

ATTACHMENT 3. WORK PLAN

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INTRODUCTION

This grant application is for implementation of the Calaveras River Integrated Stormwater Management Project, a joint effort of Reclamation District 1614 (RD1614) and Stockton East Water District (SEWD) in cooperation with the Northeast San Joaquin County Groundwater Banking Authority (GBA) which is the Regional Water Management Group for the area.

The Project will integrate flood management and groundwater recharge through construction and coordinated operation of two key elements:

- The RD1614 Wisconsin Avenue Pumping Station Replacement
- The SEWD Flood Detention and Groundwater Recharge Facility

This Project will benefit an urbanized portion of RD1614 and any developed agricultural and urban areas adjacent to the lower Calaveras River. Physical improvements include the replacement and up-sizing of the Wisconsin Avenue Pumping Station and the construction of an upstream flood detention/groundwater recharge facility. The project will provide flood-reduction benefits by using the upstream flood-detention/groundwater recharge facility during high water events and whenever the Wisconsin Avenue Pumping Station is pumping into the Calaveras River.

The Wisconsin Avenue Pumping Station is a RD1614 internal drainage pumping facility currently sized to pump about 10,000 gallons per minute (22 cfs) to the Calaveras River during storm and flood runoff events. To continue protecting nearly 1,700 homes from storm and flood runoff events, this facility requires replacement and upgrading to meet current flood-control standards. To meet current flood-control standards, the facility's capacity must be tripled to about 30,000 gallons per minute (67 cfs).

The SEWD flood-detention/groundwater recharge facility will be constructed on land adjacent to the existing SEWD water treatment plant. SEWD owns 35 acres of the site, and has an option to purchase 230 additional acres. Water for flood detention and groundwater recharge will be diverted upstream on the Calaveras River at the existing Bellota Weir, and conveyed through the existing Bellota Pipeline to the site. These operations will use SEWD's existing Calaveras River water rights.

With the goal of providing a flood-neutral/flood-reduction project, operation of the new Wisconsin Avenue Pumping Station in RD1614 will be coordinated with the new upstream SEWD flood-detention/groundwater recharge facility. An amount of surface water at least equivalent to the contribution of the Wisconsin Avenue Pumping Station will be diverted from the Calaveras River, resulting in a flood-neutral/flood-reduction project.

Diversion of water from the Calaveras River by SEWD is permitted through the SWRCB. Up to 73 cubic-feet per second will be diverted into the Bellota pipeline just upstream of the Escalon-Bellota Road bridge where it will be conveyed to the SEWD flood-detention/groundwater recharge facility. Where the diversion of Calaveras River flow to the SEWD flood-detention/groundwater recharge facility is equal to the contribution of the Wisconsin Avenue Pumping Station, the Project is considered flood-neutral (up to 67.67 cfs); where the diversion at Bellota is greater (up to 73 cfs), the Project is considered to be flood-reducing.

Goals and Objectives

The Calaveras River Integrated Stormwater Management Project is an integrated flood-reduction/supply reliability project that will benefit an urbanized portion of RD 1614 and developed agricultural and urban areas adjacent to the lower Calaveras River, detain and percolate flood waters to recharge depleted aquifers for subsequent extraction during drought years, and create seasonal waterfowl habitat.

Purpose and Need

The proposed Calaveras River Integrated Stormwater Management Project will protect existing homes and businesses from flood damages, reduce the frequency of overtopping of Calaveras River levees, and make use of stormwater supplies for groundwater recharge to enhance urban water supply reliability.

Overdraft

Currently, the Eastern San Joaquin County Groundwater Basin (Basin), which includes the SEWD and RD1614 service areas, is in a state of critical overdraft and has the threat of migration of a saline front if groundwater continues to be depleted.⁷ Since 1976, SEWD has improved the condition of overdraft and saline front migration by bringing Calaveras River surface water to its service area for use in-lieu of groundwater pumping, allowing a reduction in overdraft. The water is treated for municipal and industrial uses at the 65-mgd capacity SEWD Drinking Water Treatment Plant. The benefits of the surface water projects are documented in the Eastern San Joaquin Groundwater Management Plan.⁸ However, in dry periods when surface water availability declines, there is an increasing dependence on groundwater to make up the remaining water needs.

Conjunctive management of surface water and groundwater with an extensive groundwater storage project will allow SEWD to reliably meet future water demands in the service area without further damaging the Basin. The project is within the Bay-Delta solution area and will address the mismatch between supply and demand by utilizing previously unused supply generated from the diversion of wet year water and floodwater for groundwater storage. In addition to enhancing water supply reliability by banking groundwater for use in dry years, the project will provide water supply for seasonal waterfowl habitat. Also, by countering the saline front migration, the project will preserve the Basin's

⁷ DWR, 1980, Bulletin 118-80

⁸ GBA, September 2004, Eastern San Joaquin Groundwater Basin Groundwater Management Plan

water quality and eliminate the need for ever greater quantities of additional surface water from Bay-Delta tributaries should salinity render portions of the basin unusable.

Seasonal Waterfowl Habitat

The use of stormwater flows for recharge provides an opportunity to create up to 265 additional acres of seasonal waterfowl habitat areas. The storage of water in the groundwater basin both improves water quality by preventing the migration of the salinity front, and improves water supply reliability by providing a supply of groundwater for dry periods when surface water is not readily available. In addition, the groundwater put into storage contributes to statewide water storage objectives.

Inadequate Pumping Capacity

The replacement of the RD 1614 Wisconsin Avenue Pump Station is necessitated by two key factors. First, the current pumping capacity is not sufficient to provide protection against runoff from a 100-year storm event. Second, the existing pump station structure is severely antiquated and in danger of detrimental collapse.

Ten of the eleven District storm drain pump stations currently provide sufficient protection against the runoff from a 24-hour, 100-year storm event. The Wisconsin Pump Station is the one exception. This facility provides storm drainage pumping for runoff from a drainage shed of nearly 700 acres – the largest drainage shed within RD 1614. It is currently sized with two pumps with a combined pumping capacity of approximately 10,000 gallons per minute (gpm) that discharge stormwater runoff into the Calaveras River. However, this current pumping capacity is not sufficient, and these areas are expected to be mapped as a Special Flood Hazard Area (SFHA) by the Federal Emergency Management Agency (FEMA), and flood insurance requirements for property owners will be affected. To continue protecting nearly 1,700 parcels from future storm and flood runoff events, this facility requires replacement and upgrading of its pumping capacity to approximately 30,000 gpm in order to meet current 100-year flood standards.

Potential for Pump Station Failure

The Wisconsin Pump Station is an antiquated structure that is comprised of a steel sheet pile stormwater collection sump with a concrete slab and pump house on top. The sump does not have a solid bottom and therefore is subject to groundwater infiltration. Although the pump house on top is in fair condition, the sheet pile sump itself is woefully inadequate and in a state of impending failure. Therefore, any improvements and/or upsizing of the pumping capacity of the pump station would be detrimental to the structural integrity of the sump and that the entire structure should be removed and replaced with a new sump structure.

Integration

With the goal of providing a flood-neutral/flood-reduction project, operation of the new Wisconsin Avenue Pumping Station in RD1614 will be coordinated with the new upstream SEWD flood-detention/groundwater recharge facility. An amount of surface water at least equivalent to the contribution from the Wisconsin Avenue Pumping Station will be diverted from the Calaveras River, resulting in a flood-neutral/flood-reduction project.

IRWMP Goals and Objectives

There are 17 underlying issues identified in the Eastern San Joaquin IRWM Plan, including flood protection, remediating groundwater overdraft, supply reliability, degradation of water quality, and funding and financing.⁹ The Eastern San Joaquin IRWM Plan was developed to address these underlying issues. The stated Objective of the Plan is to:

“Ensure the long-term sustainability of water resources in the Eastern San Joaquin Region while:

- Equitably distributing benefits and costs
- Minimizing adverse impacts to agriculture, communities, and the environment
- Maximizing efficiency and beneficial use of supplies, and
- Protecting and enhancing water rights and supplies”

A summary description of how the purpose and need of the proposed projects address the adopted goals and objectives of the Eastern San Joaquin IRWM Plan is presented as Table 4.

Table 4 - Relationship of Project Purpose and Need to IRWMP Goals and Objectives

IRWM Plan Goals and Objectives	Proposal Purpose and Needs
Ensure the long-term water resource sustainability	Use flood water to replenish overdrafted groundwater basin
Equitably distribute benefits and costs	Provide flood protection and urban water supply reliability paid for by beneficiaries

⁹ GBA, July 2007, Eastern San Joaquin IRWMP p.5-2

Minimize adverse impacts to agriculture, communities, and the environment	Significantly reduce flood damages; Place quantity of Calaveras River flood flow into storage equivalent to amount of stormwater pumped into river; Provide seasonal waterfowl habitat
Maximize efficiency and beneficial use of supplies	Reduce amount of flood flow that would otherwise be conveyed in the Calaveras River channel, and put this water to beneficial use by recharging groundwater for subsequent drought-year use
Protecting and enhancing water rights and supplies	Use of SEWD Calaveras River water rights and contracts; Increase reliability of dry-year supply
Flood protection	Provide flood protection for nearly 1,700 homes in the Wisconsin Avenue area of RD1614; Reduce frequency of overtopping Calaveras River levees
Remediation of groundwater overdraft	Recharge overdrafted Eastern San Joaquin groundwater basin
Improve supply reliability	Bank flood flows in aquifer for use in dry years
Maintain or improve water quality	Increase groundwater elevations to slow or reverse saline water migration
Identify funding and financing	Cooperatively fund Prop 1E Stormwater Grant application; Provide grant funding to enable construction of both projects (if successful)

Project List

Project physical improvements include the replacement and up-sizing of the Wisconsin Avenue Pumping Station (existing storm and flood water pumping facility) that has greatly exceeded its useful life, and the purchase, design and construction of a SEWD flood-detention/groundwater recharge facility located approximately nine and one-half river miles upstream of the Wisconsin Avenue Pumping Station.

Table 5 - Project Lists, Abstracts and Status

Implementing Agency	Project Abstract	Project Status
Reclamation District 1614	Replacement and up-sizing of the Wisconsin Avenue Pumping Station, an undersized existing storm and flood water pumping facility that discharges to the lower Calaveras River and has greatly exceeded its useful life	Survey, mapping, and utility research are complete; 30% design is complete; Environmental documentation has been started; Assessment district formation has been initiated
Stockton East Water District	Purchase, design and construction of a flood-detention/ groundwater recharge facility located approximately nine and one-half river miles upstream of the Wisconsin Avenue Pumping Station on the Calaveras River	Water rights and contracts have been obtained; Diversion and conveyance facilities have been constructed; Land purchase option has been negotiated; Aquifer suitability study is complete; Pilot testing consultant has been selected; Preliminary (75%) design is complete; A funding partnership with the City of Stockton, California American Water Company, and County of San Joaquin has been drafted; Environmental documentation is complete; A monitoring well has been constructed by USGS

Integrated Elements of Projects

Operationally, the project will provide flood-reduction benefits without increasing the risk of downstream Calaveras River flooding by coordinating the use of the upstream SEWD flood-detention/groundwater recharge facility with operation of the new Wisconsin Avenue Pumping Station. The new Wisconsin Avenue Pumping Station will have a capacity of 30,000 gpm (67 cfs). The existing Bellota diversion and pipeline have a capacity to move 32,800 gpm (73 cfs) from the upper reaches of the lower Calaveras River to the proposed flood detention and recharge ponds.



Regional Map

Figure 6 - Regional Map

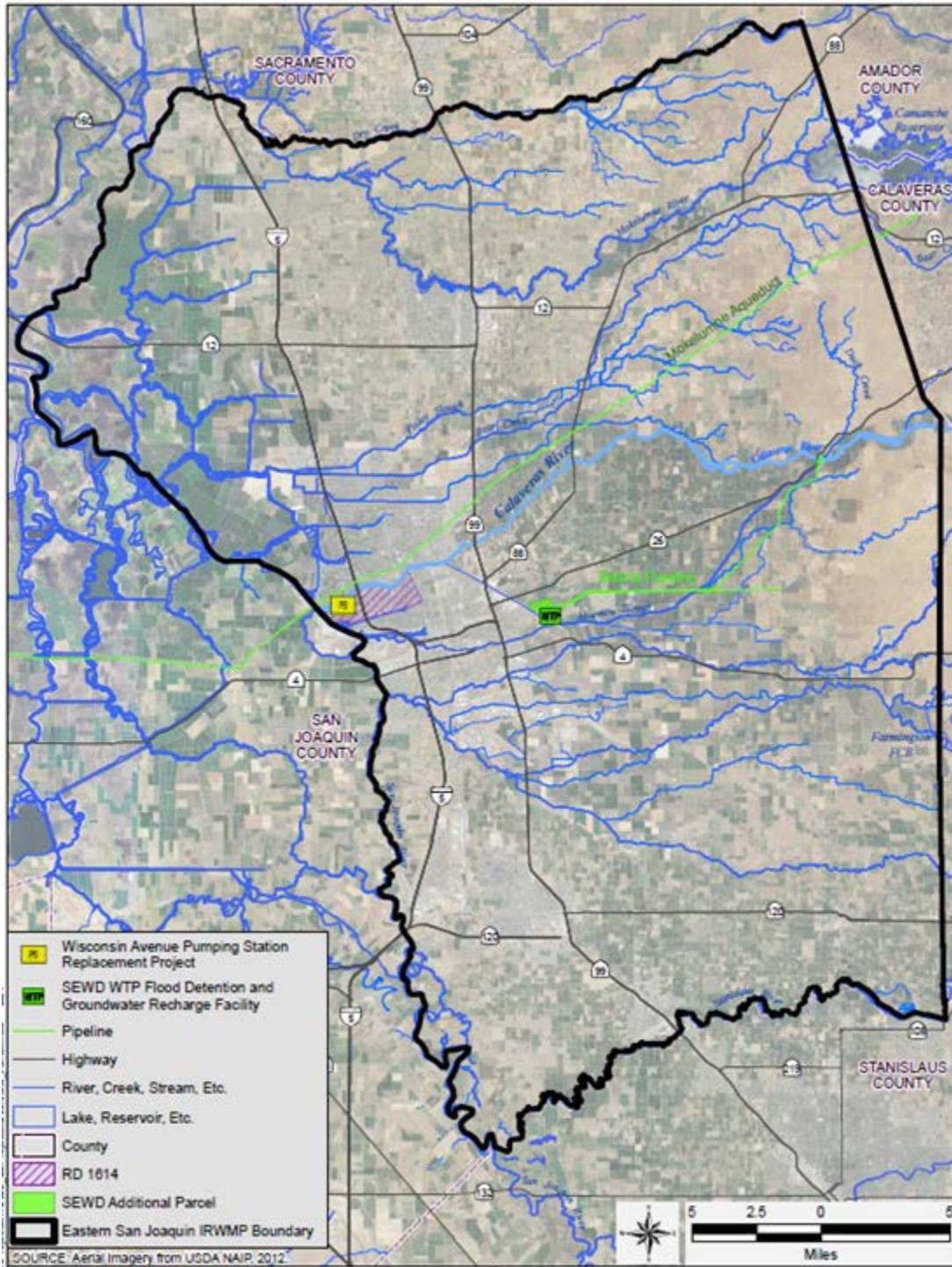
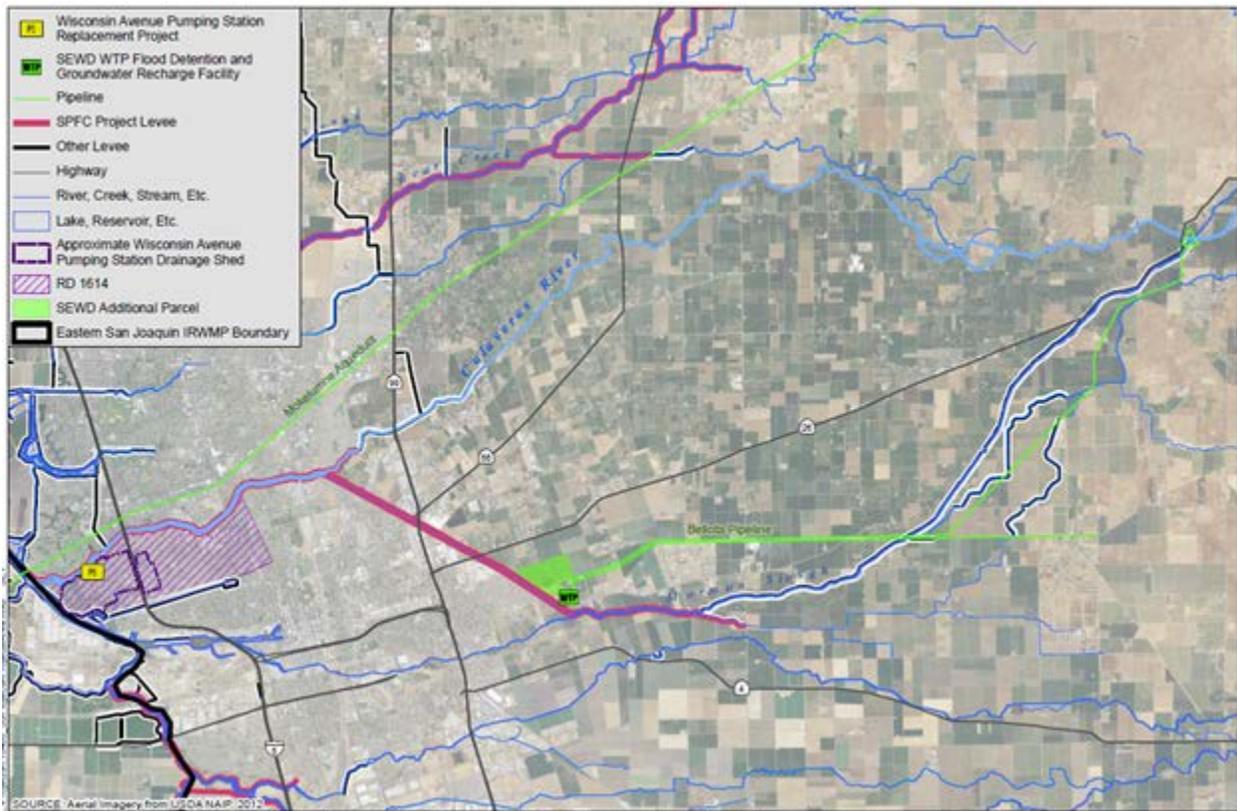


Figure 7 - Map of Project Area



Completed Work

A description of the work that has been completed or is expected to be completed prior to the grant award date. For example, if CEQA/NEPA and other environmental compliance efforts have been completed discuss the environmental determination made by the lead agency and the documents that were filed.

Work that has been completed or is expected to be completed prior to the grant award date includes:

Wisconsin Avenue Pump Station

- Survey (complete)
- Mapping (complete)
- Utility Research (complete)
- 30% Improvement Plans (complete)
- Proposition 218 Assessment District formation (expected complete before grant award date)

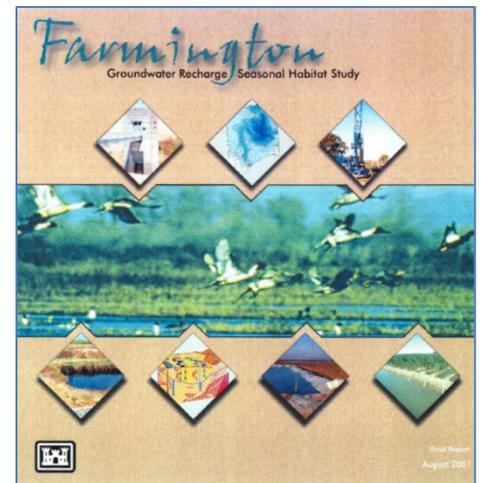
SEWD Flood Detention and Groundwater Recharge

- Water rights and contracts have been obtained (complete)

- Diversion and conveyance facilities are existing (complete)
- Land appraisal (complete)
- Land purchase option has been negotiated (complete)
- Aquifer suitability study (complete)
- Pilot testing contract has been issued
- Preliminary (75%) design (complete; final design will be completed after grant award date)
- Monitoring well exists (complete)
- Environmental documentation (Initial Study and Negative Declaration complete, see Appendix C-3)

Existing Data and Studies

Groundwater recharge in the vicinity of the Stockton East Water District drinking water treatment plant has been studied for over 15 years. The first major report on these studies, the Farmington Groundwater Recharge and Seasonal Habitat Study, was published in August 2001.¹⁰ This seminal study described existing conditions and future without project conditions, the problems and opportunities, the drilling and testing program to characterize the potential recharge areas, and developed a long-term plan for implementing the recharge program. The environmental impacts was also described, and a range of probable costs presented.



The overall conclusions and recommendation of the study were:

- Surface recharge of the groundwater is feasible in the area
- Geologic conditions that can affect groundwater recharge vary widely
- The implementation should be phased to demonstrate feasibility
- Establish monitoring protocols

Expected performance

SEWD retained the services of groundwater specialist Sound Earth Strategies, Inc. to evaluate the recharge potential of the North Site.¹¹ In their report to the district, the consultant concluded that percolation on the North Site was “anticipated to perform as well or better than the existing 60-acre MAR [Managed Aquifer Recharge] basins adjoining the SEWD facility.”

Based on this conclusion, SEWD has extrapolated the demonstrated 60-acre site performance to the North Site and concluded that the North Site water banking system would be capable of percolating up to 26,500 acre feet per year. A groundwater bank with the capacity to store up to 26,500 acre feet of

¹⁰ Montgomery Watson Harza, August 2001, “Farmington Groundwater Recharge and Seasonal Habitat Study”, prepared for the U.S. Army Corps of Engineers

¹¹ SoundEarth Strategies, October 6, 2011, “Report of Managed Aquifer Recharge, Characterization and Site Assessment for the Bozzano (North Site) Property, Stockton California”

surface water per year for use in dry years would dramatically enhance the District's ability to provide a secure dry year source of drinking water supply.

The District has also hired a consultant to study other sites within District boundaries that would provide suitable locations for surface water storage and subsequent extraction. In the consultant's report, approximately 100 sites with an aggregate area of about 9,000 acres were identified. The characteristics of these sites included suitable topography, and absence of incompatible agricultural uses for surface water percolation, and a proximity to district conveyance facilities that would allow the delivery of surface water for storage as well as the ability to deliver extracted stored surface water. None of these 9,000 acres is as close to existing conveyance facilities as the North Site is, and each individual site developed would require its own conveyance infrastructure, likely avoiding the economies of scale that the North Site enjoys. Additionally, there would be many individual property owners that would have to be negotiated with, costing both time and money.

Relationship to the State Plan of Flood Control

Collectively, the facilities, lands, programs, conditions, and mode of O&M for the State-federal flood protection system in the Central Valley are referred to as the State Plan of Flood Control (SPFC).

This flood protection system is composed of federally authorized project levees and related facilities for which the State has provided assurances of cooperation to the federal government. These State-provided assurances are an important distinction for what constitutes the State-federal flood protection system since other flood protection facilities in the Central Valley are not covered by State assurances and are not part of the State-federal system.

As shown in Figure 7, both projects are adjacent to SPFC facilities, but neither project is part of the State Plan of Flood Control. The levees along the Stockton Diverting Canal and the lower Calaveras River (below the Diverting Canal) are SPFC facilities that protect the area from riverine flooding. The Wisconsin Pump Station, however, provides internal drainage of stormwater for the Wisconsin Avenue drainage which outfalls to the Calaveras River. The SEWD Flood Detention and Groundwater Recharge facilities are not part of the SPFC, and will mitigate any additional flooding that might be caused by pumping at Wisconsin Avenue by diverting an equal or greater amount of flow upstream.

The RD1614 and SEWD facilities are locally owned and operated, and therefore are not part of the SPFC.

TASKS

Labor Code Compliance: The applicant recognizes that projects financed with Proposition IE funds require enforcement of a labor compliance program pursuant to California Labor Code section 1771.5(b), which will be in force at the time of grant contract award.

WISCONSIN AVENUE PUMP STATION REPLACEMENT PROJECT

Reclamation District No. 1614 – Smith Tract (RD 1614) is located in San Joaquin County within incorporated and unincorporated portions of the City of Stockton and is responsible for maintaining the levee system that protects nearly 1,600 acres of land dedicated to mostly residential and commercial uses. RD 1614 is bounded by the Calaveras River to the north, Pershing Avenue to the east, Smith Canal to the south, and the San Joaquin River and Riviera Cliffs Subdivision to the west. Stormwater runoff within RD 1614 is collected and conveyed via an extensive network of inlets and pipes owned and operated by the City of Stockton and San Joaquin County. It is then ultimately discharged into the Calaveras River and Smith Canal by one of eleven storm drain pump stations owned and operated by RD 1614. RD 1614 is in the process of designing and obtaining funding for the replacement of one of these pump stations – the Wisconsin Pump Station.

Figure 8 - RD1614 Wisconsin Pump Station Replacement Location Map

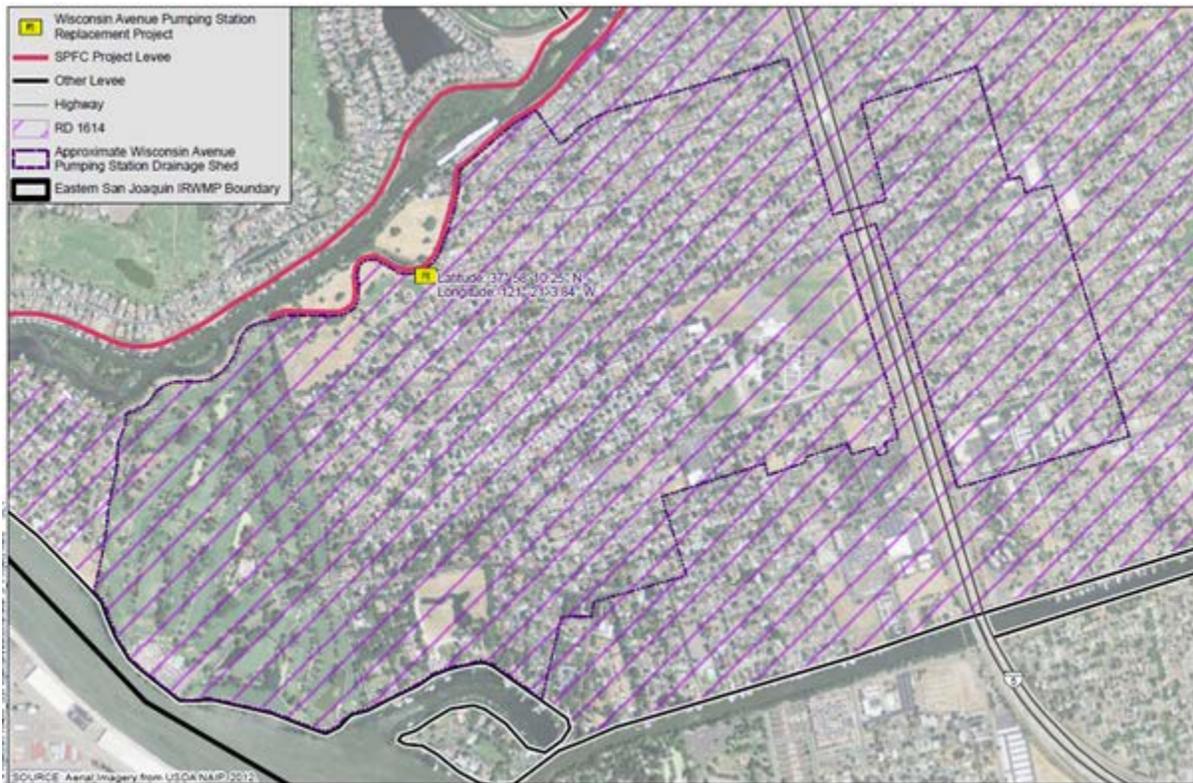


Figure 9 - Wisconsin Pump Station Replacement Project Location

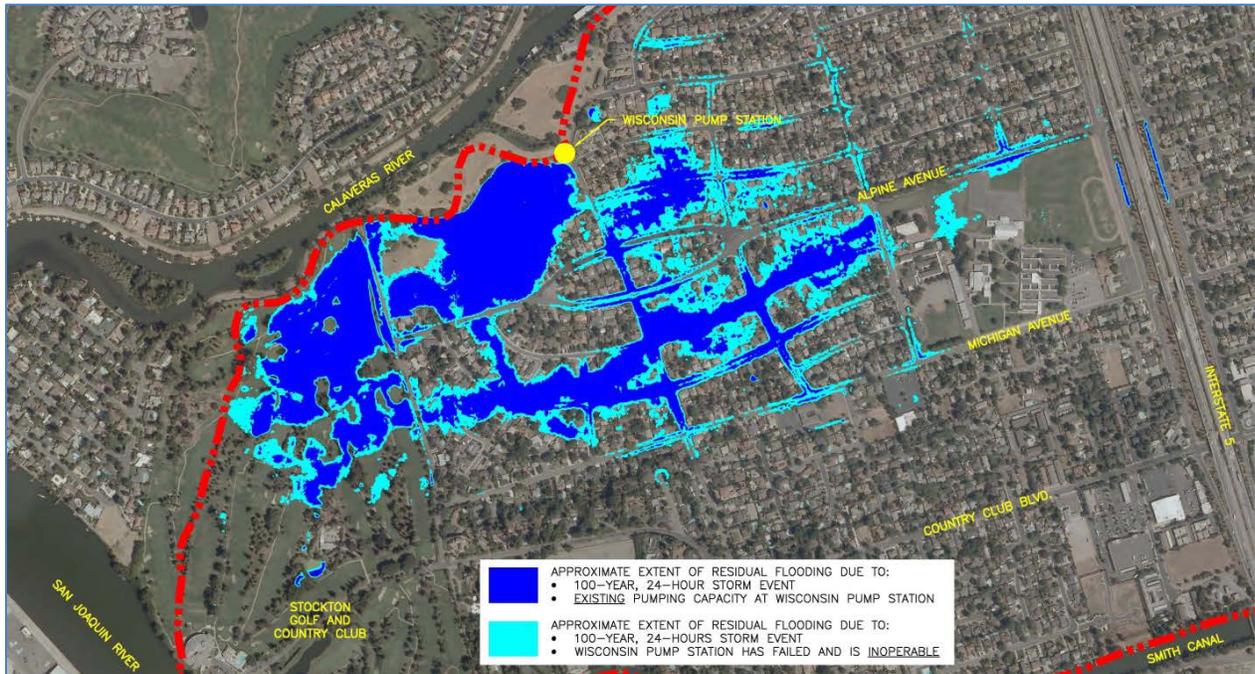


The replacement of the Wisconsin Pump Station is necessitated by two key factors. First, the current pumping capacity is not sufficient to provide protection against runoff from a 100-year storm event. Second, the existing pump station structure is severely antiquated and in danger of detrimental collapse.

Ten of the eleven District storm drain pump stations currently provide sufficient protection against the runoff from a 24-hour, 100-year storm event. The Wisconsin Pump Station is the one exception. This facility provides storm drainage pumping for runoff from a drainage shed of nearly 700 acres – the largest drainage shed within RD 1614. It is currently sized with two pumps with a combined pumping capacity of approximately 10,000 gallons per minute (gpm) that discharge stormwater runoff into the Calaveras River. However, this current pumping capacity is not sufficient, and runoff from a 24-hour, 100-year storm event would likely cause areas of residual flooding within RD 1614 (see Figure 10). As a result, these areas are expected to be mapped as a Special Flood Hazard Area (SFHA) by the Federal Emergency Management Agency (FEMA), and flood insurance requirements for property owners will be

affected. To continue protecting nearly 1,700 parcels from future storm and flood runoff events, this facility requires replacement and upgrading of its pumping capacity to approximately 30,000 gpm in order to meet current 100-year flood standards.

Figure 10 - Potential Residual Flooding



The Wisconsin Pump Station is an antiquated structure that is comprised of a steel sheet pile stormwater collection sump with a concrete slab and pump house on top. The sump does not have a solid bottom and therefore is subject to groundwater infiltration. Although the pump house on top is in fair condition, the sheet pile sump itself is woefully inadequate and in a state of impending failure. The sheet pile sump is reinforced with wood timber whalers that have rotted. The steel sheet piles themselves have rotted and are collapsing inward (see Figure 11). After assessing the condition of the pump station and consulting with a structural engineer, RD 1614 has determined that the structural integrity of the facility's sump has diminished to a point where there is now great concern that the pump house is in danger of collapsing into the sump. Therefore, any improvements and/or upsizing of the pumping capacity of the pump station would be detrimental to the structural integrity of the sump and that the entire structure should be removed and replaced with a new sump structure.

Figure 11 - Photograph of Existing Sump Structure



As District Engineer for RD 1614, Kjeldsen, Sinnock and Neudeck, Inc. (KSN) will be the primary project manager for the Wisconsin Pump Station Replacement Project and will be responsible for all coordination. Much preliminary planning work has already occurred for this project. The environmental assessment and CEQA compliance process has begun and is nearly finalized. Surveying, mapping, and utility research has also been performed, and a 30% design level of design drawings has been prepared.

RD 1614 is currently actively pursuing various funding mechanisms to assist with financing the Wisconsin Pump Station Replacement Project. RD 1614 is cooperating with Stockton East Water District (SEWD) to apply for a Stormwater Flood Management Grant with the State of California, Department of Water Resources (DWR) through its Integrated Regional Water Management (IRWM) grant program. It is expected that this grant would provide for a 50% cost share. In order to procure its 50% local share, RD 1614 is also proceeding with a Proposition 218 measure in cooperation with the San Joaquin Area Flood Control Agency (SJAFCA).

Upon receiving sufficient assurances that the project will be adequately funded, KSN will then continue with the design process with the goal of preparing a final set of construction documents including improvement plans and specifications. Design services will include hydraulic modeling, pump selection, site planning, grading, structural design, and analysis of geotechnical studies. Preliminary calculations

indicate that the new pump station will require a total pumping capacity of 30,000 gpm. The design will also include a light-duty pump that is intended to pump minor “nuisance” flows and to evacuate the water below the lowest pumping water level of the main duty pumps. It is anticipated that other engineering disciplines will be added to the KSN design team including, but not limited to, geotechnical, structural, and electrical.

KSN will also be providing construction management services on behalf of RD 1614. These services are expected to include agency and permitting coordination, bidding, contract administration, and construction inspection. Anticipated permits consist of:

- a Streambed Alteration Agreement from the State of California – Department of Fish and Wildlife
- a lease from the State Lands Commission
- an encroachment permit from the Central Valley Flood Protection Board (CVFPB), with review by the U.S. Army Corps of Engineers
- a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- an endorsement from the San Joaquin County Flood Control and Water Conservation District

Construction will consist of the following: demolition; earthwork excavation; cast-in-place concrete sump structure with steel grating and steel trashrack; multiple main duty pumps and a single light-duty pump; housing facility to protect the pumps; discharge pipes to the Calaveras River and outfall structure; electrical and controls; domestic water service; all-weather road surfacing; fencing; and rerouting of existing storm drain utilities into new sump. Final acceptance of the new pump station by RD 1614 will not be made until all work has been satisfactorily completed, the facility tested for proper operation, and all final submittals (e.g. as-built drawings, O&M manuals, warranties, etc.) have been received.

Work Plan task descriptions, deliverable and status for the Wisconsin Avenue Pump Station Replacement are listed in Table 6.

Table 6 - Work Plan, RD1614 Wisconsin Avenue Pumping Station Replacement

RD1614 WISCONSIN AVENUE PUMPING STATION REPLACEMENT

Task		Description	Deliverable	Status
1a	Administration	Maintenance of contracts, payment of invoices, and project management	Executed contracts; Invoices and progress reports; Project management meetings	On-going for duration of grant contract; Completed by December 2017
1b	Labor Compliance Program	Implement and maintain compliant labor program	Labor program compliant with Calif. Labor Code Sec. 1771.5(b)	Will start March 2017 construction award; Completed by October 2017
1c	Reporting	Quarterly progress reports and invoicing	Quarterly progress reports and invoicing to DWR	On-going for duration of grant contract; Completed by December 2017
1d	Land and Right of Way Acquisition (None Required)	No land or right of way is required	No land or right of way is required	
1e1	Surveying, Mapping and Utility Research (complete)	Perform site survey, mapping, and utility location	Site map and elevation control	This task is complete
1e2	Geotechnical Investigation	Determine site-specific conditions for pumping plant and outfall	Soils report	Complete by January 2015
1f1	Improvement Plans, 30% (complete)	Develop preliminary design plans and specifications	30% level design documents	This task is complete
1f2	Improvement Plans and	Develop final design	100% level design	Completed by

Task		Description	Deliverable	Status
	Specs, 100%	plans and specifications	documents	December 2014
1g	Environmental Documentation	CEQA compliant environmental documentation	Mitigated Negative Declaration	Completed by May 2013
1h	Permitting	Obtain construction permits	Fully executed permits. Potential permitting agencies consist of the State of California – Department of Fish and Game (DFG), the State Lands Commission, the Central Valley Flood Protection Board (CVFPB), the U.S. Army Corp of Engineers (USACE), and San Joaquin County.	Completed by December 2014
1i	Construction Contracting			
1i1	Bidding Process	Public bid process for selection of a contractor	Complete plans, specifications, and contract documents; Advertise and distribute	Completed by February 2017
1i2	Award	Evaluate construction bids; Award and complete contract	Evaluation of bids; Notification to bidders; Complete contact with successful bidder	Completed by March 2017
1i3	Notice to Proceed	Issue Notice to Proceed	Notice to Proceed issued to contractor	Completed by March 2017
1j	Construction			

Task		Description	Deliverable	Status
1j1	Mobilization/Site Preparation	Prepare site and position equipment	Establish construction office; Move equipment onto site; Fencing and security	Completed by April 2017
1j2	Project Construction	Construct Project	Completed project: Construction will include demolition; earthwork excavation; cast- in-place concrete sump structure with steel grating and steel trashrack; multiple main duty pumps and a single light-duty pump; housing facility to protect the pumps; discharge pipes to the Calaveras River and outfall structure; electrical and controls; domestic water service; all-weather road surfacing; fencing; and rerouting of existing storm drain utilities into new sump	Completed by August 2017
1j3	Performance Testing/Demobilization	Test project functions; Remove equipment	Verify operation of equipment and functioning of project	Completed by September 2017
1j4	Notice of Completion	Issue Notice of Completion to contractor verifying contract terms have been met	Notice of Completion	Completed by October 2017
1k	Environmental Compliance/Mitigation/	Implement Monitoring and Mitigation Plan	Implemented environmental compliance measures	Completed by May 2013

Task		Description	Deliverable	Status
	Enhancement			
1l	Construction Administration	Verify progress; Make payments	Daily and weekly progress summaries; Verify and pay invoices	To be performed throughout construction period; Completed by October 2017
1l1	Project Closeout	Develop as-builts; Make final payments	As-built drawings; Final payments; Record archived	Completed by December 2017
1m1	Prop 218 Assessment District			
1m1a	Ballot Tabulation	Balloting to form assessment district	Successful Prop 218 process; Identified funding stream	Completed by June 2013
1m1b	Collect First 3 Years' Fees	Collect funds adequate to finance construction	3 years of assessments collected	Start in calendar year after election; Complete 3rd year by December 2016
1m2	Prop 1E Stormwater Flood Management Grant			
1m2a	Prepare Grant Application	Develop Prop 1E Stormwater application	Complete and submit application	Submit by February 1, 2013
1i2b	Grant Award	Grant awarded to project	DWR award of grant	Expected August 15, 2013

Tasks with stippled background are not part of the grant application, but are provided for context



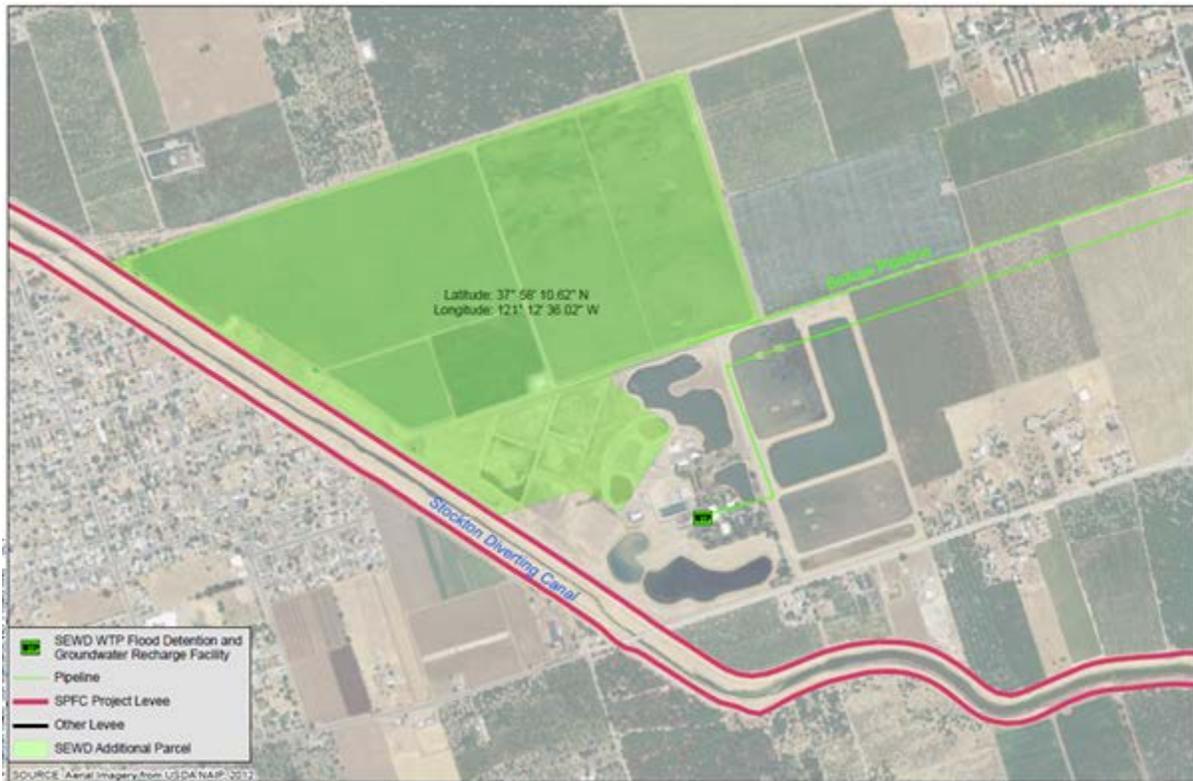


STOCKTON EAST WATER DISTRICT FLOOD DETENTION AND GROUNDWATER RECHARGE FACILITY PROJECT

SEWD has responsibility to secure surface water supplies to manage the sustainability of the groundwater basin (Basin) below its boundaries. In its enabling legislation, the California Legislature acknowledged that SEWD should lead this effort for both the urban and agricultural portions of SEWD.

The Basin continues to be in a state of critical overdraft threatening the water supply for all Eastern San Joaquin County. This threat is based on both quantity and quality of water supply. With the continued lowering of the Basin water levels resulting from overdraft, lower quality groundwater from under the Sacramento-San Joaquin Delta at a higher elevation will flow downhill to the low point of the Basin, contaminating good quality groundwater in its path (this is typically called saline migration or saline intrusion).

Figure 12 - SEWD Flood Detention and Groundwater Recharge Facility Location Map

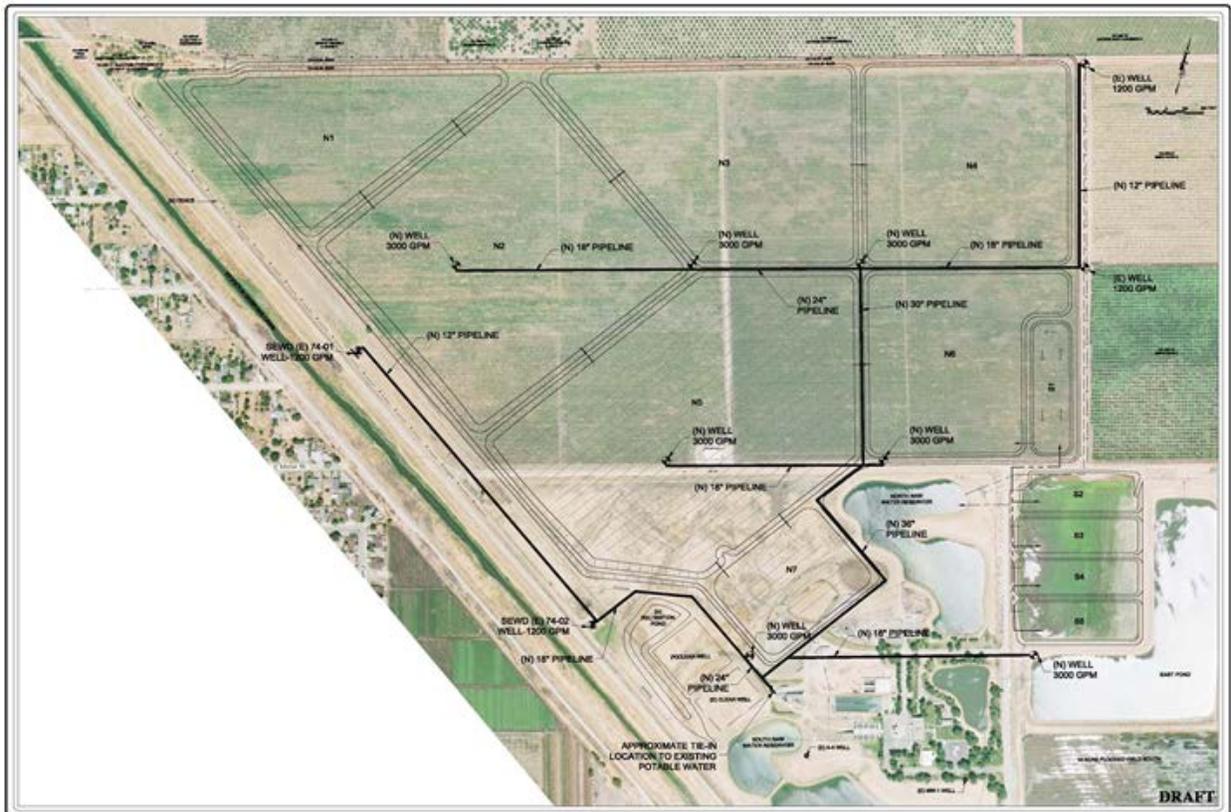


SEWD proposed solution to meet dry year demands of the Urban Contractors is to expand its current groundwater recharge facilities¹² to include an addition of 230-acres of recharge facilities and 11 wells placed on SEWD property used to recover the surface water stored in the ground. This will provide dry year supplies at a cost 75% less than alternative dry-year supplies.

¹² 60-acre existing recharge site, and not fully-developed 35-acre recharge site

The SEWD flood-detention/groundwater recharge facility will be constructed on land adjacent to the existing SEWD water treatment plant. SEWD has 35 acres available on this site, and has an option to purchase 230 additional acres (North Site). Water for flood detention and groundwater recharge will be diverted upstream on the Calaveras River at the existing Bellota Weir, and conveyed through the existing Bellota Pipeline to this site. These operations will use SEWD’s existing Calaveras River water rights.

Figure 13 - SEWD Flood Detention and Groundwater Recharge Facility Site Map



With the goal of providing a flood-neutral/flood-reduction project, operation of the new Wisconsin Avenue Pumping Station in RD1614 will be coordinated with the new upstream SEWD flood-detention/groundwater recharge facility. An amount of surface water at least equivalent to the contribution of the Wisconsin Avenue Pumping Station will be diverted from the Calaveras River upstream, resulting in a flood-neutral/flood-reduction project.

Diversion of water from the Calaveras River by SEWD is permitted through the SWRCB. Up to 73 cubic-feet per second can be diverted into the Bellota pipeline just upstream of the Escalon-Bellota Road Bridge where it will be conveyed to the SEWD flood-detention/groundwater recharge facility. Where the diversion of Calaveras River flow to the SEWD flood-detention/groundwater recharge facility is equal to the contribution of the Wisconsin Avenue Pumping Station, the Project is considered flood-neutral

(up to 67.67 cfs); where the diversion at Bellota is greater (up to 73 cfs), the Project is considered to be flood-reducing.

The preliminary design calls for 197.6 acres of percolation area contained in 7 ponds varying from 7.4 to 51.3 acres in size. The design seeks to achieve cost efficiencies by balancing the amount of soils cut and filled to minimize any accumulation or off-site transport of excess soil. The completed site development will create an interconnected network of 7 cells that will receive the surface water. The hydraulic head of the water in the cells will vary from 1 to 5 feet above the soil.

A network of 11 new and existing wells on or near the 230-acre site will be used for groundwater extraction. These wells will consist of 4 existing wells capable of producing 1,200 gallons per minute (gpm) along with 7 new 3,000 gpm wells. The 11-well network is expected to have a pumping capacity of over 37,000,000 gallons per day over the projected worst-case 8-months of pumping per year that stored surface water is required.

The existing 60 acre site has been in service since 2003. The site has only been in use for groundwater recharge, as the site was developed to demonstrate the concept of groundwater recharge. While in recharge operation, the site's performance was closely monitored and recorded. The observed range of percolation was 2,789 to 5,825 acre feet per year or 4,396 acre feet per year on average.

To develop the property, a network of ridges and channels would be constructed on the North Site. Additionally, all necessary piping, valves, culverts, rip rap and access roads would be constructed. The project will initially use two existing wells on the SEWD property and two agricultural wells on the North Site property. Once these wells are in operation, the additional 3,000 gpm wells will be constructed on the North and SEWD sites to directly extract the water that was percolated from the project. The North Site is "anticipated to perform as well or better than the existing 60-acre MAR basins adjoining the SEWD facility".¹³

Work Plan task descriptions, deliverable and status for the Wisconsin Avenue Pump Station Replacement are listed in Table 6.

¹³ SoundEarth Strategies, October 6, 2011, "Report of Managed Aquifer Recharge, Characterization and Site Assessment for the Bozzano (North Site) Property, Stockton California"



Table 7 - Work Plan, SEWD Flood Detention and Groundwater Recharge Facility

SEWD FLOOD DETENTION AND GROUNDWATER RECHARGE FACILITY

Task		Description	Deliverable	Status
2a	Administration	Maintenance of contracts, payment of invoices, and project management	Executed contracts; Invoices and progress reports; Project management meetings	On-going for duration of grant contract; Completed by January 2016
2b	Labor Compliance Program	Implement and maintain compliant labor program	Labor program compliant with Calif. Labor Code Sec. 1771.5(b)	Will start November 2014 construction award; Completed by October 2015
2c	Reporting	Quarterly progress reports and invoicing	Quarterly progress reports and invoicing to DWR	On-going for duration of grant contract; Completed by January 2016
2d	Land and Right of Way Acquisition			
2d1	Purchase Decision	Milestone	Decision to purchase percolation pond properties	Contingent on agreement with urban retailers and securing grant funds; Expected complete by December 2013
2d2	Land Purchase ¹⁴	Execute purchase of	Complete purchase of percolation pond	Completed by February

¹⁴ SEWD currently holds an option to purchase the North Site property for \$5,100,000. The existing option purchase price was derived from a 2008 appraisal. Noting the current decline in real estate values since that date, the District had the property reappraised in August 2011. This valuation reflected that the current market value of the 230 acre site was approximately \$4,450,000. Because of the reduction of market value, SEWD will attempt to renegotiate the option purchase price near the recent appraised value. For planning purposes, it was also assumed that the total cost to acquire the North Site property (including legal, title, escrow and other closing related costs) would be \$5,000,000.

Task		Description	Deliverable	Status
		Bozzano property	properties; Transfer of title	2014
2e1	Surveying, Mapping and Utility Research	Construction survey and mapping	Maps, elevation control, utility identification	Complete before start of final design; Completed by December 2013
2e2	Managed Aquifer and Recovery Study	Study to assess aquifer suitability for percolation and subsequent recovery	Final report	Completed in December 2011
2e3	Geologic Investigation and Pilot Testing Program	Study to confirm banking feasibility	Maps, analyses, and pilot recharge and extraction demonstration	In progress; Completed by November 2013
2e4	Execute Banking Agreement with CoS, CalWater, SJCo	Water supply and funding agreement with urban water suppliers	Executed operations and funding agreement	Completed by December 2013
2f1	Preliminary Design, 75%	Preliminary design completed to 75% level	Plans and specifications completed to 75% design level	Completed January 2011
2f2	Final Design	Final plans, specifications, and contract documents	100% level design documents	Completed by March 2014
2g	Environmental Documentation	CEQA compliant environmental documentation	Mitigated Negative Declaration	Completed January 2013

Task		Description	Deliverable	Status
2h	Permitting	Obtain construction permits	Fully executed permits from San Joaquin County	Completed by August 2014
2i	Construction Contracting			
2i1	Bidding	Public bid process for selection of a contractor	Complete plans, specifications, and contract documents; Advertise and distribute	Completed by October 2014
2i2	Award	Evaluate construction bids; Award and complete contract	Evaluation of bids; Notification to bidders; Complete contact with successful bidder	Completed by November 2014
2i3	Notice to Proceed	Issue Notice to Proceed	Notice to Proceed issued to contractor	Completed by November 2014
2j	Construction			
2j1	Mobilization/Site Preparation	Prepare site and position equipment	Establish construction office; Move equipment onto site; Clear and grub; Fencing and security	Completed by December 2014
2j2	Project Construction	Construct Project	Completed project	Completed by September 2015
2j3	Performance Testing/Demobilization	Test project functions; Remove equipment	Verify operation of equipment and functioning of project	Completed by October 2015

Task		Description	Deliverable	Status
2j4	Notice of Completion	Issue Notice of Completion to contractor verifying contract terms have been met	Notice of Completion	Completed by October 2015
2k	Environmental Compliance/ Mitigation/ Enhancement	Implement Monitoring and Mitigation Plan	Implemented environmental compliance measures	Completed by October 2015 for construction and on-going with operations
2l	Construction Administration	Verify progress; Make payments	Daily and weekly progress summaries; Verify and pay invoices	To be performed throughout construction period; Completed by October 2015
2l1	Project Closeout	Develop as-builts; Make final payments	As-built drawings; Final payments; Record archived	Completed by January 2016
1m2	Prop 1E Stormwater Flood Management Grant			
1m2a	Prepare Grant Application	Develop Prop 1E Stormwater application	Complete and submit application	Submit by February 1, 2013
1i2b	Grant Award	Grant awarded to project	DWR award of grant	Expected August 15, 2013

Tasks with stippled background are not part of the grant application, but are provided for context



