat
- Reduction of pesticide loading and impacts to aquatic health

These goals support the goals of the Pajaro River Watershed IRWMP.

The Authority completed several studies that evaluated effective and sustainable flood management solutions throughout the watershed and opportunities to influence downstream outcomes through upstream modifications.

The Phase 1 Study consisted of modeling both the hydrologic and sediment regimes of the watershed. The results of Phase 1 provided a better understanding of the characteristics of the watershed and changes over time that affect flooding frequency and flooding potential in the downstream reaches of the Pajaro River.

The Phase 2 Study identified project alternatives that would provide flood protection for the Lower Pajaro River from the 100-year flood flows identified in Phase 1. The Phase 2 Study projects were developed to coordinate with a concurrent Corps' Project.

After the conclusion of Phase 2, the Corps identified a 100-year flood protection project for the Lower Pajaro River. The Corps' project was based on the assumption that the watershed conditions (or current level of flood attenuation provided in the upper watershed) were

maintained. The Phase 1 model results highlighted the natural flood attenuation benefits of Soap Lake and the critical importance of maintaining those benefits as part of any Pajaro River flood protection solution. Therefore, the focus of the Authority work shifted to ensure that the flows passing through the Lower Pajaro River Project would not increase above the currently predicted levels. The most direct way to achieve this goal was to preserve the Soap Lake Floodplain and its attenuation capabilities.

The Phase 3 and 4a Studies defined and documented the preferred method to maintain the Soap Lake attenuation and storage capacity, known as the Soap Lake Floodplain Preservation Project (Soap Lake Project). In Phase 3, Soap Lake was hydraulically modeled and the floodplain boundaries defined. The impacts of flooding and land use preservation were examined in compliance with the California Environmental Quality Act (CEQA) and the cost of the Project estimated. The Authority received Proposition 50 IRWM Implementation Grant funds to acquire floodplain easements in the Soap Lake Floodplain and is currently implementing that project.

The Phase 4b Study included a three part sediment study designed to complement the Corps' Project by partially addressing some of the channel maintenance concerns and further the Authority's understanding of how various processes operate and interact within the entire watershed but primarily focusing on the San Benito River. The San Benito River is believed to be the main source of sediment in the Pajaro River. Though a sediment transport model of the San Benito River was previously developed, work showed that the river has widened by an average of 277 feet since 1986, the date of the topographic survey used in the former model. Thus, there is a need to update the model to account for the changed geometry and sediment transport capacity. The studies were:

- Two-dimensional (2D) hydrodynamic and sediment transport model to assess the bench concept and assess its impact on sediment transport;
- Evaluation of a sediment trap in the upper project reach to prevent sediment accumulation in the flood-prone area; and
- Sediment transport model of the San Benito River to assess inputs from this source.

The San Benito watershed has relatively high relief, and is largely rural, dominated by agriculture and ranching. The San Benito River drains a 607-square mile watershed upstream of Hollister that lies parallel with, and slightly north, of the San Andreas Rift Zone for a length of approximately 60 miles. The San Benito River sediment model study reach extended approximately 8 miles upstream from the mouth, representing about ten percent of the total river length.

The San Benito River has undergone dramatic changes in channel morphology over the last 50 years, many related to gravel mining activities. Between 1955 and 1974, the channel incised by up to 40 feet downstream of the new State Hwy 156 Bridge, with much of the channel between Hwy 195 and Hollister degrading by more than 25 feet. A 2005 assessment of channel changes in the San Benito showed that between 1987 and 2000, the river widened by an average of 277 feet and incised by an average of 2.4 feet. This change in channel geometry increased channel

capacity by 5.2 million cubic yards due to a mixture of gravel extraction and erosion. These changes altered the river's sediment transport characteristics.

The sediment transport model results demonstrated that sediment delivery and discharge output from the San Benito River is a significant source of sediment for the lower Pajaro River, with an average total sediment load of 410,482 tons per day being delivered at the peak of the 100-year flood, and 3,602 tons per day being delivered during bankfull events. Comparing the sediment outflow from the San Benito with the sediment inflow to the Pajaro River suggests that during high flows two thirds of the Lower Pajaro River's sediment load comes from the San Benito River. At low flows the proportion is greater, but the excess may be stored between the San Benito and Chittenden, mobilizing only during larger events.

The study also suggested that while the river will continue to erode and generate sediment to the Pajaro River, the rate of vertical erosion may be similar to the last 20 years and lower than rates observed between the 1950s and the 1970s. Thus, the sediment delivery rates are expected to be similar to those observed during the last 20 years.

The study provided insights into how sediment is eroded, transported and deposited in the Pajaro River watershed. However, these studies highlighted data gaps that must be filled to reach consensus on the Levee Project and meet the objectives of the IRWMP. The data gap was identified in the current sediment transport model between the confluence with the Pajaro River and River Mile 0.7 on the San Benito River. This gap, due to the limit of high resolution spatial data, means that it is unknown how much sedimentation or erosion occurs prior to the rivers joining. Higher resolution survey data would allow this data gap to be filled. The additional studies will focus on developing a better understanding of sediment issues and the cost and benefits of solutions in the watershed. The additional studies and projects involve calculating and managing sediment load and peak flows from the upper watershed into the lower Pajaro River. The two recommended studies necessary to filling a data gap in the IRWMP include:

1. Establishing a program to collect sediment concentration and flow data on both the Pajaro River and the San Benito River above their confluence, so that an accurate sediment budget for the two river systems can be developed.
2. Calibration of the San Benito River sediment transport model based on observed erosion between 1987 and 2000.

Task 16.1 Program to Collect Sediment Concentration and Flow Data on the Pajaro and San Benito Rivers above their Confluence

The data collection will allow the Authority to calculate relative sediment delivery rates from the Upper Pajaro River and the San Benito River to the Lower Pajaro River. An accurate estimate and partition of sediment yield is needed to plan for and manage sediment within the flood prone area around Watsonville and Pajaro, and to prioritize sediment management actions in the upper watershed.

Task 16.1.1: Flow Gage Installation

Install a flow gage on each of the Pajaro River and the San Benito River around Highway 101.

Task 16.1.2: Develop Flow Rating Curve and Conduct Flow Rate Sampling

Conduct automatic flow rate sampling (15 minute intervals) and necessary gage maintenance for a period of 3 years (only first year costs included)

Task 16.1.3: Conduct Event-based Sediment and Flow Sampling and Prepare TM

Conduct event-based sediment and flow sampling on the Pajaro River and the San Benito River upstream of the confluence to:

a. Establish a sediment rating curve,
b. Calculate sediment loadings, and
c. Calculate relative sediment contributions from both rivers.
d. The sampling should consist of suspended load (Total Suspended Sediment), bed load and discharge at a range of flows on both rivers.

Deliverables:

- Two installed flow gages with depth sensor and data logger
- Technical Memo and presentation to the Authority, Corps, and community technical committee describing the flow rating curve and instrument set up for each site
- Flow data to be provided to the Authority quarterly within one month of the end of the quarter
- Annual Draft and Final Technical Memo with all flow and sediment transport data
- Annual presentation of results and conclusions to the Authority, Corps and community technical committee
- Addition of data to region's Data Management System.
- Recommendations for updating or adding projects to the IRWM Plan.

Task 16.2 Update, Calibrate and Re-Run the San Benito River sediment transport model

In 2005, a one-dimensional hydraulic and sediment transport model (HEC-6T) for the San Benito River from a point 0.7 miles upstream of the confluence with the Pajaro River, to Lane Road in Hollister (11.5 miles upstream) was developed. The model was used to identify aggrading and eroding reaches and to assess sediment load from the San Benito River to the Pajaro River. The study identified several data gaps that this scope of work will fill:

- The model stopped short of the confluence with the Pajaro River due to a gap in high resolution topographic data between the Pajaro River and the downstream boundary of the San Benito River sediment transport model;
- An estimated sediment input had to be used at the upstream boundary due to the lack of data (a sediment rating curve) on the San Benito River or the Pajaro River upstream of the confluence to calibrate the model (there is sediment data from the USGS gage at Chittenden, downstream of the confluence); and

- Cross section data (from 1987 and 2000) are available that could be used to validate and potentially calibrate the model by comparing predicted and observed erosion and sedimentation trends, but this has not currently been performed.

The model will allow the Authority to calculate sediment delivery from the San Benito River to the Lower Pajaro River more accurately. An accurate estimate of sediment delivery is needed to plan for and manage sediment within the flood prone area around Watsonville and Pajaro, and to prioritize sediment management actions in the upper watershed.

Task 16.2.1: Topographic Survey

Conduct topographic surveying of the confluence of the Pajaro and San Benito Rivers to extend the San Benito River sediment transport model to the confluence. The 2005 one-dimensional hydraulic and sediment transport model stopped 0.7 miles short of the confluence due to topographic data gaps. A topographic survey of the channel will be performed in this reach of the San Benito River, producing a cross section at least every 250 feet on average (assume 20 cross sections total).

Task 16.2.2: Extend Sediment Transport Model

Extend the existing sediment transport model to the confluence of the Pajaro River (total extent from the confluence of the Pajaro River to Lane Road, Hollister). The cross sections will be used to extend the existing HEC-6T model. The Authority may choose to convert the existing model from HEC-6T to HEC-RAS using the sediment transport module of HEC-RAS. The model shall be set up to simulate a movable bed system with a mixed particle size distribution (primarily sand and gravel).

Task 16.2.3: Validate and Calibrate the Model

Validate and calibrate the model using the observed changes in channel cross section between 1987 and 2000.

Task 16.2.4: Calculate Sediment Load

Re-run the model to calculate the sediment load from the San Benito River to the Pajaro River using continuous flow records from the USGS gage at Hollister from 1970 to the present.

Deliverables:

- Topographic survey supplied in electronic form (AutoCAD)
- 20 cross sections for export to a hydraulic model (X, Z data in feet)
- HEC-RAS or HEC-6T hydraulic and sediment transport model with associated input and output files
- Draft and Final Technical Memo describing the model set up, calibration and validation using channel cross section data from 1987 to 2000, and simulation of conditions from 1970 to present. The memo should include estimates of annual sediment load from the San Benito River to the Pajaro River, identify trends if present, and identify areas of erosion and deposition in the river.

- Presentation of Draft Technical Memo to the Authority, Corps, and community technical committee at up to two meetings
- Updated region description that incorporates the estimates an annual sediment load, any trends, and areas of erosion and deposition in the river.

17. Perform Salt and Nutrient Management Planning

Salt and nutrient management planning contributes to the implementation of two key water management strategies in the Pajaro River Watershed: Groundwater Management and Water Recycling. Groundwater is a major component of supply through the Pajaro region, and the development of salt/nutrient management plans for groundwater subbasins will help ensure the implementation of measures to achieve or maintain water quality objectives. Recycled water is identified in the existing IRWM Plan as an effective strategy in the for creating a local, reliable, drought-proof water supply, and reducing dependence on imported water supplies. However, recycled water projects can include potential water quality impacts from nutrient and salinity loading and emerging contaminants. The development of salt and nutrient management plans (SNMPs) will enable salts and nutrients from all sources to be managed on a basin-wide or watershed-wide basis in a manner that assures attainment of water quality objectives and protection of beneficial uses.

The State Water Resources Control Board adopted the Recycled Water Policy (Policy) that requires SNMPs be developed to manage salts, nutrients, and other significant chemical compounds in every groundwater basin or subbasin in the State. The SNMPs are intended to help streamline permitting of new recycled water projects while ensuring attainment of water quality objectives and protection of beneficial uses.

The RWMG will conduct salt and nutrient management planning in three critical study areas - the Llagas Subbasin managed by the Santa Clara Valley Water District; the Bolsa, Hollister, and San Juan Bautista Area Subbasins managed by the San Benito County Water District; and the Pajaro Valley Groundwater Basin managed by the Pajaro Valley Water Management Agency.

The RWMG recognizes that the development of these SNMPs will help facilitate stakeholder/institutional integration through the cooperative and collaborative development process, which will involve water and wastewater agencies, and other salt and nutrient stakeholders. In addition, development of the SNMPs will also contribute to the integration of resources, through the sharing of information such as project scoping, project outcomes, and lessons learned with other agencies in the Pajaro region.

Salt and nutrient management planning addresses several DWR Program Preferences. It effectively integrates water management programs with the region by developing a strategy for addressing all sources of salts and nutrients, rather than addressing them individually. Salt and nutrient management planning also addresses the Statewide Priority to protect water quality.

Expanded recycled water use, which will be facilitated by salt and nutrient management planning, will contribute to the attainment of CALFED Bay-Delta program objectives for water supply reliability as SCVWD and SBCWD both receive water imported from the Bay-Delta. Expanded recycled water use also contributes to drought preparedness, water reuse, and climate change response Statewide Priorities.

Task 17.1 Develop Salt and Nutrient Management Planning Stakeholder Committees in each study area

Each basin manager will establish a Salt and Nutrient Management Planning Stakeholder Committee (SNMP Stakeholder Committee) for their study area. The SNMP Stakeholder Committee will be comprised of stakeholders whose activities and operations may impact salt and nutrient management in the basin/subbasin, including agricultural interests, wastewater dischargers, and recycled water producers. Other stakeholders may include private well owners, environmental groups, regulatory staff, and the general public. Each basin manager will take the lead in identifying stakeholders and developing their SNMP Stakeholder Committee rosters, based on the existing IRWM stakeholder list. Each basin manager shall maintain their SNMP Committee roster and coordinate all workshop notifications and deliverable distribution with the SNMP stakeholders. Each basin manager will also request Regional Water Quality Control (Regional Board) participation in their SNMP Stakeholder Committee. Each basin manager anticipates conducting at least three SNMP Stakeholder Committee meetings during the IRWM Plan update process. The SNMP Stakeholder Committee meetings are discussed in Task 19.

Deliverable:

- SNMP Stakeholder Committee Rosters

Task 17.2 Document Conceptual Models

Each basin manager will develop and document the conceptual model of their study area, including natural and managed groundwater recharge, subbasin inflow and outflow, groundwater flow, groundwater extraction, and other water uses. The basin managers will also request groundwater and surface water monitoring data from existing sources. The conceptual model will include a water balance, existing salt and nutrient concentrations in surface and groundwater, and a fate and transport analysis for TDS and nitrogen. This information will be incorporated in the *Region Description* section during the IRWM Plan update.

Deliverables:

- GIS coverages and maps
- Figures and tables summarizing groundwater data
- Figures and tables summarizing water quality data
- Figures and narrative descriptions of groundwater basin/subbasin conceptual models
- Water balances
- Fate and transport analyses

Task 17.3 Identify Salt and Nutrient Sources

Each basin manager, in collaboration with stakeholders, will identify salt and nutrient sources. Salts and nutrients include, but are not limited to, total dissolved solids (TDS), nitrogen compounds (nitrate, nitrite, total nitrogen, TKN and ammonia), phosphorous, boron, arsenic, and chloride. During SNMP Workshop 2 (discussed in Task 19), the relevance of these and other potential constituents shall be discussed and input regarding other potential compounds received. Although the basin managers may be collecting information for a number of constituents, the basin managers' analysis during this work effort will likely focus on TDS and nitrate. TDS and nitrate are fundamentally important water quality parameters; they behave conservatively in groundwater; and they provide basic information needed to understand the behavior of more chemically reactive and complex constituents.

Deliverables

- List of salt and nutrient sources that will be incorporated into the *Region Description* section during the IRWM Plan update

Task 17.4 Salt and Nutrient Loading Analysis

Each basin manager will estimate salt and nutrient loading to the basin/subbasin based on salt and nutrient sources, land cover/land use, the conceptual model, the fate and transport analysis, and the water balance. A mass loading approach will be used to estimate total salt and nutrient inputs from different sources (i.e., wastewater dischargers) or land uses (i.e., irrigated agriculture, septic system). The type of water used (local or imported surface water, recycled water, groundwater) and the water's salt and nutrient content will be included in the mass loading estimate. The loading analysis will be conducted assuming implementation of planned recycled water projects and existing and projected land uses.

Deliverables

- GIS coverages populated with salt and nutrient source location and loads that will be incorporated into the *Region Description* section during the IRWM Plan update.

Task 17.5 Assimilative Capacity Estimate

Each basin manager shall develop an estimate for the assimilative capacity of each basin/subbasin in their study area for TDS, nitrate, and any other parameters determined to be significant during prior tasks. The assimilative capacity of subbasin will be calculated using the loading estimates from Task 17.4 and comparison with water quality objectives identified in the Regional Water Quality Control Board's Basin Plan.

Deliverables

- Assimilative capacity estimates (GIS layers) that will be included in the *Region Description* section during the IRWM Plan update.

Task 17.6 Develop or update Objectives related to recycled water, stormwater recharge and reuse, and other salt and nutrient management related issues

Each basin manager shall develop or update objectives related to recycled water, stormwater recharge and reuse, and other salt and nutrient management related issues. Other issues might include water quality or water conservation. The development or update of objectives will also consider the Central Coast RWQCB priorities of improving municipal development review and approval, stormwater management improvement through development of hydromodification controls, groundwater recharge area protection, riparian habitat improvement in urban and agricultural areas, and elimination reduction in pollution from agricultural discharges. These objectives will be developed in collaboration with the SNMP Stakeholder Committees and the Stakeholder Steering Committee. The RWMG will, to the extent practical, work with stakeholders to integrate the objectives so they apply to the entire region. Performance metrics for the objectives will be developed and they will be prioritized according to the method developed in Task 3.2. The objectives will be included the Objectives section of the updated IRWM Plan.

Deliverables

- Recycled water and stormwater management recharge and reuse objectives for the IRWM Plan.

The basin managers/RWMG will continue salt and nutrient management planning beyond the IRWM Update project. Additional activities are listed below:

Develop Implementation Projects, Programs, and Policies: Potential remedies for areas that may be impacted by elevated concentrations of salts and nutrients will be identified and discussed. Recommended implementation projects may include: salt source control (i.e., water softeners), improved irrigation and fertilization management practices, improved feedlot management, irrigation source water changes, enhanced recharge of stormwater, and management strategies that might be undertaken at a basin and/or regional level. Implementation projects will be reviewed for inclusion in the IRWM Plan according to the IRWM Project Review process. Updates to the IRWM project list will be completed according to the procedures that will be included in the updated IRWM Plan. These implementation projects will contribute to addressing the region's priorities related to salt management and agricultural water quality.

Conduct Anti-Degradation Analysis: After the source analysis has been performed and implementation projects have been developed, each basin manager will consult with the Regional Water Quality Control Board and determine if an anti-degradation analysis is necessary. If the source analysis and implementation measures show that degradation of high quality water will occur, then the basin manager will, in consultation with the Regional Water Quality Control Board, perform an analysis of whether this degradation would satisfy the requirements of State Water Resources Control Board Policy 68-16 by protecting beneficial uses and maintaining water quality consistent with

the maximum benefit to the people of the State. Based on the result of the anti-degradation analysis, additional implementation projects may be necessary.

Develop Groundwater Monitoring Plans and Conduct CEC Monitoring

Based on results of prior tasks, Groundwater Monitoring Plans shall be designed to fill data gaps, monitor the salt and nutrient balance and source loading, and provide ongoing assessment of salt and nutrient issues throughout the study area. Data gap analysis shall include analytes (such as Chemicals of Emerging Concern) and potential need for additional monitoring wells. Particular focus shall be paid to using existing wells and monitoring programs to assess groundwater quality, particularly near and downgradient of areas identified to be most at-risk for high salt/ nutrient loading and degradation.

The monitoring plans shall include recommendations regarding the frequency of sampling and how the frequency and number of wells may be modified through time as additional data are collected. Chemicals of emerging concern (CECs) shall be monitored per State Water Board policy and following the recommendations of the CEC Blue Ribbon Panel, which issued a final report on June 25, 2010.

The Groundwater Monitoring Plans will provide for reporting data to the State consistent with the IRWM Plan Data Management section.

Prepare Salt and Nutrient Management Plans and Submit to Regional Water Quality Control Board

The outline and content of the SNMPs shall be developed as part of the collaborative stakeholder process. Much of the SNMPs will be based on work completed during prior tasks. In addition, the SNMPs will include an implementation plan and schedule and performance measures. They will describe any planned public outreach and education activities, provide an organizational structure for implementation, and discuss costs and funding opportunities. The basin managers shall present the SNMPs to Regional Water Quality Control Board.

The SNMPs may provide a basis for changes in the Regional Board's Basin Plan. Any changes in the Basin Plan will be considered and addressed through the IRWM Plan's adaptive management procedures.

18. Implement local watershed planning process – College Lake Improvement and Watershed Management

The RWMG will work with the County of Santa Cruz to review and update existing investigations in order to develop and incorporate into the IRWMP a set of management measures for College Lake that maximizes benefits for water supply and flood management while preserving steelhead migration and supporting other environmental and community benefits. This will help address a major deficiency in the current IRWMP, which does not presently provide for a sustainable water supply, and will also help the updated Plan address the California Water Plan resource management strategies of Conveyance, System Reoperation, Conjunctive Management and Groundwater Storage, Surface Storage, Matching Water Quality to Use, Pollution Prevention, Improve Flood Management, Agricultural Lands Stewardship, Ecosystem Restoration, Water-Dependent Recreation, Watershed Management, Wetlands Enhancement & Creation, and Irrigated Land Retirement.

This project contributes to several Statewide Priorities (Program Preferences) including: Drought Preparedness, Expand Environmental Stewardship, Practice Integrated Flood Management, and Protect Surface Water and Groundwater Quality. This project also contributes to Ecosystem Restoration, which is an objective of the CALFED Bay delta program (Program Preference). The project also helps achieve a program preference to integrate water management with land use planning.

Project Background

College Lake is located approximately one mile north of the Watsonville city limits and is a naturally occurring seasonal lake that receives surface water inflow from the Green Valley, Casserly and Hughes Creek subwatersheds. These streams drain approximately 11,000 acres of range, rural residential and croplands. Outflows from the lake naturally flow downstreat to Salsipuedes Creek in the winter months. Downstream from College Lake, Corralitos Creek converges with Salsipuedes Creek, which flows into the Pajaro River and ultimately into the Monterey Bay. An existing low dam on the south side of the lake causes inundation of approximately 260 acres of the basin. In the spring, the lake basin is typically pumped dry to allow farming to take place during the summer months. This practice continues today and a majority of the lakebed is used for row crops including vegetables, strawberries, flowers, raspberries, and grapes. Both the Pajaro Valley Water Management Agency (PVWMA) and the U.S. Corps of Engineers (USCOE) are evaluating College Lake for future water supply and flood control projects, respectively. The PVWMA is considering development of the “Expanded College Lake” facilities, which calls for increasing the reservoir elevation of the lake and increasing the area of inundation to 420 acres. Stored water would be treated and available as a local source of agricultural supply and possibly used for the Aquifer Storage and Recovery project (ASR).

PVWMA conducts routine water quality monitoring of the surface water inflow into College Lake which indicates elevated concentrations of nitrogen, suspended solids, pathogenic bacteria and other potential pollutants, such as soluble pesticides.

Casserly Creek supports the state and federally listed south-central CA steelhead. Erosion, sedimentation and elevated levels of nitrates are some of the most significant causes of surface water quality degradation and fishery declines throughout the watershed. There is a need to provide a channel suitable for upstream and downstream anadromous fish migration through the College Lake to enhance overall salmonid production and survival in conjunction with other uses of the Lake.

There are good opportunities for restoration of wetland and riparian habitat in the College Lake area, in conjunction with water storage facilities and other amenities such as a trail system. Benefits could include:

- Improving water quality
- Flood flow attenuation
- Wildlife habitat enhancement
- Restoration of historical wetlands and riparian habitat
- Creation of aesthetic and recreation areas
- Research and environmental education
- Water storage and supply

Task 18.1 Summarize Previous Work

Review and summarize previous design studies and investigations regarding management of College Lake and its watershed.

Task 18.2 Evaluate Water Supply Alternatives

Describe possible water supply alternatives, including: estimated yield and timing of water availability; infrastructure improvements needed; water rights, permits, and legal agreement needed; cost estimates; and, mitigation measures needed. College Lake water supply components include, but may not be limited to:

- Reconstruction of a dam and enlarged reservoir;
- Increased storage through diversion of Pinto Lake, Pajaro River or other sources
- Groundwater recharge of lake water with either injection wells or by “in-lieu” recharge in which the water would be used locally, replacing groundwater pumping;
- Conveyance of lake water to the coastal distribution system.

Task 18.3 Evaluate Flood Management Alternatives

The Army Corps of Engineers (ACOE) Pajaro River Flood Damage Reduction Project General Reevaluation Report, July 2010 has identified several tributary alternatives that propose to

operate College Lake as a detention basin, including construction of an earthen detention levee structure and floodwall with a passive gated outlet structure that will limit outflows to 2,500 cfs during the 100-year project design conditions, and realignment of Pinto Creek so that it empties into College Lake behind the containment levee. The proposed planning project will evaluate additional alternative approaches which could provide flood benefit in conjunction with benefits for water supply storage and environmental enhancements.

Task 18.4 Describe Benefits to IRWM Plan Implementation

Describe opportunities for linkages to other IRWM Plan objectives, including steelhead migration and rearing, water quality enhancement, wetland enhancement, and recreation education and other community benefits.

- The streams that drain into College Lake are utilized to some extent by steelhead and the lake serves as a migration route and potential rearing habitat. The extent of this utilization will be evaluated and information developed to support the design of necessary mitigation measures for water supply and flood management alternatives. It is anticipated that this may include the design of a conveyance channel through the impounded area and/or fish ladders over the dam.
- There is potential for restoration of wetland areas around the periphery of the lake which could provide for water quality improvement as well as mitigate other impacts of operation of the lake as a water supply and flood management project. Conceptual designs of wetland restoration projects will be prepared. Restoration of wetland areas could also serve as mitigation for other water supply, flood control or development projects.
- Opportunities and conceptual designs for trails, recreation areas, and research and educational areas will be developed.

Task 18.5 Develop mechanism for watershed management

Substantial erosion, sedimentation, and agricultural runoff problems exist in the watershed and ultimately affect beneficial uses of College Lake. There is need for a clear mechanism that allows landowners and land managers to work together to improve watershed functions to support the ultimate uses of College Lake. This component will include development of recommendations to address those issues. Key watershed management issues to be addressed include:

- Coordination and implementation of ditch maintenance & drainage improvements;
- Coordinated permitting of environmental enhancement projects;
- Technical assistance and project coordination;
- Development of safe harbor agreements and other incentives;
- Conservation easements.

Task 18.6 Contribute to Updates of IRWM Plan

Identify the preferred alternative, develop an implementation plan, and include it and other supporting components in relevant sections of the IRWM Plan Update. Identify conflicts and

complements among the various options described. In consultation with stakeholders select the options which optimize water supply and flood management while preserving steelhead migration and supporting other environmental and community benefits. Develop an implementation and financing plan to finance construction and operation of plan components, and compensate property owners for acquisition of land or easements necessary for implementation. Update relevant sections of the Pajaro IRWM regarding water supply, flood management and environmental enhancement.

Deliverables:

- Watershed Management Plan for College Lake that will identify additional projects and program to consider in the IRWM Plan, impacts and benefits, financing plan, and performance measures

19. Engage Stakeholders in IRWM Plan Update

Task 19.1 IRWM Plan Update workshops

The RWMG and/or its IRWM Plan update partners will conduct at least six stakeholder workshops during IRWM Plan Update process. The stakeholder workshops will be announced using email and newspapers. Stakeholders will be encouraged to distribute the notices to agencies and organizations with whom they collaborate. The RWMG and/or its partners will prepare meeting materials for distribution prior to the meetings and make meeting summaries available to stakeholders. The workshops will be rotate across the region. At a minimum, the workshops will be held on the following topics:

- Region Description and Resource Management Strategies
- Plan Objectives
- Project Review Process and Project List
- College Lake water supply and flood management options
- Technical Information, such as plan performance and monitoring, DMS, financing, and technical analysis
- Draft IRWM Plan

Deliverables:

- Meeting materials and summaries of stakeholder workshops

Task 19.2 Engage the Stakeholder Steering Committee in the IRWM Plan Update

The RWMG anticipates meeting quarterly with the Stakeholder Steering Committee. The meetings will focus on receiving feedback and input from the Stakeholder Steering Committee on strategic topics such as RMS, Objectives, the Project Review Process, and stakeholder engagement. The Stakeholder Steering Committee will also be invited to provide more technical feedback on topics like monitoring and data management. The Stakeholder Steering

Committee, given its diverse composition, will also support coordination with other agencies and entities within the watershed.

Deliverables:

- Meeting materials and summaries for quarterly meetings

Task 19.3 Conduct Salt/Nutrient Management Plan Workshops

Each basin manager will conduct at least three stakeholder workshops (nine workshops in total) intended to help gather input from stakeholders and provide a forum for discussion of salt/nutrient issues. The basin manager shall prepare an agenda and slides for the workshop, and guide the stakeholder discussion and technical presentation.

SNMP Workshop 1: Introduction and Collaborative Approach. During this workshop, the basin manager will present an overview of the Recycled Water Policy and relevant drivers, the proposed process for Plan development and Plan elements, constituents that will be assessed, and an overview of our current understanding regarding salt and nutrient sources in the basin. The basin manager shall prepare maps and related graphics illustrating the study area and our current understanding of the land cover and salt/nutrient sources in the basin. Stakeholders shall be asked for input on these items including relevant technical data they may have.

This workshop will be also be used to establish the collaborative process for preparing the salt and nutrient management plan. This effort is currently scoped with the basin managers performing the technical analysis with the stakeholders contributing information and acting as reviewers to the process. The workshop will allow the group to discuss this assumption and determine the best way to develop a collaborative approach.

SNMP Workshop 2: Source Analysis. Stakeholders will be asked to review source analysis, including the salt and nutrient balance and assimilative capacity analysis.

SNMP Workshop 3: Goals and Objectives. Stakeholders will help develop goals and objectives addressing, as appropriate based on the previous work, water recycling, stormwater recharge/reuse, and other salt and nutrient contributors. The goals and objectives may include the sustainable salt/water balance, water recycling goals, storm water recharge goals, institutional controls, and management practices.

The basin managers will conduct additional workshops outside of the scope of the IRWM Plan Update project. These workshops will, however, be part of ongoing stakeholder involvement in IRWM Plan development and implementation. The additional workshops will address groundwater monitoring plans for the SNMPs, implementation plans, and draft Salt and Nutrient Management Plans.

Workshop notification, location coordination, sign-in, and minutes shall be coordinated and managed by each basin manager. Each basin manager shall endeavor to provide workshop materials, including agenda and draft documents, to the stakeholders at least one week in advance of the workshop (up to 2 weeks in advance for the agenda).

Deliverables:

- Meeting materials and summaries for nine workshops

Task 19.4 Public Notices

The RWMG will publish a notice of intent to update the IRWM Plan in accordance with §6066 of the Government Code. Upon completion of the update IRWM Plan, the RWMG will publish a notice(s) of intent to adopt the Plan in a public meeting of each RWMG member's governing Board.

Deliverables:

- Public notices

20. Engage Disadvantaged Communities in IRWM Plan Update

The Department of Water Resources (DWR) defines DACs as communities with an annual median household income that is less than 80 percent of the State-wide annual Median Household Income (MHI), which was $47,493 according to the 2000 US Census (i.e., less than $37,994), and/ or communities with American Indian or Alaskan Native, Asian or Pacific Islander, Black, and/ or Hispanic/ Latino populations exceeding 50% of the total population. However, the RWMG recognizes that even within DAC communities, there may be populations who may be more severely disadvantaged and may require additional support. In addition, the RWMG strives to understand other ways in which disadvantaged communities are rendered invisible, for example, low-income communities that may live within wealthier ones, or communities that are not documented. Identifying these "hidden" disadvantaged communities will be part of the proposed DAC outreach effort.

This task will be performed by the Environmental Justice Coalition for Water (EJCW), under the supervision of the Northern California Program Director and the Central Coast Organizer. EJCW is a statewide coalition comprised of over 70 community-based and non-profit member organizations working on water justice issues that impact low-income communities and communities of color.

EJCW has been participating in the Pajaro River Watershed IRWM Plan Stakeholder meetings to provide input on the consideration of water-related needs and priorities of DACs in the IRWM planning process. As part of the Plan update, the RWMG would like to extend the coverage and improve effectiveness of outreach efforts to DACs and Native American tribal communities in the Pajaro region with assistance from EJCW.

Specifically in the Pajaro River areas, EJCW will work to identify DACs in the area with ongoing water issues, provide basic water education and advocacy services, and develop a clear sense of the community water concerns and potential solutions in these communities. Outreach will begin in areas that have already been identified as DACs, such as Watsonville, and the town of Pajaro. As explained in the Pajaro River IRWM Plan, although the town of Pajaro does not qualify as a DAC based on the definition of being 80% of the state Median Household Income (MHI), the Median Family Income (MFI) in Pajaro is much lower, at 70% of the state's MFI. The reason for this is that poverty and high cost of living have forced a larger family size and hence it appears that the MHI is high, while indeed the region is a DAC.

A special effort will be made to mobilize communities in the region to participate strategically in regional IRWMP meetings, and EJCW will advocate for the development of water infrastructure projects that can be included in the IRWMP (in particular drinking water and wastewater projects, but also including other projects), due to a recognized need in that area. EJCW has already made contact with several of these communities, and has a bilingual Organizer located in the Central Coast who has begun outreach to various communities in the region.

This task satisfies two Program Preferences as specified in PRC §75026(b):

- Address critical water supply or water quality needs of disadvantaged communities within the region.
- Address Statewide priorities, including "Ensure equitable distribution of benefits," which includes specifically:
    - Increase the participation of small and disadvantaged communities in the IRWM process.
    - Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations.
    - Contain projects that address safe drinking water and wastewater treatment needs of DACs.

Specifically, the DAC outreach in the Pajaro IRWMP will strive to accomplish the following objectives:

1. Develop an inventory of disadvantaged communities and Native American tribes in the region and conduct an assessment of water needs.
2. Engage and integrate DACs effectively into the Bay Area IRWMP by developing mechanisms to address priority DAC needs and support integrated solutions to DAC needs within the Bay Area IRWMP.
3. Develop conceptual project descriptions and cost estimates to include in the Bay Area IRWMP and strive towards ensuring that DAC projects receive funding.

The tasks involved in engaging DACs in the IRWM process are:

Task 20.1 Review and Supplement Inventory of DACs and Native American tribes identified in the Pajaro IRWM region and Develop Outreach Plan

This task will involve reviewing the maps showing locations of disadvantaged communities, developed in Task 2.3 *Update and develop new maps*, and conducting an assessment of water supply, water quality or other water-related needs or environmental justice concerns for each identified DAC. Results of the water needs assessment will be summarized and provided to the RWMG for incorporation into the Region Description update. A detailed Outreach Plan will be developed based on identified DAC areas and issues to conduct targeted, respectful and effective outreach.

Deliverables:

- Results of needs assessment and detailed Outreach Plan

Task 20.2 Conduct Focused Outreach Activities to Integrate DAC members and tribes into the IRWM Planning Process

The objective of this task is to engage and integrate DACs effectively into the IRWM planning process by developing mechanisms to address priority DAC needs and support integrated solutions to DAC needs within the IRWM Plan. This task will be conducted through the following methods:

DAC-focused Outreach Activities

- Establish relationships with DACs and Native American tribal communities
- Conduct bilingual meetings with community residents
- Identify and contact non-profit and community-based organizations in DAC areas and conduct informational meetings on the IRWM planning process to create allies and partners for DAC water needs
- Identify and contact local elected officials representing DAC and tribal needs and provide them with information on the IRWM planning process and Plan update
- Identify and contact small community water systems and domestic well-owners and provide them with information and possible solutions to water needs
- Develop linguistically and culturally appropriate outreach materials to inform communities of general water issues, the IRWMP, and possible funding opportunities.
- Conduct presentations at local events, community forums, fairs, etc. to educate members of disadvantaged communities about the IRWM planning process and the Pajaro River IRWMP
- Host a Pajaro Valley Strategy Meeting

Deliverables:

- Meetings with non-profit and community-based organizations.
- Relationships created with small water systems and domestic well owners in the Pajaro River region.

- Fliers, brochures and other outreach materials produced in IRWMP, water contamination and other issues, translated to Spanish and distributed to communities and allies.
- Catalog of identified DAC and tribal needs.
- Pajaro Valley Strategy Meeting.
- Summarize outreach efforts and disseminate outcomes from workshops and meetings to communities through written reports and presentations at meetings.

Integration of DAC members and tribes into the Pajaro River IRWMP process

- Foster participation of DAC and tribal leaders in meetings by providing assistance on inclusion in the process, understanding goals and objectives, encouraging cultural sensitivity of IRWMP, creating a fair ranking process, etc.
- Identify and contact DAC and tribal leaders to provide information on the IRWM planning process and to seek input on the Plan update, and to convey their input at Stakeholder meetings if they are unable to attend.
- Provide interpretation for DAC members at key IRWM meetings as needed.

Task 20.3 Provide Community Assistance for Project Preparation

This task involves the following:

- Provide assistance to DAC and tribal leaders to identify specific projects that address critical water supply, water quality, wastewater, and other water-related needs
- Together with DAC and tribal leaders, select subset DAC and tribal entities for assistance with project development
- Promote water and resource conservation projects and watershed projects among DACs and tribal communities

Deliverables:

- List of DAC projects selected for project development assistance

Task 20.4 Provide Technical Assistance for Project Preparation

This task involves the following:

- Leverage DWR technical assistance funds for DACs and tribes to prepare projects for submission into the IRWMP plan to apply for funds for DAC and tribal projects,
- Hire consultant engineers as needed to provide technical assistance to communities in order to develop their project applications for the IRWMP,
- Prepare technical assessment, develop initial feasibility studies for projects,
- Develop project descriptions that include the following components:
    A. *How the project contributes to the IRWM objectives*
    B. *How the project is related to resource management strategies*
    C. *Technical feasibility of the project*
    D. *Specific benefits to critical DAC water issues*
    E. *Specific benefits to critical water issues for Native American tribal communities*
    F. *Environmental Justice Considerations*

G. *Project Costs and Financing*
H. *Economic Feasibility*
I. *Project Status*
J. *Strategic considerations for IRWM Plan Implementation*
K. *Purposefully implementing projects with multi-benefits*
L. *Contribution of the project in adapting to the effects of climate change*
M. *Contribution of the project in reducing GHG emissions as compared to project alternatives*

- Finalize a subset of projects, conduct project development, preparation and submission to IRWMP

Deliverables:

- Three to five community projects developed for inclusion in the Pajaro River IRWM Plan.

21. Compile Updated IRWM Plan

The RWMG will compile all the information prepared or compiled in the prior tasks into a single draft updated IRWM Plan. The RWMG will make the draft update IRWM Plan available, in electronic and written formats, to all stakeholders for review. At least publically noticed workshop will be conducted to review and discuss the draft Plan. The RWMG will incorporate review comments to extent possible and provide a response to all comments received. The responses to comments will be provided prior to presenting the Plan for adoption to the Boards of the RWMG agencies. The RWMG agencies will present the Plan to their Boards with a recommendation for adoption.

Deliverables:

- Draft updated IRWM Plan
- Final updated IRWM Plan

22. Project Management

San Benito County Water District (SBCWD) will act as Grant Administrator for the RWMG. SBCWD will follow Appendix E: Guidelines for Grantees and Borrowers in the August 2010 Guidelines to ensure that records are maintained for each funded project. The tasks associated with Grant Management are listed below.

Task 22.1: Ongoing Grant Management

SBCWD will perform ongoing grant management during the two year Plan update process, including calls and meetings with the State and record keeping.

Deliverables:

- Calls and meetings with the State
- Record Keeping

Task 22.2: Agreements

SBCWD will draft and finalize grant agreements with the State and project proponents. SBCWD and project proponents will develop consultant agreements, as necessary, consistent with their individual procurement processes and consistent with State requirements.

Deliverables:

- Final agreement with the State
- Final agreements with project proponents that are contributing to implementing this Work Plan
- Final agreements with consultants

Task 22.3: Quarterly Reports

SBCWD will prepare quarterly reports and invoices for the State.

Deliverables:

- Quarterly reports
- Grant invoices

Task 22.4: Final Report

SBCWD will prepare a final report to the State.

Deliverables:

- Final report

Pajaro Valley Watershed Integrated Regional Water Management Region Proposition 84 Planning Grant Application:
Budget

		Non-State Share (Funding Match $)													Grant Request (DWR Grant Request)		Total	% Funding Match
		SBCWD		SCVWD		PVWMA		FPA		County of Santa Cruz		EJCW		TOTAL	Task Hours	Task Budget		
		local or federal match	"in kind" contribution[4]	local or federal match	"in kind" contribution[4]	local or federal match	"in kind" contribution[4]	local or federal match	"in kind" contribution	local or federal match	"in kind" contribution	local or federal match	"in kind" contribution					
Work Items																		
Task 1 Update Governance Section		**$0**	**$1,680**	**$0**	**$5,400**	**$0**	**$1,680**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$8,760**	**40**	**$7,600**	**$16,360**	
1.1	Formalize Stakeholder Steering Committee		$960		$2,400		$960							$4,320	8	$1,520	$5,840	284%
1.2	Develop Communication Plan		$240		$2,400		$240							$2,880	12	$2,280	$5,160	126%
1.3	Document Adaptive Approach for Future Revisions to the Plan		$240		$300		$240							$780	12	$2,280	$3,060	34%
1.4	Compile Governance Section		$240		$300		$240							$780	8	$1,520	$2,300	51%
Task 2 Update Region Description		**$0**	**$360**	**$0**	**$450**	**$0**	**$360**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,170**	**64**	**$12,160**	**$13,330**	
2.1	Update Region Description		$360		$450		$360							$1,170	32	$6,080	$7,250	19%
2.2	Compile Expanded Region Description Information													$0	8	$1,520	$1,520	0%
2.3	Update and Develop New Maps in the Region Description													$0	24	$4,560	$4,560	0%
Task 3 Update Plan Objectives		**$0**	**$840**	**$0**	**$1,050**	**$0**	**$840**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,730**	**108**	**$20,520**	**$23,250**	
3.1	Draft Updated Objectives		$600		$750		$600							$1,950	60	$11,400	$13,350	17%
3.2	Prioritize Objectives		$240		$300		$240							$780	40	$7,600	$8,380	10%
3.3	Finalize Revised Objectives and Objectives Prioritization													$0	8	$1,520	$1,520	0%
Task 4 Develop Resource Management Strategies Sections		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**40**	**$7,600**	**$7,600**	
4.1	Document process used to consider RMS in the Plan update													$0	24	$4,560	$4,560	0%
4.2	Identify RMS that will be implemented and identify gaps													$0	16	$3,040	$3,040	0%
Task 5 Prepare Project Review and Selection Section		**$0**	**$480**	**$20,000**	**$600**	**$0**	**$480**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$21,560**	**164**	**$31,160**	**$52,720**	
5.1	Document process for submitting a project for inclusion in the IRWM Plan													$0	8	$1,520	$1,520	0%
5.2	Update Project Review Process		$480		$600		$480							$1,560	80	$15,200	$16,760	10%
5.3	Update Project List			$20,000										$20,000	60	$11,400	$31,400	175%
5.4	Develop and Implement Procedure for Communicating the List of Selected Projects													$0	8	$1,520	$1,520	0%
5.5	Compile Project Review and Selection Section													$0	8	$1,520	$1,520	0%
Task 6 Update Impacts and Benefits Section		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**56**	**$10,640**	**$10,640**	
6.1	Review and update screening-level discussion of impacts and benefits													$0	36	$6,840	$6,840	0%
6.2	Identify and analyze direct impacts and benefits affecting DAC, EJ concerns and Native American tribal communities													$0	12	$2,280	$2,280	0%
6.3	Develop benchmark for assessing impacts and benefits													$0	8	$1,520	$1,520	0%
Task 7 Update Plan Performance and Monitoring Section		**$0**	**$240**	**$0**	**$300**	**$0**	**$240**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$780**	**56**	**$10,640**	**$11,420**	
7.1	Review and Update Institutional Structure for IRWM Implementation Evaluation													$0	8	$1,520	$1,520	0%
7.2	Explain how IRWM implementation will be tracked with a data management system (DMS) and who will be responsible for maintaining the DMS.													$0	8	$1,520	$2,300	0%
7.3	Draft Plan Performance and Monitoring Section		$240		$300		$240							$780	40	$7,600	$7,600	10%
Task 8 Update Data Management Section		**$0**	**$480**	**$0**	**$600**	**$0**	**$480**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,560**	**160**	**$30,400**	**$31,960**	
8.1	Review Data Needs													$0	40	$7,600	$7,600	0%
8.2	Assess Available Data Programs													$0	40	$7,600	$7,600	0%
8.3	Establish DMS Protocol		$480		$600		$480							$1,560	80	$15,200	$16,760	10%
Task 9 Update Finance Section		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**40**	**$7,600**	**$7,600**	
9.1	Draft IRWMP Finance Section and Finance Table													$0	40	$7,600	$7,600	0%
Task 10 Update Technical Analysis Section		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**52**	**$9,880**	**$9,880**	
10.1	Develop Technical Information Source Matrix													$0	24	$4,560	$4,560	0%
10.2	Identify Data Gaps													$0	12	$2,280	$2,280	0%
10.3	Develop Technical Analysis and Methods													$0	8	$1,520	$1,520	0%
10.4	Prepare Updated Technical Analysis Section													$0	8	$1,520	$1,520	0%
Task 11 Update Relation to Local Water Planning Section		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**36**	**$6,840**	**$6,840**	
11.1	Update description of IRWM Plan relationship with local planning documents													$0	36	$6,840	$6,840	0%
Task 12 Update Relation to Local Land Use Planning Section		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**32**	**$6,080**	**$6,080**	
12.1	Identify links between the IRWM Plan and local land use planning													$0	16	$3,040	$3,040	0%
12.2	Describe he current relationship between local land use planning entities and water management entities													$0	8	$1,520	$1,520	0%
12.3	Describe future efforts to establish a proactive relationship between land use planning and water management													$0	8	$1,520	$1,520	0%
Task 13 Update Stakeholder Involvement Section		**$0**	**$960**	**$0**	**$1,200**	**$0**	**$960**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,120**	**40**	**$7,600**	**$10,720**	
13.1	Expand description of the Stakeholder Steering Committee													$0	8	$1,520	$1,520	0%
13.2	Elaborate on Stakeholder Involvement Tactics		$960		$1,200		$960							$3,120	16	$3,040	$6,160	103%
13.3	Elaborate on Stakeholder Involvement in Decision-making Process													$0	8	$1,520	$1,520	0%
13.4	Update Stakeholder Involvement Section													$0	8	$1,520	$1,520	0%
Task 14 Update Coordination Section		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**12**	**$2,280**	**$2,280**	
14.1	Update Coordination Section to ensure consistency with Guidelines													$0	12	$2,280	$2,280	0%
Task 15 Perform Climate Change Analyses		**$0**	**$480**	**$0**	**$600**	**$0**	**$480**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,560**	**136**	**$25,840**	**$27,400**	
15.1	Assess Climate Change Impacts and Regional Vulnerabilities													$0	16	$3,040	$3,040	0%
15.2	Address Region Vulnerabilities in Plan Objectives		$240		$300		$240							$780	16	$3,040	$3,820	26%
15.3	Identify and Develop Regional Adaptation Strategies		$240		$300		$240							$780	16	$3,040	$3,820	26%
15.4	Prepare GHG Emissions Analysis for Implementation Projects													$0	40	$7,600	$7,600	0%
15.5	Identify Triggers for Changing or Amending Plan in Response to Climate Change													$0	24	$4,560	$4,560	0%
15.6	Identify Collaboration Opportunities													$0	16	$3,040	$3,040	0%
15.7	Compile Climate Change Information													$0	8	$1,520	$1,520	0%
Task 16 Watershed Study to Address Key Data Gaps[1]		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$68,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$68,000**	**590**	**$112,100**	**$180,100**	
16.1	Program to Collect Sediment Concentration and Flow Data on the Pajaro and San Benito Rivers above their Confluence							$38,000						$38,000	390	$74,100	$112,100	51%
16.2	Update, Calibrate, and Re-Run the San Benito River Sediment Transport Model							$30,000						$30,000	200	$38,000	$68,000	79%

Pajaro Valley Watershed Integrated Regional Water Management Region Proposition 84 Planning Grant Application:
Budget

		Non-State Share (Funding Match $)												Grant Request (DWR Grant Request)		Total	% Funding Match
		SBCWD		SCVWD		PVWMA		FPA		County of Santa Cruz		EJCW		TOTAL	Task Hours	Task Budget		
		local or federal match	"in kind" contribution[4]	local or federal match	"in kind" contribution[4]	local or federal match	"in kind" contribution[4]	local or federal match	"in kind" contribution	local or federal match	"in kind" contribution	local or federal match	"in kind" contribution					
Work Items																		
Task 17 Perform Salt and Nutrient Management Planning		**$30,000**	**$0**	**$10,000**	**$21,600**	**$10,000**	**$4,080**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$75,680**	**1390**	**$264,100**	**$339,780**	
17.1	Develop Salt and Nutrient Management Planning Stakeholder Committees in Each Study Area				$1,200		$960							$2,160	24	$4,560	$6,720	47%
17.2	Document Conceptual Models	$12,000		$5,000	$9,600	$6,000	$1,920							$34,520	360	$68,400	$102,920	50%
17.3	Identify Salt and Nutrient Sources	$8,000				$1,000	$240							$9,240	120	$22,800	$32,040	41%
17.4	Salt and Nutrient Loading Analysis	$10,000		$5,000	$4,800	$3,000	$960							$23,760	450	$85,500	$109,260	28%
17.5	Assimilative Capacity Estimate				$4,800									$4,800	400	$76,000	$80,800	6%
17.6	Develop or Update Objectives Related to Recycled Water, Stormwater recharge and reuse, and other salt and nutrient management related issues				$1,200									$1,200	36	$6,840	$8,040	18%
Task 18 Implement Local Watershed Planning Process- College Lake Improvement and Watershed Management[2]		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$75,000**	**$65,000**	**$0**	**$0**	**$140,000**	**1211**	**$230,090**	**$370,090**	
18.1	Summarize Previous Work										$10,000			$10,000	10	$1,900	$11,900	526%
18.2	Evaluate Water Supply Alternatives									$25,000				$25,000	586	$111,340	$136,340	22%
18.3	Evaluate Flood Management Alternatives									$50,000	$20,000			$70,000	120	$22,800	$92,800	307%
18.4	Describe Benefits to IRWM Plan Implementation										$15,000			$15,000	350	$66,500	$81,500	23%
18.5	Develop mechanism for watershed management										$10,000			$10,000	60	$11,400	$21,400	88%
18.6	Contribute to Updates of IRWM Plan										$10,000			$10,000	85	$16,150	$26,150	62%
Task 19 Engage Stakeholders in IRWM Plan Update		**$0**	**$5,280**	**$25,000**	**$6,600**	**$0**	**$5,280**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$42,160**	**396**	**$75,240**	**$117,400**	
19.1	IRWM Plan Update workshops		$1,920	$25,000	$2,400		$1,920							$31,240	100	$19,000	$50,240	164%
19.2	Engage the Stakeholder Steering Committee in the IRWM Plan Update		$1,920		$2,400		$1,920							$6,240	64	$12,160	$18,400	51%
19.3	Conduct Salt/Nutrient Management Plan Workshops		$1,440		$1,800		$1,440							$4,680	216	$41,040	$45,720	11%
19.4	Public Notices													$0	16	$3,040	$3,040	0%
Task 20 Engage Disadvantage Communities in IRWM Plan Update[3]		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$21,084**	**$21,084**	**0**	**$70,000**	**$91,084**	
20.1	Review and Supplement Inventory of DACs and Native American tribes identified in the Pajaro IRWM region and develop Outreach Plan												$10,000	$10,000		$4,000	$14,000	250%
20.2	Conduct Focused Outreach Activities to Integrate DAC members and tribes into the IRWM Planning Process												$11,084	$11,084		$29,000	$40,084	38%
20.3	Provide Community Assistance for Project Preparation												$0	$0		$12,000	$12,000	0%
20.4	Provide Technical Assistance for Project Preparation												$0	$0		$25,000	$25,000	0%
Task 21 Compile Updated IRWM Plan		**$0**	**$1,920**	**$0**	**$2,400**	**$0**	**$1,920**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,240**	**40**	**$25,000**	**$31,240**	
21	Compile Updated IRWM Plan		$1,920		$2,400		$1,920							$6,240	40	$25,000	$31,240	25%
Task 22 Project Management		**$0**	**$12,000**	**$15,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$27,000**	**120**	**$22,800**	**$49,800**	
22.1	Ongoing Grant Management		$7,200	$5,000										$12,200		$0	$12,200	NA
22.2	Agreements		$4,800	$5,000										$9,800		$0	$9,800	NA
22.3	Quarterly Reports			$5,000										$5,000	80	$15,200	$20,200	33%
22.4	Final Report													$0	40	$7,600	$7,600	0%
TOTALS:		**$30,000**	**$24,720**	**$70,000**	**$40,800**	**$10,000**	**$16,800**	**$68,000**	**$0**	**$75,000**	**$65,000**	**$0**	**$21,084**	**$421,404**	**1156**	**$996,170**	**$1,417,574**	42%

Notes:

1. The costs for completing the Task 16 Watershed Study were based on a fee estimate developed by a consulting firm. This firm completed earlier phases of the study and is very familiar with the area, data needed, and level of effort required to complete the study. Attached is a memorandum summarizing the workplan, estimated fee, and schedule for completing the study. Also attached is a letter from the US Army Corps of Engineers expressing the federal interest in a study and the federal 50% cost match. It is important to note that only the first two tasks of the study are included in the IRWM Plan Update activities.
2. The costs for completing the Task 18 Local Watershed Planning Process were based on level of effort estimates from each of the agencies participating in the process. The estimates are based on the availability of a significant number of existing studies already prepared by one of the partner agencies, PVWMA. The non-state share is based on work completed since September 2008 on the effort and a commitment from the partner agencies to provide in-kind services through completion of the process.
3. The costs for completing Task 20 Engage Disadvantaged Communities were based on similar efforts throughout the State by the Environmental Justice Coalition for Water. The costs reflect some of the work that has already been done to identify, engage and support disadvantaged communities in the Pajaro River Watershed while recognizing that additional work must be done to meet the needs of these communities. The supporting budget documentation provided by EJCW is attached.
4. Hourly rates for "in kind" contribution for SBCWD and PVWMA are $120 per hour. Hourly rates for "in kind" contribution for SCVWD is $150 per hour.

Pajaro Valley Watershed Integrated Regional Water Management Region Proposition 84 Planning Grant Application:

Budget Supporting Information

1) Budget Summary Table
2) Letter from the US Army Corps of Engineers regarding cost sharing for Task 18: Watershed Study to Address Key Data Gaps (FPA Study)
3) Background Scope and Budget information for Task 18: Watershed Study to Address Key Data Gaps (FPA Study)
4) Environmental Justice Coalition for Water—Disadvantaged Communities Budget Description

Grant Request Totals	
Salt and Nutrient Management Plans (3 basins)	$305,140
Watershed Study to Address Key Data Gaps (FPA)	$112,100
College Lake Watershed Management (Santa Cruz)	$230,090
DAC Outreach and Engagement (EJCW)	$70,000
IRWM Plan Update	$278,840
Total request	**$996,170**

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

March 13, 2008

Viet REPLY TO
ATTENTION OF

Mr. Nick Papadakis
Executive Coordinator
Pajaro River Watershed Flood Prevention Authority
P.O. Box 809
Marina, California 93933

Dear Mr. Papadakis,

Thank you for your letter of February 25, 2008 stating the Pajaro Watershed Flood Prevention Authority's (FPA's) interest in participating in the Pajaro River Watershed Study (the study) as the non-Federal sponsor. We look forward to working with you and understand that your specific interests are currently along the San Benito River and that your role needs to be consistent with AB807.

Please note that, from the Corps's perspective, the scope of the study is still very open and is subject in large part to the desires of your organization as the local sponsor. The study can examine traditional Corps mission areas such as flood risk management and ecosystem restoration with a goal of identifying a Federal interest in implementation of projects. Alternatively, the study can be used to look at broader planning issues, including those where the Corps is less likely to be a cost-sharing participant in implementation, for example, ground-water recharge and water supply. The decision is your; so we will need to learn more about where you would like to see the study focus.

Unfortunately, we do not have funding in the current (Fiscal Year 2008) budget for this effort. However, if you would like, we can investigate nominal reprogramming of Federal funds to potentially accomplish a first phase scope (Project Management Plan) and the signing of a partnership agreement. This would be attempted as soon as practicable in anticipation of Federal and state appropriations in a subsequent fiscal year to begin the 50-50 cost-shared basin feasibility study in earnest. Please note that any reprogramming request would require approval of the Congressional Appropriations committee and that, absent appropriations, our involvement will need to be very limited.

Again, we look forward to partnering with you on this study. If you have any questions on appropriations or other matters, please do not hesitate to call me at 415-503-6822 or Nicole Ortega at 415-503-6734.

Sincerely,

Thomas R. Kendall
Chief of Planning Branch, ETS
U.S. Army Corps of Engineers

PWA
PHILIP WILLIAMS & ASSOCIATES, LTD
ENVIRONMENTAL HYDROLOGY
550 Kearny Street, Suite 900
San Francisco, California 94108-2404
TEL 415.262.2300 FAX 415.262.2303
www.pwa-ltd.com

DRAFT MEMORANDUM

Date: December 28th 2009

To: John Doughty

CC: Lidia Gutierrez and Bruce Leclergue

From: Andrew Collison

PWA Project #:

Subject: **Pajaro Watershed Flood Prevention Authority scope of work**

The following is a draft scope of services, deliverables list, schedule and fee estimate for completing additional watershed studies in the Pajaro River Watershed. The scope, fee, and schedule shall be used by the Pajaro River Watershed Flood Prevention Authority (FPA) to support the federal appropriations process with the Army Corps of Engineers and the pursuit of grant funding opportunities with the State of California to perform the additional watershed studies.

The FPA has completed several flood and sediment studies that provided insights into how sediment is eroded, transported and deposited in the Pajaro River watershed; however, these studies highlighted data gaps that are the subject of this scope of work. The additional studies will focus on developing a better understanding of sediment issues and the cost and benefits of solutions in the watershed. The additional studies and projects involve calculating and managing sediment load and peak flows from the upper watershed into the lower Pajaro River. The five recommended studies include:

1. Calibration of the San Benito River sediment transport model based on observed erosion between 1987 and 2000.
2. Establishing a program to collect sediment concentration and flow data on both the Pajaro River and the San Benito River above their confluence, so that an accurate sediment budget for the two river systems can be developed.
3. Performing an opportunities and constraints assessment for erosion reduction on the lower San Benito River (between Hollister and the confluence with the Pajaro River). The assessment will focus on arresting potential knickpoints that may migrate upstream, and on stabilizing the banks and bed of the San Benito River.
4. Development of a two-dimensional sediment transport model for the entire Lower Pajaro River Levee Reconstruction Project reach (from the Chittenden gage to the Pacific Ocean).
5. Performing an opportunities and constraints assessment for peak flow reduction on the San Benito River. The assessment will focus on identifying opportunities to detain water before it reaches the Pajaro River, reducing the flood peak for the downstream Lower Pajaro River Levee Reconstruction Project.

These items are described in more detail on the following pages.

1. UPDATE, CALIBRATE AND RE-RUN THE SAN BENITO RIVER SEDIMENT TRANSPORT MODEL

Phil Williams & Associates (PWA 2005) developed a one-dimensional hydraulic and sediment transport model (HEC-6T) for the San Benito River from a point 0.7 miles upstream of the confluence with the Pajaro River, to Lane Road in Hollister (11.5 miles upstream). The model was used to identify aggrading and eroding reaches and to assess sediment load from the San Benito River to the Pajaro River. The study identified several data gaps that this scope of work will fill:

- The model stopped short of the confluence with the Pajaro River due to a gap in high resolution topographic data between the Pajaro River and the downstream boundary of the San Benito River sediment transport model;
- An estimated sediment input had to be used at the upstream boundary due to the lack of data (a sediment rating curve) on the San Benito River or the Pajaro River upstream of the confluence to calibrate the model (there is sediment data from the USGS gage at Chittenden, downstream of the confluence); and
- Cross section data (from 1987 and 2000) are available that could be used to validate and potentially calibrate the model by comparing predicted and observed erosion and sedimentation trends, but this has not currently been performed.

Primary Objectives and Benefits

The model will allow the FPA to calculate sediment delivery from the San Benito River to the Lower Pajaro River more accurately. An accurate estimate of sediment delivery is needed to plan for and manage sediment within the flood prone area around Watsonville and Pajaro, and to prioritize sediment management actions in the upper watershed.

Scope of Work

1. Conduct topographic surveying of the confluence of the Pajaro and San Benito Rivers to extend the San Benito River sediment transport model to the confluence. The 2005 one-dimensional hydraulic and sediment transport model stopped 0.7 miles short of the confluence due to topographic data gaps. The consultant will carry out a topographic survey of the channel in this reach of the San Benito River, producing a cross section at least every 250 feet on average (assume 20 cross sections total).
2. Extend the existing sediment transport model to the confluence of the Pajaro River (total extent from the confluence of the Pajaro River to Lane Road, Hollister). The cross sections will be used to extend the existing HEC-6T model. The consultant may choose to convert the existing model from HEC-6T to HEC-RAS using the sediment transport module of HEC-RAS. The model shall be set up to simulate a movable bed system with a mixed particle size distribution (primarily sand and gravel).
3. Validate and calibrate the model using the observed changes in channel cross section between 1987 and 2000.

4. Re-run the model to calculate the sediment load from the San Benito River to the Pajaro River using continuous flow records from the USGS gage at Hollister from 1970 to the present.

Deliverables

- Topographic survey supplied in electronic form (AutoCAD)
- 20 cross sections for export to a hydraulic model (X, Z data in feet)
- HEC-RAS or HEC-6T hydraulic and sediment transport model with associated input and output files
- Draft and Final Technical Memo describing the model set up, calibration and validation using channel cross section data from 1987 to 2000, and simulation of conditions from 1970 to present. The memo should include estimates of annual sediment load from the San Benito River to the Pajaro River, identify trends if present, and identify areas of erosion and deposition in the river.

- Presentation of Draft Technical Memo to the FPA and the USACE at up to two meetings (additional meetings to be added as an optional extra task if required).

Estimated Duration

- Topographic Surveying – Three months from Notice to Proceed (NTP)
- Hydraulic model set up and simulation – Six months from NTP

Estimated Fee

- Topographic Survey ~$20,000
- Extend sediment transport model ~ $15,000
- Validate and calibrate based on historic topographic data ~ $15,000
- Re-run model to simulate period of record ~ $15,000
- Meetings and meeting preparation ~ $5,000
- **Total ~ $70,000**

2. A PROGRAM TO COLLECT SEDIMENT CONCENTRATION AND FLOW DATA ON BOTH THE PAJARO RIVER AND THE SAN BENITO RIVER ABOVE THEIR CONFLUENCE

Primary Objectives and Benefits

The data collection will allow the FPA to calculate relative sediment delivery rates from the Upper Pajaro River and the San Benito River to the Lower Pajaro River. An accurate estimate and partition of sediment yield is needed to plan for and manage sediment within the flood prone area around Watsonville and Pajaro, and to prioritize sediment management actions in the upper watershed.

Scope of Work

1. Install a flow gage on each of the Pajaro River and the San Benito River around Highway 101.
2. Develop a flow rating curve for the cross section.
3. Conduct automatic flow rate sampling (15 minute intervals) and necessary gage maintenance for a period of 3 years.
4. Conduct event-based sediment and flow sampling on the Pajaro River and the San Benito River upstream of the confluence to:
    a. Establish a sediment rating curve,
    b. Calculate sediment loadings, and
    c. Calculate relative sediment contributions from both rivers.

    The sampling should consist of suspended load (Total Suspended Sediment), bed load and discharge at a range of flows on both rivers.

Deliverables

- Two installed flow gages with depth sensor and data logger
- Technical Memo and presentation to FPA and USACE describing the flow rating curve and instrument set up for each site
- Flow data to be provided to the FPA quarterly within one month of the end of the quarter
- Annual Draft and Final Technical Memo with all flow and sediment transport data
- Annual presentation of results and conclusions to FPA and USACE

Estimated Duration

- Flow Gage Installation – Three months from NTP
- Technical Memo describing set up and rating curve – end of first rainy season (June, assuming project starts in fall or winter)

Estimated Fee

- Equipment purchase and installation ~ $20,000
- Yearly maintenance and monitoring ~ $45,000
- Event monitoring and rating curve development ~ $35,000 Technical Memo ~ $10,000
- **Total ~ $110,000 for 1st year, ~ $200,000 over 3 years**

3. OPPORTUNITIES AND CONSTRAINTS ASSESSMENT FOR EROSION REDUCTION ON THE SAN BENITO RIVER

The assessment will focus on arresting potential knickpoints that may migrate upstream, and on stabilizing the banks and bed of the San Benito River.

Primary Objectives and Benefits

The San Benito River is believed to be the main source of sediment that is restricting flood conveyance in lower Pajaro River, and thus sediment reduction in the San Benito River watershed has the potential to reduce flood damages downstream. This study will identify the main sediment sources within the watershed downstream of Hollister and identify conceptual alternatives and conceptual level cost estimates to treat and reduce sediment. This will allow cost-benefit comparisons to be made between treating sediment at source and removing sediment from the lower Pajaro River.

Scope of Work

1. Using the flow data at Hollister and data collected under the San Benito River sediment transport study (above), determine how much of the sediment transported from the San Benito River to the Pajaro River originates from upstream of Hollister and how much from downstream.
2. Based on the results of step 1, prioritize field and aerial photo assessments of major erosion sources that can be effectively treated to reduce sediment loading to the river. These sources are anticipated to include eroding banks, knick points and landslides adjacent to the channel.
3. Conduct a sediment trapping opportunities assessment. Opportunities may include potential sediment retention basins and floodplain areas.
4. Develop a prioritized list of conceptual treatments for at least the top ten erosion sources or opportunities to trap sediment, including a description of the feature, map showing locations, ownership, estimated volume of sediment eroded or that could be trapped per year, conceptual treatment, conceptual cost estimate.

Deliverables

- Draft and Final Technical Memo describing the sediment reduction opportunities and constraints along the San Benito River
- Presentation to FPA and USACE of results and conclusions

Estimated Duration

- Draft Technical Memo - Six months after NTP
- Final Technical Memo – Nine months after NTP

Estimated Fee

- Fieldwork and Technical Memo ~ $80,000

4. A TWO-DIMENSIONAL SEDIMENT TRANSPORT MODEL OF THE PAJARO RIVER FROM CHITTENDEN GAP TO THE OCEAN

Primary Objectives and Benefits
A two-dimensional sediment transport model will allow the FPA to evaluate the proposed project alternatives for erosion and deposition characteristics, including assessment of meander bends, setbacks, floodplain benches, and the effects of vegetation management. It will also allow assessment of long term issues such as the effects of sea level rise on the Lower Pajaro River Levee Reconstruction project's performance.

Scope of Work
1. Construct a two-dimensional hydraulic and sediment transport model for the Pajaro River from Chittenden gage to the Pacific Ocean (approximately 16 miles).
2. Conduct sediment sampling on the Pajaro River to characterize bed material.
3. Simulate the existing and proposed conditions (up to three alternatives) for the proposed Lower Pajaro River Levee Reconstruction Project to evaluate sediment deposition and erosion rates and locations.

Deliverables
- Input and output files for two-dimensional sediment transport model
- Draft Technical Memo describing the model set up and evaluating existing and proposed conditions for sediment erosion, transport and deposition, as well as anticipated sediment removal requirements under the proposed Lower Pajaro River Levee Reconstruction project
- Presentation of Draft and Final Technical Memo to FPA and USACE
- Participation in five meetings to provide technical input (additional meetings to be funded separately if required)
- Final Technical Memo

Estimated Duration
- Draft Technical Memo – Six months from NTP
- Final Technical Memo – Nine months from NTP

Estimated Fee
- Model development and Technical Memo ~ $100,000
- Meeting preparation and participation ~ $15,000
- **Total ~ $115,000**

5. OPPORTUNITIES AND CONSTRAINTS ASSESSMENT FOR PEAK FLOW REDUCTION ON THE SAN BENITO RIVER

The assessment will be a spatial (GIS) and hydrologic (rainfall-runoff model) assessment identifying opportunities to detain water before it reaches the Pajaro River, reducing the flood peak for the Lower Pajaro River Levee Reconstruction project.

Primary Objectives and Benefits
The San Benito River represents more than half the watershed area of the Pajaro River at their confluence, and is a major source of peak flows in the lower Pajaro River floodplain. Finding opportunities to detain water in the upper watershed will reduce the frequency and depth of inundation downstream.

Scope of Work

1. Identify flood-reduction screening criterion. The consultant shall identify a general flood reduction target (percentage reduction and relevant flood event frequency) for use as an initial screening criterion to evaluate the effectiveness of potential storage locations.
2. Conduct modeling exercise to evaluate potential locations. Using an appropriate watershed hydrology model (e.g. HEC-HMS), the consultant shall investigate the potential effectiveness of detention at various locations in the watershed.
3. Identify a minimum facility volume. Based on the investigation above, the consultant shall identify an approximate minimum facility volume needed to meet the preliminary flood reduction target.
4. Screen out infeasible areas. Using spatial analysis along with the minimum facility volume, the consultant shall screen out areas that are too far upstream to detain the minimum required flood volume, heavily developed, too far from stream channels to permit water transfer to a facility under gravity, or topographically unable to reasonably accommodate the required storage volume.
5. Focus site-specific investigation in remaining zone. The consultant shall look for opportunities for flood detention within the remaining zone. Once potential locations have been identified, consultant shall perform modeling using site-specific parameters (i.e. stage-storage relationships, inflow hydrographs, potential detention structure configuration) to evaluate facility performance and flood reduction potential.
6. Recommend a facility location. Using the hydrology modeling results, the consultant shall recommend a location that best meets the flood-reduction target. The consultant may also recommend methodologies to rank feasible alternatives.

Assumptions
It is assumed that the rainfall-runoff HEC-1 model developed by the FPA for the Pajaro River Watershed Study will be available.

Deliverables

- Updated HEC-HMS model for the San Benito River Watershed with all input and output files
- GIS input and output files used in the analysis
- Draft Technical Memo describing the screening process and conclusions, including a description of suitable detention sites, flood reduction potential, conceptual approach to detention and conceptual cost estimates
- Final Technical Memo
- Presentation of results to FPA and USACE
- Participation in five meetings to provide technical input (additional meetings to be funded separately if required). (Note: this may be combined with Task 4 for cost savings.)

Estimated Duration

- Draft Technical Memo – Six months from NTP
- Final Technical Memo – Nine months from NTP

Estimated Fee

- Modeling and Technical Memo ~ $75,000
- Meeting participation ~ $15,000
- **Total ~ $90,000**

SCHEDULE AND PRIORITIZATION OF TASKS

All tasks may start simultaneously using existing data, though data from Task 2 will provide information for subsequent sediment transport studies such as follow on work for Task 4. Work may be phased to facilitate funding or workloads.

Priorities have been focused on tasks that are most likely to provide 'actionable' data for the FPA to reduce flood risk downstream, lower O&M costs and enhance the design of the USACE Lower Pajaro River Levee Reconstruction project. These priorities are as follows:

Priority 1. Task 4 Development of a two-dimensional sediment transport model. This task will feed most directly into the flood project design process and provide the FPA with technical input on different design refinements, as well as O&M issues such as where sediment will require removal, effects of sea-level rise on the project in future etc.

Priority 2. Task 5. Opportunities and constraints assessment for peak flow reduction. This task will seek to identify locations where flows can be reduced by upstream detention, directly benefiting the downstream communities.

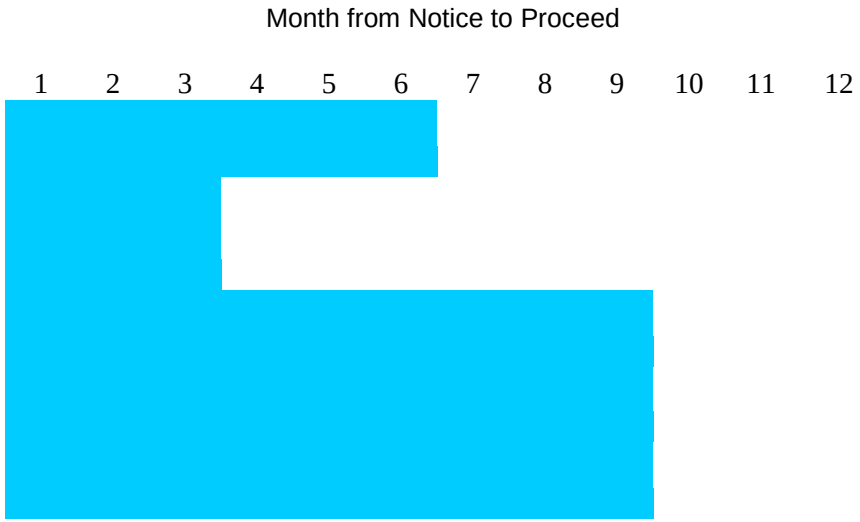
Priority 3. Task 3. Opportunities and constraints assessment for erosion and sediment reduction. This task will seek to identify opportunities to reduce sediment inputs into the Pajaro River, lowering the need for O&M and maintaining flood conveyance downstream.

Priority 4. Task 2. Sediment data collection. This task will inform long term planning for the watershed by providing data on sediment movement through the Pajaro and San Benito Rivers.

Priority 5. Task 1. Extend and calibrate San Benito River sediment model. This task will quickly plug a gap in the sediment transport data and provide a long term estimate of sediment inputs from the San Benito River to the Pajaro River.

PWA
PHILIP WILLIAMS & ASSOCIATES, LTD
ENVIRONMENTAL HYDROLOGY
550 Kearny Street, Suite 900
San Francisco, California 94108-2404
TEL 415.262.2300 FAX 415.262.2303
www.pwa-ltd.com

Task	Cost	Task Priority
1. Update, calibrate and re run the San Benito River sediment transport model	**$ 70,000**	**5**
2. A program to collect sediment concentration and flow data on both the Pajaro River and the San Benito River above their confluence	**$110,000 ($200,000)**	**4**
3. Opportunities and constraints assessment for erosion reduction on the San Benito River	**$ 80,000**	**3**
4. a Two-dimensional sediment transport model of the Pajaro River from Chittenden to the ocean	**$115,000**	**1**
5. Opportunities and constraints assessment for peak flow reduction on the San Benito River	**$ 90,000**	**2**



Environmental Justice Coalition for Water
DAC Outreach
BUDGET DESCRIPTION

Total time-frame for completion of sub-contract: 18 months from signing of the contract.
Total budget requested for completion of sub-contract: $70,000

1) EJCW Northern California Program Director cost: $27,300

   The rate is $70/ hour (includes overheads).
   5 hours/ week X 52 weeks/ year X 1.5 years = $27,300

2) EJCW Central Coast Organizer: $18,720

   The rate is $30/ hour.
   8 hours/ week X 52 weeks/ year X 1.5 years = $18,720

3) Transport costs: $12,340 for 1.5 years

   EJCW reimburses mileage at the federal rate of $0.50/ mile for a privately owned vehicle. For a rental car, EJCW reimburses up to the cost of an economy car (or van if more than 4 people are being transported), along with fuel costs. In addition, cost of public transit, parking and tolls are reimbursed. Food and lodging are reimbursed when required.

4) Translation of documents into Spanish: $1400

   Translation costs $0.10/ word X 700 words/ flier approx. X 20 fliers = $1400 approx

5) Copying and printing of outreach materials: $1,740 for 1.5 years

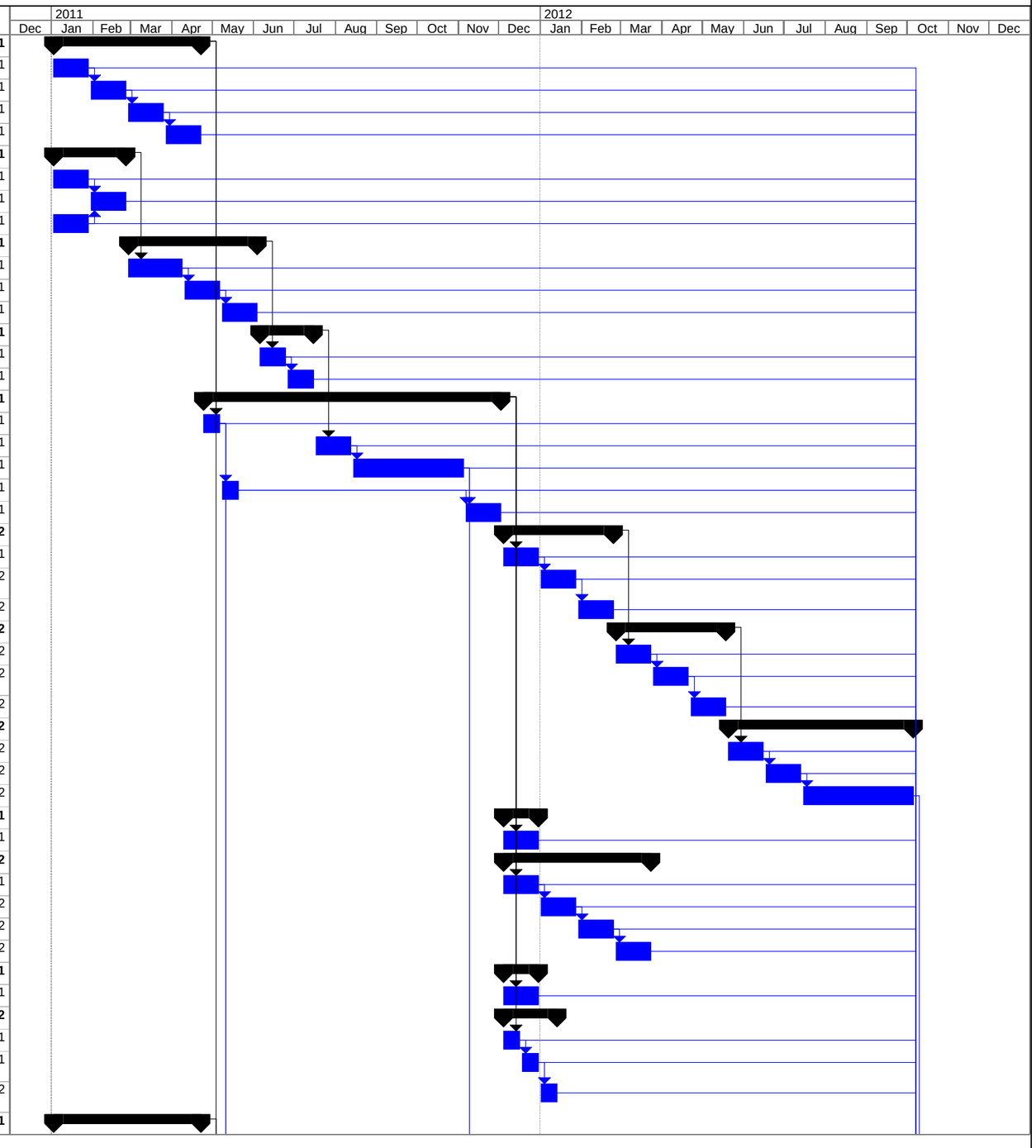
6) Meeting expenses: $2500

7) Conference calls: $1000

8) Technical Assistance/ cost of Consultant Engineers: $5000

Pajaro River Watershed
Integrated Regional Water Management Region
Proposition 84 Planning Grant Application Schedule

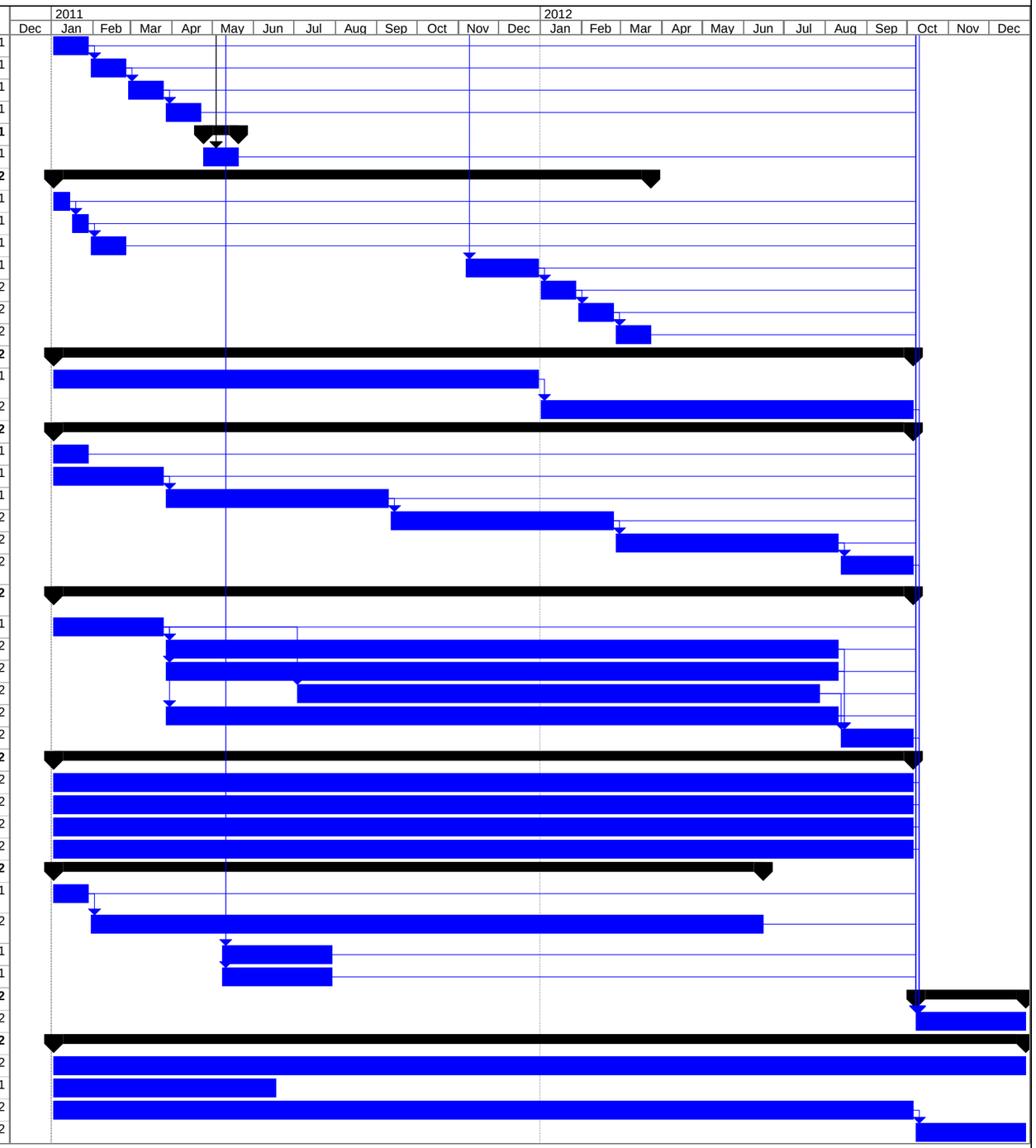
ID	Task Name	Duration	Start	Finish
1	**Task 1 Update Governance Section**	**80 days**	**Mon 1/3/11**	**Fri 4/22/11**
2	1.1 Formalize Stakeholder Steering Committee	1 mon	Mon 1/3/11	Fri 1/28/11
3	1.2 Develop Communication Plan	1 mon	Mon 1/31/11	Fri 2/25/11
4	1.3 Document Adaptive Approach for Future Revisions to the Plan	1 mon	Mon 2/28/11	Fri 3/25/11
5	1.4 Compile Governance Section	1 mon	Mon 3/28/11	Fri 4/22/11
6	**Task 2 Update Region Description**	**40 days**	**Mon 1/3/11**	**Fri 2/25/11**
7	2.1 Update Region Description	1 mon	Mon 1/3/11	Fri 1/28/11
8	2.2 Compile Expanded Region Description Information	1 mon	Mon 1/31/11	Fri 2/25/11
9	2.3 Update and Develop New Maps in the Region Description	1 mon	Mon 1/3/11	Fri 1/28/11
10	**Task 3 Update Plan Objectives**	**70 days**	**Mon 2/28/11**	**Fri 6/3/11**
11	3.1 Draft Updated Objectives	1.5 mons	Mon 2/28/11	Fri 4/8/11
12	3.2 Prioritize Objectives	1 mon	Mon 4/11/11	Fri 5/6/11
13	3.3 Finalize Revised Objectives and Objectives Prioritization	1 mon	Mon 5/9/11	Fri 6/3/11
14	**Task 4 Develop Resource Management Strategies Sections**	**30 days**	**Mon 6/6/11**	**Fri 7/15/11**
15	4.1 Document process used to consider RMS in the Plan update	0.75 mons	Mon 6/6/11	Fri 6/24/11
16	4.2 Identify RMS that will be implemented and identify gaps	0.75 mons	Mon 6/27/11	Fri 7/15/11
17	**Task 5 Prepare Project Review and Selection Section**	**160 days**	**Mon 4/25/11**	**Fri 12/2/11**
18	5.1 Document process for submitting a project for inclusion in the IRWM Plan	0.5 mons	Mon 4/25/11	Fri 5/6/11
19	5.2 Update Project Review Process	1 mon	Mon 7/18/11	Fri 8/12/11
20	5.3 Update Project List	3 mons	Mon 8/15/11	Fri 11/4/11
21	5.4 Develop and Implement Procedure for Communicating the List of Selected Projects	0.5 mons	Mon 5/9/11	Fri 5/20/11
22	5.5 Compile Project Review and Selection Section	1 mon	Mon 11/7/11	Fri 12/2/11
23	**Task 6 Update Impacts and Benefits Section**	**60 days**	**Mon 12/5/11**	**Fri 2/24/12**
24	6.1 Review and update screening-level discussion of impacts and benefits	1 mon	Mon 12/5/11	Fri 12/30/11
25	6.2 Identify and analyze direct impacts and benefits affecting DAC, EJ concerns and Native American tribal communities	1 mon	Mon 1/2/12	Fri 1/27/12
26	6.3 Develop benchmark for assessing impacts and benefits	1 mon	Mon 1/30/12	Fri 2/24/12
27	**Task 7 Update Plan Performance and Monitoring Section**	**60 days**	**Mon 2/27/12**	**Fri 5/18/12**
28	7.1 Review and Update Institutional Structure for IRWM Implementation Evaluation	1 mon	Mon 2/27/12	Fri 3/23/12
29	7.2 Explain how IRWM implementation will be tracked with a data management system (DMS) and who will be responsible for maintaining the DMS.	1 mon	Mon 3/26/12	Fri 4/20/12
30	7.3 Draft Plan Performance and Monitoring Section	1 mon	Mon 4/23/12	Fri 5/18/12
31	**Task 8 Update Data Management Section**	**100 days**	**Mon 5/21/12**	**Fri 10/5/12**
32	8.1 Review Data Needs	1 mon	Mon 5/21/12	Fri 6/15/12
33	8.2 Assess Available Data Programs	1 mon	Mon 6/18/12	Fri 7/13/12
34	8.3 Establish DMS Protocol	3 mons	Mon 7/16/12	Fri 10/5/12
35	**Task 9 Update Finance Section**	**20 days**	**Mon 12/5/11**	**Fri 12/30/11**
36	9.1 Draft IRWMP Finance Section and Finance Table	1 mon	Mon 12/5/11	Fri 12/30/11
37	**Task 10 Update Technical Analysis Section**	**80 days**	**Mon 12/5/11**	**Fri 3/23/12**
38	10.1 Develop Technical Information Source Matrix	1 mon	Mon 12/5/11	Fri 12/30/11
39	10.2 Identify Data Gaps	1 mon	Mon 1/2/12	Fri 1/27/12
40	10.3 Develop Technical Analysis and Methods	1 mon	Mon 1/30/12	Fri 2/24/12
41	10.4 Prepare Updated Technical Analysis Section	1 mon	Mon 2/27/12	Fri 3/23/12
42	**Task 11 Update Relation to Local Water Planning Section**	**20 days**	**Mon 12/5/11**	**Fri 12/30/11**
43	11.1 Update description of IRWM Plan relationship with local planning documents	1 mon	Mon 12/5/11	Fri 12/30/11
44	**Task 12 Update Relation to Local Land Use Planning Section**	**30 days**	**Mon 12/5/11**	**Fri 1/13/12**
45	12.1 Identify links between the IRWM Plan and local land use planning	0.5 mons	Mon 12/5/11	Fri 12/16/11
46	12.2 Describe he current relationship between local land use planning entities and water management entities	0.5 mons	Mon 12/19/11	Fri 12/30/11
47	12.3 Describe future efforts to establish a proactive relationship between land use planning and water management	0.5 mons	Mon 1/2/12	Fri 1/13/12
48	**Task 13 Update Stakeholder Involvement Section**	**80 days**	**Mon 1/3/11**	**Fri 4/22/11**



*Schedule start date shown as 1/3/11. Actual start date depends on date of DWR grant award.

Pajaro River Watershed
Integrated Regional Water Management Region
Proposition 84 Planning Grant Application Schedule

ID	Task Name	Duration	Start	Finish
49	13.1 Expand description of the Stakeholder Steering Committee	1 mon	Mon 1/3/11	Fri 1/28/11
50	13.2 Elaborate on Stakeholder Involvement Tactics	1 mon	Mon 1/31/11	Fri 2/25/11
51	13.3 Elaborate on Stakeholder Involvement in Decision-making Process	1 mon	Mon 2/28/11	Fri 3/25/11
52	13.4 Update Stakeholder Involvement Section	1 mon	Mon 3/28/11	Fri 4/22/11
53	**Task 14 Update Coordination Section**	**20 days**	**Mon 4/25/11**	**Fri 5/20/11**
54	14.1 Update Coordination Section to ensure consistency with Guidelines	1 mon	Mon 4/25/11	Fri 5/20/11
55	**Task 15 Perform Climate Change Analyses**	**320 days**	**Mon 1/3/11**	**Fri 3/23/12**
56	15.1 Assess Climate Change Impacts and Regional Vulnerabilities	0.5 mons	Mon 1/3/11	Fri 1/14/11
57	15.2 Address Region Vulnerabilities in Plan Objectives	0.5 mons	Mon 1/17/11	Fri 1/28/11
58	15.3 Identify and Develop Regional Adaptation Strategies	1 mon	Mon 1/31/11	Fri 2/25/11
59	15.4 Prepare GHG Emissions Analysis for Implementation Projects	2 mons	Mon 11/7/11	Fri 12/30/11
60	15.5 Identify Triggers for Changing or Amending Plan in Response to Climate Change	1 mon	Mon 1/2/12	Fri 1/27/12
61	15.6 Identify Collaboration Opportunities	1 mon	Mon 1/30/12	Fri 2/24/12
62	15.7 Compile Climate Change Information	1 mon	Mon 2/27/12	Fri 3/23/12
63	**Task 16 Watershed Study to Address Key Data Gaps**	**460 days**	**Mon 1/3/11**	**Fri 10/5/12**
64	16.1 Program to Collect Sediment Concentration and Flow Data on the Pajaro and San Benito Rivers above their Confluence	13 mons	Mon 1/3/11	Fri 12/30/11
65	16.2 Update, Calibrate, and Re-Run the San Benito River Sediment Transport Model	10 mons	Mon 1/2/12	Fri 10/5/12
66	**Task 17 Perform Salt and Nutrient Management Planning**	**460 days**	**Mon 1/3/11**	**Fri 10/5/12**
67	17.1 Develop Salt and Nutrient Management Planning Stakeholder Committees in Each Study Area	1 mon	Mon 1/3/11	Fri 1/28/11
68	17.2 Document Conceptual Models	3 mons	Mon 1/3/11	Fri 3/25/11
69	17.3 Identify Salt and Nutrient Sources	6 mons	Mon 3/28/11	Fri 9/9/11
70	17.4 Salt and Nutrient Loading Analysis	6 mons	Mon 9/12/11	Fri 2/24/12
71	17.5 Assimilative Capacity Estimate	6 mons	Mon 2/27/12	Fri 8/10/12
72	17.6 Develop or Update Objectives Related to Recycled Water, Stormwater recharge and reuse, and other salt and nutrient management related issues	2 mons	Mon 8/13/12	Fri 10/5/12
73	**Task 18 Implement Local Watershed Planning Process- College Lake Improvement and Watershed Management**	**460 days**	**Mon 1/3/11**	**Fri 10/5/12**
74	18.1 Summarize Previous Work	3 mons	Mon 1/3/11	Fri 3/25/11
75	18.2 Evaluate Water Supply Alternatives	18 mons	Mon 3/28/11	Fri 8/10/12
76	18.3 Evaluate Flood Management Alternatives	18 mons	Mon 3/28/11	Fri 8/10/12
77	18.4 Describe Benefits to IRWM Plan Implementation	14 mons	Mon 7/4/11	Fri 7/27/12
78	18.5 Develop mechanism for watershed management	18 mons	Mon 3/28/11	Fri 8/10/12
79	18.6 Contribute to Updates of IRWM Plan	2 mons	Mon 8/13/12	Fri 10/5/12
80	**Task 19 Engage Stakeholders in IRWM Plan Update**	**460 days**	**Mon 1/3/11**	**Fri 10/5/12**
81	19.1 IRWM Plan Update workshops	23 mons	Mon 1/3/11	Fri 10/5/12
82	19.2 Engage the Stakeholder Steering Committee in the IRWM Plan Update	23 mons	Mon 1/3/11	Fri 10/5/12
83	19.3 Conduct Salt/Nutrient Management Plan Workshops	23 mons	Mon 1/3/11	Fri 10/5/12
84	19.4 Public Notices	23 mons	Mon 1/3/11	Fri 10/5/12
85	**Task 20 Engage Disadvantage Communities in IRWM Plan Update**	**380 days**	**Mon 1/3/11**	**Fri 6/15/12**
86	20.1 Review and Supplement Inventory of DACs and Native American tribes identified in the Pajaro IRWM region and develop Outreach Plan	1 mon	Mon 1/3/11	Fri 1/28/11
87	20.2 Conduct Focused Outreach Activities to Integrate DAC members and tribes into the IRWM Planning Process	18 mons	Mon 1/31/11	Fri 6/15/12
88	20.3 Provide Community Assistance for Project Preparation	3 mons	Mon 5/9/11	Fri 7/29/11
89	20.4 Provide Technical Assistance for Project Preparation	3 mons	Mon 5/9/11	Fri 7/29/11
90	**Task 21 Compile Updated IRWM Plan**	**60 days**	**Mon 10/8/12**	**Fri 12/28/12**
91	21 Compile Updated IRWM Plan	60 days	Mon 10/8/12	Fri 12/28/12
92	**Task 22 Project Management**	**520 days**	**Mon 1/3/11**	**Fri 12/28/12**
93	22.1 Ongoing Grant Management	26 mons	Mon 1/3/11	Fri 12/28/12
94	22.2 Agreements	6 mons	Mon 1/3/11	Fri 6/17/11
95	22.3 Quarterly Reports	23 mons	Mon 1/3/11	Fri 10/5/12
96	22.4 Final Report	3 mons	Mon 10/8/12	Fri 12/28/12



*Schedule start date shown as 1/3/11. Actual start date depends on date of DWR grant award.