

**East Contra Costa County Region
Proposition 84 Round 2 Grant Proposal**

**ATTACHMENT 3 –
WORK PLAN**

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Introduction

The following members of the East County Water Management Association (ECWMA), including water agencies, wastewater agencies, flood control districts, and watershed management groups within the eastern portion of Contra Costa County (East County), have a long history of cooperative planning for the region.

- City of Antioch
- City of Brentwood
- Byron-Bethany Irrigation District
- City of Pittsburg
- Town of Discovery Bay
- Contra Costa County
- Contra Costa County Flood Control and Water Conservation District (FCD)
- Contra Costa Water District (CCWD)



- Delta Diablo Sanitation District (DDSD)
- Diablo Water District (DWD)
- East Contra Costa County Habitat Conservancy (Conservancy)
- East Contra Costa Irrigation District (ECCID)
- Ironhouse Sanitary District (ISD)

Through their coordinated regional planning efforts, these East County agencies developed a Functionally Equivalent Integrated Regional Water Management Plan (IRWMP) based on planning completed through the following efforts:

- *East County Water Supply Management Study (1996)*
- *Future Water Supply Study (1996, Updated 2002)*
- *Stormwater Management Plan (1999)*
- *Delta Region Drinking Water Management Plan (2005)*
- *East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) (Draft 2005, Final 2006)*

These documents formed the basis of the Functionally Equivalent IRWMP umbrella document, which served to integrate the regional plans listed above into a single overarching regional water management plan for East County. The East Contra Costa County Functionally Equivalent IRWMP was adopted in July 2005. The Region is currently in the process of using Proposition 84 IRWM planning grant funds to update its 2005 IRWMP to address the 2012 *Proposition 84 & 1E Integrated Regional Water Management Program Guidelines* (DWR, November 2012) as described in Attachment 1. The Plan is currently anticipated to be adopted by ECWMA member agencies in July 2013.

Through the IRWMP update process, the East County agencies identified a suite of water management projects and programs that, together, will provide multiple benefits including:

- Improve water supply reliability and quality for the region and its DACs
- Reduce dependence on imported water
- Assist in achieving the regional objectives, and
- Improve habitat for threatened and endangered species.

Through the 2005 IRWMP effort, the agencies developed a process for prioritizing short-term and long-term priority projects for implementation which considers the ability of projects to achieve regional objectives, among other factors. Over time, the specific projects being considered for regional implementation have evolved to include additional projects targeted at reducing demands on Delta supplies as well as projects aimed at addressing critical water supply and water quality needs of DACs. The process has proven successful in its ability to respond to changing needs and conditions in the Region, and has continued to be utilized to identify priority projects for regional implementation. The same methodology was applied during a 2012 project solicitation process, through which the ECWMA identified five high priority projects for regional implementation and inclusion in this Proposal.

This proposal was carefully crafted to establish a well-rounded, integrated, watershed-based program to further the Region in achieving the following vision, which reflects the theme of this Proposal:

Address critical water supply and quality needs of disadvantaged communities using integrated project planning, while reducing reliance on Delta supplies and restoring the fragile Delta ecosystem within the East Contra Costa County Region.

The following proposed projects comprise the East Contra Costa County Integrated Regional Water Management Proposition 84 Implementation Round 2 Grant Proposal.

1. Beacon West Arsenic Well and Tank Replacement Project (Diablo Water District)
2. Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion (City of Pittsburg)
3. Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project (Contra Costa Water District and Contra Costa County Flood Control and Water Conservation District)
4. Knightsen Wetland Restoration and Flood Protection Project (East Contra Costa County Habitat Conservancy)
5. Recycled Water Salinity Reduction and Distribution System Expansion Project (Delta Diablo Sanitation District)

Together, these projects will provide significant benefits to the local community, the East County Region, and the two-thirds of Californians who rely on the Delta for drinking water supplies.

Project List

Table 3-1 provides an abstract of each of the projects included within this proposal and identifies the implementing agencies and current status.

Table 3-1: Project List

Project	Implementing Agency(ies)	Abstract	% Design Complete
Beacon West Arsenic Well and Tank Replacement Project	Diablo Water District	A well that has arsenic levels in excess of Primary Drinking Water Standards in Beacon West will be replaced with a well installed in a shallower aquifer zone with water shown to have arsenic levels below Primary Drinking Water Standards. The Project will also replace two 1,500 gallon hydropneumatic pressure tanks that have corroded and jeopardize the community's water supply which is located in a Census Tract and Census Designated Place identified as DACs.	Preliminary Design (10%)

Project	Implementing Agency(ies)	Abstract	% Design Complete
Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion	City of Pittsburg	To meet current and future water demands, the City of Pittsburg will replace its existing Rossmoor Groundwater Well, which has experienced severe capacity reduction due to biofouling, with a larger capacity well (1,400 gallons per minute [gpm]). Also, about 1,200 feet of 8-inch pipeline will be replaced with 10-inch and 12-inch pipeline to allow for increased use of the Pittsburg Plain Groundwater Basin. Lastly, a multiport monitoring well will be installed in order to expand the groundwater monitoring system.	Planning Phase (10%)
Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project	CCWD and Contra Costa County Flood Control and Water Conservation District	The Project will remove 75,000 cubic yards (cy) of stockpiled, surplus earthen material from the FCD's Upper Sand Creek Basin (USCB) site and reuse this material at the CCWD's Contra Costa Canal Levee Elimination and Flood Protection Project. This will allow an additional 450 feet of Canal to be encased in a buried pipeline, providing water quality, water supply, and flood protection benefits along the Contra Costa Canal. The improvement will also accelerate the flood protection benefits to be provided by the USCB Project by approximately 5 years.	Preliminary Design (10%)
Knightsen Wetland Restoration and Flood Protection Project	East Contra Costa County Habitat Conservancy	The Knightsen Wetland Restoration and Flood Protection Project will enhance the Delta ecosystem and protect water quality by acquiring a 645-acre parcel to treat and manage stormwater from the area. In addition to designing and constructing a stormwater treatment wetland, the project will restore/manage 645 acres of land for habitat for endangered and threatened species in the region.	Planning (10%)
Recycled Water Salinity Reduction and Distribution System Expansion Project	Delta Diablo Sanitation District	This project will install pipeline and appurtenances to redirect a high total dissolved solids (TDS) brine line from Dow to the DDSD wastewater treatment plant downstream of the recycled water facility to reduce recycled water TDS concentrations by 15% to 20%. Reduced TDS concentration will allow for increased cycling ratios for cooling purposes, thus freeing up recycled water capacity for other users. New recycled water service will be established for several use sites for landscape irrigation and for industrial purposes located in the City of Antioch and City of Pittsburg.	Planning Phase (5%)

Project	Implementing Agency(ies)	Abstract	% Design Complete
East Contra Costa County Prop 84 Round 2 Grant Administration	Contra Costa Water District	CCWD is currently administering the East Contra Costa County IRWM Region’s Prop 84 Round 1 planning and implementation grants. They will continue their role as administrator and contracting entity with DWR. This project consists of the overall grant administration required for this proposal. This is only discussed in Attachments 3, 4, and 5 as this is an administrative project.	Not Applicable

Regional Map

The maps that follow (Figures 3-1 to 3-3) present the location of the proposed projects within the East Contra Costa County Region with respect to local water resources, jurisdictional boundaries, major infrastructure, and disadvantaged communities. The monitoring locations for each project are generally located at the project sites; more detailed descriptions of monitoring methods and locations are provided in Attachment 6.

Project Map

Individual site maps for each project that show the geographical location and surrounding work boundaries are included in the Work Plan Tasks section of this attachment.

Figure 3-1: Regional Map

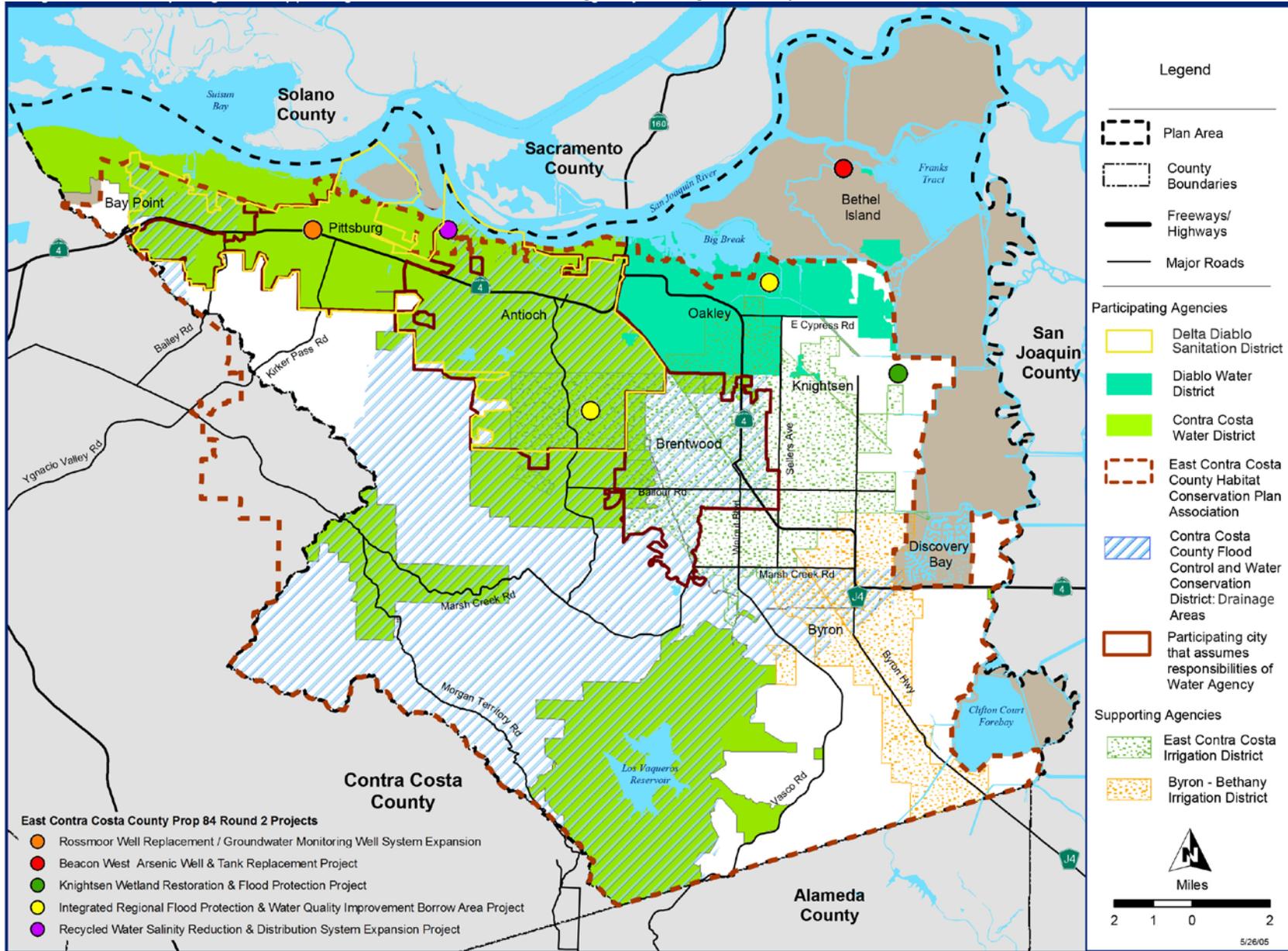


Figure 3-2: Groundwater Basins

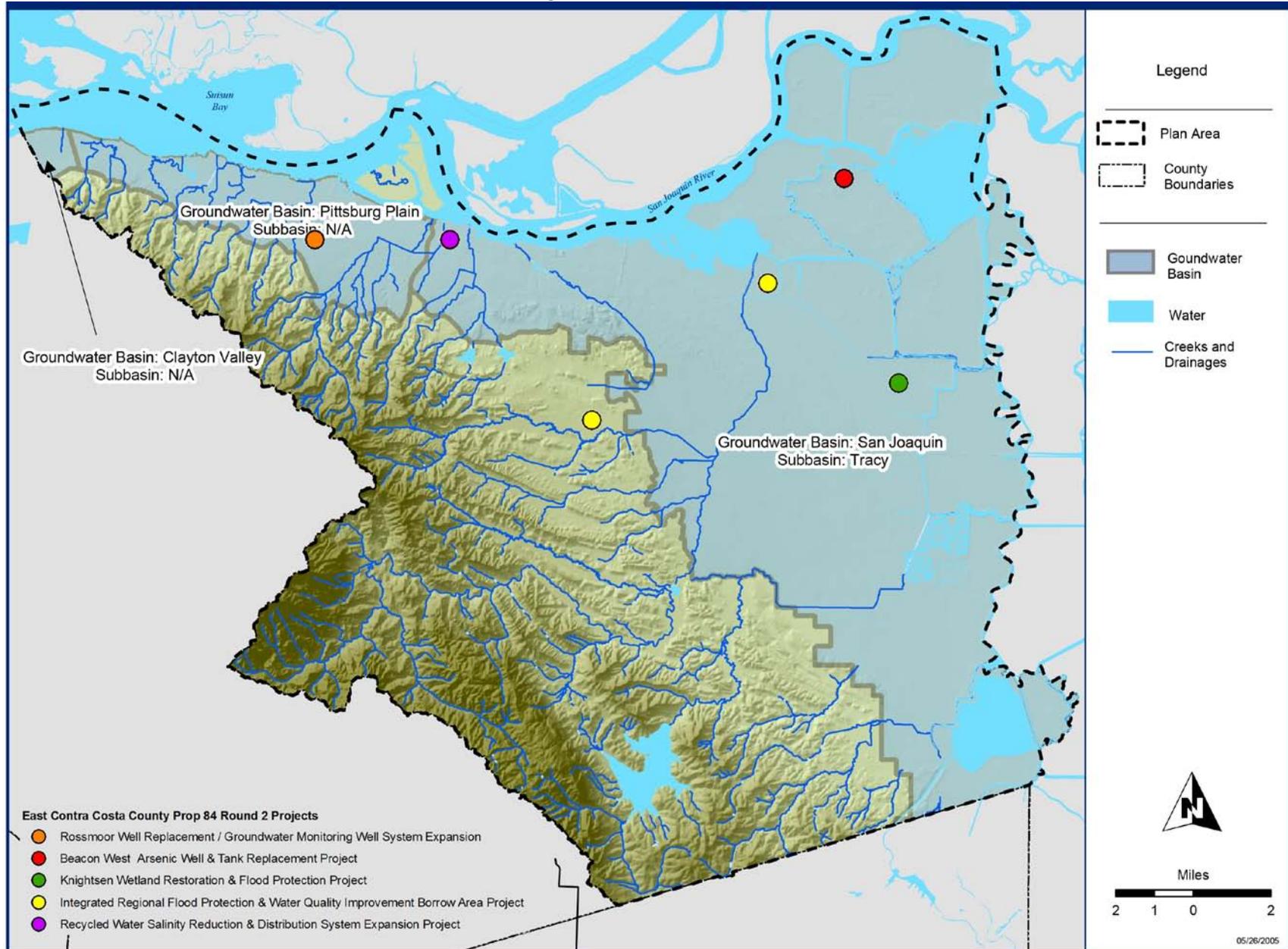
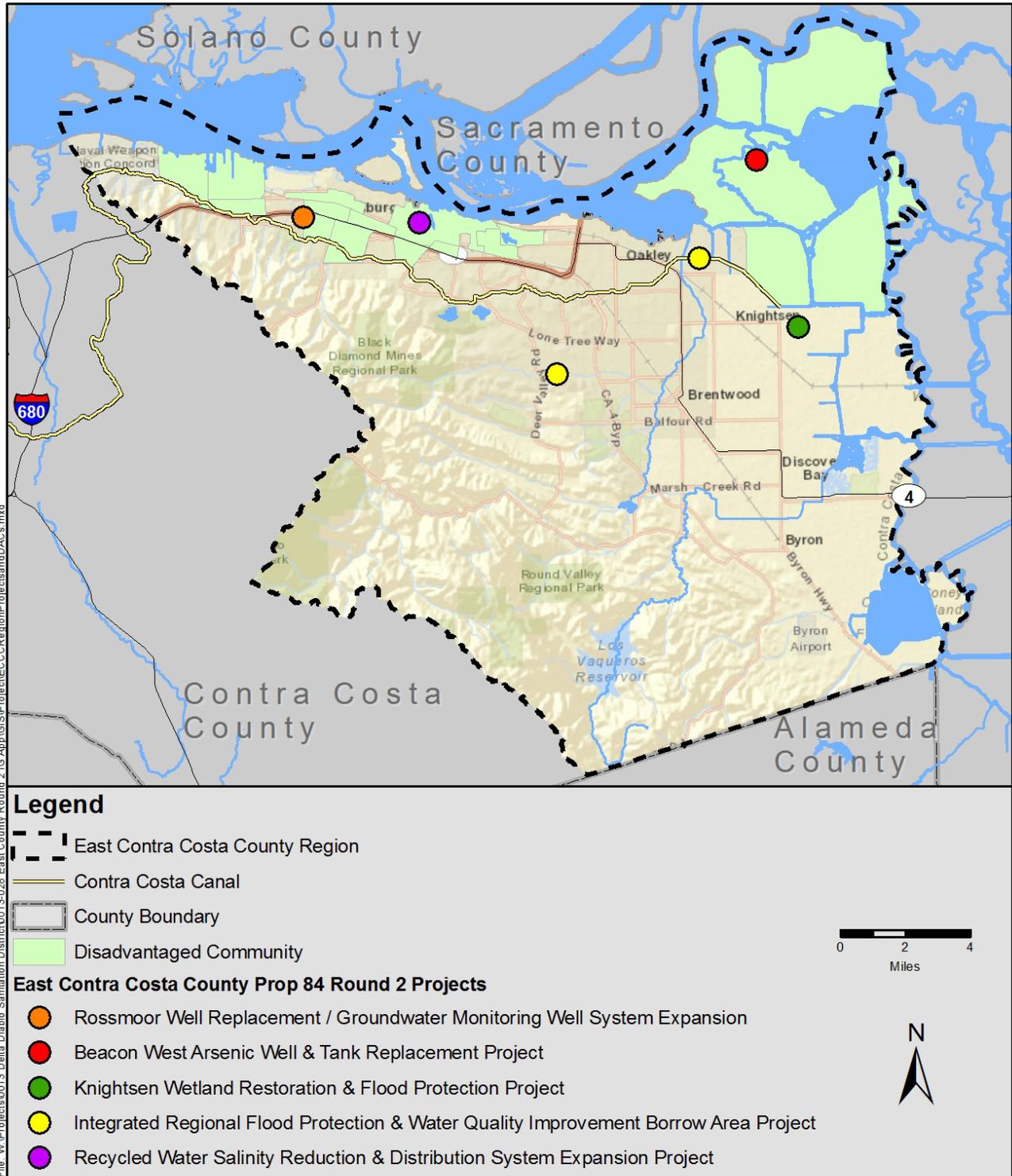


Figure 3-3: Projects and DACs



Goals and Objectives

The theme of this proposal is to:

Address critical water supply and quality needs of disadvantaged communities using integrated project planning, while reducing reliance on Delta supplies and restoring the fragile Delta ecosystem within the East Contra Costa County Region.

As such, the projects included in this proposal were selected for their ability to achieve the following key objectives:

- **Objective 1: Address critical water supply and quality needs of DACs in the East County Region**
- **Objective 2: Maximize Integrated Project Planning**
- **Objective 3: Reduce reliance on Delta supplies**
- **Objective 4: Restore the fragile Delta ecosystem**

Objective 1: Address Critical Water Supply and Quality Needs of DACs in the East County Region

This Proposal includes a strong emphasis on water supply and water quality benefits to DACs and other communities in the East Contra Costa County Region, as well as flood protection.

Specifically, the ***Beacon West Arsenic Well and Tank Replacement Project*** will address a critical integrated water supply and water quality need of a community located in a DAC. Currently, the Beacon West community receives water supply from a well with arsenic concentrations in excess of the Maximum Contaminant Level (MCL). Beacon West is located in Census Tract 3010, a DAC based on the definition contained in PRC §75005 (g), with a Median Household Income (MHI) of \$39,324. Additionally, Beacon West is located on Bethel Island which is a Census Designated Place with an MHI of \$36,515, resulting in being a severely disadvantaged community according to PRC §75005 (g); that is, the MHI of Bethel Island is 60% of the California MHI of \$60,882. The critical water quality issue Beacon West is facing threatens water supply to this community as they will be unable to continue to use this supply without corrective action. The project will replace the well containing high arsenic concentrations with another well drawing from an aquifer shown to have arsenic concentrations below detection, resulting in a projected 93 percent reduction in drinking water arsenic concentrations, and bringing the community into compliance with the arsenic MCL. The project will also replace two pressure tanks that are in danger of catastrophic failure due to corrosion. Similarly, the ***Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion*** will correct capacity deficiencies resulting from biofouling that have severely impaired the City's ability to meet water demands with existing groundwater supplies. Approximately 45% of the City of Pittsburg lives within DACs. Replacing the existing Rossmoor Well with a well of higher capacity will allow the City to continue to meet the existing and future demands of local DACs with this lower-cost, more reliable alternative to Delta supplies. The ***Recycled Water Salinity Reduction and Distribution System Expansion Project*** will maximize the use of drought-resistant recycled water supplies, offsetting potable water supplies in DAC communities within the cities of Pittsburg and Antioch (19% of the population is in DACs) that would otherwise be met by Delta supplies.

Objective 2: Maximize Integrated Project Planning

East County is an example of a Region that has engaged in cooperative planning for many years, beginning long before the passage of Proposition 50 and establishment of the IRWM Program in 2004. Through the ECWMA, the Region has engaged in cooperative water resources planning since 1996, when the East County Water Supply Management Study was completed.

Through this longstanding commitment to cooperative planning, the East County Region has come to appreciate the benefits provided by working collaboratively on integrated projects that cross jurisdictional boundaries and water management areas. This proposal seeks to encourage cooperative planning projects in which multiple entities from different areas of water management have collaborated to establish projects that achieve significantly greater benefit through integration than would otherwise be realized.

Specifically, the ***Integrated Regional Flood Protection and Water Quality Improvement Borrow Project*** is an example of an integrated project which generates significant benefits through collaboration. In this project, CCWD and the FCD will help extend the benefits of both the USCB project and the Contra Costa Canal Levee Elimination and Flood Protection Project through collaboration to maximize beneficial reuse of fill materials. Similarly, the ***Recycled Water Salinity Reduction and Distribution System Expansion Project*** involves collaboration among a wastewater agency, two municipal water suppliers, and two private entities to maximize recycled water availability, improve quality, and reduce the region's reliance on Delta supplies – objectives that could not be achieved without full cooperation of all project partners. Additionally, the ***Knightsen Wetland and Flood Protection Project*** integrates the habitat restoration goals of the Conservancy with the Flood Protection needs of the community of Knightsen. By partnering on this effort, the agencies can use one large land acquisition to reduce flooding, restore habitat and protect Delta water quality.

The proposed implementation grant consists of integrated planning to include water supply (groundwater wells), recycled water, delta ecosystem restoration, flood protection and water quality projects throughout the East County Region.

Objective 3: Reduce Reliance on Delta supplies

Implementation of the projects included in this Proposal would yield significant water supply benefits, at the local, regional and statewide level. **Over the course of this Proposal, approximately 64,800 AF of Delta supply will be conserved or offset.**

All of the water suppliers in the ECWMA rely on Delta supplies. Three of these water suppliers (City of Pittsburg, City of Antioch, DWD) purchase untreated Sacramento-San Joaquin Delta supplies from CCWD. As described in Attachment 13, improving current and future water supply reliability under all hydrologic conditions is a critical regional need, due to the Region's current heavy reliance on Delta supplies. Delta supplies are highly vulnerable to hydrologic changes, and water withdrawals can be severely restricted in dry years, reducing the quantity of supply available to the participating agencies. In addition, regulatory restrictions can limit the quantity of Delta supplies available in a given year. Conflicts between the need to divert water from the Delta and the legal requirements to protect endangered species can result in pumping restrictions that severely limit the quantity of Delta water allowed to be withdrawn in a given year.

Implementing the projects in this proposal will assist the region in improving water supply reliability, a critical water supply need. Specifically, the **Beacon West Arsenic Well and Tank Replacement Project** and the **Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion** will improve supply reliability through the implementation of groundwater wells to acquire high quality, reliable groundwater for potable use. Replacing the existing Rossmoor Well with a well of higher capacity will also reduce dependence on the Delta by avoiding the need to purchase an additional 500 AFY of Delta supplies. Similarly, the **Recycled Water Salinity Reduction and Distribution System Expansion Project** will maximize the use of drought-resistant recycled water supplies, offsetting potable water supplies in the cities of Antioch and Pittsburg that would be potentially met by Delta supplies. Recycled water is less influenced by year-to-year hydrologic conditions, and therefore provides additional dry year reliability for irrigation customers and industrial users. The **Integrated Regional Flood Protection and Water Quality Improvement Borrow Project** helps further the Contra Costa Canal Levee Elimination and Flood Protection Project by reusing the surplus material from the USCB Project to build upon its primary benefit of improving water supply reliability, not only for the East County Region, but Statewide. By eliminating local degradation from groundwater seepage and runoff, this project will increase overall water supply for the Federal Central Valley Project by reducing the need for upstream releases into the Delta to offset this local degradation.

Objective 4: Restore the Fragile Delta Ecosystem

Ecosystem restoration and habitat protection are unavoidably linked to protecting the water quality and water supply reliability in East County. Protecting Delta water quality improves source water for the region and supports the Delta's aquatic species, protecting them from the harmful impacts of degraded water quality. Promoting the recovery of the Delta's endangered fish species improves water supply reliability by reducing regulatory conflicts between the need to divert water from the Delta and the legal requirements to protect endangered species. Wetland and riparian restoration projects can sometimes create habitat for endangered species while at the same time reducing the amount of polluted run-off flowing into the Delta – a win for water quality, endangered species, and water supply reliability.

For example, the **Integrated Regional Flood Protection and Water Quality Improvement Borrow Project** will help further the Contra Costa Canal Levee Elimination and Flood Protection Project by encasing an additional 450 feet of the Contra Costa Canal, contributing to the overall goal of improving drinking water quality for residents of Contra Costa County by decreasing the amount of saline groundwater intrusion in the canal. Increasing the amount of pipeline constructed by CCWD supports the adjacent DWR Dutch Slough Tidal Restoration Project by ensuring that the Canal's water supply is protected before this wetland project is created. The **Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion** will also improve water quality in the Delta by avoiding the need to purchase 500 AFY of Delta Supplies and therefore potentially leaving this same amount in the Delta.

The **Knightsen Wetland Restoration and Flood Protection Project** will improve water quality for Knightsen's 1,500 residents who rely on groundwater supplies by preventing contamination from flood waters and agricultural tailwater, as well as for CCWD's customers by treating runoff adjacent to CCWD's Rock Slough water intake. The **Recycled Water Salinity Reduction and Distribution System Expansion Project** will increase recycled water use in the region resulting in a reduction in wastewater discharges and associated reduction in mass of pollutants discharged to the environment.

Many of the proposed projects serve to protect and enhance the valuable natural resources of East Contra Costa County. Any project that helps reduce Delta water use will potentially serve to leave more

water in the Delta environment, providing valuable benefits for aquatic species. For example, the **Pittsburg Rossmoor Well Replacement/ Groundwater Monitoring Well System Expansion Project** will allow for increased pumping of groundwater from the Pittsburg Plain Groundwater Basin and reduced reliance on imported water purchased from CCWD. Similarly, the **Recycled Water Salinity Reduction and Distribution System Expansion Project** will offset potable water supply needs in the cities of Pittsburg and Antioch that would be met with Delta supplies. Additionally, the Recycled Water Project will connect Dow Wetlands project as one of the new users. The recycled water will be used to maintain wetland habitat through augmentation of water supply. The Dow Wetlands are approximately 471 acres and home to endangered species (salt marsh harvest mouse, Mason's lileopsis, Suisun aster) and threatened species (black shouldered kites, northern harrier).

Protection and improvement of natural and environmental resources will also be directly achieved through the implementation of the **Knightsen Wetland Restoration and Flood Protection Project**, which will acquire and restore a 645-acre parcel in the East Contra Costa County Region and restore habitat and establish managed wetlands. A 2011 study revealed that the current parcel for this project, though currently used as irrigated agriculture, contained a striking mosaic of tidal wetland, alkali wetland, oak savanna and rare interior sand dune. While it may not be possible to rewind the clock, the new study identifies the potential for an extensive restoration project that could include multiple types of restored wetlands as well as restored dunes and savanna. The restored areas will provide potential habitat for raptor foraging (Swainson's hawk), and habitat for the California red legged frog, California tiger salamander, Fairy Shrimp (various sp), Silvery legless lizard, and Giant garter snake. Rare plant communities that often occur on alkali soils in this region are Britblescale, Spearscale and Recurved larkspur. These species are all targets of conservation efforts outlined in the East Contra Costa County HCP/NCCP.

Purpose and Need

The East County Region is unique in three key ways:

1. The Region is located entirely within the boundaries of the statutory Delta
2. It is home to a host of disadvantaged communities
3. Agencies in the Region have a long history of collaborative planning.

These three distinguishing factors provide the region with unique challenges and opportunities. Specifically, being located within the statutory Delta provides the Region with tremendous opportunity and motivation to assist in protecting, enhancing, and restoring the rich Delta ecosystem. At the same time, this need must be carefully balanced with the critical water quality and supply needs of DACs in the Region, many of which lie in the overlap area with the San Francisco Bay Area Region and are at risk of being forgotten. As such, the Region has sought to craft a proposal that provides multiple benefits through integrated projects: reducing reliance on Delta supplies, enhancing the Delta ecosystem, and addressing the critical needs of disadvantaged communities in a cohesive and integrated way. In addition, through their long history of collaborative partnership, the ECWMA agencies have established strong working relationships which have allowed them to cross jurisdictional and water management boundaries and develop and implement integrated programs that provide benefits far greater than could be achieved by either partner working alone.

Addressing the Region's Adopted Goals and Objectives

The five high priority, short-term projects in this Proposal were identified through the prioritization process developed during the East County IRWMP and update, and through collective determination by

the participating agencies. The projects were selected for inclusion in this Proposal due to their ability to assist the Region in making significant progress toward achieving the IRWMP objectives. As shown in Table 3-2, the proposed projects will move the region further along the path to achieving these objectives.

Table 3-2: Regional Objectives Met by Projects

Water Management Category	Objectives	Proposed Projects Achieving Objective
Water Supply	Maximize Dry Year Supplies	<ul style="list-style-type: none"> • Beacon West Arsenic Well and Tank Replacement Project • Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion • Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project • Recycled Water Salinity Reduction and Distribution System Expansion Project
	Maximize Water Supply Reliability	<ul style="list-style-type: none"> • Beacon West Arsenic Well and Tank Replacement Project • Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion • Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project • Recycled Water Salinity Reduction and Distribution System Expansion Project • Knightsen Wetland Restoration and Flood Control Project (through prevention of well contamination)
	Meet Future Demands	<ul style="list-style-type: none"> • Beacon West Arsenic Well and Tank Replacement Project • Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion • Recycled Water Salinity Reduction and Distribution System Expansion Project
	Maximize the Use of Local Supplies/Reduce Dependence on Imported Supplies	<ul style="list-style-type: none"> • Beacon West Arsenic Well and Tank Replacement Project • Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion • Recycled Water Salinity Reduction and Distribution System Expansion Project
Water Quality	Maximize Public Health Protection	<ul style="list-style-type: none"> • Beacon West Arsenic Well and Tank Replacement Project • Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project • Knightsen Wetland Restoration and Flood Protection Project

Water Management Category	Objectives	Proposed Projects Achieving Objective
	Protect and Enhance Source Water Quality	<ul style="list-style-type: none"> Recycled Water Salinity Reduction and Distribution System Expansion Project
Groundwater Management	Protect Against Overdraft	<ul style="list-style-type: none"> Recycled Water Salinity Reduction and Distribution System Expansion Project Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion
	Protect Water Quality from Degradation	<ul style="list-style-type: none"> Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion
Ecosystem Restoration/ Preservation	Minimize Environmental Impacts	<ul style="list-style-type: none"> Beacon West Arsenic Well and Tank Replacement Project Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project Knightsen Wetland Restoration and Flood Protection Project Recycled Water Salinity Reduction and Distribution System Expansion Project
	Maximize Environmental Benefits	<ul style="list-style-type: none"> Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project Knightsen Wetland Restoration and Flood Protection Project
Wastewater	Reduce Pollutant Discharges	<ul style="list-style-type: none"> Recycled Water Salinity Reduction and Distribution System Expansion Project
	Maintain Regulatory Compliance	<ul style="list-style-type: none"> Recycled Water Salinity Reduction and Distribution System Expansion Project
	Protect Public Health and Environmental Resources	<ul style="list-style-type: none"> Recycled Water Salinity Reduction and Distribution System Expansion Project
	Maximize Environmental Sustainability	<ul style="list-style-type: none"> Recycled Water Salinity Reduction and Distribution System Expansion Project
Flood Control	Protect Against Flooding	<ul style="list-style-type: none"> Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project Knightsen Wetland Restoration and Flood Protection Project

Water Management Category	Objectives	Proposed Projects Achieving Objective
Implementability	Maximize Implementability (e.g., maximize regional coordination, conduct stakeholder outreach, maximize cost-effectiveness, etc)	<ul style="list-style-type: none"> • Beacon West Arsenic Well and Tank Replacement Project • Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion • Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project • Knightsen Wetland Restoration and Flood Protection Project • Recycled Water Salinity Reduction and Distribution System Expansion Project

Consistency with Basin Plan

The bulk of the East County Region falls within Region 5, with portions of CCWD and the Cities of Pittsburg and Antioch included in Region 2. This proposal is consistent with the Basin Plans for both the Central Valley (Region 5), and the San Francisco Bay Area (Region 2). Each Basin Plan identifies water quality objectives for water bodies within its respective region. Notably, the Region 5 Basin plan identifies water quality objectives for the Sacramento-San Joaquin Delta, based on determined beneficial uses. The Basin plan lists the following existing beneficial uses for the Sacramento-San Joaquin Delta:

- Municipal and Domestic Supply (Existing)
- Agricultural Supply – Irrigation and Stock Watering (Existing)
- Industrial Supply – Process and Service Supply
- Recreation - Contact and Other Non-Contact
- Freshwater Habitat – Warm and Cold
- Migration – Warm and Cold
- Spawning – Warm
- Wildlife Habitat
- Navigation

Similar beneficial uses have been determined for potentially affected water bodies in Region 2. Further, all groundwaters in Regions 2 and 5 are considered suitable, or potentially suitable, for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply, unless otherwise designated by the appropriate Basin Plan.

As described previously, one of the primary objectives of this Proposal is to improve water quality for both drinking water and receiving water. All of the projects in East County that benefit ambient or receiving water quality benefit water quality in Region 5 and/or 2, and are therefore consistent with the appropriate Basin Plan(s). Specific water quality objectives for surface waters in the Region 5 and 2 Basin Plans include the following.

- Bacteria
- Bioaccumulation¹
- Biostimulatory Substances
- Chemical Constituents
- Color
- Dissolved Oxygen
- Floating Material
- Mercury
- Methylmercury
- Oil and Grease
- pH
- Population and community ecology¹
- Pesticides
- Radioactivity
- Salinity
- Sediment
- Settleable Material
- Suspended Material
- Sulfide¹
- Tastes and Odors
- Temperature
- Toxicity
- Turbidity
- Un-ionized ammonia¹

Several of the projects included in this Proposal will reduce the loading and / or concentrations of these parameters in Delta supplies, as follows.

- **Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion:** By increasing the use of groundwater and reducing reliance on Delta water supplies, this project may leave additional supply in the Delta, providing increased dilution for pollutants. As a result, this project would be expected to contribute to a reduction in concentration of the bulk of the contaminants listed. Therefore, this project is consistent with the Region 2 Basin Plan.
- **Recycled Water Salinity Reduction and Distribution System Expansion Project:** This project will increase recycled water, thus reducing DDSD’s wastewater discharges. As a result, it would be expected to decrease the loading of bacteria, biostimulatory substances, chemical constituents, mercury, pesticides, salinity, suspended material, and turbidity into Delta waters. It may also contribute to increased dissolved oxygen and decreased in turbidity. Therefore, the project is consistent with the Region 2 Basin Plan.
- **Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project:** This project will help FCD and CCWD further their USCB Project and Contra Costa Canal Levee Elimination and Flood Protection Project, respectively. By integrating these projects to reuse the surplus material from the USCB Project for the Canal Project, benefits will be achieved including the elimination of flooding in an urbanized area and subsequent introduction of polluted flood waters into the Delta, potentially reducing loading of bacteria, biostimulatory substance, chemical constituents, floating material, mercury, oil and grease, pesticides, salinity, sediment, settleable material, suspended material, and taste-and-odor-causing compounds. In addition, pollution from flood waters could cause pH impacts and contribute to increased temperature, turbidity, color and toxicity and decreased dissolved oxygen. Additionally, the implementation of this project will allow for an additional 450 feet of pipeline installed in the Canal Project which will help to prevent intrusion of saline groundwater into the Contra Costa Canal, directly contributing to achievement of Basin Plan electrical conductivity (EC) objectives for Canal supplies. This project would also be expected to improve taste and odor in delivered water. As a

¹ Included in Region 2 Basin Plan only

result, this project is consistent with the Region 5 Basin Plan, which includes water quality objectives for the Contra Costa Canal.

- ***Knightsen Wetland Restoration and Flood Control Project:*** This project will reduce pollutants from flood water draining directly into the Delta through No Name Slough and uncontrolled stormwater run-off. The treatment wetlands are expected to reduce contaminants in the flood waters and agricultural tailwaters that currently drain directly into the Delta. Contaminants include: pesticides, bacteria, sediment, suspended material, and floating material.

While the project-level reductions in pollutant loading and improvements in parameter concentrations noted above are generally expected to be too small to measure, the overall effect is an improvement in water quality, consistent with both Region 2 and Region 5 Basin Plan objectives.

Completed Work and Existing Data and Studies

Table 3-3 provides a summary of work already completed for each of the projects and identifies existing data and studies that have been performed to support the project's feasibility and approach. Completed plans and specifications, where applicable, have been provided as separate files to this attachment. The following sections describe the work that has been or will be completed prior to the assumed grant award date of October 1, 2013.

Table 3-3: Completed Work and Existing Studies/Data for Projects

Project	Summary of Completed Work and Key Findings	Existing Data and Studies
<p>Beacon West Arsenic Well and Tank Replacement Project</p>	<p>Preliminary design and site planning has been completed. The <i>Diablo Water District Feasibility Study Beacon West Arsenic Well & Tank Replacement Project</i> was completed in February 2013. This Study describes the work completed to date for the Project. In 1999, DWD participated in an Investigation of Groundwater Resources in the East Contra Costa Area which developed the cross section C-C' demonstrating the geologic relationship between the Beacon West well 10E and the Bob Butler Well (Well 3N) at 170 feet below ground surface (bgs). Well Drillers Reports for both wells are included in the Feasibility Study. Water quality samples were taken at the Bob Butler Well and lab results came back as non detect for Arsenic at 170 feet bgs, leading to the conclusion that installing a new well 170 feet bgs in the vicinity of the Beacon West Well in the same aquifer as the Bob Butler Well will yield water with Arsenic levels complying with drinking water quality standards.</p> <p>DWD selected a location for the replacement well, prepared a plot plan, and submitted a Request for Variance to Contra Costa Health Services which was approved on February 8, 2013.</p> <p>The Project qualifies as a California Environmental Quality Act (CEQA) Class 2 Categorical Exemption since the project involves replacing existing facilities on the same right-of-way of the existing well and will have the same capacity. DWD filed a Notice of Exemption (NOE) with the County Clerk on March 1, 2013.</p>	<ul style="list-style-type: none"> • Feasibility Study for the Project. • Section C-C' from 1999 Groundwater Resources Assessment shows the connection of target aquifer between well with non-detect Arsenic levels and proposed well location. • Lab results demonstrate non-detect levels of Arsenic in well connected to target aquifer. • Approved Variance Request from Health Department approving new well location. • Cost proposal to perform the construction activity. • NOE for CEQA Categorical Exemption.

Project	Summary of Completed Work and Key Findings	Existing Data and Studies
<p>Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion</p>	<p>In September 2009 a Report on the Groundwater Monitoring Program was completed that summarized the collection of groundwater data and the groundwater conditions in relation to the City’s well production. This Report concluded that the Rossmoor Well, constructed in 1991, has experienced severe biofouling problems since 2001 which led to more frequent pump failures. Then, as described in the Pittsburg Plain Groundwater Basin Groundwater Management Plan, a video log was completed and holes were found in the well casing.</p> <p>Prior to the assumed grant award date of October 1, 2013, design and CEQA documentation (anticipated Notice of Exemption) will be completed.</p>	<ul style="list-style-type: none"> • Reports on Groundwater Monitoring Program (September 2009, February 2013) • Pittsburg Plain Groundwater Basin (2-4) CASGEM Monitoring Plan (December 2011) • Pittsburg Plain Groundwater Basin (2-4) Groundwater Management Plan (October 2012)
<p>Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project</p>	<p>CCWD and FCD have completed numerous studies and reports for the Contra Costa Canal Levee Elimination and Flood Protection Project and the USCB Project, respectively. Additionally, planning, design, permitting, and CEQA/NEPA documentation is complete for both projects.</p>	<ul style="list-style-type: none"> • Extensive work has been completed to support this project; please refer to Attachment 7 for a full list
<p>Knightsen Wetland Restoration and Flood Protection Project</p>	<p>The Knightsen Water Quality Wetland Feasibility Assessment completed in 2002 summarizes the development of a plan to improve stormwater quality and reduce flood hazards in the Knightsen area. The CALFED Veale/Byron Track Work Group worked with the community of Knightsen to develop the plan. The Assessment evaluates the feasibility of constructing facilities to help improve water quality of stormwater and agricultural tailwaters from the Knightsen area before they enter the Delta. This laid the groundwork for the Feasibility Study which identified the East Contra Costa County Habitat Conservancy’s plan to purchase the 645 acre parcel in Knightsen, as well as the methods of restoration of the project site to enhance and restore habitats that historically were found there. The Study describes historical and present day site conditions, key components of the target restoration habitats, and stormwater quality treatment facilities to be implemented.</p>	<ul style="list-style-type: none"> • Knightsen Water Quality Wetland Feasibility Assessment (2002) • East Contra Costa County Historical Ecology Study (2011) • Knightsen Habitat Restoration Feasibility Study (2013) • Property appraisal (confidential)

Project	Summary of Completed Work and Key Findings	Existing Data and Studies
	Thus far, the feasibility studies have been completed and the property has been appraised.	
Recycled Water Salinity Reduction and Distribution System Expansion Project	<p>A Recycled Water Master Plan (RWMP)/Title XVI Feasibility Study report was prepared to examine opportunities to expand and optimize operations of DDS's recycled water system. It identified potential users, new system facilities that would be required, estimated average annual demands and costs, and performed an alternatives and cost effectiveness analyses.</p> <p>The TDS Reduction Advanced Treatment Feasibility Study examined alternatives for reducing the TDS concentrations in recycled water through the redirection of a high salinity brine line.</p> <p>The final Biological Assessment and the Cultural Resources Inventory Report were prepared March 2013. Planning for the high salinity brine line is being coordinated with The Dow Chemical company, and DDS has formally requested permit approval from the State Water Resources Control Board for this project.</p>	<p>Recycled Water Master Plan: A Title XVI Feasibility Study Report (Revised Administrative Draft January 2013)</p> <p>TDS Reduction Advanced Treatment Feasibility Study (February 2012)</p> <p>Technical Memorandum, Final Effluent Quality Analysis with Dow Industrial Waste Relocation (draft November 2012)</p> <p>Letter from Regional Water Quality Control Board approving rerouting of Dow brine line (February 28, 2013)</p>

Integrated Elements of Projects and Project Timing and Phasing

As discussed previously, the projects included in this grant proposal were selected based on their ability to – collectively – achieve a specific vision for the Region. The projects are integrated in their ability to achieve this vision together. Implementation of a subset of the projects would impair the region’s ability to achieve the overarching vision for the proposal. However, each project is capable of providing the benefits claimed in the absence of other projects; as a result, implementation of the projects and associated tasks as described in this Attachment will yield full benefits, and the schedules of proposed projects are not interdependent.

Several of the projects included in this application are elements of larger projects or programs and funding received through this grant opportunity will be leveraged to implement a component of a larger project. Additionally, the projects included in this proposal are intrinsically linked through the East Contra Costa County regional objectives and one project in particular, is linked to two projects that were included in the East Contra Costa County Functionally Equivalent IRWMP and planning process, and are currently being implemented with IRWM grant monies.

The ***Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project*** is a project that arose from two separate, stand-alone projects led by CCWD and FCD. The project partners’ collaboration in the East Contra Costa County IRWM planning effort led to this joint project, a prime example of successful IRWM planning. The FCD is currently implementing the USCB Project to prevent flooding along the lower reach of Marsh Creek between Sand Creek and the Marsh Creek outfall into the Sacramento-San Joaquin River at Big Break in Oakley. The construction of USCB is expanding an existing interim flood control basin by excavating the existing interim basin floor. The Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project would involve using soil removed from the excavation for use by CCWD for its Contra Costa Canal Flood Protection and Levee Elimination and Flood Protection Project as fill material. The Canal Project, which received funding for implementation under Round 1 of Proposition 1E, is currently under construction. The project partners are already closely coordinating and will continue doing so to ensure the surplus material is available at the necessary time. By using the surplus material from USCB, the FCD will further the progress of its project to ultimately provide flood control benefits and CCWD will be able to construct an additional 450 feet of pipeline and provide additional water quality and supply benefits to the region.

The other projects included in this Proposal are related to the successful and on-going East Contra Costa County IRWM planning process and associated project integration. For example, DDSD identified the ***Recycled Water Salinity Reduction and Distribution System Expansion Project*** through completion of its Recycled Water Master Plan (RWMP), which was awarded funding through a Proposition 84 Round 2 Planning Grant, and will be included in the East Contra Costa County’s updated IRWMP currently being prepared. The East County region also received a Round 1 Planning Grant, which included funding to study salt management in the Pittsburg Plain Groundwater Basin. The recycled water salinity reduction component of the DDSD project is designed to reduce salinity in recycled water used for landscape irrigation which supports the salt management strategy for the Pittsburg Plain and greater East County region developed using IRWM planning grant funds. The Recycled Water Salinity Reduction and Distribution System Expansion Project is part of a larger program that will expand delivery of recycled water to users. This project is the first phase of expanding DDSD’s distribution of recycled water to users that are ready for recycled water. The RWMP identifies potential users through build out, which will occur over multiple years in several phases. Each phase, including this Project, is a stand-alone phase

and can be implemented independently of the other while yielding water quality and water supply benefits.

Similarly, the ***Knightsen Wetland Restoration and Flood Protection Project*** is the second component of a larger, three phased program. The three phases are:

- I. Completion of Feasibility Studies
- II. (A) Property Acquisition, development and construction of stormwater treatment wetlands
(B) Habitat Restoration of the additional habitats (beyond the stormwater treatment wetlands) and improvements to drainage infrastructure within Knightsen community
- III. Ongoing adaptive management of the project to ensure that water quality, habitat/species and flood control goals are met.

Phase 1 was completed in November 2002 through development of the *Knightsen Water Quality Wetland Feasibility Assessment*. This laid the groundwork for Phase II(A): the Knightsen Wetland Restoration and Flood Protection Project included in this Proposal, which will achieve flood management, water quality, and environmental benefits. Full benefits of an array of habitats and improved stormwater conveyance will be achieved upon completion of Phase II(B). The fund for acquisition of the parcel has been secured and the Conservancy and other project partners are eager to finalize design and initiate the restoration.

Work Plan Tasks

This section includes a detailed discussion of the various tasks needed to implement each project and collectively this proposal.

1 - Beacon West Arsenic Well & Tank Replacement Project

Detailed Description

The Beacon West Arsenic Well and Tank Replacement Project include the following elements: (1) Replacement of a well that has high Arsenic levels in excess of Primary Drinking Water Standards with a well completed into a shallower aquifer zone with water shown to have Arsenic levels below Primary Drinking Water Standards; (2) Replacement of two 1,500 gallon hydropneumatic pressure tanks that have corroded and jeopardize the Beacon West community's water supply. The location of the new well has already been determined and the District has received a Variance Permit from the Contra Costa Health Services Department given its location within the existing road right-of-way. The water source for Beacon West is currently under Compliance Order No. 002-09 for Arsenic levels that are greater than the primary drinking water MCL. The Beacon West Arsenic Well and Tank Replacement Project will address water supply and quality issues in Beacon West by providing drinking water that meets the primary drinking water standard and ensuring the water system does not fail due to corroded pressure tanks. Beacon West is a community located within Census Tract 3010 and also the Census Designated Place of Bethel Island, both of which are considered DACs based on the definition contained in PRC §75005 (g).

Technical Documentation

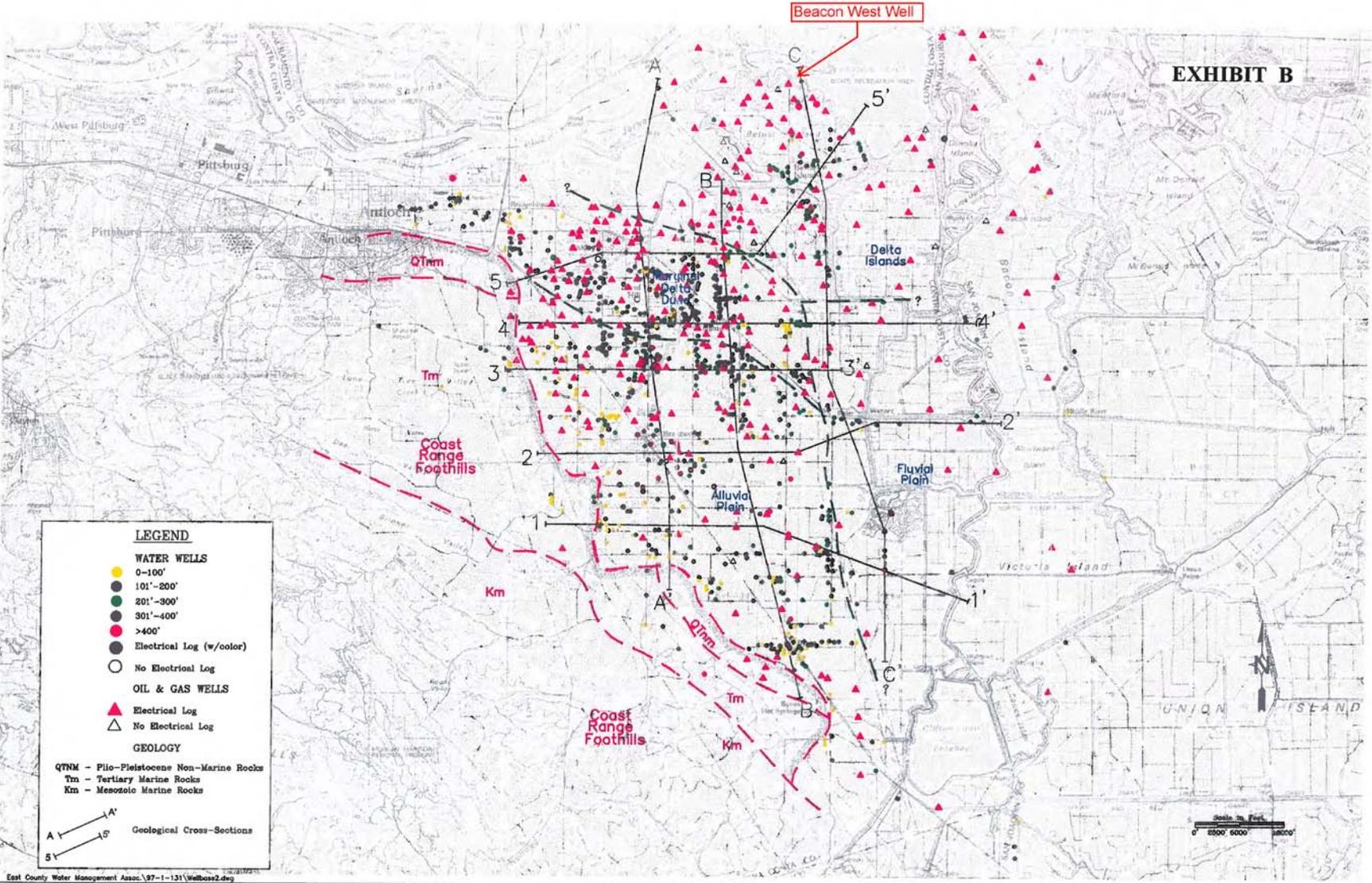
Technical documents that support the feasibility of the project include:

- 1999 Investigation of Groundwater Resources – Appendix 1-1
- Diablo Water District (DWD) 2013 Feasibility Study - Beacon West Arsenic Well and Tank Replacement Project – Appendix 1-2
 - Well Drillers log for target aquifer – included in Feasibility Study (Appendix 1-2) as attachment 3
 - Geologic Cross Section of target aquifer – included in Feasibility Study (Appendix 1-2) as attachment 3
 - Lab results of water sample from target aquifer showing non-detect arsenic levels – included in Feasibility Study (Appendix 1-2) as attachment 4
 - Approved Variance request from Health Department for location of well – included in Feasibility Study (Appendix 1-2) as attachment 5
 - Construction cost quotes for the new well system and replacement of the two 1,500 gallon pressure tanks – included in Feasibility Study (Appendix 1-2) as Attachment 6
- DWD 2010 Urban Water Management Plan - Appendix 1-3
- Preliminary Design and Site Planning, 2013 - Appendix 1-4

Project Map

The figure on the following page shows the location of the Beacon West Arsenic Well and Tank Replacement Project.

Figure 3-4: Beacon West Well Location



Well Map
East County Water Management Association
Ground-Water Resources Assessment

Budget Category (a): Direct Project Administration Costs

Task 1.1: Administration

This task involves general administration activities associated with the various elements of the Beacon West Arsenic Well and Tank Replacement. Proposed project administration tasks and deliverables are described in the table below.

Task	Description	Deliverables
1.1	Preparation of invoices and backup documentation and project coordination.	<ul style="list-style-type: none"> Invoices and backup documentation

Task 1.2: Labor Compliance Program

This task involves the development of the Labor Compliance Program for Beacon West Arsenic Well and Tank Replacement.

Task	Description	Deliverable
1.2	Diablo Water District contracts with 3QC located in Folsom, California to perform its labor compliance monitoring and reporting.	<ul style="list-style-type: none"> Adopted Labor Compliance Program

Task 1.3: Reporting

Proposed reporting activities are described in the table below.

Task	Description	Deliverables
1.3	This task includes the preparation and submittal of quarterly reports and a project completion report to DWR. Also, a Project Performance Monitoring Plan will be prepared to provide a framework for assessing and evaluating the project performance once it is implemented. The Monitoring Plan will identify the measures that will be used to monitor progress toward achieving the specific project goals. Attachment 6 of this Proposal consists of Monitoring, Assessment, and Performance Measures for the Project which will provide a basis for the Monitoring Plan.	<ul style="list-style-type: none"> Quarterly and Project Completion Reports to DWR starting after contract execution Project Performance Monitoring Plan

Budget Category (b): Land Purchase/Easement

There is no land purchase or easement acquisition associated with the Beacon West Arsenic Well and Tank Replacement Project.

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

This task involves the primary engineering and environmental documentation tasks related to the Beacon West Arsenic Well and Tank Replacement Project.

Task 1.4: Assessment and Evaluation

This task involves the preliminary assessment and evaluation tasks related to Beacon West Arsenic Well and Tank Replacement. Significant planning and design work has been completed as previously described.

Task	Description	Deliverable
1.4	Preliminary design and site planning has been completed. Water quality sampling will be conducted and lab analyses performed.	<ul style="list-style-type: none"> Water quality report

Task 1.5: Final Design

Proposed design tasks are described below.

Task	Description	Deliverable
1.5	This task involves the development of the Final Design Drawings and Specifications.	<ul style="list-style-type: none"> Final design submittal

Task 1.6: Environmental Documentation

Proposed environmental documentation activities are described below.

Task	Description	Deliverable
1.6	Notice of Exemption for Class 2 Categorical Exemption was filed with the County Clerk in March 2013.	<ul style="list-style-type: none"> Filed Notice of Exemption

Task 1.7: Permitting

A well Location Variance Permit from the County Environmental Health Department has already been obtained for the Beacon West Arsenic Well and Tank Replacement Project. A well construction permit will be acquired by the contractor prior to construction.

Task	Description	Deliverable
1.7	Well Drilling Permit	<ul style="list-style-type: none"> Executed Permit

Budget Category (d): Construction/Implementation

This task involves the construction contracting and construction activities associated with the Beacon West Arsenic Well and Tank Replacement Project.

Task 1.8: Construction Contracting

Proposed construction contracting tasks are described below:

Task	Description	Deliverables
1.8	This task includes the preparation of the bid package and award of the construction project	Bid package and selection

Task 1.9: Construction

Proposed construction tasks are described below:

Task	Description	Deliverables
1.9	Mobilization and site preparation includes: <ul style="list-style-type: none"> Setting up drill rig 	<ul style="list-style-type: none"> As-built drawings Well and pump

Task	Description	Deliverables
	<ul style="list-style-type: none"> Moving equipment to site <p>Project construction includes the following elements:</p> <ul style="list-style-type: none"> Constructing 8" well Installing 18-gpm test pump for sampling purposes Installing concrete slab with raised well head Installing 10 HP, 165 gpm pump Installing approximately 40 feet of 4" piping from new well pump to tanks Converting old well to monitoring well Removing and replacing two 1,500-gallon pressure tanks and pedestals <p>Performance testing will occur after the well pump and tanks are installed. Performance testing will include:</p> <ul style="list-style-type: none"> Confirming system operability with new well, pump and tanks. Checking specific capacity of well Checking pump efficiency Pressure testing of hydropneumatic tanks prior to being placed into service. 	testing report

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

Task 1.10: Environmental Compliance/Mitigation/Enhancement

There is no mitigation required for a Categorical Exempt Project such as the Beacon West Arsenic Well and Tank Replacement Project; therefore there is no environmental compliance/ mitigation/ enhancement for this project.

Budget Category (f): Construction Administration

Task 1.11: Construction Administration

Proposed construction administration tasks associated with the Beacon West Arsenic Well and Tank Replacement Project are described in the table below:

Task	Description	Deliverables
1.11	<ul style="list-style-type: none"> Construction management Processing progress payments Inspection activities Responses to RFIs and Change Order Requests Payment of contractor invoices Public notification of construction activities 	<ul style="list-style-type: none"> Approved invoices Quarterly progress reports

Budget Category (g): Other Costs

There are no other costs associated with the Beacon West Arsenic Well and Tank Replacement Project.

Budget Category (h): Construction/Implementation Contingency

There are no separate construction implementation contingencies associated with Beacon West Arsenic Well and Tank Replacement Project. Contingencies of approximately 10% are included with project costs.

2 - Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project

Detailed Description

The Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project consists of the following elements: (1) Installing a replacement well at the existing Rossmoor Well with variable frequency drive and resulting in a capacity increase from 600 gpm to 1400 gpm; (2) Installing 1,200 feet of larger supply line; and (3) Installing a multiport monitoring well to expand the groundwater monitoring system.

Technical Documentation

Technical documents that support the feasibility of the project include:

- Reports on Groundwater Monitoring Program (September 2009, February 2012) – Appendix 2-1
- Pittsburg Plain Groundwater Basin (2-4) CASGEM Monitoring Plan (December 2011) – Appendix 2-2
- Pittsburg Plain Groundwater Basin (2-4) Groundwater Management Plan (October 2012) – Appendix 2-3
- City of Pittsburg 2010 Urban Water Management Plan Update – Appendix 2-4
- California Environmental Quality Act (CEQA) Notice of Exemption – Appendix 2-5
- Cost comparison – Bodega and Rossmoor Wells – Appendix 2-6

Project Map

The figure on the following page shows the location of the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project. The replacement Rossmoor Well will be in approximately the same location as the existing well shown on Figure 3-4.

Figure 3-5: Rossmoor Well Location



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Figure 5a
Contours of Equal Groundwater Elevation (NADV88)
Shallow Well 1/16/2008

Budget Category (a): Direct Project Administration Costs

Task 2.1: Administration

This task involves general administration activities associated with the various elements of the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project. Proposed project administration tasks and deliverables are described in the table below.

Task	Description	Deliverables
2.1	Preparation of invoices and backup documentation	<ul style="list-style-type: none"> • Preparation of invoices and backup documentation • Quarterly, Annual and Final Reports to DWR

Task 2.2: Labor Compliance Program

This task involves the development of the Labor Compliance Program for the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project. The City of Pittsburg will pursue its existing Labor Compliance Program as described below:

Task	Description	Deliverables
2.2	Develop and implement Labor Compliance Program	<ul style="list-style-type: none"> • Adopted Labor Compliance Program

Task 2.3: Reporting

Proposed reporting activities are described in the table below.

Task	Description	Deliverables
2.3	This task includes the preparation and submittal of quarterly reports and a project completion report to DWR. Also, a Project Performance Monitoring Plan will be prepared to provide a framework for assessing and evaluating the project performance once it is implemented. The Monitoring Plan will identify the measures that will be used to monitor progress toward achieving the specific project goals. Attachment 6 of this Proposal consists of Monitoring, Assessment, and Performance Measures for the Project which will provide a basis for the Monitoring Plan.	<ul style="list-style-type: none"> • Quarterly, Annual and Final Reports to DWR after contract execution • Project Performance Monitoring Plan

Budget Category (b): Land Purchase/Easement

The Rossmoor Well property transfer from Contra Costa County to the City of Pittsburg occurred in 2005. There is no other land purchase acquisition activities associated with the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

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

This task involves the primary engineering and environmental documentation tasks related to the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

Task 2.4: Assessment and Evaluation

Significant planning and design work has been completed as described in the table below; therefore there is no further assessment and evaluation tasks related to Rossmoor Well Replacement / Groundwater Monitoring Well System Expansion Project.

Task	Description	Status
2.4	Hydrology and Water Quality Study	Complete (2008)
	Reports on Groundwater Monitoring Program	Complete (2009, 2012)
	California Environmental Quality Act (CEQA) Notice of Exemption	Complete (2012)

Task 2.5: Final Design

Proposed design tasks are described below.

Task	Description	Deliverables
2.5	This task involves the development of the Conceptual Design Report, 50% Design Drawings and Specifications and the Final Design Drawings and Specifications.	<ul style="list-style-type: none"> • Conceptual design submittal • 50% design submittal • Final design submittal

Task 2.6: Environmental Documentation

The project is categorically exempt under Class 2. Proposed environmental documentation activities are described below.

Task	Description	Deliverables
2.6	A Notice of Exemption will be filed with the County Clerk.	<ul style="list-style-type: none"> • Filed Notice of Exemption

Task 2.7: Permitting

This task involves acquiring the permits listed in the table below:

Task	Description	Deliverables
2.7	California Department of Public Health Water Supply Permit	<ul style="list-style-type: none"> • Executed Permit
	Contra Costa County Health Department Well Permit	<ul style="list-style-type: none"> • Executed Permit

Budget Category (d): Construction/Implementation

This task involves the construction contracting and construction activities associated with the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

Task 2.8: Construction Contracting

Proposed construction contracting tasks are described below:

Task	Description	Deliverables
2.8	This task includes resident engineering, consultant review of construction activities, and construction materials testing.	<ul style="list-style-type: none"> • Construction contract

Task 2.9: Construction

Proposed construction tasks are described below:

Task	Description	Deliverables
2.9	<p>Mobilization and site preparation including work area set-up and construction equipment preparation.</p> <p>Project construction includes physical construction tasks including:</p> <ul style="list-style-type: none"> • Installing a 1,400 gpm well at the existing Rossmoor Well with variable frequency drive • Installing 1,200 feet of supply line • Installing a multiport monitoring well to expand the groundwater monitoring system <p>Project close-out includes documentation of project as-built conditions.</p>	<ul style="list-style-type: none"> • As-built drawings • Completed facilities • Inspection report

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

Task 2.10: Environmental Compliance/Mitigation/Enhancement

A Notice of Exemption has been filed, and mitigation is not expected to be required as part of this Project.

Budget Category (f): Construction Administration

Task 2.11: Construction Administration

Proposed construction administration tasks associated with the Rossmoor Well Replacement/ Groundwater Monitoring Well System Expansion Project are described in the table below:

Task	Description	Deliverables
2.11	Construction management Inspection activities Responses to RFIs and Change Order Requests Payment of contractor invoices Public notification of construction activities	<ul style="list-style-type: none"> • Approved invoices • Quarterly progress reports

Budget Category (g): Other Costs

There are no other costs associated with the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

Budget Category (h): Construction/Implementation Contingency

There are no construction implementation contingency associated with the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

3 - Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project

Detailed Description

The Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project consists of removing 75,000 cy of stockpiled, surplus earthen material from the FCD's USCB site, and reusing this material at CCWD's Contra Costa Canal Levee Elimination and Flood Protection Project, where approximately 5,000 linear feet of pipeline will be installed replacing the Canal embankments along Segment 2 of the unlined Canal in Oakley, California. The project will enable an additional 450 feet of Canal to be encased in a buried pipeline, providing regional flood risk reduction and improving water supply reliability and delivered water quality for CCWD's customers and will support construction of created wetlands by the DWR Dutch Slough Tidal Restoration Project.

Technical Documentation

Technical documents that support the feasibility of the Upper Sand Creek Basin portion of the project are included in Appendix 3-1 as follows:

- Upper Sand Creek Basin Preliminary Soil Characterization Study, 2000 – Appendix 3-1.1
- Upper San Creek Detention Basin Design Report, August 2010 – Appendix 3-1.2
- CEQA analysis regarding hauling of fill from the Sand Creek Basin site by the Contra Costa County Flood Control & Water Conservation District, Approved by Contra Costa County Board of Supervisors on November 2010 – Appendix 3-1.3
- Upper Sand Creek Basin Geotechnical Report, 2012 – Appendix 3-1.4
- Upper Sand Creek Basin Project Plans and Specifications, 2012 – Appendix 3-1.5
- Contra Costa Flood Control District Proposition 1E Round 1 Funding Application Work Plan and Economic Analysis – Upper Sand Creek Basin – Appendix 3-1.6

In addition, CCWD has completed numerous studies and reports evaluating and quantifying the benefits of the Contra Costa Canal Levee Elimination and Flood Protection Project, which would be extended through implementation of the proposed project. Phase 1 of the Project has been constructed, and design of the remaining phases is nearing completion. Specific studies and actions completed to-date supporting feasibility of the Contra Costa Canal Levee Elimination and Flood Protection Project include the following.

Environmental & Permitting Documentation – Appendix 3-2

- Environmental documentation has been completed in accordance with the California Environmental Quality Act (CEQA) and National Environmental Protection Act (NEPA). A Negative Declaration was approved on November 2006; it was determined that the Project will not have significant effects on the environment. Reclamation approved a NEPA Finding of No Significant Impact (FONSI) in July, 2007. CEQA Addendum and NEPA modifications will be conducted as required for new phases of construction. (Appendix 3-2.1)
- Mitigation Monitoring and Reporting Program for the Contra Costa Canal Replacement Project. State Clearinghouse # 2006042082. November 2006. (Appendix 3-2.2)
- Final Mitigated Negative Declaration for the Contra Costa Canal Replacement Project. November 2006. (Appendix 3-2.3)

- Final Environmental Assessment Contra Costa Canal Replacement Project, contra Costa County, California. June 2007. (Appendix 3-2.4)
- Several permits and agreements were secured in 2007, including: Central Valley Regional Water Quality Control Board 401 Permit, CA Department of Fish and Game 1600 and 2081 Permits, State Historic Preservation Officer MOU, US Army Corps of Engineers 404 Permit, National Marine Fisheries Service Letters of Concurrence, US Fish and Wildlife Coordination Act Letter, and Bureau of Reclamation/Western Area Power Administration (WAPA) NEPA EA/FONSI. These permits may require modification to reflect current field conditions consistent with CEQA Addendum and NEPA updates. (Appendix 3-2.5)
- Conservation Easement Deed Holland Tract Preserve. Completed environmental mitigation included a total of 145 acres of mitigation land including 98 acres of upland habitat and 47 acres of wetland habitat in Holland Tract. (Appendix 3-2.6)

Engineering & Design Documentation – Appendix 3-3

- Geotechnical Engineering Investigation Contra Costa Water District Canal Replacement Project Oakley, CA. DCM Engineering/Carollo Engineers, November 2007. (Appendix 3-3.1)
- Recommended Pipeline Alignment. Technical Memorandum. Brown & Caldwell. June 2011. (Appendix 3-3.2)
- Canal Crossings. Technical Memorandum. Brown & Caldwell. June 2011. (Appendix 3-3.3)
- Canal Levee Elimination and Flood Mitigation Project Phase 2 – Pipeline. Access Structure Structural Calculations. Brown and Caldwell. June 2011. (Appendix 3-3.4)
- Cypress Grove Levee Protection. Technical Memorandum. Brown & Caldwell. June 2011 (Appendix 3-3.5)
- Pumping Plant 1 Test Report. Technical Memorandum. Brown & Caldwell, June 2011. (Appendix 3-3.6)
- Final Grade Elevations and Imported Backfill. Technical Memorandum. Brown & Caldwell, June 2011. (Appendix 3-3.7)
- 100% Design Drawings Segments 2 – 4 (Appendix 3-3.8)
- Volume-1-DIV-00-17-FULL (Appendix 3-3.9)
- Volume-2-Appendices (Appendix 3-3.10)
- Executed Prop 1E Agreement for Contra Costa Canal Levee Elimination and Flood Protection Project (Appendix 3-3.11)

Flood Benefits Documentation – Appendix 3-4

- Photos and narrative description of historical flood damage: RD 1237, Contra Costa Water District Operations and Maintenance Staff (Appendix 3-4.1)
- Flood frequency curves for Old River at Rock Slough and San Joaquin River at Antioch. Developed by Corps of Engineers, Sacramento California. February 1992. (Appendix 3-4.2)
- FEMA inundation maps. (Appendix 3-4.3)
- Water surface elevations measured at Rock Slough. http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=RSL (Appendix 3-4.4)
- Application for Individual Permit Supplemental Attachment. Dutch Slough Tidal Marsh Restoration (SPK-2004000043). Prepared for U.S. Army Corps of Engineers Sacramento District, Regulatory Division. Prepared by California Department of Water Resources. March 2012 (Appendix 3-4.5).

- Dutch Slough Tidal Marsh Restoration Project Final Environmental Impact Report. SCH # 2006042009. State of California Department of Water Resources. March 2010. (Appendix 3-4.6)
- City of Oakley 2020 General Plan. Updated January 2010.
http://www.ci.oakley.ca.us/UserFiles/file/GeneralPlan/General%20Plan%202020_Updated%20January%2026,%202010.pdf (Appendix 3-4.7)
- City of Oakley East Cypress Corridor Specific Plan Final Supplemental Environmental Impact Report. January 2009.
<http://www.ci.oakley.ca.us/UserFiles/file/planning/East%20Cypress/ECC%20SP%20Draft%20EIR.pdf> (Appendix 3-4.8)

Water Supply Benefits Documentation – Appendix 3-5

- Spreadsheet of CCWD daily operations model output (Appendix 3-5.1)
- Contra Costa Water District Daily Operations Model (WRSEL based linear program). Los Vaqueros Expansion Model Documentation. Technical Memorandum. MBK Engineers. November 3, 2010. (Appendix 3-5.2)
- G-model used to estimate water savings to CVP/SWP associated with compliance with water quality standards. Accounting for Antecedent Conditions in Seawater Intrusion Modeling – Applications for the San Francisco Bay-Delta. Richard Denton, 1993. Hydraulic Engineering, Volume 1, ASCE, pp. 448-453. (Appendix 3-5.3)
- Calculation of water savings based on Rock Slough salinity requirements, Contra Costa Water District, 2013. (Appendix 3-5.4)

Water Quality Benefits Documentation – Appendix 3-6

- Water Quality at Contra Costa Water District’s Contra Costa Canal Intake: A Review of Rock Slough Water Quality Analyses. Contra Costa Water District Interoffice Memorandum. August 14, 2001. (Appendix 3-6.1)
- Rock Slough Technical Memorandum Evaluating Veale Tract Discharge. FlowScience. December 19, 2003. (Appendix 3-6.2)
- Identification of Water Quality Degradation Sources in Rock Slough and Unlined Portion of Contra Costa Canal. Contra Costa Water District Interoffice Memorandum. October 23, 2003. (Appendix 3-6.3)
- Bay Area Water Quality & Supply Reliability Program. CALFED Bay Delta Program. May 2005. (Appendix 3-6.4)
- Amy, G.L., M. Siddiqui, K. Ozekin, H.W. Zhu, and C. Wang, (1998). Empirically Based Models for Predicting Chlorination and Ozonation By-Product: Haloacetic Acids, Chloral Hydrate, and Bromate. EPA Report CX 819579. USEPA Office of Groundwater and Drinking Water: Cincinnati, OH. 1998. (Appendix 3-6.5)
- Field data collected by Contra Costa Water District and the Department of Water Resources. (Appendix 3-6.6)
- Beneficial Use Impact Study, Final Report Ironhouse Sanitary District, Oakley, California. Prepared by HydroFocus. December 2003. (Appendix 3-6.7)

Environmental Benefits Documentation – Appendix 3-7

- Dutch Slough Tidal Marsh Restoration Project Final Environmental Impact Report. SCH # 2006042009. State of California Department of Water Resources. March 2010. (Appendix 3-7.1)

- East Contra Costa County HCP/NCCP Mitigation Fee Audit. East Contra Costa County Habitat Conservancy, December 2012. (Appendix 3-7.2)
- East Contra Costa County Habitat Conservancy Governing Board Memorandum: Review and Adjustment of the HCP/NCCP Mitigation Fees, July 2011. (Appendix 3-7.3)

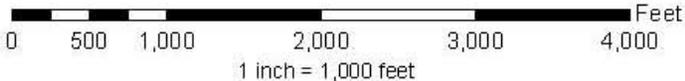
Energy Related Benefits Documentation - Appendix 3-8

- Spreadsheet of CCWD daily operations model output, Contra Costa Water District Daily Operations Model (WRSEL based linear program). Los Vaqueros Expansion Model Documentation. Technical Memorandum. MBK Engineers. November 3, 2010. Greenhouse gas (GHG) emissions for the Contra Costa Water District (CCWD) is based on the Climate Registry's (Registry) General Reporting Protocol v3.1 (Protocol) released in January 2009. (Appendix 3-8.1)

Project Map

The figure on the following page shows the locations of the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. Figure 3-5 shows the location of the USCB, the source of the excess material / fill. Figure 3-6 shows Segment 2 of the Contra Costa Canal where the fill will be used by CCWD for its Contra Costa Canal Flood Protection and Levee Elimination Project, eliminating the cost of the fill material, allowing an additional 450 feet of canal to be encased in a pipeline, extending the benefits of the project.

Figure 3-6: Upper Sand Creek Basin Location

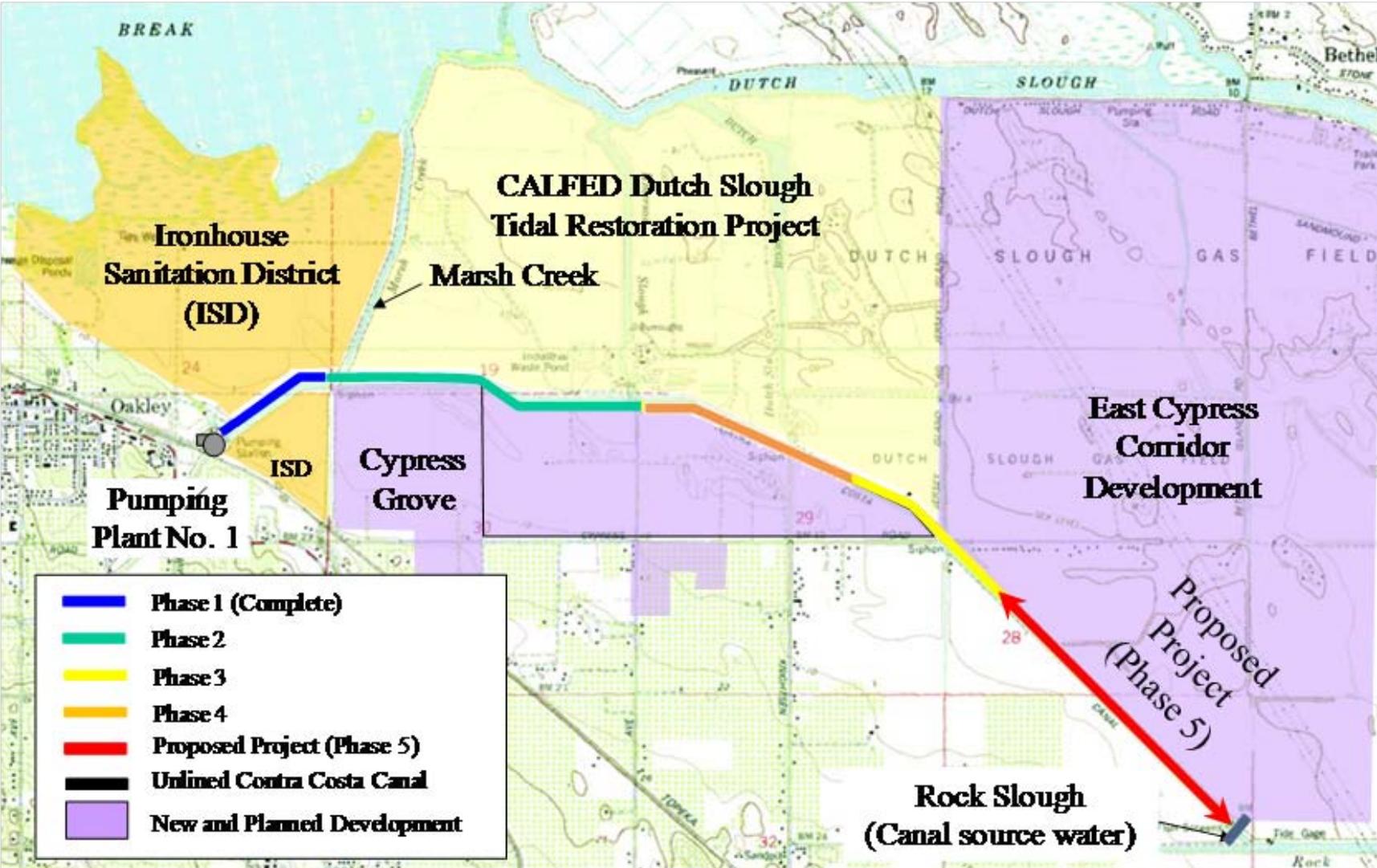


Aerial photo taken March/April 2008

- City Limit Boundaries
- Creek
- Existing Interim Basin
- Proposed Basin Expansion



Figure 3-7: Contra Costa Canal Segment 2



Budget Category (a): Direct Project Administration Costs

Task 3.1: Administration

This task involves general administration activities associated with the various elements of the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. Proposed project administration tasks and deliverables are described in the table below.

Task	Description	Deliverables
3.1	Preparation of invoices and backup documentation	<ul style="list-style-type: none"> • Preparation of invoices and backup documentation • Quarterly, Annual and Final Reports to DWR

Task 3.2: Labor Compliance Program

This task involves the development of the Labor Compliance Program for the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

Task	Description	Deliverables
3.2	Development of Labor Compliance Program	<ul style="list-style-type: none"> • Adopted Labor Compliance Program

Task 3.3: Reporting

Proposed reporting activities are described in the table below.

Task	Description	Deliverables
3.3	This task includes the preparation and submittal of quarterly reports and a project completion report to DWR. Also, a Project Performance Monitoring Plan will be prepared to provide a framework for assessing and evaluating the project performance once it is implemented. The Monitoring Plan will identify the measures that will be used to monitor progress toward achieving the specific project goals. Attachment 6 of this Proposal consists of Monitoring, Assessment, and Performance Measures for the Project which will provide a basis for the Monitoring Plan.	<ul style="list-style-type: none"> • Quarterly, Annual and Final Reports to DWR after contract execution • Project Performance Monitoring Plan

Budget Category (b): Land Purchase/Easement

No land purchase acquisition activities are associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

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

This task involves the primary engineering and environmental documentation tasks related to the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

Task 3.4: Assessment and Evaluation

This task involves the preliminary assessment and evaluation tasks related to the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. Significant planning and design work has been completed. The remaining work to be completed is described below.

Task	Description	Deliverables
3.4	This task includes verification of the USCB and CC Canal information to ensure project plans meet the intended objectives.	<ul style="list-style-type: none"> None

Task 3.5: Final Design

This task involves combining previously developed design information to create a stand-alone set of final plans and specifications. Preliminary design for the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project is complete. Upon project completion, as-built drawings will be provided for the final grade once fill materials are delivered to the Canal right-of-way.

Task 3.6: Environmental Documentation

Proposed environmental documentation activities are described below. Note that bid documents for CCWD's Contra Costa Canal Levee Elimination and Flood Protection Project Segment 2 are being finalized under a separate contract for construction advertisement in April 2013 as a separate project. Additionally, CCWD will have prepared all of the necessary environmental documentation for the hauling of fill to Segment 2 of the Canal Levee Elimination and Flood Protection project as part of its process to support construction of Segment 2. No additional costs are expected to be charged for this grant.

Task	Description	Deliverables
3.6	Preparation of addendum to the 2006 CEQA Initial Study/Mitigated Negative Declaration (Approved by CCWD Board in November 2006) that will include the use of fill for Segment 2 of the Canal Project from the Sand Creek Basin site.	<ul style="list-style-type: none"> Addendum to Initial Study/Mitigated Negative Declaration (completed under separate project/scope of work)

Task 3.7: Permitting

Several permits have already been obtained for the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. The permits already acquired are listed in the table below:

Permit	Status
ACOE Section 404 Permit (USCB)	<ul style="list-style-type: none"> CCWD Canal Permit received August 2007 USCB Permit received December 2012
RWQCB Section 401 Water Quality Certification (USCB)	<ul style="list-style-type: none"> CCWD Canal Certification received March 2007 USCB Certification received December 2012.
DFG Lake and Streambed Alteration Agreement (USCB)	<ul style="list-style-type: none"> CCWD Canal Agreement received September 2007 USCB Agreement received December 2012

Permit	Status
SWRCB NPDES Permit for Stormwater Discharges Associated with Construction Activity (USCB)	<ul style="list-style-type: none"> • CCWD NOI for Segment 2 will be filed prior to the start of construction for Segment 2 • USCB NOI filed; approval is expected April 2013

Budget Category (d): Construction/Implementation

This task involves the construction contracting and construction activities associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

Task 3.8: Construction Contracting

This task will include all construction administration activities, including advertisement for bids, bidding, contract award, insurance confirmation and tracking, submittal review and tracking, invoice review and payment, schedule maintenance, and contract closeout. Proposed construction contracting tasks are described below:

Task	Description	Deliverables
3.8	This task includes resident engineering, consultant review of construction activities, and construction materials testing.	<ul style="list-style-type: none"> • Inspection reports • Testing reports

Task 3.9: Construction

Proposed construction tasks are described below:

Task	Description	Deliverables
3.9	<ul style="list-style-type: none"> • Mobilization and site preparation includes traffic control, mobilization, clearing and grubbing, construction area signs, stormwater pollution prevention plan development. • Project construction includes physical construction tasks including excavation of stockpiled material, hauling, placement and compaction of material at the CCWD site and erosion control. The fill material for CCWD will be mass, non-structural fill over the Contra Costa Canal pipeline. • Project close-out includes documentation of project as-built conditions and final topographic surveys. 	<ul style="list-style-type: none"> • Site work • Completed Facilities • As-built drawings

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

Task 3.10: Environmental Compliance/Mitigation/Enhancement

This task involves identifying and mitigating environmental impacts (e.g. construction impacts) associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. *The CCWD Canal Project has identified mitigation measures to fully mitigate potential project impacts. All permit conditions related to project mitigation will be followed. Accepting fill material does not create the need for additional mitigation. Also, the USCB project is fully mitigated.*

Task	Description	Deliverables
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Task	Description	Deliverables
3.10	This task includes site stabilization and installation of erosion control and seeding.	<ul style="list-style-type: none"> Completed erosion control

Budget Category (f): Construction Administration

Task 3.11: Construction Administration

Proposed construction administration tasks associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project are described in the table below:

Task	Description	Deliverables
3.11	<ul style="list-style-type: none"> Construction management Inspection activities Responses to RFIs and Change Order Requests Payment of contractor invoices Public notification of construction activities 	<ul style="list-style-type: none"> Approved invoices Quarterly progress reports

Budget Category (g): Other Costs

There are no other costs associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

Budget Category (h): Construction/Implementation Contingency

There are no construction implementation contingency associated with Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

4 - Knightsen Wetland Restoration and Flood Protection Project

Detailed Description

The Knightsen Wetland Restoration and Flood Protection Project includes the following elements:

1. Acquisition of an existing 645-acre parcel to treat and manage stormwater from the area.
2. Completion of the design of the stormwater treatment wetland.
3. Completion of construction of the stormwater treatment wetland.

This multi-objective project will restore wetlands to treat contaminated flood/stormwater near the unincorporated town of Knightsen. This restoration project will provide environmental (habitat and species) benefits as well as substantial water quality benefits. By capitalizing on the immediate opportunity to integrate: a) long-standing interest in flood protection and stormwater treatment wetlands near Knightsen, b) the habitat and watershed protection and restoration goals of the adopted HCP/NCCP in East Contra Costa County, and c) opportunity to acquire a piece of property that is ideal for integrating these two objectives, the construction of the project provides long term multiple benefits to the region (flood control, drinking water quality protection, and habitat protection and restoration).

In addition to the immediate and local impacts to the area around Knightsen, improving the quality of stormwater runoff in this area is particularly critical because contaminated stormwater drains to Rock Slough and adjacent Delta waterways. Rock Slough is the location for the intake to the Contra Costa Canal, a primary source of drinking water for central and eastern Contra Costa County. The property has the potential to support habitat for a number of special status plants and animals including wetland species including, Giant garter snake, California red legged frog, California tiger salamander, and vernal pool fairy shrimp. The recovery of these species (as well as others that could occupy the restoration site) is of regional and state-wide importance. This project will provide urgently needed benefits to the local community and the region.

Technical Documentation

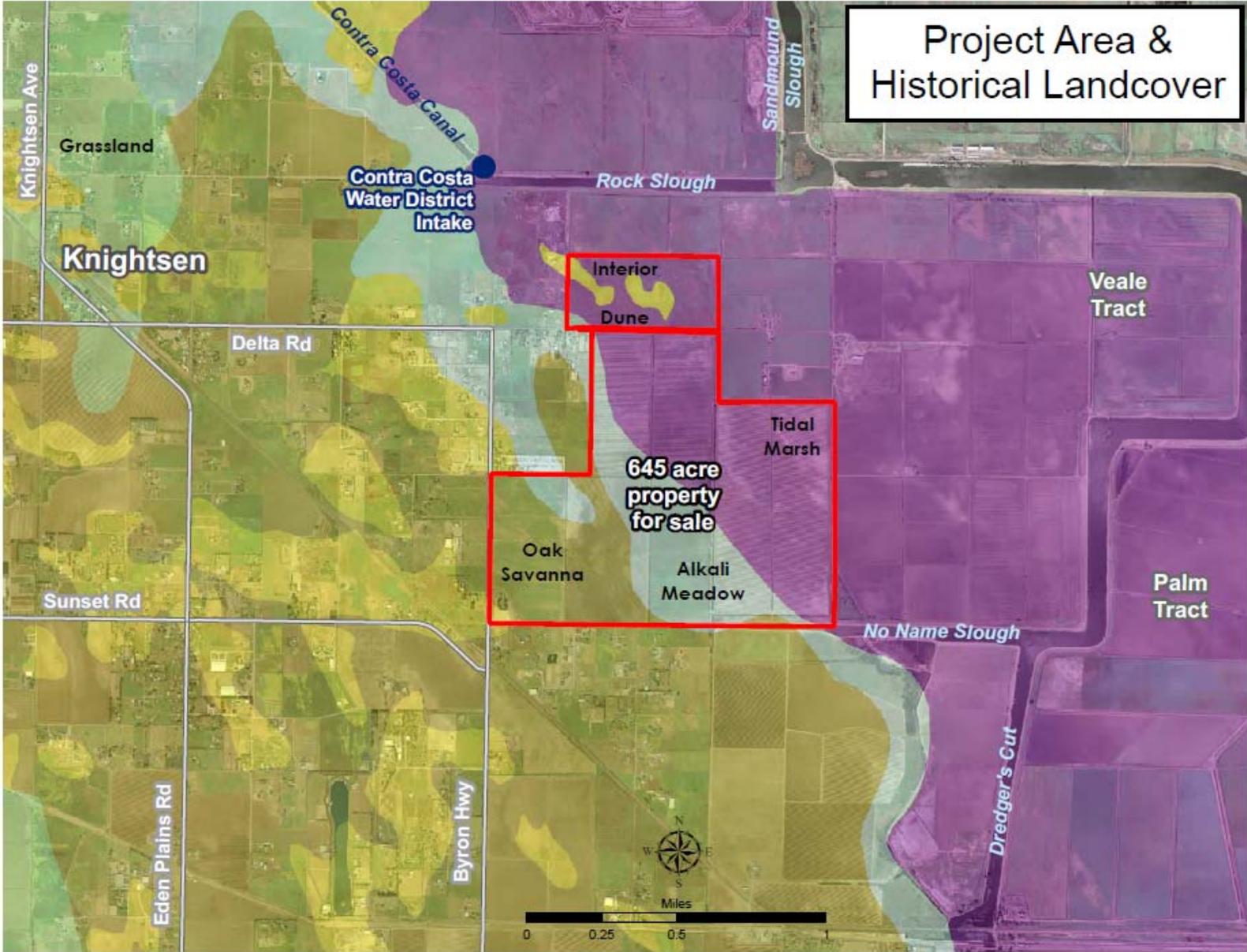
Technical documents that support the feasibility of the project include:

- Knightsen Water Quality Wetland Feasibility Assessment (2002) – Appendix 4-1
- Knightsen Habitat Restoration Feasibility Study (2013) – Appendix 4-2
- Property appraisal (confidential)

Project Map

Figure 3-7 on the following page shows the location of the Knightsen Wetland Restoration and Flood Protection Project.

Figure 3-8: Knightsen Wetland Restoration and Flood Protection Project Site Map



Budget Category (a): Direct Project Administration Costs

Task 4.1: Administration

This task involves general administration activities associated with the various elements of Knightsen Wetland Restoration and Flood Protection Project. Proposed project administration tasks and deliverables are described in the table below.

Task	Description	Deliverables
4.1	Preparation of invoices and backup documentation	<ul style="list-style-type: none"> • Preparation of invoices and backup documentation • Quarterly, Annual and Final Reports to DWR

Task 4.2: Labor Compliance Program

The Conservancy does not have a LCP in place. The Conservancy will hire a third party to provide labor compliance services.

Task	Description	Deliverables
4.2	Contracting of Third Party Labor Compliance Contractor for preparation of a Labor Compliance Program	<ul style="list-style-type: none"> • Labor Compliance Program

Task 4.3: Reporting

Proposed reporting activities are described in the table below.

Task	Description	Deliverables
4.3	This task includes the preparation and submittal of quarterly reports and a project completion report to DWR. Also, a Project Performance Monitoring Plan will be prepared to provide a framework for assessing and evaluating the project performance once it is implemented. The Monitoring Plan will identify the measures that will be used to monitor progress toward achieving the specific project goals. Attachment 6 of this Proposal consists of Monitoring, Assessment, and Performance Measures for the Project which will provide a basis for the Monitoring Plan.	<ul style="list-style-type: none"> • Quarterly, Annual and Final Reports to DWR after contract execution • Project Performance Monitoring Plan

Budget Category (b): Land Purchase/Easement

This budget category involves the land purchase acquisition activities associated with the Knightsen Wetland Restoration and Flood Protection Project.

Description	Deliverables
This large scale restoration project is dependent on the acquisition of a 645-acre parcel that was recently listed for sale. The Conservancy has commissioned an	<ul style="list-style-type: none"> • Property title

Description	Deliverables
appraisal of the property and has secured USFWS ESA Section 6 funds for the acquisition. It is expected that the acquisition will be completed in the first quarter of 2014.	

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

This task involves the primary engineering and environmental documentation tasks related to the Knightsen Wetland Restoration and Flood Protection Project.

Task 4.4: Assessment and Evaluation

This task involves the preliminary assessment and evaluation tasks related to the Knightsen Wetland Restoration and Flood Protection Project. Two Feasibility Studies have been completed in 2001 and 2012. They are described in the table below:

Task	Description	Status
4.4	Knightsen Water Quality Wetland Feasibility Study, Phillip Williams and Associates, 2001. This study was completed by PWA in 2001 for the Contra Costa County Flood Control Department. The study assesses flooding and the resulting water quality degradation (both drinking and environmental). The feasibility study identifies different parcels in the area that could be used to store and treat stormwater in a treatment wetland/bioswale before discharging the water to the Delta	Complete
	Knightsen Habitat Restoration Feasibility Memo, ESA-PWA, 2012. This study was commissioned by the East Contra Costa County Habitat Conservancy and the Town of Knightsen to assess the restoration potential of the identified/available parcel. The study concluded that it is appropriate to restore delta marsh as well as other habitats to the identified parcel	Complete

Task 4.5: Final Design

Proposed design tasks are described below.

Task	Description	Deliverables
4.5	This task involves the development of the Conceptual Design, 50% Design, 90% Design, As-built Report.	<ul style="list-style-type: none"> • Conceptual design, 50% Design, 90% Design, and As-built Report

Task 4.6: Environmental Documentation

Proposed environmental documentation activities are described below.

Task	Description	Deliverables
4.6	This task involves the development and filing of a Mitigated Negative Declaration.	<ul style="list-style-type: none"> • Mitigated Negative Declaration

Task 4.7: Permitting

This task involves the preparation of the following permits:

Task	Description	Deliverables
4.7	East Contra Costa County Habitat Conservancy Take Permits for ESA/CESA US Army Corps of Engineers California Department of Fish and Wildlife Streambed Alteration Agreement (possible) Regional Water Quality Control Board 401 Cert and SWPPP Contra Costa County Grading Permit	<ul style="list-style-type: none"> Executed permits and agreements

Budget Category (d): Construction/Implementation

This task involves the construction contracting and construction activities associated with the Knightsen Wetland Restoration and Flood Protection Project.

Task 4.8: Construction Contracting

Proposed construction contracting tasks are described below:

Task	Description	Deliverables
4.8	Preparation of bid packaging, bid solicitation, and award	<ul style="list-style-type: none"> Advertisement for bid Bid summary Bid award

Task 4.9: Construction

Proposed construction tasks are described below:

Task	Description	Deliverables
4.9	Mobilization and Site Preparation includes the following: <ul style="list-style-type: none"> preconstruction biological surveys removal of any debris of irrigation infrastructure staking, clearing and grubbing of wetland excavation areas BMP installation Equipment needed onsite includes scrapers, excavator, backhoe, water truck and hydroseed equipment Project Construction includes the following activities: <ul style="list-style-type: none"> Earthwork (excavation)- rough grade Dirt compaction/wetland liner Fine grade/habitat features Vegetation establishment/seeding and mulch/ tackifier as needed Performance Testing and Demobilization includes the following activities: <ul style="list-style-type: none"> Final walk through/inspection 	<ul style="list-style-type: none"> As-built drawings Interim work performance letters at key construction benchmarks Photo documentation

Task	Description	Deliverables
	<ul style="list-style-type: none"> • Break down of staging area • Removal of heavy equipment • Start monitoring program 	

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

Task 4.10: Environmental Compliance/Mitigation/Enhancement

Because the project is a restoration project, it is anticipated that no mitigation or enhancement beyond the project design will be required.

Budget Category (f): Construction Administration

Task 4.11: Construction Administration

Proposed construction administration tasks associated with the Knightsen Wetland Restoration and Flood Protection Project are described in the table below:

Task	Description	Deliverables
4.11	Construction management Inspection activities Responses to RFIs and Change Order Requests Payment of contractor invoices Public notification of construction activities	<ul style="list-style-type: none"> • Site work • Completed Facilities • As-built drawings

Budget Category (g): Other Costs

There are no other costs associated with the Knightsen Wetland Restoration and Flood Protection Project.

Budget Category (h): Construction/Implementation Contingency

There are no construction implementation contingency associated with the Knightsen Wetland Restoration and Flood Protection Project.

5 - Recycled Water Salinity Reduction and Distribution System Expansion Project

Detailed Description

The Recycled Water Salinity Reduction and Distribution System Expansion Project will improve recycled water quality, provide operational benefits, cost savings, and expand recycled water capacity by reducing TDS concentration in recycled water produced at DDS. This project involves the installation of approximately 9,200 lineal feet of 6" high density polyethylene (HDPE) pipe and appurtenances to redirect a high TDS brine line from Dow to the DDS wastewater treatment plant downstream of the recycled water facility. This will reduce recycled water TDS concentrations by 15% to 20%, which will improve industrial and irrigation uses. Reduced TDS concentration will allow increased cycling ratios for cooling purposes, thus freeing up recycled water capacity for other users. New recycled water service will be established for several use sites for landscape irrigation and for industrial purposes located in the City of Antioch and City of Pittsburg. Feasibility studies have been drafted to support this project, which is currently in the planning phase with design less than 5% complete.

Technical Documentation

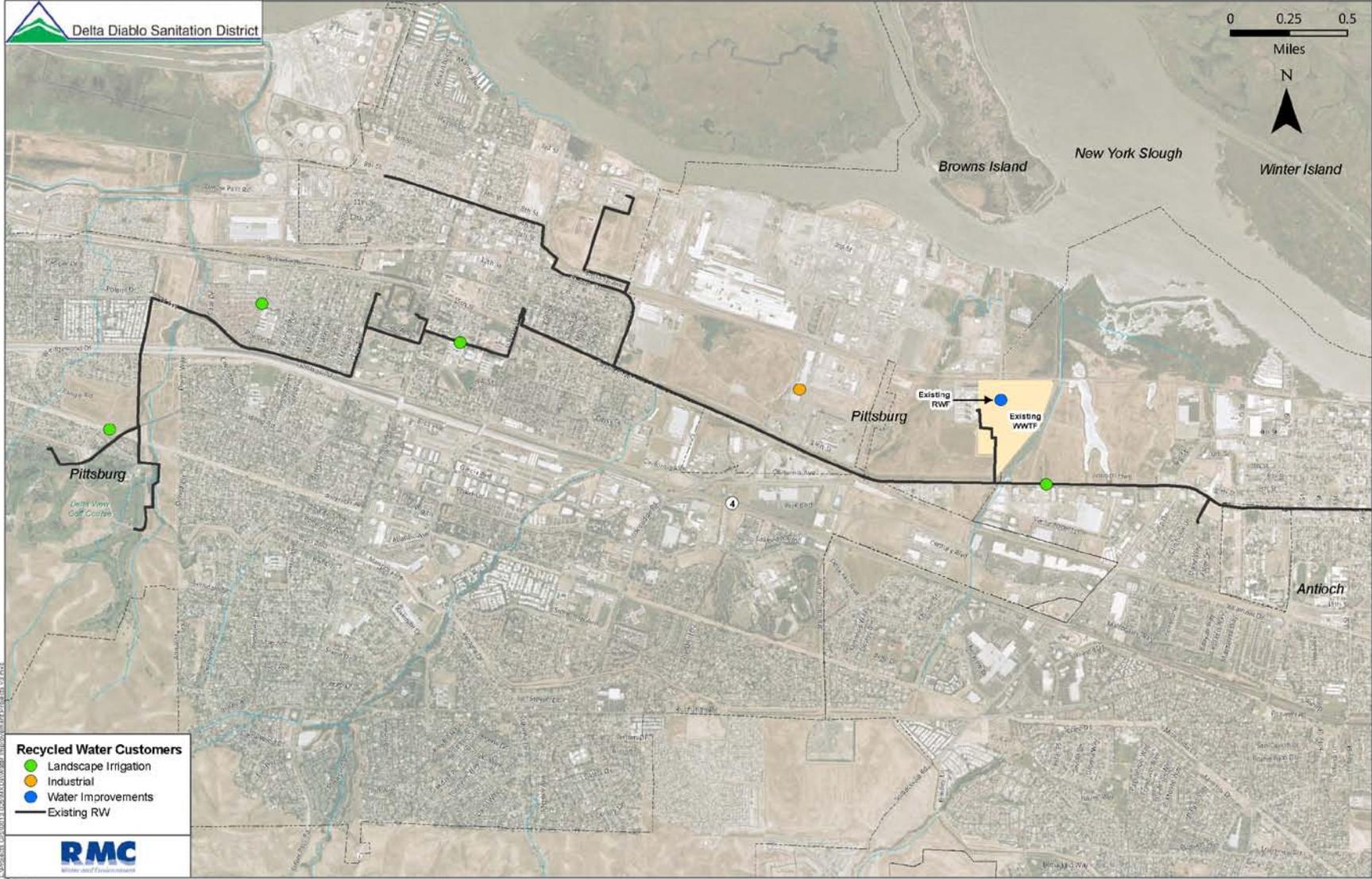
Technical documents that support the feasibility of the project include:

- Recycled Water Master Plan (Jan. 2013) – Appendix 5-1
- TDS Reduction Advanced Treatment Feasibility Study (Feb. 2012) – Appendix 5-2
- Technical Memorandum, Final Effluent Quality Analysis with Dow Industrial Waste Relocation, (November 2012) Appendix 5-3
- Regional Water Quality Control Board approval letter, February 28, 2013 – Appendix 5-4
- Final Biological Assessment and the Cultural Resources Inventory Report, March 2013 (prepared in support of the Recycled Water Master Plan/Title XVI Feasibility Study Report) – Appendix 5-5

Project Map

The figure on the following page shows the location of the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Figure 9: Recycled Water Salinity Reduction and Distribution System Expansion Project Location



Budget Category (a): Direct Project Administration Costs

Task 5.1: Administration

This task involves general administration activities associated with the various elements of the Recycled Water Salinity Reduction and Distribution System Expansion Project. Proposed project administration tasks and deliverables are described in the table below.

Task	Description	Deliverables
5.1	Preparation of invoices and backup documentation, as well as execution of agreements with partner agencies	<ul style="list-style-type: none"> • Preparation of invoices and backup documentation • Quarterly, Annual and Final Reports to DWR • Executed agreements

Task 5.2: Labor Compliance Program

This task involves the development of the Labor Compliance Program for the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Task	Description	Deliverables
5.2	Development of Labor Compliance Program	<ul style="list-style-type: none"> • Labor Compliance Program

Task 5.3: Reporting

Proposed reporting activities are described in the table below.

Task	Description	Deliverables
5.3	This task includes the preparation and submittal of quarterly reports and a project completion report to DWR. Also, a Project Performance Monitoring Plan will be prepared to provide a framework for assessing and evaluating the project performance once it is implemented. The Monitoring Plan will identify the measures that will be used to monitor progress toward achieving the specific project goals. Attachment 6 of this Proposal consists of Monitoring, Assessment, and Performance Measures for the Project which will provide a basis for the Monitoring Plan.	<ul style="list-style-type: none"> • Quarterly, Annual and Final Reports to DWR after contract execution • Performance Monitoring Plan

Budget Category (b): Land Purchase/Easement

This task involves the land purchase acquisition activities associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Description	Deliverables
Right-of-ways and easements may be needed from partner agencies to install new pipe for establishing recycled water service and re-routing Dow TDS stream	<ul style="list-style-type: none"> • Easements

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

This task involves the primary engineering and environmental documentation tasks related to the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Task 5.4: Assessment and Evaluation

This task involves the preliminary assessment and evaluation tasks related to the Recycled Water Salinity Reduction and Distribution System Expansion Project. Feasibility Studies were completed in 2012, with an administrative draft of the Recycled Water Master Plan completed in January 2013. The list of completed and underway studies is provided in the table below:

Task	Description	Status
5.4	Recycled Water Master Plan: A Title XVI Feasibility Study Report, RMC Water and Environment, in Association with HDR, and Puckorius & Associates (Revised Admin Draft Jan. 2013). This Master Plan examines opportunities to expand and optimize operations of the recycled water system. It includes identification of potential use sites, new system facilities, estimated average annual demands and costs, alternatives and cost effectiveness analyses.	Complete
	TDS Reduction Advanced Treatment Feasibility Study, Kennedy/Jenks Consultants (February 2012) This study examines alternatives for reducing the TDS concentrations in recycled water (Identifies redirection of high-salinity brine line as the preferred alternative for TDS reduction in the DDSR recycled water system).	Complete
	Technical Memorandum, Final Effluent Quality Analysis with Dow Industrial Waste Relocation, Larry Walker Associates, (draft November 2012).	Complete
	Recycled Water Master Plan/Title XVI Feasibility Study report Revised Admin Draft, January 2013. RMC is under contract for this study and associated CEQA/NEPA Work. The final Biological Assessment and the Cultural Resources Inventory Report were prepared March 2013. Planning for the high salinity brine line is being coordinated with The Dow Chemical company, and DDSR requested and received approval from the Regional Water Quality Control Board for this project. Development of financing occurs as part of the 5-year Capital Improvement Program, being updated for 2013/15 through 2018/2019.	Ongoing (Completion is anticipated in June 2013)

Task 5.5: Final Design

Proposed design tasks are described below.

Task	Description	Deliverables
5.5	This task involves the development of the Preliminary Design	• Conceptual design

Task	Description	Deliverables
	Report, and 50%, 90%, and Final Design Drawings and Specifications.	<ul style="list-style-type: none"> submittal • 50%, 90%, and Final Design Submittals

Task 5.6: Environmental Documentation

Proposed environmental documentation activities are described below.

Task	Description	Deliverables
5.6	This task involves the development and filing of a Mitigated Negative Declaration.	<ul style="list-style-type: none"> • Mitigated Negative Declaration

Task 5.7: Permitting

This task involves the preparation of the following permits:

Task	Description	Deliverables
5.7	<ul style="list-style-type: none"> • Cities of Pittsburg and Antioch Encroachment and Excavation Permits and Street Work Permits 	<ul style="list-style-type: none"> • Executed permits

Budget Category (d): Construction/Implementation

This task involves the construction contracting and construction activities associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Task 5.8: Construction Contracting

Proposed construction contracting tasks are described below:

Task	Description	Deliverables
5.8	<ul style="list-style-type: none"> • Preparation of bid packaging • Bid Solicitation • Bid Award 	<ul style="list-style-type: none"> • Advertisement for bid • Bid summary • Bid award

Task 5.9: Construction

Proposed construction tasks are described below:

Task	Description	Deliverables
5.9	<p>Mobilization of equipment and personnel and preparation of project site for construction will be completed. Preparation will consist of setting up laydown area and securing site.</p> <p>Project Construction will entail excavating and installing piping, including appurtenances to provide recycled water and reroute brine line.</p> <p>Performance Testing will comprise pressure testing to ensure air tight and leak free system.</p> <p>Demobilization of equipment and personnel, and restore site upon completion of work.</p>	<ul style="list-style-type: none"> • As-built drawings • O&M Manuals for pumps and tank • Final post-construction testing Reports

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

Task 5.10: Environmental Compliance/Mitigation/Enhancement

This task involves identifying and mitigating environmental impacts (e.g. construction impacts) associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Task	Description	Deliverables
5.10	Implementation of environmental mitigation as needed.	<ul style="list-style-type: none"> • Environmental mitigation (as needed)

Budget Category (f): Construction Administration

Task 5.11: Construction Administration

Proposed construction administration tasks associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project are described in the table below:

Task	Description	Deliverables
5.11	Construction management Inspection activities Responses to RFIs and Change Order Requests Payment of contractor invoices Public notification of construction activities	<ul style="list-style-type: none"> • Daily inspection reports • Approved invoices • Quarterly progress reports

Budget Category (g): Other Costs

There are no other costs associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project.

Budget Category (h): Construction/Implementation Contingency

There is no construction implementation contingency associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project.

6 – East Contra Costa County Prop 84 Round 2 Grant Administration

CCWD is currently administering the East Contra Costa County IRWM Region’s Prop 84 Round 1 planning and implementation grants. They will continue their role as administrator and contracting entity with DWR. This project consists of the overall grant administration required for this proposal. All of the work items and associated budget are within Task 6.1: Administration of Budget Category (a): Direct Project Administration as described in the following sections.

Budget Category (a): Direct Project Administration Costs

Task 6.1: Administration

This task involves general administration and coordination activities associated with all of the projects included in this proposal. Proposed project administration tasks and deliverables are described in the table below.

Task	Description	Deliverables
6.1	CCWD will be responsible for managing and distributing awarded grant funds to the project proponents (DWD, City of Pittsburg, FCD, the Conservancy, and DDS). Grant funding awarded by DWR for the projects in this proposal will be directed to the proponents by an agreement between CCWD and the proponent. A grant agreement between CCWD and DWR will be executed. General project administration tasks such as project start-up, kickoff and progress meetings or conference calls, general coordination, compilation and submittal of invoices and reimbursement requests, budget tracking, and communications between CCWD and project proponents will also be completed in this Task.	<ul style="list-style-type: none"> • CCWD-DWR grant agreement • Executed agreements between CCWD and project proponents • Kickoff and progress meetings/conference calls • Invoice and progress report compilation

Task 6.2: Labor Compliance Program

This task is not applicable.

Task 6.3: Reporting

Progress reports will be completed by each project proponent for their associated projects. CCWD will coordinate with the project proponents for submittal to DWR and compile necessary information. This is included in Task 6.1.

None of the other budget categories or tasks is associated with this project.

Appendices

The following Appendices have been provided on the CD included at the end of this proposal.

Appendix	Filename
Appendix 1 - Studies Supporting Project 1: Beacon West Arsenic Well & Tank	
Appendix 1-1: 1999 Investigation of Groundwater Resources	Att3_IG2_WorkPlan_2of20
Appendix 1-2: Diablo Water District Feasibility Study Beacon West Arsenic Well & Tank Replacement Project	Att3_IG2_WorkPlan_2of20
Appendix 1-3: DWD Urban Water Management Plan	Att3_IG2_WorkPlan_2of20
Appendix 1-4: Preliminary Design and Site Planning, 2013	
Appendix 2 - Studies Supporting Project 2: Rossmoor Well Replacement / Groundwater Monitoring System Expansion	
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