Attachment 3 – Work Plan

Introduction

The Upper Kings Basin IRWM Authority has developed a priority list of projects as described in Attachment 1, that seek to implement the region's priority goals and objectives. This grant application proposal includes six projects from the Upper Kings IRWM region that serve to meet those goals as well as the overall objectives of the State's IRWM effort. The projects included in this application provide many benefits including increasing water supply and reliability, improving water quality, helping meet the critical water needs of multiple disadvantaged communities, providing flood control, and increasing water and energy efficiency. This grant application includes six projects as shown in Table 3-2.

Table 3-1 Total Application for $13,333,333

Proj	Agency	Project	Total Project Cost	Local Cost Share		Grant Amount Requested
1	CID	South and Highland Basin Project	$4,627,000.00	$400,000.00	9%	$4,227,000.00
2	City of Clovis	Surface Water Treatment Plant Expansion	$4,250,000.00	$1,250,000.00	29%	$3,000,000.00
3	County of Fresno	Drummond Jensen Avenue Sewer Connection Study	$119,090.00	DAC Waiver	n/a	$119,090.00
4	East Orosi CSD	Water Well Rehabilitation Project	$137,000.00	DAC Waiver	n/a	$137,000.00
5	City of Fresno	Residential Water Meter Project (Area IV)	$6,815,000.00	$2,307,400.00	33%	$4,507,300.00
6	Bakman WC	Water Meter Installation Project	$1,342,643.00	DAC Waiver	n/a	$1,342,643.00
		Totals =	$17,290,733.00			**$13,333,333.00**
		Total Project Cost (not including DAC Waiver Projects) =	$15,692,000.00			
		Required Cost Share (25% of non-DAC Waiver Projects) =	$3,923,000.00	$3,923,000.00	25%	

If partial funding of less than $12,025,090 is awarded, only the first five projects would be included. In the event of partial funding being available, we have also included a reduced list of 5 of the 6 projects showing how $6.6M could be utilized by the project proponents. In this scenario, Project 1 is a reduced project, Projects 2, 3 and 4 remain the same, Project 5 is the same total project but the grant amount is reduced, and Project 5 is no longer included. Table 3-2 lists those projects. We have prepared the application based on the full funding for all six projects as shown in Table 3-1. However, in later sections of this Attachment, as well as the other attachments, we have included discussion about the changes required for the reduced grant amount request and the associated benefits. If some amount of money less than $6.6M is awarded to the Authority, there have been discussions on how the first four projects would share the money depending on the amount. The Authority would then request to determine the allocation to first four projects once the awarded amount is identified.

Table 3-2 Project List for Partial Funding Amount of $6,666,667						
Proj	**Agency**	**Project**	**Total Project Cost**	**Local Cost Share**		**Grant Amount Requested**
1	CID	South and Highland Basin Project	$3,200,000.00	$400,000.00	12.5%	$2,800,000.00
2	City of Clovis	Surface Water Treatment Plant Expansion	$4,250,000.00	$1,250,000.00	29.4%	$3,000,000.00
3	County of Fresno	Drummond Jensen Avenue Sewer Connection Study	$119,090.00	DAC Waiver	n/a	$119,090.00
4	East Orosi CSD	Water Well Rehabilitation Project	$137,000.00	DAC Waiver	n/a	$137,000.00
5	City of Fresno	Residential Water Meter Project (Area IV)	$6,815,000.00	$6,204,423.00	91.0%	$610,577.00
		Totals =	$14,521,090.00			**$6,666,667.00**
		Total Project Cost (not including DAC Waiver Projects) =	$14,265,000.00			
		Required Cost Share (25% of non-DAC Waiver Projects) =	$3,566,250.00	$7,854,423.00	55.1%	

Table 3-3 summarizes the six projects, provides the project abstract and includes the project status.

Table 3-3 – Project List Abstract and Status

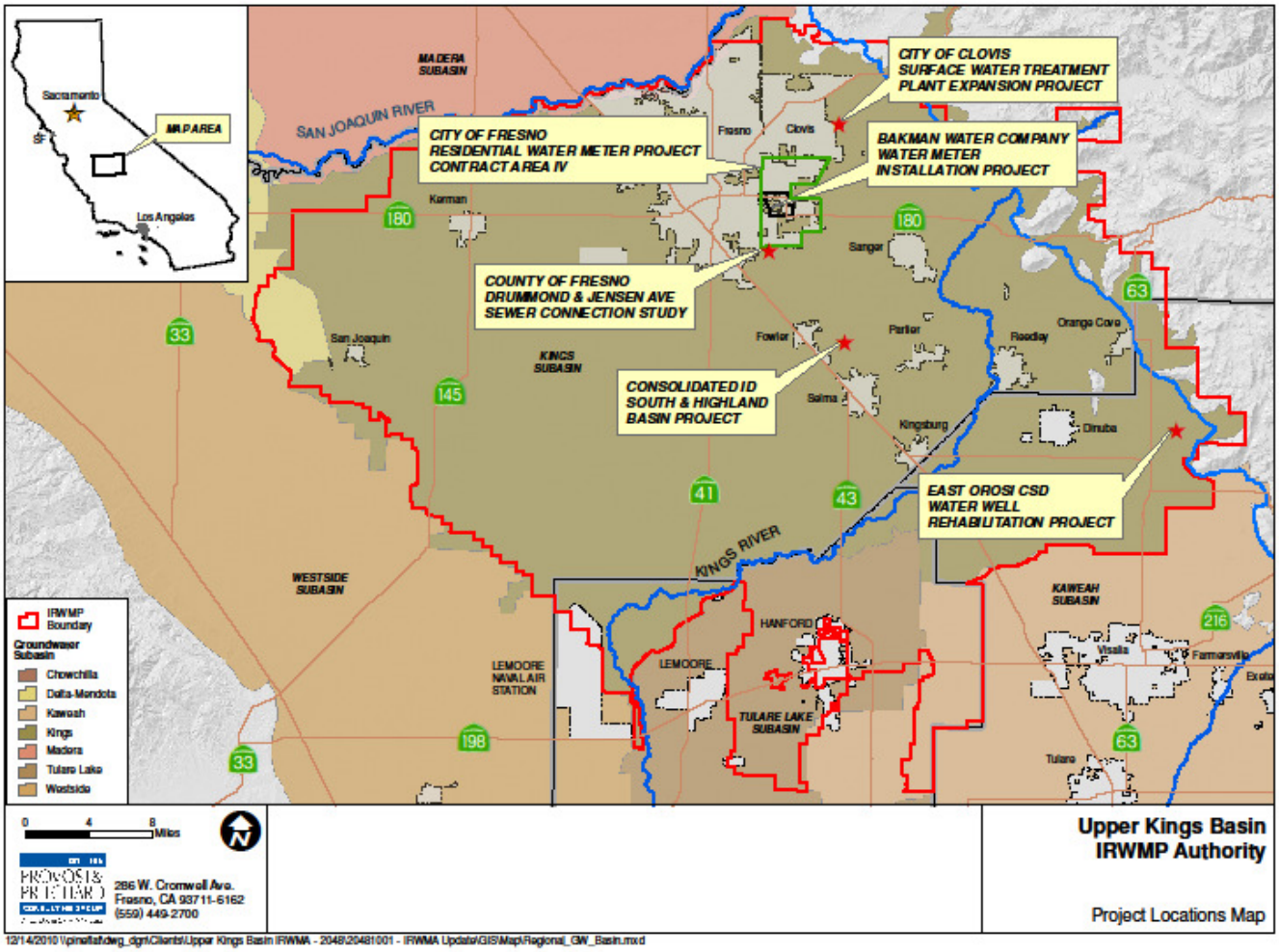
Project Proponent / Implementing Agency	Project Title	Abstract / Description	Project Status
1 - Consolidated Irrigation District	South and Highland Basin Project	Development of a 75-acre groundwater banking facility consisting of reservoirs, recovery and monitoring wells, and canal improvements. Would create an average annual (including dry year) water supply of approximately 2,500 AF, and be able to bank an average of approximately 3,200 AF of water each year that will be made available to market.	Feasibility Study and pilot testing complete. 35% Design complete. Option to purchase property obtained. Refer to page 3-11 for completed work.
2 - City of Clovis	Surface Water Treatment Plant Expansion	Expansion of the City's existing SWTP capacity from 15MGD to 23MGD (approximately 7,700 AF/yr). The plant was initially designed and constructed with provisions to facilitate expansion in the event of reduced groundwater supplies. This project will benefit the local groundwater basin through "in-lieu" recharge by reducing the City's dependence on groundwater.	Environmental complete. Permitting complete. Conceptual Design complete. Refer to page 3-27 for completed work.
3 - County of Fresno	Drummond Jensen Avenue Sewer Connection Study (DAC)	Feasibility study and design for extending a City of Fresno wastewater sewer system outside of the city limits to the disadvantaged community of Drummond, currently utilizing failing septic systems. The reduced use of septic systems in this area would improve the region's groundwater quality by reducing the continued contribution of excessive nitrates.	Neighborhood Interest surveys complete. County/City initiated project discussions complete. Cost estimate and concept outline developed. Refer to page 3-37 for completed work.
4 - East Orosi Community Services District	Water Well Rehabilitation Project (DAC)	Rehabilitation of two municipal water wells that service the disadvantaged community of East Orosi. The wells currently exhibit limited capacity and have water quality, problems exceed the MCL for nitrate. Rehabilitation would include unplugging the wells' lower casing perforations to increase well production rates and to extract water from lower stratas with reduced nitrate levels.	Analysis/study complete. Refer to page 3-45 for completed work.

Table 3-3 – Project List Abstract and Status

Project Proponent / Implementing Agency	Project Title	Abstract / Description	Project Status
5 - City of Fresno	Residential Water Meter Project (Area IV)	Installation of 10,000 residential water meters for one of the eleven contract areas (zones) within the City of Fresno. Part of an effort to install 110,000 water meters by 2013 throughout the City in order to maintain its water supply contract with the United States Bureau of Reclamation. Project is estimated to reduce residential water consumption by 10%, reducing groundwater overdraft and improving regional and local water supply reliability.	Environmental Complete Design Complete Refer to page 3-54 for completed work.
6 - Bakman Water Company	Water Meter Installation Project (DAC)	Installation of approximately 2,400 water meters to meter all of Bakman Water Company's residential, commercial, and irrigation connections. Similar to the City of Fresno's current meter installation plan, the installation of meters will provide improved water management and conservation. The project is expected to reduce water consumption by 10%. Both Fresno and Bakman share the same aquifer, and reduced groundwater pumping will help slow the movement of nearby groundwater contaminant plumes.	Environmental Complete Design Complete Refer to page 3-64 for completed work.

Projects Location Map

Below is a regional map showing the locations of all projects and the current Upper Kings IRWM Authority Boundary. Upper Kings IRWM Authority Boundary.



Project Linkages

Integrated Elements of Projects:

Although there are no physical connections between the projects, there are linkages between and among the projects selected that are critical to the overall goals of the IRWMP.

- Development of these projects is a further step in implementing the IRWMP and the prior actions to accomplish the goals as identified in Sections 8 and 9 of the IRWMP.

- All of the projects are consistent with the IRWMP goals and objectives, and are included in the project list. Together, the projects will provide additional water supply, as well as other benefits, to the region, and will help further several objectives of the Upper Kings IRWMP, including to:
    - Halt, and ultimately reverse, the current overdraft and provide for sustainable management of surface and groundwater;
    - Increase the water supply reliability, enhance operation flexibility and reduce system constraints;
    - Provide additional flood protection;
    - Protect and enhance aquatic ecosystems and wildlife habitat;
    - Contribute expeditiously and measurably to the long term attainment and maintenance of water quality standards;
    - Eliminate or significantly reduce pollution in impaired water sensitive habitat areas, and
    - Include safe drinking water and water quality projects that serve disadvantaged communities.
    - Provide precedent for successful involvement and implement solutions to meet critical water supply and water quality needs of Disadvantaged Communities within the IRWM that is applicable to other DACs within the IRWM with similar problems.
    - Develop dry year water supply that can be utilized by other members within the region
    - Help sustain the region's supply and reduce need for other supplies including delta water supplies

As described in Attachment 1, the collaborative effort that has occurred in the Upper Kings region since 2001 has established these goals and has brought together common interest of the members and interested parties of the Authority. The integrated project elements and linkages are described further under each projects individual workplan later in this attachment.

Data Management and Monitoring

All of the projects include data management and monitoring consistent with the IRWM Standards and Guidelines. Each project includes a reporting deliverable that will include delivery of project status information in all stages of the projects' study, design, construction, operation and ongoing monitoring. Project status reports will be made at least quarterly throughout all stages of the project, and presented at the Authority's quarterly Advisory and Board meetings. These meetings are noticed well in advance by email, as well as on the Authority's webpage (www.krcd.org/water/ukbirwma/index.html) and are open to the public. Meeting minutes are provided and posted online following the meetings. The Authority has an active outreach program, and will present public press releases and conduct project kickoff or completion

ceremonies as appropriate. The ongoing operation and monitoring of each of the projects is included in each projects' workplan.

A separate workplan for each of the projects is included in the following sections of this attachment.

Project 1: Consolidated Irrigation District South and Highland Basin

Introduction

CID will construct a new groundwater banking facility for recharge and recovery. The facility will include construction of recharge ponds on a 75-acre site, along with recovery wells, monitor wells, and diversion structures. CID will deliver excess and available surface water to the basin for recharge during winter and spring months when water is available. Then during summer months, CID will pump the banked water using recovery wells into existing CID canals for delivery to meet downstream irrigation demands. Using the banked water to meet grower demands will allow CID to exchange or sell surface water to interested parties or utilize to extend CID's irrigation season.

The project will provide an estimated 2,500 acre-feet annual average yield. Banked water will be delivered to meet CID demands downstream of the project. The project will allow additional Kings River floodwater and Fisheries Agreement Exhibit C water to be banked that is available during the late fall and winter months that CID has access to but would otherwise be lost to CID since the District has no irrigation demand during this period of the year.

During the banking operations, CID will make a like amount of Kings River water supply available for purchase to potential partners such as Fresno Irrigation District (FID), City of Fresno, City of Clovis, and other interested partners that utilize Kings River water supplies. Vicinity maps showing the project location and associated groundwater basin area included as Attachment 3a.

A detailed feasibility study has been completed identifying additional details concerning the proposed South & Highland Banking Facility, and that study is included in Attachment 3b. This study is referenced throughout this document.

This project was the third highest priority project in the original Kings Basin IRWMP, and the two higher projects have been completed.

Goals and Objectives:

The goal of this project is to construct a new groundwater banking facility. The objectives of the project are to:

- Expand the available water supply of the Kings River region. This project will provide an additional estimated 2,500 AF average annual water supply.
- Make use of flood waters that are sometimes lost to CID. Flood water would be routed through CID to the project site where this water will be recharged, stored, and later put to beneficial use.
- Help establish a fishery along the Kings River. The fisheries program commits water to be diverted along portions of the Kings River for establishment of a fishery. A portion of this water needs to be routed through sections of the river down to CID's diversion

point. The agreement requires water to be diverted from surface storage in Pine Flat during winter months (outside of the District's irrigation season0 to help maintain the fishery along the Kings River. Because the flows are diverting during a non-irrigation season when there is little or no irrigation demand, this facility will allow CID to maintain this supply by recharging, banking, then pumping the water later for delivery during the irrigation season.

- Increase groundwater storage. The project would provide as much as 10,000 acre-feet of additional groundwater storage at the recharge facility.
- Provide a reliable, dry-year water supply. This project will provide an average of 2,500 acre-feet of dry year water supply to the Kings River region.
- Reduce local groundwater overdraft. The project will recharge water at the project site, leaving behind as much as 10% for recharge. The project will also deliver water to CID customers for direct surface water delivery, thereby offsetting groundwater pumping within CID.
- Minimize flood damage by diverting some floodwaters. Having an additional facility to divert floodwaters will increase the capacity to handle floodwaters in the area. The project will also provide some protection for the City of Fowler, located approximately two miles downstream along the Kirby Ditch.
- Sustain the local agricultural community by providing revenue to CID. By agreement with a project partner, CID will receive additional revenue over and above conveyance and operational expenses.
- Increase knowledge of the local geology and hydrogeology. Groundwater recharge and recovery data will be monitored and evaluated, providing valuable information regarding the area and performance of the project.

Purpose and Need:

This project is consistent with the Upper Kings Basin Integrated Regional Water Management Plan (IRWMP). As listed on pages 2-11 and 2-12 of the IRWMP, CID is a member of the IRWMP. CID participated in the development of the IRWMP from the onset of the project, and adopted the IRWMP on July 25, 2007.

This project is consistent with the Regional Goals identified in Section 5.3 of the IRWMP, including:

- Halt, and ultimately reverse, the current overdraft and provide for sustainable management of surface and groundwater;
- Increase the water supply reliability, enhance operation flexibility and reduce system constraints;

- Provide additional flood protection; and
- Protect and enhance aquatic ecosystems and wildlife habitat.

This project is consistent with the Kings Basin Water Resource Planning Objectives and many Statewide Preferences and Priorities identified in Section 5.3 and in Table 6-3 of the IRWMP, including:

- Define local and regional opportunities for groundwater recharge. This project consists of constructing the first groundwater banking facility within CID. Preliminary studies indicate that this region's geology is favorable to groundwater recharge.
- Develop large scale regional conjunctive use projects and artificial recharge facilities to:
    - Capture storm and flood water currently lost to the region. This project will utilize and capture available flood water.
    - Enhance operational flexibility of existing water facilities, consistent with existing agreements, entitlements and water rights. This project will utilize CID's existing water supply entitlements and rights.
    - Improve the ability to store available sources of surface water in the groundwater basin. This project provides additional groundwater recharge.
    - Provide multi-purpose groundwater recharge facilities that provide flood control, recreation and ecosystem benefits. This project will allow for the storage of storm/flood water and includes support for the Kings River fishery and recreational opportunities that stem from the fishery.
    - Integrate the fishery management plan. The fisheries management program on the Kings River is discussed Section 3.2.8 of the IRWMP. In addition, CID has committed to being responsible for increased flows to establish the fishery along the river. The fisheries program commits water to be conveyed along portions of the Kings River that are upstream of CID's diversion point. In order for CID to commit water supply to the fisheries program without losing a portion of its supply, a project like the one proposed is required. This project would allow CID to divert water down the river for the fishery to CID's diversion point then store and bank the water at the project location. CID will then be able to deliver the banked water to customers along the Kirby Ditch, downstream of the project. With the total diversions from the Kings River being reduced due to the project supplementing demands along the Kirby Ditch during the irrigation season, a portion of CID's Kings River supplies will be exchanged with other Kings River partners, potentially including FID, City of Fresno, and City of Clovis.

- Negotiate and develop institutional arrangements and cost sharing for water banking, water exchange, water reclamation, and water treatment. Project operations and maintenance costs will be funded by water sales of banked water to other irrigation districts and municipalities.
- Enhance wildlife habitat through surface water reclamation, recharge and treatment facilities. This project provides for the creation of fish & wildlife habitat including:
    - Creation of habitat for migrating birds.
    - Creation of wetlands habitat.

Integrated Elements of Projects:

This project may be used as source water supply for other projects being considered, specifically the City of Clovis Surface Water Treatment Plant Expansion project. In addition, the CID South and Highland Basin project could provide a water supply to allow future projects within the Upper Kings IRWM region to be pursued.

Project Timing and Phasing:

The proposed project is not tied directly with another proposed project. However, the conceptual design of the project does have provisions for allowing the project to be multi-phased. If necessary, a reduced number of recharge basins could be constructed, such as developing only the portion of the project north of the Kirby Ditch, and still provide CID water banking benefits. Under this scenario, one, instead of two, recovery wells could be constructed.

If full funding is not available, the initial phase of the banking project could consist of constructing only the Cell 2 portion of the Alternative 1 project layout. This would include the construction of the recovery well as well as the canal turnout to divert water into Cell 2. Upon securing additional funding, additional recharge basins and recovery/extraction wells would be constructed to produce a fully operational banking facility.

Three alternatives could be considered for funding:

1. Complete development of the entire project (three basin cells and two recovery wells)
2. Development of one recharge basin and one recovery well
3. Development of one recharge basin

This grant application assumes full development and full funding available for the project.

Completed Work:

Refer to the project's feasibility study (Attachment 3b) for a summary of work completed. In summary, the work completed includes:

- Preliminary topographic survey of the project's property.
- Securing an option to purchase the project's property.
- Feasibility Study entitled "*South and Highland Basin Feasibility Study*", including water availability analysis, project cost analysis, and geologic review (**Attachment 3b**)
- Preliminary Project Layout Drawings (**Attachment 3b**)
- Preliminary Geotechnical Investigation Report, May 2010 (**Attachment 3b**)
- Reconnaissance Level Biological Survey Report, June 2010 (**Attachment 3c**)
- Phase 1 Environmental Site Assessment, July 2010 (**Attachment 3d**)
- Development of a monitoring well canvass for project operations (refer to feasibility study in **Attachment 3b**)
- Initial results from on-site percolation test (refer to feasibility study in **Attachment 3b**)

Work to be Completed by June 1, 2011

As shown in the project workplan, it is anticipated that the design of this project will commence prior to the assumed contract execution date of June 1, 2011. Tasks expected to be completed or nearly completed prior to the contract execution date include the completion and analysis of the on-site percolation test and mounding calculations, pump test, final design engineering, environmental documentation, and land purchase. Refer to the project schedule (**Attachment 5**) for additional details.

Existing Data and Studies:

A feasibility study for the project entitled "*South and Highland Basin Feasibility Study*" has been previously prepared. This study goes into depth concerning an analysis of investigative soil borings, subsurface geology using Department of Water Resources well completion reports, project site layout alternatives, CID water supply data, estimated banking operation performance, and estimated preliminary construction costs. In addition to the feasibility study, the following additional work has been completed to determine the project's feasibility:

- Preliminary geotechnical investigation (**Attachment 3b**)
- Reconnaissance level biological study (**Attachment 3c**)
- Phase 1 Environmental Site Assessment (**Attachment 3d**)
- Infiltration test (**Attachment 3b**)
- Landowner meeting (refer to **Attachment 3e** for attendance list and meeting presentation slides)

- Visitation to other banking projects

Project Map:

Refer to Attachment 3a for a site map showing the project's geographic location and the surrounding region.

Tasks

The following workplan was developed based on similar groundwater banking projects constructed in the region. *The work items were developed to collectively implement the proposed project.*

Task 1: Administration

This task will include the project administration related work involved in the development of the project. This task includes items such as meetings, coordination with stakeholders, developing partnerships, and overall project coordination. Some of this work has already begun on the project and the timeframe for that previous work is shown on the schedule.

The following is a list of subtasks to be completed:

Subtask 1.1 - Project Administration.

This subtask will include management and administrative tasks performed by CID. Specific tasks will include meetings (internal, landowners, project partners, etc.), coordination with stakeholders, and project implementation and agreements.

Subtask 1.2 - Engineering Consultant Project Administration.

This subtask will include management and administrative tasks for CID's engineering consultant. Specific tasks will include meetings, conference calls, subconsultant management, coordination with stakeholders, development of the Monitoring, Assessment, and Performance Measures (MAPM), and overall project coordination.

Work products for this task includes:

- Project meetings
- Coordination of stakeholders
- Project implementation and agreement preparation
- Development of MAPM

Deliverables: Preparation of invoices and other deliverables as required.

Task 2: Labor Compliance Program

This task includes adopting and enforcing a labor compliance program pursuant to Calfornia Labor Code and applicable laws. PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It is anticipated that a 3rd party labor compliance officer will be retained to develop the program and perform the required workplace inspections, reviews, and reporting. The labor compliance program will be in place prior to the award of the project's construction contract.

Deliverable: Submission of Labor Compliance Program

Task 3: Reporting

This task will include quarterly project reports and all other reporting obligations in accordance with the grant contract requirements. This task will also include preparation of a project draft and final project report. The report will summarize the project activities identified within this workplan, including a comparison of the scope, budget and schedule of the items performed. The draft report will be prepared and submitted to DWR for review and comment. Upon receipt of DWR comments, a final project report will be prepared and resubmitted to DWR. This task also includes modification to the MAPM prepared and included in **Attachment 6**. Upon completion of any needed revisions to the MAPM, it will be implemented and the efforts described within the MAPM will be documented.

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

Task 4: Land Purchase/Easement

This task includes acquisition of the required land and fees associated with the Option to Purchase agreement that CID secured with the landowner in April 2010.

The following subtask has already been completed:

Subtask 4.1 – Option to Purchase Agreement.

Work to acquire the property (Fresno County Assessor's Number 345-020-52) has been initiated with an Option to Purchase Agreement dated April 1, 2010 between the landowner and CID. The agreement requires CID to pay a monthly fee while the Option to Purchase Agreement is in effect. It is anticipated this agreement will remain in effect until June 2011 (14 months).

The following subtask will be performed:

Subtask 4.2 – Land Purchase/Acquisition

Included in this subtask is fee title acquisition of approximately 75 acres (APN 345-020-52) for development as the recharge basin area. Final purchase of the property is expected to be completed in the middle of 2011, in accordance with the terms of the option agreement.

Work products for this task include:

- Land appraisals as required by the State.
- Acquisition of Required Land (APN 345-020-52)

Deliverables to DWR for this task will include:

- Status of completion of acquisition
- Proof of completion of acquisition, in the form of title and agreement

There are many work products described under this task. If desired by DWR, any of these work products will be made available to DWR for review.

Task 5: Assessment and Evaluation

This task includes the required studies to review and analyze the feasibility of the banking project. Much of this work has already been completed or is well underway.

The following subtask has already been completed:

Subtask 5.1 - Feasibility Study.

A feasibility study was completed in November 2010 to evaluate water supplies, facility economics, and conceptual project design. The study identified specific water supplies for banking, and included a hydrologic simulation and detailed cost estimates for construction fees. Refer to **Attachment 3b** for a copy of the study.

As part of the feasibility study, a hydrogeologic study was completed for the proposed project. The study evaluated the geologic and hydrogeologic conditions, and concluded that a groundwater bank is technically feasible at the proposed site. The study included a preliminary geotechnical investigation, development of geologic cross sections utilizing DWR well completion reports, an on-site percolation and groundwater mounding test, and development of a monitoring well canvass to aid in the design and monitoring of the groundwater. All work products listed in this task have already been completed, except for final analysis of the on-site percolation test.

In addition, a Phase 1 Environmental Site Assessment and a Reconnaissance Level Biological Survey Report were prepared as part of this subtask as well to aid in the feasibility determination of the project (included in **Appendices F and G**). The results of

these studies conclude that the project site is feasible for use as a banking facility, with minor to no anticipated environmental impacts.

The following subtask has been initiated but is not yet completed:

Subtask 5.2 - Establish Monitoring Committee.

A Groundwater Monitoring Committee of local landowners and District staff will be established for monitoring and providing guidance on the management of the project's groundwater bank. This committee will assume responsibility for monitoring and providing guidance on management of the proposed project. The District committee held an initial meeting with landowners on November 11, 2010. Refer to **Attachment 3e** for the attendance sheet and meeting presentation slides.

Deliverables: Technical studies

Task 6: Final Design

This task includes developing the preliminary and final design for the project. In addition, this task includes a detailed topographic survey of the subject property.

The following subtasks will be performed:

Subtask 6.1 – Surveying.

This task will include topographic surveying along adjacent CID canals, within the project's property, along adjacent roadways, and in other areas needed to complete the final design. The deliverable for this task is topographic survey data. A boundary survey is not anticipated at this point, but will be added if required.

Subtask 6.2 - Design.

Preliminary and final design drawings and specifications will be prepared for the recharge basin earthwork and levee construction, one new project check structure in the Kirby Ditch, three project turnout structures along the Kirby Ditch, two monitoring wells, and two recovery wells. Basin design will include a full geotechnical investigation to determine the recommended levee design. Structure design will include the design of a concrete check structure with appropriate control appurtenances and basin turnout box and pipeline design. Well design will include initial siting, determination of dimensions, materials, and perforated intervals, pump design, and electrical interconnection design.

Work products for this task include:

- Preliminary design plans and specifications
- 90% level design plans and specifications
- Final design plans and specifications (contract documents)

- Construction cost estimates at each design milestone

Deliverables: Completion of project plans and specifications at the 90 percent and final level.

Task 7: Environmental Documentation

This task includes the required planning and environmental efforts to complete the project development. Some of this work has already been completed.

This task includes the required environmental processing and documentation involved in the project. All two of these items are closely interrelated, so are described here together. The process and documentation described herein is based on experience from the same process for the similar banking facilities.

Environmental Process – The two environmental regulations that need compliance relate to NEPA and CEQA. Since the project will not involve Federal monies, nor a Federal decision NEPA does not apply. CEQA consists of 1) preparation of initial studies to identify potential project impacts, 2) undertaking scientific and biological reviews to identify the existing conditions and potential impacts from construction and/or operations of the proposed project and 3) public input through meetings, public hearings and the formalized process of publication, circulation and adoption.

Environmental Documentation - Environmental documentation will include preparation of a CEQA Initial Study, performing the necessary biological surveys including plant and animal surveys as well as identifying the potential for endangered species, cultural resources survey and other pertinent studies as identified in the initial study. Additionally, there is planned to be public involvement in preparation and review of this work through meetings and a public hearing.

Work already completed:

- Biological survey to identify sensitive plant and animal species at the project site

Work products to be completed for this task include:

- Cultural resources investigation
- CEQA Initial Study for circulation and other related documentation
- Approved and adopted CEQA documentation

Deliverable: Approved and adopted CEQA/NEPA documentation

Task 8: Permitting

This task includes the required permitting efforts to complete the project development. Permitting for this project will be involved and include numerous State, Federal and Local agencies. Each of the identified agencies will be contacted and have jurisdiction over portions of the project. The permits identified herein are grouped into two areas. The first are permits that are required during the planning, regulatory and design phase. The other group consists of

permits that are required for construction. The anticipated permits for the project are listed below. It is anticipated that the applications for the permits will commence after preliminary design plans and specifications are prepared.

Planning, Regulatory, and Design Phase Permits and/or Reviews:

- Fresno County – CEQA review, conformance with General Plan
- Mosquito Abatement District – Review and planning for mosquito control

Construction Phase Permits and/or Reviews:

- Fresno County – Well drilling/construction, electrical review, encroachment permit (if required)
- San Joaquin Valley Air Board – Emissions from equipment, dust control.
- Regional Water Quality Control Board – Storm Water Pollution Prevention Plan (SWPPP)

Task 9: Construction Contracting

Bidding documents will be prepared for all construction work. It is expected that four separate bid packages will be prepared because of the nature of different project components. Separate bid packages will be prepared for the earthwork/structures, recovery well construction, recovery well equipping, and monitor well construction. This task also includes public bid advertisements, pre-bid meetings, answering questions during the bidding process, and evaluating submitted bids. The deliverables for this task is bidding documents and support during bidding.

Work products for this task include:

- Bid documents required to obtain contractors bids for construction.
- Advertisements for bids
- Pre-bid contractor's meeting
- Bid canvass summary
- Contract award

Deliverables: Advertisement for bids; pre-bid contractors meeting; evaluation of bids; award contract

Task 10: Construction

This task includes construction of the required facilities.

The following subtasks will be completed:

Subtask 10.1 Mobilization

This subtask will include construction items necessary for mobilization including contractor bonds and insurance, worker protection, and mobilizing construction equipment to the project site.

Work products for this task include:

- Contractor mobilization, bonds, and insurance.
- Worker protection

Subtask 10.2 Recharge Basin and Levee Construction

This will include the earthwork activities to excavate and construction the recharge basins, including the earthen levees. In addition, this subtask also includes any required clearing and grubbing of the existing fields and the abandonment, demolition, and removal of the existing home site and workshop. Debris as a result of this subtask will be exported offsite to an appropriate waste collection or landfill location.

The initial stages of the earthwork operations will consist of excavating the floor of the basins to the required depth, constructing levee keyways, and using excess cut from the basin excavation to construct the basin levees. Soil compaction, backfilling, and other geotechnical activities will be reviewed and monitored by a geotechnical engineer to ensure compliance with the geotechnical report recommendations and design plans and specifications.

Work products for this task include:

- Site preparation and demolition
- Construction of recharge basins and levees

Subtask 10.3 Project Canal Check and Basin Turnout Structures

This subtask will include the construction of a new concrete canal check structure downstream of the recharge basin turnouts in the Kirby Ditch for maintaining canal water levels. The construction will include water control gates, water level measurement devices, and other appurtenances and will be constructed according the plans and specifications.

The subtask will also include the construction of one concrete basin turnout structure including the associated pipeline, valve and appurtenances, will be constructed according to the plans and specifications for each of the project's recharge basins. The turnouts will regulate and convey water from the Kirby Ditch into the recharge basins using water control gates.

Work products for this task include:

- Construction of Kirby Ditch check structure
- Construction of recharge basin turnout structures

Subtask 10.4 - Recovery Well Construction.

This will include construction of two recovery wells including discharge piping, flow meters, check valves and other appurtenances. Initial stages of the well construction will include pilot borings, depth discrete water quality sampling, and aquifer tests to aid in selecting the final design details of the wells. In addition, E-logs will be performed in all of the pilot borings. Included in this task is application and processing for a well drilling permit from the County of Kings, as well as application and permit for electrical service.

Work products for this task include:

- Construction of Recovery Wells

Subtask 10.5 - Monitoring Well Construction.

Two shallow monitoring wells will be constructed according to the plans and specifications. The monitoring wells will be used to assist with monitoring and managing the groundwater bank. These two wells will supplement existing private wells identified in the well canvass (refer to the feasibility study in **Attachment 3b**).

Work products for this task include:

- Construction of Monitoring Wells

Subtask 10.6 – Other Site Improvements.

This subtask includes remaining construction activities that will be part of the groundwater banking facility. These activities include perimeter fence construction, placing crushed rock drive surfaces, and constructing project electrical improvements for the wells and electrically controlled water control gates.

Work products for this task include:

- Perimeter fencing around banking facility
- Placing crushed rock drive surfaces
- Site electrical improvements

Subtask 10.7 – Performance Testing and Demobilization.

This subtask includes final inspection of the banking facility and testing of the recovery wells. A final inspection will be performed to ensure the project was constructed in

compliance with the plans and specifications. In addition, tests will be performed on the recovery wells after construction to ensure their performance capabilities comply with that of the design. Once construction and testing is complete, the contractor will be able to demobilize from the project and project closeout will commence.

Work products for this task include:

- Final inspection of the facility
- Recovery well performance tests
- Contractor demobilization

Task 11: Environmental Compliance/Mitigation/Enhancement

Based on the results of the reconnaissance level biological survey report (refer to **Attachment 3c**), the project will likely not impact Federal of State protected species or natural communities.

However, this task has been developed to mitigate any potential disturbance or impacts to protected species or communities. As previously discussed, the construction of the project's recharge basins will involve excavation of the floor of the basins and construction of earthen levees. Preventative measures will be used during construction to minimize potential impacts to wildlife, including:

- Vehicles should use slow speeds (<15 miles per hour), especially at night, when driving through or around the Project site to minimize potential for striking or disturbing animals. San Joaquin kit fox and other animals are vulnerable to collisions with autos.
- Open pipes and culverts should be inspected before being moved or altered to prevent wildlife from being injured or trapped.
- If special status species are encountered during an inspection, they should be left alone to passively exit the area unless otherwise authorized by CDFG or USFWS.
- Any migratory birds and their nests should be not be disturbed as outlined in the Migratory Bird Treaty Act of 1918(MBTA). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations(CFR) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).
- If building or tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity should be conducted by a qualified biologist no more than 15 days before tree and building removal. If active nests are located within the construction site, nests should be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance should occur until after nesting season for

the observed species is concluded. Pre-disturbance surveys for bird nesting activity should include the trees on-site, burrows and open buildings (house/garage and shed).

These measures are documented in the reconnaissance level biological survey report included as **Attachment 3c**.

Work products for this task include:

- Preventative construction measures
- Construction monitoring

The following deliverables will be provided to DWR as part of this task:

- Listing/Report of protective measures required
- Implementation status, included in the project status reporting in **Task 3**

There are many work products described under this task. If desired by DWR, any of these work products will be made available to DWR for review.

Task 12: Construction Administration

This task includes construction administration and observation efforts. CID experienced construction management staff will perform construction observation duties with assistance from an experienced consultant familiar with these projects.

The following subtasks will be completed:

Subtask 12.1 - Construction Observation.

The engineering consultant will provide a field engineer, geotechnical engineer, or geologist, as appropriate, to monitor construction of the recharge basins and levees, concrete structures, wells, pumps, and pipelines. During construction of the wells, geologic logs will be prepared by a geologist. The consultant will make periodic visits to the project site during construction. Other roles of the engineering consultant will include: Organize and attend kickoff meetings, attend weekly meetings with contractors, review submittals, process monthly payment requests, and review contract change orders requests.

Work products for this task include:

- Daily construction observation and reporting
- Review of submittals
- Contractor progress payment approval and change order review

Subtask 12.2 - Record Drawings.

Upon completion of construction, the design drawings will be modified to reflect construction conditions using information provided by the contractor. The drawings will be signed by a professional engineer.

Work products for this task include:

- Preparation of final record drawings

Deliverables to DWR related to this task will include:

- Project construction status, included in the project status reports in **Task 3**
- Final record (as-built) drawings based on changes during construction

There are other work products described under this task. If desired by DWR, any of these work products will be made available to DWR for review.

Subtask 12.3 –O&M Manuals and Monitoring Plan.

This subtask includes the preparation of an Operations and Maintenance (O&M) Manual and Monitoring Plan. The Monitoring Plan will establish the procedures for monitoring the banking project's influence on groundwater conditions and will be used to minimize negative effects on nearby wells and septic systems, in conjunction with the MAPM. The O&M Manual and Monitoring Plan may be included in the same document. Draft copies of each document will be given to CID for comments and then final copies will be prepared.

Work products for this task include:

- O&M Manual
- Monitoring Plan

The following deliverables will be delivered to DWR:

- Final Monitoring Plan

There are many work products described under this task. If desired by DWR, any of these work products will be made available to DWR for review.

Task 13 – Other

This task includes other tasks not included in the work tasks described above. These include legal services, as well as on-going monitoring and operation of the project for many years following completion. The ongoing monitoring and operation/maintenance of the project includes efforts after initial project completion and operation. These efforts will be completed by District.

The following subtasks will be completed:

Subtask 13.1 - Legal Services.

Some legal assistance will be needed to assist with permitting, land acquisition, construction contracts, and agreements among the stakeholders.

Work products for this task include:

- Legal consultation as required

Subtask 13.2 – On-going Monitoring.

Utilizing the MAPM described in **Task 3**, the on-going monitoring will include regular monitoring of water deliveries, well extraction, groundwater levels, and groundwater quality. In addition, the data will be evaluated by an engineer and hydrogeologist and documented in an annual report. Monitoring efforts provide useful information for properly managing the groundwater bank. A Groundwater Monitoring Committee will be established (see **Subtask 5.2**). Ongoing monitoring efforts will extend for the life of the project. This task is shown for a short duration on the project schedule only because of space on the schedule. Annual monitoring reports will be prepared in accordance with the future Monitoring Plan.

Work products for this task include:

- Monitoring of the new banking facility

Subtask 13.3 – On-going Operation and Maintenance.

On-going operation and maintenance will include delivering water to the site, extraction well pumping, and maintenance on the wells, pumps, and recharge basins. Ongoing operation and maintenance efforts will extend for the life of the project. This task is shown for a short duration on the project schedule only because of space on the schedule.

Work products for this task include:

- Ongoing Operation and Maintenance of facilities

Deliverables to DWR for this task will include:

- Annual Report of Operations including the MAPM listed in **Task 3** and described in **Attachment 6**.

Project 2: City of Clovis SWTP Expansion

Introduction

The City of Clovis (City) is proposing to expand their current Surface Water Treatment Plant (Plant) which was built in 2004. The Plant is currently operating at an output capacity of 15,376 ac-ft per year (15 MGD). The Surface Water Treatment Plant Expansion (Expansion) will add a total of 7,711 ac-ft per year to the output capacity of the existing Plant (total of 23 MGD output). The Expansion will receive surface water conveyed by the Enterprise Canal which is owned and operated by the Fresno Irrigation District (FID). The added capacity will allow the City to rely less on their existing groundwater wells, allow for groundwater basin recharge and provide greater flexibility during dry years.

A vicinity map showing the project location is included as **Attachment 3f.**

This project was the fifth highest priority project in the original Kings Basin IRWMP.

Goals and Objectives:

The goal of the City of Clovis' (City) Surface Water Treatment Plant Expansion (Expansion) is to allow the City to better serve the surrounding communities. The objectives of the project include:

- The City will use the Expansion's additional treatment capacity to further reduce the City's dependence on groundwater wells.
- The Expansion will allow for approximately 7,711 ac-ft of potable water to be produced from surface water rather than from groundwater (based on Plant operation of 335 days per year).
- The reduced dependency on groundwater wells by the City will aid the local groundwater basin.
- The City will have the ability to shutdown or cycle existing groundwater wells to reduce water pumped, electricity used, and increase maintenance schedules in order to maintain efficiencies.
- Reduction in groundwater pumping will help stabilize the groundwater table, reduce local groundwater overdraft, and reduce the need to deepen wells, lower pumps, and install new wells.
- Provide reliable dry year supply

The project is consistent with the Kings Basin Water Resource Planning Objectives and several Statewide Priorities as indicated in Attachment 11. The project will help the region meet the goals identified in the Kings Basin IRWMP including:

- Halt and ultimately reverse the current overdraft and provide for sustainable management of surface and groundwater, by providing additional surface water treatment capacity reducing the City's dependence on groundwater.
- Increase the water supply reliability, enhance operational flexibility, and reduce system constraints by providing a more consistent surface water supply than the current fluctuating groundwater supply that has required the City modify and lower existing wells.
- Improve and protect water quality by eliminating some constituent concerns that come from pumping groundwater as well as helping to slow the migration of known contaminant concerns such as DBCP.

Purpose and Need:

The Expansion is needed in order to help prevent further overdraft of the local groundwater basin that serves the Fresno/Clovis metropolitan area and surrounding communities/users. Added surface water capacity at the Plant will add flexibility to the management of water in the local basin through "in-lieu" groundwater recharge and storage in the basin in wet and normal years. The storage that takes place will aid local communities in dry/drought years.

Additionally, the City's costs for pumping groundwater are increasing. In the past year, three (3) of the City's existing groundwater wells have been affected due to the declining water table; reducing the reliability of potable water for Clovis users. The City has been forced to modify and extend these wells. Furthermore in some areas of the City, particularly to the east, there is limited groundwater available for pumping so the City. This is compounded by the problem that there is very limited area suitable for recharge within the City or its sphere because of the heavy soils. These factors require the City to increase surface water treatment capacity to meet demands.

Integrated Elements of Projects:

The Expansion will add capacity to the existing Plant and further help reduce overdraft efforts for the local groundwater basin. The added surface water capacity will increase overall water supply reliability and increase system flexibility.

The Expansion project will also add water supply with the City of Fresno interconnection project. The interconnection project supplies water treated by the City of Clovis to Fresno users near the southeast portion of Clovis. Similar to parts of Clovis, the City of Fresno planned on supplying the users in the area through wells, however over a 3 year period 7 of 16 test wells were abandoned due to poor soil lithology and groundwater supply. The City of Fresno has a robust surface water supply and the City of Clovis has a surface water treatment facility in close proximity with

treatment capacity. Therefore the City of Fresno and Clovis developed and an interconnection agreement for two purposes:

- The agreement allows for Fresno to send surface water to the Clovis treatment facility, which is then delivered to the users in southeast Fresno. This interim supply of potable water reduces the number of wells to be constructed. It also provides time for the City of Fresno to construct a surface water treatment facility in southeast Fresno.
- The primary purpose for the interconnection is to provide emergency service to either City and to provide redundancy for system maintenance activities.

In addition, since the new expansion project would provide water to the City of Fresno, the City of Fresno Residential Water Meter Project included in this grant application would install residential meters that would end up measuring delivery of this water to homes in southeast Fresno.

Completed Work:

The City has completed the following work related to the Expansion project:

- CEQA documents were prepared, noticed, and a mitigated negative declaration adopted for the Expansion as part of the initial Plant construction.
- Original Plant equipment and buildings have been sized/built/designed for the plant expansion.
- Established procedures for Site Operations, Monitoring, and Reporting. (See Attachment 6a for an example of a Plant Sampling Report.)
- The City has secured its portion of the financing through City funds (see Question 9 above).
- Preliminary Design Drawings in the form of “future expansion” designations on the Original Plant’s construction drawings (see drawings CY100, M100, and M101). (see **Attachment 3g**)
- A "Surface Water Treatment Plant Project Basis of Design Report, Final", dated December 13, 2002, was prepared by Black and Veatch. The Basis of Design Report Executive summary has been provided in Attachment 3h.
- There is an agreement between FID and the City to provide the needed surface water supply deliveries.

As of June 2011, the City will have completed the following work related to the Expansion Project:

- Determine if Additive Option - Sewer Pipeline Construction (see Subtask 9.2.4) is beneficial for the City.

- If Additive Option - Sewer Pipeline Construction is determined to be more beneficial agreements/determinations on alignments, land easements and agreements will be completed.
- Request for Qualifications for design professionals to prepare final design specifications and drawings will be prepared and the selection process initiated.
- The City of Clovis has already completed the required CEQA documents for this project when the original plant was planned and designed (see Notice of Determination dated January 22, 2003; and Final Mitigated Negative Declaration dated February 3, 2003). (see **Attachment 3i**)

Existing Data and Studies:

There are numerous studies and reports that have detailed the need for a more reliable water supply source for the City.

- City of Clovis 2005 Urban Water Management Plan; addressing the current and future water demands (Section 5), and available water sources.
- City of Clovis Water Master Plan Update, Phase II Facilities Plan (July 1999) addresses the current surface water treatment plant and the needed capacity. The Expansion is also addressed as a method to reduce dependency on the existing groundwater wells and water purchases required to supply water to the Clovis users.
- In the 1997 Groundwater Management Plan the City states that with:

  > "the proper delivery system in place, in lower demand periods … additional wells can be turned off. This in effect becomes "in lieu groundwater recharge", enhancing the effort to mitigate overdraft". (page 25)

- The use and expansion of surface water treatment is identified as a planned action in the current Fresno Area Regional GWMP.
- The groundwater basin's overdraft has been evaluated by the State of California in the "California's Groundwater - Bulletin 118" (October 2003) which has identified the area as "critically overdrafted".

Project Map:

A project map has been provided in Attachment 3g. The proposed Expansion locations have been detailed to better depict the construction locations. A site vicinity map has also been included (see **Attachment 3f**).

Project Timing and Phasing:

At the time of award, the City is planning on having Project Design "Request for Proposals" bids advertised, along with any land easements detailed and ready for processing. The design and construction bid portion should take six (6) months and construction should be completed in less than 12 months. The Expansion portion of the Plant should be operational in the early part of 2013. There are no other projects that must be completed prior to the Expansion being constructed.

If the City should receive only a portion of the funding, the Expansion project is scalable. For example, if the City were to obtain half the requested funding, the City could feasibly install the new pump, two new filtration racks and a smaller sludge dry bed, allowing for a portion of the proposed 8 MGD expansion to be completed and the proportional supply and benefits obtained. The Sewer option would most likely not be installed. If the City does not receive funding, then the Expansion project will be put off until funding becomes available.

Tasks

The task list was developed based on the original Surface Water Treatment Plant Planning, Design, Construction and Operation experience of the City of Clovis. The task items were developed to collectively implement the proposed project.

Task 1: Administration

This task will include the project administration related work involved in the project. Specific tasks will include meetings, conference calls, reimbursement requests, engineering consultant management, and overall project coordination.

Deliverable: Preparation of project reimbursement requests.

Task 2: Labor Compliance Program

This task includes adopting and enforcing a labor compliance program pursuant to Calfornia Labor Code and applicable laws. PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It is anticipated that a 3rd party labor compliance officer will be retained to develop the program and perform the required workplace inspections, reviews, and reporting. The labor compliance program will be in place prior to the award of the project's construction contract.

Deliverable: Submission of Labor Compliance Program

Task 3: Reporting

This task will include quarterly project reports and all other reporting obligations in accordance with the grant contract requirements. This task will also include preparation of a project draft and

final project report. The report will summarize the project activities identified within this work plan, including a comparison of the scope, budget and schedule of the items performed. The draft report will be prepared and submitted to DWR for review and comment. Upon receipt of DWR comments, a final project report will be prepared and resubmitted to DWR.

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

Task 4: Assessment and Evaluation

The City of Clovis, through the Original Plant design engineer, has already evaluated the project Expansion components as part of the overall Plant during the initial phase design and construction. A "Surface Water Treatment Plant Project Basis of Design Report, Final", dated December 13, 2002, was prepared by Black and Veatch. The Basis of Design Report Executive summary has been provided in Attachment 3h.

The City of Clovis will evaluate the option of constructing a sewer pipeline between the Plant and the existing sewer pipeline in DeWolf Ave. The City will determine if the proposed pipeline would be cost beneficial versus the existing sludge haul off and removal fees.

Deliverables: City determination of inclusion of the Sewer Pipeline in Design Plans. Basis of Design report copies can be provided upon request.

Task 5: Final Design

This subtask will include the design of the membrane feed pumps and strainers, membrane rack arrangements, solids drying beds, pipelines and preparation of plans, specifications and cost estimates. City design engineers will prepare the required design plans and specifications with assistance from design consultants as required.

Deliverables: Completion of project plans and specifications at the 90 percent and final level.

Task 6: Environmental Documentation

CEQA was completed with the original Plant planning, design and construction. A copy of the adopted mitigated negative declaration is included in Attachment 3i.

No deliverables are listed as this task has already been completed as part of the existing Plant environmental documentation. If desired, complete copies of the mitigated negative declaration and supporting documents will be made available for review.

Task 7: Permitting

Permitting for this project will be involved and include State and Local agencies. Each of the identified agencies will be contacted and have jurisdiction over portions of the project. It should be noted that this project is an expansion of a project completed in July 2004. From that

perspective the expanded project has similar project features, is located in the same geographic area and is expected to have the same or similar conditions to the project that has recently been completed. The permits identified herein are grouped into two areas. The first are permits that are required during the planning, regulatory and design phase. The other group consists of permits that are required for construction. The City does not anticipate any problems in securing these permits.

Planning, Regulatory and Design Phase

Agency	Permit	Permit Obtained	Description/Status
San Joaquin Valley Air Pollution Control District	Indirect Source Review	ISR Determination to be provided	To be obtained during planning stages. A determination needs to be given by the San Joaquin Valley Air Pollution Control District
California Department of Public Health	Operating Permit	Still required	Upon initiation of design, the City will request from CDPH permission to increase the operational flow through the SWTP.

Construction Phase

Agency	Permit	Permit required	Description/Status
State Water Resources Control Board	Construction General Permit	Yes (to be obtained by contractor)	For control of drainage from property; Contractor to Obtain
San Joaquin Valley Air Pollution Control District	Permit	Yes (to be obtained by contractor)	Emissions on Equipment; Contractor to Obtain
City of Clovis	Building Permit	Yes (to be obtained by contractor)	Contractor to Obtain

Deliverables: SWPPP documentation, San Joaquin Valley Air Board documentation

Task 8: Construction Contracting

Bidding documents will be prepared for all construction work. The City will conduct a public bid process in accordance with City and State requirements to secure a licensed contractor experienced with the required construction. This task also includes pre-bid meetings, answering questions during the bidding process, and evaluating submitted bids.

Deliverables: Advertisement for bids; pre-bid contractors meeting; evaluation of bids; award contract

Task 9: Construction

This task includes the construction activities of the proposed facilities. All construction will meet all applicable local, state and federal codes and regulations.

Subtask 9.1 Mobilization and Site Preparation

This task includes the pre-construction meeting, the project site clearing and construction equipment and material lay-down and staging area. This task also includes the setup of a construction site trailer/office. This task also includes the onsite maintenance required to ensure the existing Plant is not interfered with and that all Stormwater Pollution Prevention and Dust Control Prevention measures are in place.

Subtask 9.2 Project Construction

Subtask 9.2.1 Membrane Feed Pump and Strainer

This task includes the construction costs of purchasing and installing the membrane feed pump and strainer, all required pipes and fittings to connect the existing system to the new expansion system.

Subtask 9.2.2 Membrane Rack

This task includes the construction costs of purchasing and installing the new four (4) membrane racks, and all required fittings to connect the existing system to the new expansion system.

Subtask 9.2.3 Solids Drying Beds

This task includes the construction costs of constructing additional solids drying beds.

Subtask 9.2.4 Sewer Connection Pipeline (Additive Option 1)

This task includes the construction costs of constructing a pipeline connecting the existing Plant to an existing City owned Sewer line in DeWolf Avenue. This option would likely remove the construction of Subtask 9.2.3 - Solids Drying Beds.

Subtask 9.3 Performance Testing for Startup Operations

This task includes all the equipment testing, the post-construction close-out walkthrough between the contractor, City and engineer, the project site cleanup of the construction areas, and the construction equipment and material lay-down and staging area. All equipment testing will meet the specifications of the construction documents and manufacturer recommendations. Testing will comply with local, state and federal regulations.

Task 10: Environmental Compliance/Mitigation/Enhancement

The City of Clovis already owns the land the Expansion will be constructed on. There will not be any land impacted off site that would require mitigation or protection. There are no mitigation measures required for the expansion. Onsite work associated with adherence to the SWPPP is included under Task 11.

Task 11: Construction Administration

This task includes construction administration and observation efforts. City of Clovis construction management staff will perform construction observation duties with assistance from an experienced consultant familiar with this type of project if necessary.

The engineering consultant will provide a field engineer or construction inspector to monitor construction of the membrane feed pumps and strainers, membrane rack arrangements, solids handling location, and pipelines. The consultant will make periodic visits to the project site during construction. Other roles of the engineering consultant will include: Organize and attend kickoff meetings, attend weekly meetings with contractors, review submittals, process monthly payment requests, and review contract change orders requests.

Upon completion of construction, the design drawings will be modified to reflect construction conditions using information provided by the contractor. The drawings will be signed by a professional engineer.

Deliverables: Daily construction observation and reporting; Meeting minutes; Review of submittals; Contractor progress payment approval and change order review and Record construction drawings.

Project 3: Fresno County Drummond Jensen Ave Sewer Connection Study

Introduction

This project is a feasibility study, included in this application in accordance with the allowance for feasibility studies for DACs as eligible projects as listed on page 17 of the IRWM Guidelines.

The disadvantaged community of Drummond Jensen neighborhood near the southeast region of the City of Fresno is a small subdivision consisting of 28 parcels with 29 residences, forming a "county island" surrounded by the City of Fresno. As a "rural" residential neighborhood, the subdivision is currently served with water by the City of Fresno, though some individual wells still provide domestic water. Currently, individual septic systems and seepage pits provide for onsite disposal of domestic sewerage. Numerous septic systems are no longer operating properly due to long-term septic system use in poor soil conditions (hardpan) such that the soil has become saturated and can no longer support septic systems. This has led to back-ups, overflows and expensive maintenance and pumping of septic tanks, and represents a potential health hazard to residents of the community. In addition, because of age and the general unsuitability of local soils, many septic systems have failed, and have contaminated the groundwater and, in some cases, have effluent ponding on some properties that can cause contamination of the domestic wells.

To address the imminent health and safety hazard, a new domestic water line was constructed for the residents several years ago. However, not all residents could afford the domestic water line connection fees, so only a small portion of the neighborhood is actually connected to the new water line. Thus, many residents are still reliant on private domestic wells for drinking water. These wells continue to pump water from the underlying aquifer contaminated by the private septic systems.

This project consists of the development and preparation of a design for a new sanitary sewer system to replace the on-site septic disposal system. The new sewer system would connect into the existing nearby City of Fresno sewer system.

Figure 1 – Drummond Jensen Avenue Neighborhood Map

Goals and Objectives:

The goals of the overall project are to provide sanitary sewage disposal at an affordable price to residents of the Fresno County small disadvantaged community of the Drummond Jensen Avenue Neighborhood and to stop the continued contamination of the soils and groundwater in the neighborhood's region. The objectives of the overall project are to:

1. Eliminate the need for the use of failing private septic systems in the Drummond Jensen Avenue Neighborhood.
2. Provide a sanitary sewage disposal system for the neighborhood that will tie into an existing City of Fresno sewage system.
3. Reduce soil contamination within the neighborhood due to failed domestic septic systems. Failed septic systems have led to sewage ponding on the ground surface in some areas of the neighborhood.

4. Reduce groundwater contamination in the neighborhood's region, and the potential negative effects on the nearby groundwater recharge operations and resulting groundwater quality.

The portion of the overall project that is part of this application consists of the development of the design of the new sewer system that will be required to achieve these goals and objectives.

Purpose and Need:

The project is consistent with the Upper Kings Basin Integrated Regional Water Management Plan (IRWMP). This project is consistent with the Regional Goals identified in Section 5.3 of the IRWMP, including:

- Increase the water supply reliability;
- Improve and protect water quality

The Upper Kings Basin Water Forum developed these goals and objectives based on need due to regional problems, issues, and conflicts inherent to the region. Critical problems within the region that necessitate the proposed project include long-term sustainability and reliability of the groundwater supply, overdraft of the groundwater basin, migration of poor water quality, protection of water rights/conflict management, sustaining the agricultural economy, and environmental issues and protection.

By reducing groundwater contamination, the groundwater supply near the southeast region of the City of Fresno will remain usable for domestic and municipal use. The proposed project will improve and protect groundwater quality in the vicinity and down gradient of the Drummond Jensen Avenue neighborhood by removing failing septic tank systems which are the source of potential pollution problems. The proposed project will also remove health hazards that exist where surfacing effluent can come in contact with residents.

In addition to being consistent with the IRWMP, the project is consistent with the Fresno/Clovis Metropolitan Water Resources Management Plan (WRMP) (**Attachment 3j)** and the City of Fresno's Nitrate Management Plan (**Attachment 3k**). The WRMP discusses the need for nitrate groundwater contamination management within the Fresno and Clovis region. Specific objectives of the WRMP include:

- Develop a water supply that will adequately meet the projected water demands of the Fresno Metropolitan Area and accommodate the future land-use decisions by the cities and county.
- Provide for the protection of the groundwater aquifer from future degradation. The groundwater within the Fresno region is invaluable and is a vital water resource for the city.

Further, the City of Fresno's Nitrate Management Plan (NMP) evaluated specific project alternatives in several areas of concern within the Fresno/Clovis area that could be pursued to accomplish the goals of the WRMP related to reducing groundwater contamination due to nitrates. One area of concern includes southeast Fresno, and the NMP identified the Drummond Jensen neighborhood as one of the nitrate contamination point sources in that region.

Integrated Elements of Projects:

The proposed project will move towards the City of Fresno's overall groundwater nitrate management goals of protecting groundwater quality and meeting the sanitary sewage disposal needs of disadvantaged communities. The project will require the coordination of both the City and County of Fresno in order to construct the new sewer system that will tie into an existing City of Fresno sewer system. The project would be in agreement with the nitrate contamination reductions goals of the Fresno/Clovis Metropolitan Water Resources Management Plan (WRMP). This project would also be similar to other projects the City of Fresno identified in its Nitrate Management Plan (NMP) for the southeast region of Fresno, a zone clearly identified in the NMP to have nitrate contamination.

The Bakman Water Company Water Meter Installation Project would be implemented just north of the Drummond Jensen Avenue neighborhood. A noted benefit of the Bakman meter project is the improvement in groundwater quality due to decreased pumping related to water conservation caused by meter use. Nitrate groundwater contamination in this region of Fresno affects not only the Drummond Jensen Avenue neighborhood but also the City of Fresno and Bakman Water Company. The conjunctive efforts of removing septic systems from service and reducing groundwater pumping are being pursued to improve groundwater quality in this region.

Completed Work:

As of January 1, 2011, the California Legal Rural Assistance (CLRA) has conducted a survey to ask the residents of the neighborhood about the performance of their septic systems and whether or not they would be interested in connecting their homes to a City of Fresno sewer system (refer to **Attachment 3l** for a survey summary and compilation of the survey questionnaires). The bilingual survey asked residents about septic system problems, preferences for connecting to a City of Fresno sewer system, and the residents' involvement with city zoning meetings. The results of the survey indicate that, of the residents responding to the questionnaire, all homes within the neighborhood have a private septic system and that approximately 58% of these have septic tank problems. In addition, the survey indicated that approximately 75% of the neighborhood's residents would like to connect to a City of Fresno sewer system.

The County of Fresno, which is currently acting as lead agency, has prepared an engineer's cost estimate for the proposed construction project. Coordination efforts between the County and City of Fresno have been initiated in order to successfully implement this project. It is anticipated

that the CEQA review will be relatively uncomplicated because the sewer extension project serves an already developed neighborhood that is adjacent to the City.

Existing Data and Studies:

As mentioned previously, two studies have been prepared discussing the importance of reducing nitrate contamination in the groundwater in the Fresno region:

- Fresno/Clovis Metropolitan Water Resources Management Plan (WRMP). This discusses the overall goals the City of Fresno will be pursuing for through the year 2050, including reducing nitrate groundwater contamination due to areas within Fresno and Clovis that do not have a connection to a city sewer system. Refer to **Attachment 3j**.
- City of Fresno Nitrate Management Plan (NMP). This plan identifies specific areas within the Fresno and Clovis area that are contributing to nitrate groundwater contamination, and lists projects throughout the city that the city is considering in order to reduce nitrate contamination. Refer to **Attachment 3k**.

In addition to the aforementioned neighborhood survey, a preliminary review of the neighborhood was performed by the County which included a cursory review of the existing ground and septic conditions within the neighborhood. This review also identified the specific parcels which would utilize the new sewer system (**Attachment 3m**).

Project Timing and Phasing:

The full project will consist of two phases. First, a feasibility and design phase will be performed for the proposed sewer system. The first phase of the project is to complete project feasibility components to make the project shovel ready. This phase includes the preparation of a Preliminary Engineering Report, environmental documents, preliminary project surveying, and design. The portion of the project applying for grant funding consists of this initial phase.

Upon completion of these items, the second phase of the project will be implemented, consisting of the construction and implementation of the new proposed sewer system for the neighborhood. During this second project phase, the County will be in a position to apply for construction funding from other sources.

Tasks

The following workplan was developed based on similar projects within Fresno County. The work items were developed to collectively implement the proposed project.

Task 1: Project Administration

The County of Fresno has applied for and received funding to construct and improve multiple water and sewer systems and other public works projects over the years. Fresno County also has

the staff and expertise to administer feasibility studies and construct projects such as that proposed in this application. The County and the Drummond Jensen Avenue Neighborhood also have a working relationship with Self-Help Enterprises (SHE) which has experience in administering projects through the DWR Infrastructure Rehabilitation Program and DWR Water Use Efficiency Program.

If the County is approved for funding under the IRWMP process for the Drummond Jensen Avenue Sewer Connection Feasibility Study, the County of Fresno is prepared to meet administrative requirements of DWR and the IRWMP program including preparation of invoices, payment requests and other deliverables as required.

Deliverables: Preparation of invoices and other deliverables as required.

Task 2: Labor Compliance Program

It is assumed that a labor compliance program will be required only for the field surveying during the initial design phase of the full project. This task would then include adopting and enforcing a labor compliance program pursuant to Calfornia Labor Code and applicable laws. PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It is anticipated that a 3rd party labor compliance officer will be retained to develop the program and perform the required workplace inspections, reviews, and reporting. The labor compliance program will be in place prior to the award of the project's construction contract.

Deliverable: Submission of Labor Compliance Program

Task 3: Reporting

The County of Fresno has applied for and received funding to construct and improve multiple water and sewer systems and other public works projects over the years. Fresno County also has the staff and expertise to implement feasibility studies and construct projects such as that proposed in this application.

The County and the Drummond Jensen Avenue Neighborhood also have a working relationship with Self-Help Enterprises (SHE) which has experience with the DWR Infrastructure Rehabilitation Program and DWR Water Use Efficiency Program.

If the County is approved for funding under the IRWMP process for the Drummond Jensen Avenue Sewer Connection Feasibility Study, the County of Fresno is prepared to complete required quarterly and annual progress reports as well as the final project report and other reporting requirements of DWR and the IRWMP program.

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

Task 4: Assessment and Evaluation

The proposed feasibility study would assess viable options to extend sewer service from the City of Fresno to Drummond Jensen Avenue Neighborhood. Each option would be assessed and evaluated to determine the most feasible, cost effective and environmentally sound solution to solving the on-site wastewater disposal system failures in the area. A preliminary engineering report and environmental documents will be produced that will detail these options and the recommended solution.

Deliverables: Technical evaluation study

Task 5: Final Design

This task includes developing the preliminary and final design for the project. In addition, this task includes a detailed topographic survey of the project area.

The following subtasks will be performed:

Subtask 5.1 – Surveying.

This task will include topographic surveying along the neighborhood's streets, within residential property (as required), along adjacent roadways, and in other areas needed to complete the final design. This survey will also be used to located existing utilities in the area. The deliverable for this task is topographic survey data. A boundary survey is not anticipated at this point, but will be added if required.

Subtask 5.2 – Final Design.

Preliminary and final design drawings and specifications will be prepared for the proposed sewer collection system. Once the recommended design option developed in assessment and evaluation task is agreed upon, project design would commence. It is anticipated that the system design will include approximately 3,250 feet of 8-inch PVC sewer main and 5 new manholes that will connect into the City of Fresno's existing sewer collection system at two existing manholes.

Work products for this task include:

- Preliminary design plans and specifications
- 90% level design plans and specifications
- Final design plans and specifications (contract documents)
- Construction cost estimates at each design milestone

Deliverables: Completion of project plans and specifications at the 90 percent and final level.

Task 6: Environmental Documentation

This task includes the required planning and environmental efforts to complete the project development. It is possible that the project may only require a CEQA Notice of Exemption. This will be investigated as part of the Feasibility Study. Should this level not meet CEQA compliance, full CEQA documentation will be prepared. If this is the case, the following process and documentation will be performed.

Environmental Process – The two environmental regulations that need compliance relate to NEPA and CEQA. Since the project will not involve Federal monies, nor a Federal decision NEPA does not apply. CEQA consists of 1) preparation of initial studies to identify potential project impacts, 2) undertaking scientific and biological reviews to identify the existing conditions and potential impacts from construction and/or operations of the proposed project and 3) public input through meetings, public hearings and the formalized process of publication, circulation and adoption.

Environmental Documentation - Environmental documentation will include preparation of a CEQA Initial Study, performing the necessary biological surveys including plant and animal surveys as well as identifying the potential for endangered species, cultural resources survey and other pertinent studies as identified in the initial study. Additionally, there is planned to be public involvement in preparation and review of this work through meetings and a public hearing.

As part of this grant application, it is assumed that only a Notice of Exemption will be required.

Deliverable: Notice of Exemption

Project 4: East Orosi CSD Water Well Rehabilitation Project

Introduction

The East Orosi Community Services District (EOCSD) is a publicly owned utility that has provided water service to the disadvantaged community of East Orosi since April 19, 1955. The EOCSD currently provides water service to approximately 426 residents through 105 service connections. The District encompasses approximately 0.2 square miles of land in northern Tulare.

The community of East Orosi is provided with water from two active wells (Wells #1 and #2) which were drilled in the early 1980's. Well #1 is within the community located on Ione Road. Well #2 is located west of the community on Road 136 north of Avenue 416. Well #3 is shallower and is no longer in service due to high nitrate levels. Water quality and the amount of water produced in these two active wells have diminished over the past 25 to 30 years. In addition, these two wells have produced water that periodically has exceeded the Maximum Contaminant Level for nitrate. The East Orosi Community Services District (EOCSD) has received Notices of Violation from the Tulare County Health Department for not continuously meeting this primary drinking water quality standard.

The pump from the easterly well was pulled and the well TVed a few years ago. The well video indicated that many of the perforations were partially plugged and that an air vent pipe had broken and fallen to the bottom of the well. Efforts were made to clean the well casing, but the pipe prevented the cleaning of the bottom portion of the well. It is suspected that the bottom portion of the well taps stratas that have water with lower nitrate concentrations. The proposed project would pull the pumps, one at a time, from each well, remove any obstructions and clean the casing to optimize the passage of water from all stratas, but particularly from the lower stratas. Other remedial work on the pumping plants would be made as necessary.

The proposed project would rehabilitate the two community wells that currently serve the community of East Orosi in Tulare County in order to improve water quality and increase well capacity. Specifically, the proposed project involves remediation work on each well that will unplug well casing perforations. If successful, this remediation work will allow each well to produce a higher percentage of water from the deeper stratas where nitrate levels are lower. The EOCSD serves the severely disadvantaged community of East Orosi which desperately needs grant funding to resolve water quality and supply issues at an affordable cost to the community's residents.

Vicinity maps showing the project location are included on the following page.

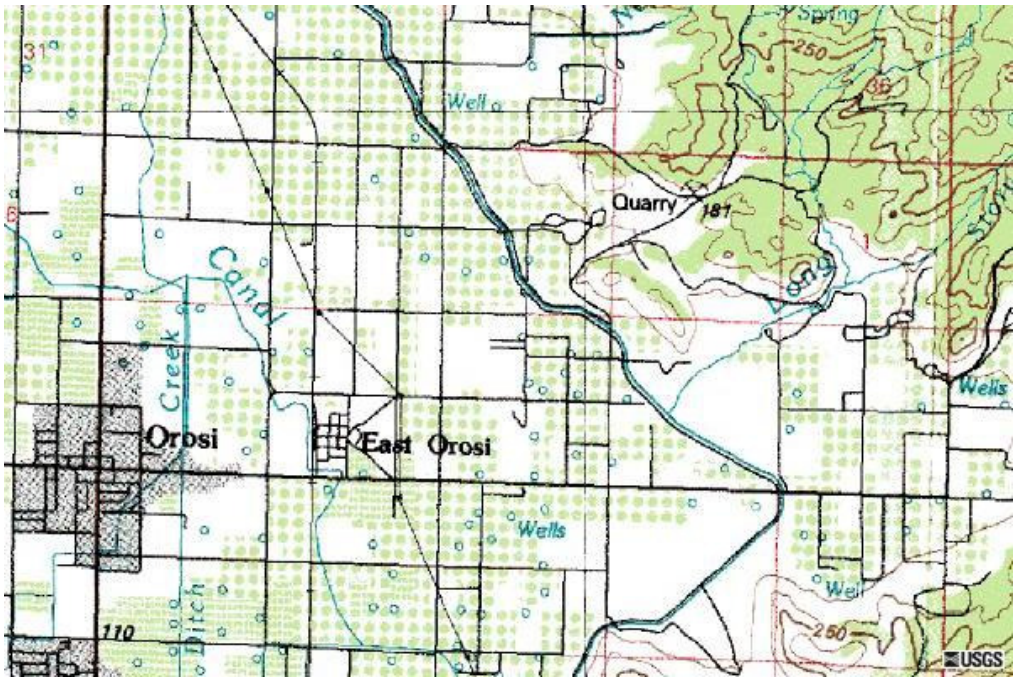


Figure 2 – Project Location

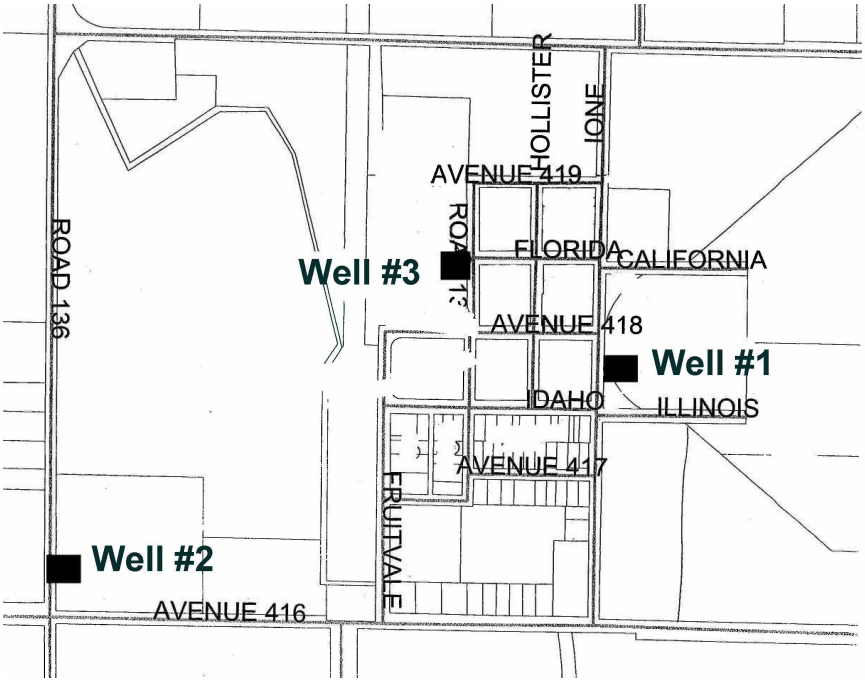


Figure 3 – East Orosi Map

Goals and Objectives:

The primary goals of the proposed project are to rehabilitate both community water wells; thereby, increasing water supply reliability and water quality. The project goals and objectives are consistent with the Upper Kings Basin Integrated Regional Water Management Plan (IRWMP), including:

1. *Increase the water supply reliability, enhance operational flexibility, and reduce system constraints.* The East Orosi community is dependent on the performance and reliability of the two water supply wells. The proposed well rehabilitation will not only increase the community's water supply reliability, but will also reduce constraints in the water system due to low well production capacities.
2. *Improve and protect water quality.* Groundwater in the local aquifer is affected by nitrate contamination in the area. Shallower groundwater has been shown to have higher concentrations of nitrate. The proposed well remediation will improve the quality of water pumped from the well by allowing more water from deeper cleaner aquifers to be accessed.

Purpose and Need:

The project is consistent with the Upper Kings Basin Integrated Regional Water Management Plan (IRWMP). This project is consistent with the Regional Goals identified in Section 5.3 of the IRWMP, including:

- Increase the water supply reliability;
- Improve and protect water quality

The Upper Kings Basin Water Forum developed these goals and objectives based on need due to regional problems, issues, and conflicts inherent to the region. Critical problems within the region that necessitate the proposed project include long-term sustainability and reliability of the groundwater supply, overdraft of the groundwater basin, migration of poor water quality, protection of water rights/conflict management, sustaining the agricultural economy, and environmental issues and protection.

The EOCSD relies solely on groundwater in an over-drafted aquifer; and therefore, the protection of supply reliability is critical, as is the protection of groundwater quality. There is known nitrate contamination within the shallow groundwater aquifer. Both Wells serving the EOCSD service area have been identified as having contaminant levels of nitrates that exceed the MCL (maximum contaminant level). Hence, residents of the EOCSD service area are notified that their water system exceeds the allowable MCL contaminant levels for nitrates; and therefore, residents have been relegated to purchasing bottled water for consumption which, to the low income residents of this disadvantaged community, is quite expensive.

Further, EOCSD's Well #3 has been shut down due to continuous high nitrate levels and the community's water system, causing the community to be reliant on only two wells. Shutting down one of the remaining two wells will not allow EOCSD to provide an adequate water supply to East Orosi. In addition, the poor performance of the two wells has caused the community's water system to be plagued with sporadic low pressure conditions, raising concerns of potential siphoning of water from residences back into the water distribution system.

Integrated Elements of Projects:

The proposed project will move towards the overall goal of meeting the drinking water needs of disadvantaged communities. Additionally, the project will require the coordination of at least two funding sources: (1) the California Department of Water Resources; and (2) the California Department of Public Health. The project is not currently integrated with another project. A second phase of this project is currently being developed and will focus on longer term water supply sustainability. Specifics for this second phase have yet to be developed.

However, this project joins the Drummond Jensen Avenue sewer study project in an effort to directly improve the water quality of groundwater being used for drinking water in these disadvantaged communities. Many disadvantaged communities within the Upper Kings IRWM region suffer from poor quality groundwater, and this project could be used as a model for future cost effective rehabilitation projects.

Completed Work:

As of January 1, 2011, an initial review and study of the existing wells and recommendations for potential improvement alternatives have been prepared. A cost effective and feasible improvement has been identified and the project is close to shovel-ready with only minor bid document preparation necessary.

Existing Data and Studies:

The following studies and reports have been prepared to assist in determining a feasible and cost effective well improvement alternative:

- Letter Report by hydrogeologist Kenneth D. Schmidt & Associates, Groundwater Quality Consultants, October 2009 (**Attachment 3n**)
- *California Department of Public Health Safe Drinking Water State Revolving Fund Program Project Report*, *East Orosi Safe Drinking Water Project for the East Orosi Community Services District*, October 2008 (**Attachment 3o**)
- TV Survey of East Well, March, 2005

A study report was prepared to review potential well improvement alternatives with discussions concerning feasibility and improvement cost estimates. The Letter Report prepared by

hydrogeologist Ken Schmidt in October, 2009 reviewed the TV survey of the well conducted in March 2005. In his letter, he states that the well screen is highly encrusted and most of the screen openings were plugged. Schmidt further emphasizes that when perforations plug, they usually do so initially farthest from the pump i.e., in the lower part of the well where lower nitrate stratas are tapped. Also, if enough screen openings are plugged, the drawdown can be so great that water production is reduced (Letter Report pgs.1-2).

Drillers logs indicate that the East Well is screened from 220 to 360 feet in depth and has an annular seal from 200 feet in depth to the surface. The West Well is screened from 205 to 320 feet in depth and has an annular seal from 200 feet in depth to the surface. Hydrogelogist Ken Schmidt indicates that the periodic exceedences of the MCL for nitrate raises several issues. This was substantiated by the TV survey conducted in March of 2005. Results of the TV survey clearly indicated that well screens were highly encrusted and most of the screen openings were plugged.

Project Timing and Phasing:

This well rehabilitation project is a standalone project that is the first of two phases to provide a safe and reliable source of drinking water for the community of East Orosi. The second phase is a longer term water supply sustainability project that is being applied for under separate cover.

Tasks

The following workplan was developed based on similar projects within Fresno County. The work items were developed to collectively implement the proposed project.

Task 1: Project Administration

The East Orosi Community Services District (EOCSD) will consider contracting administrative duties to Self-Help Enterprises (SHE). SHE has experience in administering other DWR programs such as the Infrastructure Rehabilitation Program and Water Use Efficiency Program as well as other state and federally funded water project funding. Such duties have entailed the preparation of quarterly, annual, and final progress reports as well as invoices and progress payment requests.

Deliverables: Preparation of invoices and other deliverables as required.

Task 2: Labor Compliance Program

This task includes adopting and enforcing a labor compliance program pursuant to Calfornia Labor Code and applicable laws. PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It is anticipated that a 3rd party labor compliance officer will be retained to develop the program and perform the required workplace inspections, reviews, and reporting. The labor compliance program will be in place prior to the award of the project's construction contract.

Deliverable: Submission of Labor Compliance Program

Task 3: Reporting

The East Orosi Community Services District (EOCSD) will consider contracting administrative duties to Self-Help Enterprises (SHE). SHE has experience in administering other DWR programs such as the Infrastructure Rehabilitation Program and Water Use Efficiency Program as well as other state and federally funded water project funding. Such duties have entailed the preparation of quarterly, annual, and final progress reports as well as invoices and progress payment requests.

This task also includes modification to the MAPM prepared and included in **Attachment 6**. Upon completion of any needed revisions to the MAPM, it will be implemented and the efforts described within the MAPM will be documented.

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

Task 4: Final Design

The proposed remedial well work does not require formal design plans. Work tasks will be relayed to the contractor by the engineer and/or hydrogeologist. However, project specifications and contract documents will be prepared for project bidding and contracting. The project specifications will be based on the rehabilitation guidelines established by the letter report prepared by Kenneth Schmidt.

Deliverables: Completion of project specifications at the 90 percent and final level.

Task 5: Environmental Process and Documentation

It is anticipated that this project is Exempt from CEQA. A CEQA Notice of Exemption is currently being prepared and it is anticipated it shall be approved and filed in the spring of 2011.

Deliverable: Approved and adopted CEQA Notice of Exemption.

Task 6: Permitting

No permits are anticipated for this remediation project other than the potential for construction encroachment permits.

Deliverables: Construction encroachment permits, as required.

Task 7: Construction Contracting

Bidding documents will be prepared for all construction work. This task also includes public bid advertisements, pre-bid meetings, answering questions during the bidding process, and evaluating submitted bids. The deliverables for this task is bidding documents and support during bidding.

Work products for this task include:

- Bid documents required to obtain contractors bids for construction.
- Advertisements for bids
- Pre-bid contractor's meeting
- Bid canvass summary
- Contract award

Deliverables: Advertisement for bids; pre-bid contractors meeting; evaluation of bids; award contract

Task 8: Project Construction

In this well rehabilitation project, a water well drilling firm and/or pump company will remediate the two active wells in East Orosi per the recommendations in the October 2009 letter from Ken Schmidt. The first step in the process will be to have a pump rig pull the pump. Remediation work will begin with brushing, acidification, and airlifting of the debris to the surface. Secondly, a TV survey would then be necessary to determine the effectiveness of first phase cleaning. Any holes present in the casing above the well screen will be patched by swaging in a liner or liners as necessary. Furthermore, the appropriately cleaned both wells would be pumped and surged followed by a 24 hour step drawdown coupled with constant discharge testing to measure pump performance. Thereafter, during the rest of the pumping period water samples would be collected at each step at four hour intervals for nitrate analysis.

The contractor will be directed to start and complete work on each well site separately so that the other operating well can supply water to the community. No site preparation is necessary.

Task 9: Construction Administration

This task includes construction administration and observation efforts. The East Orosi Community Services District (EOCSD) will consider contracting construction administrative and reporting duties to Self-Help Enterprises (SHE). SHE has experience in administering other DWR programs such as the Infrastructure Rehabilitation Program and Water Use Efficiency Program as well as other state and federally funded water project funding. Construction management activities will be conducted by the consulting civil engineer for the project Quad Knopf.

The following subtasks will be completed:

Subtask 9.1 – Construction Observation

The construction administrator will provide a field engineer or geologist, as appropriate, to monitor well rehabilitation operations. Other roles of the construction administrator will include: organize and attend kickoff meetings, attend weekly meetings with contractors, process monthly payment requests, and review contract change orders requests.

Work products for this task include:

- Daily construction observation and reporting
- Contractor progress payment approval and change order review

Subtask 9.2 – Monitoring Plan

This subtask will include the preparation of the project's Monitoring Plan. The Monitoring Plan will establish the procedures for monitoring both well water quality and well capacity performance. Draft copies of the Monitoring Plan will be given to EOCSD for comments and then final copies will be prepared. The Final Monitoring Plan will be made available to the DWR.

Deliverables: Final Monitoring Plan

Task 10 – Other

This task includes other tasks not included in the work tasks described above, including on-going monitoring and operation of the project for after initial project completion and operation. These efforts will be completed by EOCSD.

The following subtasks will be completed:

Subtask 10.1 – On-going Monitoring.

Utilizing the MAPM described in **Task 3**, the on-going monitoring will include regular monitoring of well extraction, groundwater levels, and groundwater quality. In addition, the data will be evaluated by an engineer and hydrogeologist and documented in an annual report. Monitoring efforts provide useful information for properly managing the community's groundwater resources. Ongoing monitoring efforts will extend for the life of the project. This task is shown for a short duration on the project schedule only because of space on the schedule. Annual monitoring reports will be prepared in accordance with the future Monitoring Plan.

Work products for this task include:

- Monitoring of the operation of the wells

Subtask 10.2 – On-going Operation and Maintenance.

On-going operation and maintenance will include extraction well pumping, and maintenance on the wells and pumps. Ongoing operation and maintenance efforts will extend for the life of the project. This task is shown for a short duration on the project schedule only because of space on the schedule.

Work products for this task include:

- Ongoing Operation and Maintenance of facilities

Deliverables to DWR for this task will include:

- Annual Report of Operations including the MAPM listed in **Task 3** and described in **Attachment 6**.

Project 5: City of Fresno Residential Water Meter Project (Area IV)

Introduction

This work plan describes the City of Fresno Residential Water Meter Project Contract Area IV project being submitted for Proposition 84 grant funding consideration.

The City of Fresno is mandated to install residential water meters on all services by January 1, 2013, in order to be compliant with AB 514 and to meet the requirements of its contract with the United States Bureau of Reclamation. The City of Fresno currently utilizes a flat rate billing method for its municipal drinking water service. This project represents a portion of the City's plan to transition all customers to metered service by January 1, 2013. This project is to install 10,000 of the 110,000 residential water meters to in the City of Fresno. Installation of the remaining 100,000 residential water meters is not included in this project.

This project was presented to the Upper Kings Basin Integrated Regional Water Management Authority (UKBIRWMA) Advisory Committee. The Advisory Committee reviewed the project and found it to be consistent with the goals and objectives of the IRWMP and able to provide increased benefits to the projects. The UKBIRWMA Board of Directors approved the projects for inclusion on May 25, 2010.

This project was identified as a favorable project in the original Kings Basin IRWMP.

A vicinity map showing the project location is included on the following page.

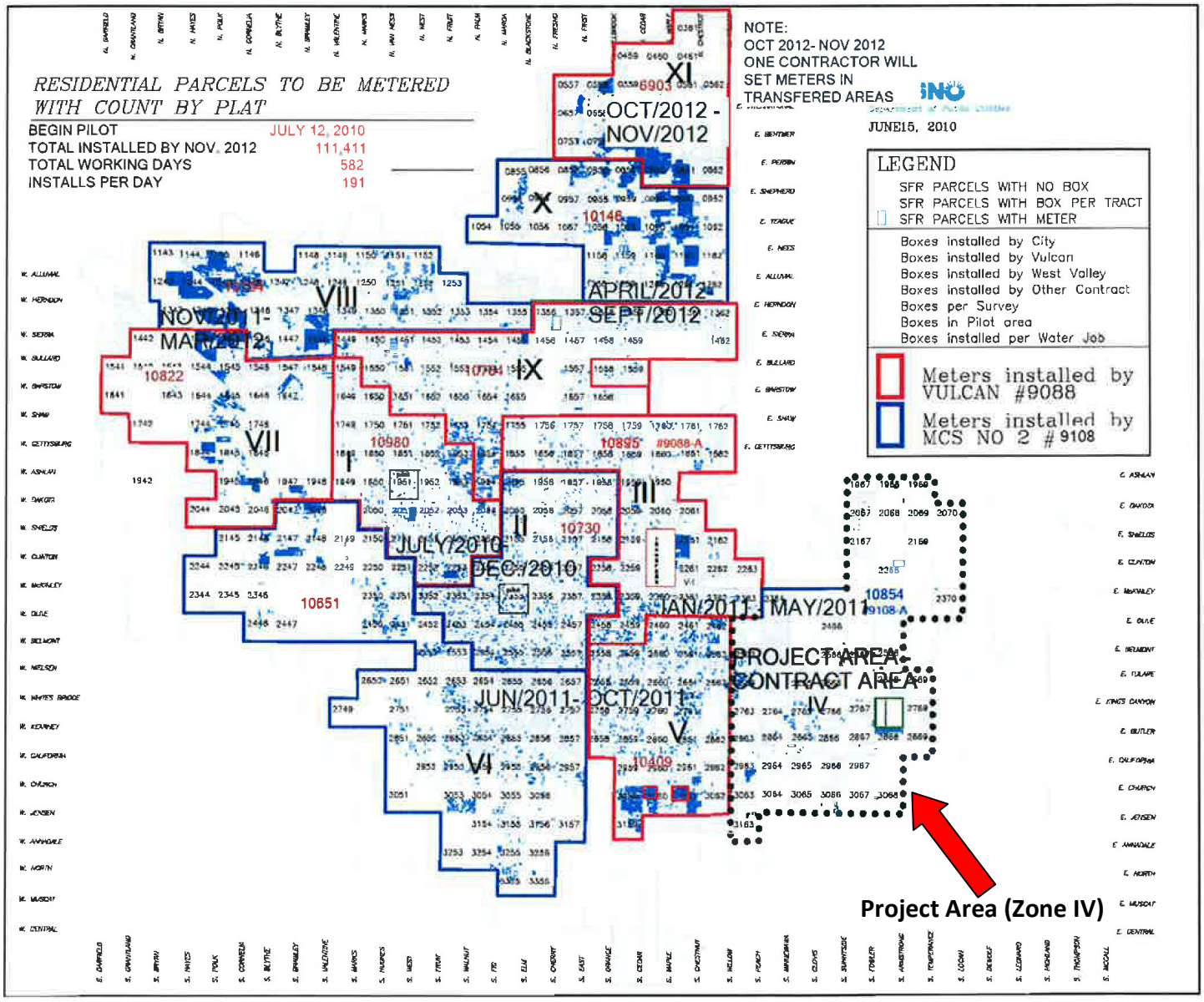


Figure 4 – Project Map

Goals and Objectives:

Ongoing project efforts related to this funding request will continue to be consistent with overall project goals to:

- Promote water conservation
- Expand the available groundwater supply.
- Provide a reliable, dry-year water supply.
- Sustain the local agricultural community by reducing overdraft.
- Improve local groundwater levels
- Increase overall water supply reliability

The objectives of the City's project are to:

- Achieve a net 10% reduction in annual water use across the project's 10,000 newly water metered customers. The City's 2008 Urban Water Management Plan (UWMP) estimates a 10% conservation of overall water residential water consumption after meter installation. As cited in the 2008 UWMP, an estimated 30 gallons per capita per day will be saved. For the proposed 10,000 meters (utilizing an average of 3 residents per meter), this savings equates to 900,000 gallons per day, or approximately 1,008 acre-feet (328.5 million gallons) per year.
- Reduce local groundwater overdraft. The City remains largely dependent on groundwater supply to meet demands. Reducing demand will in turn reduce the need to pump groundwater.

Purpose and Need:

The regional goals defined in the Upper Kings Basin IRWMP (2007), which were intended to address the primary problems and resource conflicts in the region, include:

- Halt, and ultimately reverse, the current overdraft and provide for sustainable management of surface and groundwater;
- Increase the water supply reliability, enhance operational flexibility, and reduce system constraints;
- Improve and protect water quality;
- Provide additional flood protection; and
- Protect and enhance aquatic ecosystems and wildlife habitat.

The Upper Kings Basin Water Forum developed these goals and objectives based on need due to regional problems, issues, and conflict inherent to the region. Critical problems within the region that necessitate the proposed project include overdraft of the groundwater basin, long-term sustainability and reliability of the groundwater supply, migration of poor water quality, protection of water rights/conflict management, sustaining the agricultural economy, and environmental issues and protection.

The proposed project addresses many of the priority issues developed in the Upper Kings Basin IRWMP, as well as many of the goals and objectives set in order to mitigate those issues. By installing meters on all service connections, the City of Fresno will attain the ability to track overall consumption and develop metered rates for consumers. By tracking overall consumption and fluctuations inherent to the city, Fresno will be able to provide more efficient management of the water system as well as educating users. Metered water rates as well as education regarding consumption and conservation will encourage conservation throughout the service area. It is expected that a 10% reduction in water use within Fresno will be achieved through this project.

By reducing water usage, this project will increase the reliability of the water supply as well as enhance operational flexibility. Fresno will be able to pro-actively monitor water usage on a daily, or multiple times daily, basis as necessary. Information obtained from the meters will allow for improved system understanding and operational adjustments to meet demands.

In addition, this project would allow the City of Fresno to comply with California AB 514 and the renewal of the City's USBR Central Valley Project surface water contract. These legal requirements require the City to install residential water meters and bill for water usage at a metered rate by 2013 or jeopardize losing its contract for 60,000 acre feet of CVP water.

Finally, the project will address the challenges faced by the City due to declining groundwater levels. Groundwater levels have gradually declined in the Fresno area and throughout the Upper Kings Basin. The project will encourage water conservation and aid in the restoration of groundwater supplies by increasing the residents' awareness of their individual water use.

Completed Work:

All environmental work related to the overall city-wide project has been completed (which includes work related to this funding request for Contract Area IV). The City is the lead agency under CEQA and prepared an IS/ND to address the overall project. The project relative to this funding request is a smaller subset of the larger project addressed in the IS/ND. The date of the final IS/ND was in May, 2008. The public review period was from May 1, 2008 through May 30, 2008. No comments were received. The City adopted the IS/ND and approved the overall project on June 24, 2008, and filed an NOD with the Fresno County Clerk on June 24, 2008 and OPR (SCH# 2008051008), on June 25, 2008.

Plans and specifications for the work under Contact Area IV are complete. A work estimate and schedule will be submitted by the awarded contractors pending the number and size of residential water services within the Contract Area.

Existing Data and Studies:

The City of Fresno has already completed the necessary planning, design, engineering and environmental compliance work required for the project. The Residential Meter Implementation Plan completed by HDR in January 2008 (**Attachment 3p**) evaluated the various metering options and made recommendations related to Preferred Technology, Deployment, Bid/Procurement, and Environmental Documentation.

An Initial Study, Negative Declaration and Notice of Determination were processed and subsequently adopted by City Council and filed in May and June of 2008 respectively. A copy of the Initial Study/Negative Declaration (**Attachment 3q**) and plans for meter installation (**Attachment 3r**) were prepared and included with this application.

Project Timing and Phasing:

To improve and ensure water supply and reliability, and in accordance with Upper Kings Basin IRWMP goals and mandatory requirements, the City of Fresno has implemented a multi-year project for the installation of approximately 110,000 residential water meters by January 2013. To meet project timing goals, the residential properties requiring water meter installations were divided into eleven (11) 'Contract Areas'. These Contract Areas are numbered in sequence of work to be performed. The work related to each Contract Area will be implemented and completed independent of other Contract Areas.

Work related to funding under this grant is specific to Contract Area IV. Residential water meter installation will begin in January 2011, with project completion anticipated to conclude by June 30, 2011. As is all work related to the overall project, each residential property within the project area (Area IV) will involve the installation of a water meter box and lid, water meter, an Automated Meter Reading (AMR) device (including software), connection of the AMR to the City's computerized stations, and setting the client's account to the new system.

Tasks

Task 1: Project Administration

This task will include the project administration related work involved in the project. This task includes project status reporting, preparation of invoices, and other deliverables as required.

Specific tasks will include meetings and correspondence, conference calls, subconsultant management (if necessary), preparation of invoices, and overall project coordination. Work products for this task include:

- Project meetings
- Assistance with project implementation and agreements

The deliverables associated with this task will include:

- Monthly Invoices

There are other work products described under this task. If desired by DWR, any of these work products will be made available to DWR for review.

Task 2: Labor Compliance Program

This task includes adopting and enforcing a labor compliance program pursuant to Calfornia Labor Code and applicable laws. PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It is anticipated that a 3rd party labor compliance officer will be retained to develop the program and perform the required workplace inspections, reviews, and reporting. The labor compliance program will be in place prior to the award of the project's construction contract.

Deliverable: Submission of Labor Compliance Program

Task 3: Reporting

This task will include quarterly project reports and all other reporting obligations in accordance with the grant contract requirements. This will also include preparation of a project draft and final project report. The report will summarize the project activities identified within this work plan, including a comparison of the scope, budget and schedule of the items performed. The draft report will be prepared and submitted to DWR for review and comment. Upon receipt of DWR comments, a final project report will be prepared and resubmitted to DWR. This also includes modification to the PAEP. Upon completion of any needed revisions to the PAEP, it will be implemented and the efforts described within the PAEP will be documented.

This task also includes preparation of quarterly progress reports for the grant, along with preparation of a draft and final project report.

Work products include:

- Quarterly project status reports
- Finalized PAEP and implementation of PAEP
- Draft project summary report
- Final project summary report

Task 4: Assessment and Evaluation

The City has already completed the necessary planning, design, engineering and environmental compliance work for the project. An extensive project and economic analysis was included in the City of Fresno Residential Meter Implementation Plan completed by HDR in January 2008. The analysis included evaluation of capital costs and operation and maintenance costs associated with

the various metering options. The Implementation Plan also made recommendations for the Preferred Technology, Deployment, Bid/Procurement, and necessary Environmental Documentation for the overall project (which includes work related to this funding request for Contract Area IV). A copy of the Implementation Plan is provided with this submittal (**Attachment 3p**).

Task 5: Final Design

Plans and specifications for the overall 'citywide' residential water meter project have been completed, and included in this application.

Task 6: Environmental Documentation

The City is the lead agency under CEQA and prepared an IS/ND to address the overall project. The project relative to this funding request is a smaller subset of the larger project addressed in the IS/ND. The date of the final IS/ND was in May, 2008. The public review period was from May 1, 2008 through May 30, 2008. No comments were received. The City adopted the IS/ND and approved the overall project (which includes work related to this funding request for Area IV) on June 24, 2008, and filed an NOD with the Fresno County Clerk on June 24, 2008 and OPR (SCH# 2008051008), on June 25, 2008.

Task 7: Permitting

The contractor is responsible for obtaining all required permits related to the overall project (including work related to this funding request for Contract Area IV). These include permits related to the development of project Surface Water Pollution Prevention Program (SWPPP's) and any street-work and/or encroachment permits necessary to complete the work within each Contract Area.

Task 8: Construction Contracting

To ensure consistency, and meet project timelines, competitive bidding and pilot installation programs resulted in issuing requirements contracts to several qualified contractors for citywide installation of residential water meters. Pending conditions within each contract area, contractor estimates cost for work within each area which are reviewed for appropriate cost representation, completeness, and work schedule prior to award and issuance of a Notice to Proceed.

Task 9: Construction

Several days prior to construction, all residential properties within the work area are notified of the proposed work schedule and timelines of any anticipated affects to water service. Thereafter, the contractor's construction tasks include location of water service lines to each property, and installation a meter box and lid. Follow up construction tasks include installation of water meters

and Automated Meter Reading (AMR) devices. Construction completion entails other work described under Subtask's 9.2 and 9.3.

Subtask 9.1 Mobilization and Site Preparation

Once the contractor has received Notice to Proceed (NTP) for work within the designated contract area(s), contractor mobilization and site preparation will typically include: 1) notification of residents several days in advance of the work, and 2) and logging water service and proposed meter box locations. Project construction will then continue as noted under Subtask 9.2.

Subtask 9.2 Project Construction

This task is installation of these meters at residences throughout the City. It is important to note that this grant request is for only 10,000 of the more than 110,000 residential water meters that are scheduled to be installed. The work includes installation of the meter boxes and lids, meters, Automated Meter Reading (AMR) devices, integration with the city-wide monitoring system for customer billing, and labor to install these components.

Subtask 9.3 Performance Testing and Demobilization

Each residential meter and AMR is field tested and activated to perform a 'forced read' to ensure: each meter is functioning properly; an automated signal can be generated and received by the citywide system. This evaluation is performed for each residential meter prior to contractor demobilizing to the next property within the Contract Area.

Task 10: Environmental Compliance/Mitigation/Enhancement

The City is the lead agency under CEQA and prepared an IS/ND to address the overall project. The project relative to this funding request is a smaller subset of the larger project addressed in the IS/ND. The date of the final IS/ND was in May, 2008. The public review period was from May 1, 2008 through May 30, 2008. No comments were received. The City adopted the IS/ND and approved the overall project (which includes work related to this funding request for Area IV) on June 24, 2008, and filed an NOD with the Fresno County Clerk on June 24, 2008 and OPR (SCH# 2008051008), on June 25, 2008.

As such, no Mitigation Monitoring and Report Program or Statement of Overriding Considerations was required.

Task 11: Construction Administration

This task includes construction administration and observation efforts, to be performed by a qualified inspector.

The following subtasks will be completed:

Subtask 11.1 - Construction Observation

A qualified inspector will provide construction observation to monitor the installation of the meters. The inspector will make periodic visits to the project site during construction. Other roles of the inspector will include: Organize and attend kickoff meetings, attend weekly meetings with contractors, review submittals, process monthly payment requests, and review contract change orders requests.

Work products for this task include:

- Daily construction observation and reporting
- Review of submittals
- Contractor progress payment approval and change order review

Subtask 11.2 - Record Drawings

Upon completion of construction, the design drawings will be modified to reflect construction conditions using information provided by the contractor. The drawings will be signed by a professional engineer.

Work products for this task include:

- Preparation of final record drawings

Deliverables to DWR related to this task will include:

- Final record (as-built) drawings based on changes during construction

Task 12: Other

This task includes other tasks not included in the work tasks described above. These include on-going monitoring and operation of the project for many years following completion. The ongoing monitoring and operation/maintenance of the project includes efforts after initial project completion and operation. These efforts will be completed and financed by the City of Fresno.

The following subtasks will be completed:

Subtask 12.1 – On-going Monitoring and Administration

On-going monitoring will include monitoring of water meter readings, and administration of metered water rates. Fresno currently has staff that manages operations and this task will be included as part of their ongoing duties. Initially this will involve developing and implementing a water rate structure. Water meter records will be used to verify water savings. This data will additionally be evaluated in order to more efficiently manage the water system and conserve water.

Work products for this task include:

- Develop rate structure
- Reading and monitoring of water meters
- Administration of metered water usage rates

Subtask 12.2 – On-going Operation and Maintenance

The water meters and automatic meter reading device need very little maintenance. These meters are anticipated to be virtually maintenance free for at least 20 years, unless illegal tampering of the device occurs. Fresno currently has staff that manages operations and this task will be included as part of their ongoing duties.

Deliverables to DWR for this task will include:

- Annual Report of Operations

Project 6: Bakman Water Company Water Meter Installation Project

Introduction

Bakman Water Company is a privately owned utility that has provided water service to the Fresno area since 1948. Bakman currently provides water service to approximately 8,500 customers through 2,137 service connections and covers approximately 1,660 acres within the southeastern portion of the City of Fresno and parts of unincorporated Fresno County.

This project includes installation of water meters at all of the water service connections within the Bakman Water Company service area. Bakman serves a primarily disadvantaged community, and grant funding will help reduce water costs to the community and promote conservation of water.

A vicinity map showing the project location is included at the beginning of this Attachment.

This project is similar to the City of Fresno meter installation project, which was identified as a favorable project in the original Kings Basin IRWMP.

Goals and Objectives:

The primary goals of the proposed project are to conserve water, improve water management, and increase water supply reliability. The project goals and objectives are consistent with the Upper Kings Basin Integrated Regional Water Management Plan (IRWMP), including:

1. Halt and ultimately reverse the current overdraft and provide for sustainable management of surface and groundwater.

The overdraft within the region is evidenced by falling groundwater levels, and manifested by increasing costs of groundwater pumping and some groundwater degradation. The main specific long-term goal of the Upper Kings Basin IRWMP, as well as other water management documents for the area, is to correct the overdraft and stabilize groundwater levels.

Bakman is dependent on groundwater as its sole source of supply to meet water demands. The installation of water meters is expected to result in a 10% water savings by consumers. Installation of meters will provide users with additional information regarding usage, and promote conservation with metered usage rates. Reducing demand will reduce groundwater pumping required to meet demands within the water service area. The proposed project is therefore intended to maintain or increase the volume of groundwater available in the local aquifer.

2. Increase the water supply reliability, enhance operational flexibility, and reduce system constraints.

The meter installation project will help Bakman better analyze, manage, and conserve the groundwater aquifer in the area. Information obtained from the meters will additionally allow for improved system understanding and operational adjustments to meet demands and educate users. The project will promote and provide water conservation and more efficient groundwater

management. This will improve the reliability of the water supply as well as enhance operational flexibility and reduce system constraints.

3. Improve and protect water quality.

Groundwater in the local aquifer is affected by nearby contamination plumes. This project will conserve water, and thus sustain supply of an overdrafted aquifer and slow the migration of the contaminant plumes. By slowing the movement of contaminant plumes, water quality will be protected.

Purpose and Need:

The regional goals defined in the Upper Kings Basin IRWMP (2007), which were intended to address the primary problems and resource conflicts in the region, include:

- Halt, and ultimately reverse, the current overdraft and provide for sustainable management of surface and groundwater;
- Increase the water supply reliability, enhance operational flexibility, and reduce system constraints;
- Improve and protect water quality;
- Provide additional flood protection; and
- Protect and enhance aquatic ecosystems and wildlife habitat.

The Upper Kings Basin Water Forum developed these goals and objectives based on need due to regional problems, issues, and conflict inherent to the region. Critical problems within the region that necessitate the proposed project include overdraft of the groundwater basin, long-term sustainability and reliability of the groundwater supply, migration of poor water quality, protection of water rights/conflict management, sustaining the agricultural economy, and environmental issues and protection.

The proposed project addresses many of the priority issues developed in the Upper Kings Basin IRWMP, as well as many of the goals and objectives set in order to mitigate those issues. By installing meters on all service connections, Bakman will attain the ability to track overall consumption and develop metered rates for consumers. By tracking overall consumption and fluctuations inherent to the community, Bakman will be able to provide more efficient management of the water system as well as educating users. Metered water rates as well as education regarding consumption and conservation will encourage conservation throughout the service area. Typically, water conserved by reduction in use based on meter installation is between 10% and 20%. The City of Porterville Urban Water Management Plan, 2007 Update compares water consumption for several cities in the California Central Valley, and shows that the

per capita usage for metered cities is approximately 22% lower than that for unmetered cities. It is expected that a 10% reduction in water use within Bakman will be achieved through this project.

By reducing water usage, this project will increase the reliability of the water supply as well as enhance operational flexibility. Bakman will be able to pro-actively monitor water usage on a daily, or multiple times daily, basis as necessary. Information obtained from the meters will allow for improved system understanding and operational adjustments to meet demands.

Bakman relies solely on groundwater in an overdrafted aquifer, and therefore the protection of supply reliability is critical, as is the protection of groundwater quality. There are known contaminant plumes nearby within the groundwater aquifer. Specifically, Bakman Well No. 7 is located approximately ¾ mile downgradient from City of Fresno Well No. 70, which is in a TCE plume originating from the Fresno Airport. Several other wells have concentrations of DBCP. These wells are either designated as inactive, treated, blended, or are below the maximum contaminant level (MCL) and left untreated. A reduction in water usage will help sustain the groundwater supply and slow the migration of contaminant plumes. A map showing regional groundwater contamination is included in **Attachment 3t**.

Integrated Elements of Projects:

Bakman is located within the City of Fresno sphere. The project is similar to the City's current meter installation program, included in this grant application. Both Bakman and the City of Fresno pump groundwater from the same aquifer, and are affected by nearby contamination plumes. The meter installation program will help Bakman, as well as the City, better analyze, manage and conserve the groundwater aquifer in the region. Bakman has reviewed and analyzed water meter studies prepared by the City of Fresno, and have selected a similar water meter with automatic meter reading system. Bakman will continue to review studies and information from the City of Fresno and utilize lessons learned from the City of Fresno's meter installation program to help develop and implement the meter installation program for Bakman. Bakman is located within the City of Fresno, and the City and Bakman have worked together for decades for delivery of water within the area.

Completed Work:

Over the past few years, Bakman has been installing approximately 100 meters per year. Users with these meters are conserving, and the Water Company has prepared the cost estimate for this project based on actual costs associated with installation of these meters.

An Urban Water Management Plan was completed in 2005. A 2010 UWMP, consistent with the 2010 UWMP Guidebook, will be submitted to DWR before June 2011. A Fresno Area Regional Groundwater Management Plan was also prepared in 2005, of which Bakman participated.

Existing Data and Studies:

No existing studies have been prepared for this project, however Bakman has installed meters over the past few years as mentioned. These meters have allowed Bakman to promote conservation within the service area. In addition, Bakman has reviewed previous studies and selected a Neptune water meter with automatic meter reading for their system. Two apartment complexes within the Bakman Water Company service area have meters for tracking purposes to see how much water a typical apartment complex uses.

Project Map:

A project map is included as **Attachment 3s**. The project map shows Bakman Water Company's boundary; water meters will be installed throughout the service area.

Project Timing and Phasing:

This application is for implementation of the entire system. However, if full state grant funding is not available, Bakman can implement any fractional portion of the system. Benefits associated with costs are essentially a linear relationship.

Tasks

The following workplan was developed based on recent experience by Bakman Water Company, their consulting engineers, and the City of Fresno, who is currently implementing a similar project.

Task 1: Administration

This task will include the project administration related work involved in the project. This task includes project status reporting, preparation of invoices, and other deliverables as required.

The following are subtasks to be completed:

Subtask 1.1 - Project Administration

This subtask will include management and administrative tasks for Bakman's engineering consultant. Specific tasks will include meetings and correspondence, conference calls, subconsultant management, preparation of invoices, and overall project coordination.

Work products for this task include:

- Project meetings
- Assistance with project implementation and agreements

The deliverables associated with this task will include:

- Monthly Invoices

There are other work products described under this task. If desired by DWR, any of these work products will be made available to DWR for review.

Task 2: Labor Compliance Program

This task includes adopting and enforcing a labor compliance program pursuant to Calfornia Labor Code and applicable laws. PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It is anticipated that a 3rd party labor compliance officer will be retained to develop the program and perform the required workplace inspections, reviews, and reporting. The labor compliance program will be in place prior to the award of the project's construction contract.

Deliverable: Submission of Labor Compliance Program

Task 3: Reporting

Subtask 3.1 – Project Reporting

This task will include quarterly, annual and final reports in accordance with the grant contract agreement. This task will also include preparation of a draft and final project report. The report will summarize the project activities identified within this workplan, including a comparison of the scope, budget and schedule of the items performed. The draft report will be prepared and submitted to DWR for review and comment. Upon receipt of DWR comments, a final project report will be prepared and resubmitted to DWR.

The deliverables to DWR for this task will include:

- Quarterly and annual project reports
- Draft project summary report
- Final project summary report

Task 4: Assessment and Evaluation

Subtask 4.1 – Previous Studies and Coordination

Previous studies have been prepared to evaluate the potential reduction in water use due to the installation of water meters on all service connections. Typically, studies have shown a 10%-20%, or greater, reduction in water usage due to metering of water usage, and usage rates. The City of Fresno has recently prepared a similar study and implemented a similar program to begin installing water meters at all of their water service connections.

No additional work is needed under this task.

Task 5: Final Design

Subtask 5.1 – Final Design

A preliminary design layout has been prepared and utilized. Bakman will modify this design if needed for use during installation. The deliverables for this task are final plans and specifications.

The deliverables to DWR for this subtask will include:

- Final design plans and specifications, if modifications are needed

Task 6: Environmental Documentation

Subtask 6.1 – Environmental Process and Documentation

Bakman believes that the installation of meters is exempt from CEQA under Section 21065 of the CA Public Resources Code. If it is determined that it is not exempt, Bakman will comply with CEQA guidelines, complete an initial study, and perform the appropriate documentation.

Task 7: Permitting

Subtask 7.1 – Construction Permits

Permitting for this project may include encroachment permits from City of Fresno, Fresno County, and Pacific Gas & Electric to perform work in and along road rights of way. Bakman does not anticipate any problems securing these permits as work will be performed along Bakman's existing service lines, primarily on private property.. No permits will be required during the planning or design phase.

Work products for this task include:

- Construction encroachment permits as required

Task 8: Construction Contracting

Subtask 8.1 - Project Bidding

Bidding documents will be prepared for the procurement of an automatic meter reading system, including meters and installation services. This task also includes pre-bid meetings, answering questions during the bidding process, and evaluating submitted bids. The deliverable for this task is bidding documents and support during bidding.

Work products for this task include:

- Advertisement for bids
- Pre-bid contractors meeting

- Evaluation of bids

Subtask 8.2 – Award of Contract

Once bids have been submitted, this subtask includes evaluating those bids for completeness and compliance with the bid documents. Contract will then be awarded to the lowest bidder meeting all requirements.

Work products for this task include:

- Award of Contract documentation

Task 9: Construction

Subtask 9.1 Project Construction

Project construction will include installation of water meters throughout the Bakman water system, including automatic meter reading system, constructed in accordance with the plans and specifications. Performance testing will be included in this task.

Work products for this task include:

- Installation of water meters

The following deliverables will be provided to DWR:

- Project construction status, included in the project status reports in Task 3.

Task 10: Environmental Compliance/Mitigation/Enhancement

It is not anticipated that any additional environmental compliance or mitigation measures will be required for this project.

Task 11: Construction Administration

This task includes construction administration and observation efforts, to be performed by a qualified inspector.

The following subtasks will be completed:

Subtask 11.1 - Construction Observation

A qualified inspector will provide construction observation to monitor the installation of the meters. The inspector will make periodic visits to the project site during construction. Other roles of the inspector will include: Organize and attend kickoff meetings, attend weekly meetings with contractors, review submittals, process monthly payment requests, and review contract change orders requests.

Work products for this task include:

- Daily construction observation and reporting

- Review of submittals
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Subtask 11.2 - Record Drawings

Upon completion of construction, the design drawings will be modified to reflect construction conditions using information provided by the contractor. The drawings will be signed by a professional engineer.

Work products for this task include:

- Preparation of final record drawings

Deliverables to DWR related to this task will include:

- Final record (as-built) drawings based on changes during construction

Task 12: Other

This task includes other tasks not included in the work tasks described above. These include on-going monitoring and operation of the project for many years following completion. The ongoing monitoring and operation/maintenance of the project includes efforts after initial project completion and operation. These efforts will be completed and financed by Bakman.

The following subtasks will be completed:

Subtask 12.1 – On-going Monitoring and Administration

On-going monitoring will include monitoring of water meter readings, and administration of metered water rates. Bakman currently has staff that manages operations and this task will be included as part of their ongoing duties. Initially this will involve developing and implementing a water rate structure. Water meter records will be used to verify water savings. This data will additionally be evaluated in order to more efficiently manage the water system and conserve water.

Work products for this task include:

- Develop rate structure
- Reading and monitoring of water meters
- Administration of metered water usage rates

Subtask 12.2 – On-going Operation and Maintenance

The water meters and automatic meter reading device need very little maintenance. These meters are anticipated to be virtually maintenance free for at least 20 years, unless illegal

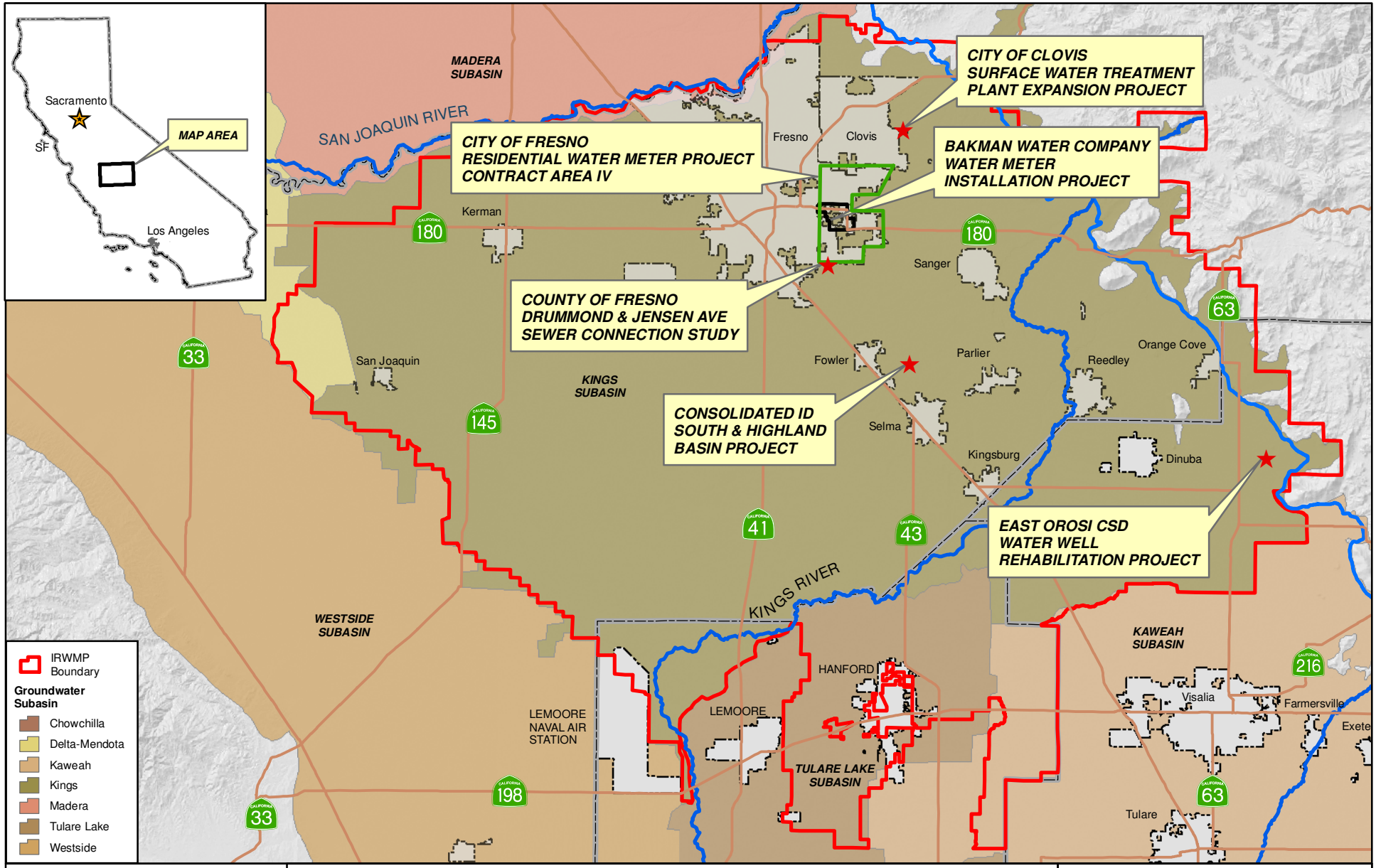
tampering of the device occurs. Bakman currently has staff that manages operations and this task will be included as part of their ongoing duties.

Deliverables to DWR for this task will include:

- Annual Report of Operations

Task 13: Construction Contingency

Construction contingency accounts for unknown events, circumstances, or other costs associated with the construction of the project. A 10% contingency is incorporated in the project budget due to the unknown considerations at this preliminary phase of the project.



EST. 1968
PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
286 W. Cromwell Ave.
Fresno, CA 93711-6162
(559) 449-2700

Upper Kings Basin IRWMP Authority

Project Locations Map

12/14/2010 \\pineflat\dwg_dgn\Clients\Upper Kings Basin IRWMA - 2048\20481001 - IRWMA Update\GIS\Map\Regional_GW_Basin.mxd

Attachment 4 – Budget

Tables 7 and 8 showing the overall project proposal and individual project budgets are included herein. The following provides a summary description of each of the projects included in the application along with the associated tables required under the Proposal Solicitation Package. A detailed breakdown of the costs associated with each task is also included for each of the projects proposed. The tasks included in the budget are consistent with the workplan and schedule. The budget descriptions for each project below include:

- Detailed costs for each project and supporting information
- Explanation of how the project costs were estimated
- Discussion of why the cost estimates are reasonable
- Proposed funding match for each project, or states whether or not a funding match waiver is being requested
- Inclusion of labor compliance
- Funding sources for the ongoing data management and monitoring is also included

In addition, for the projects that are modified or eliminated from the project list due to reduced grant funding, an additional "reduced funding" version of the tables are included.

Project 1: Consolidated Irrigation District South and Highland Basin

The budget details in this attachment are organized into a format provided with the grant Proposal Solicitation Package. A detailed breakdown of all tasks and construction costs described in the Work Plan is included in the table at the end of this attachment. The associated costs are reasonable as they are based primarily from costs associated with similar banking projects in the region. The primary source for construction cost estimating was from 2010 actual construction bids received and awarded for FID's Jameson Pond project, a similar project designed by the District's consulting engineer and partially funded through an IRWM grant from the State. The two projects are similar in size, design, operation, are reasonably close in proximity, and the same contractors will likely bid on the project. All construction and surveying costs are based on local prevailing wage rates.

Refer to the tables included at the back of this section for a detailed breakdown of the estimated conceptual construction costs.

Below is a discussion of the budget for each of the work tasks included.

Direct Project Administration Costs (Tasks 1, 2 and 3)

The Kings River Conservation District is the Fiscal and Administrative Agent for the Upper Kings Basin IRWM Authority. CID staff will assist KRCD with preparation of the required reporting information. The budget for this task includes is for administrative tasks including preparation