Tuolumne Stanislaus IRWM - Project Worksheet

Name of Project: Meadow Lane Groundwater Well

Project Proponent: Twain Harte Community Services District

Project Contact: Tom Trott

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Project Location:

Meadow Lane, Twain Harte, Tuolumne County

Watershed: Upper Tuolumne River

Theme:

Twain Harte Community Services District (District) relies solely on surface water provided by Tuolumne Utilities District (TUD) to supply water to its 1,572 customer connections. This historic drought has severely impacted this surface water supply, resulting in mandatory restrictions that cut the District's supply by 50%. In order to meet basic health and safety water needs throughout this and future droughts, the District must obtain alternate water supply sources to supplement its surface water source.

Brief Project Description:

The Meadow Lane Groundwater Well Project consists of drilling a new groundwater well on an existing District parcel to supplement the District's only water supply. The overall project will enable the District to access and treat an estimated 100 gallons per minute of groundwater for distribution to its customers. This alternate supply would account for approximately 80% of normal winter water demands and 36% of normal summer demands, providing drought and emergency reliability now and in the future.

The attached Exhibit Map provides a schematic drawing of the project's improvements, which generally consists of the following:

- Drilling, sealing and testing a 10" diameter well (anticipated to yield 100 gallons per minute) on previously developed, District-owned property on Meadow Lane in Twain Harte.
- Installation of a pump, motor, control panel and electrical improvements.
- Installation of a treatment facility. The treatment facility consists of a chlorine injection/mixing system to provide for disinfection and a green sand filter for removal of iron and manganese, which are anticipated to existing California Department of Public Health maximum contaminant levels.
- Installation of controls and monitoring equipment to ensure appropriate treatment levels and provide for automatic well operation based on existing tank levels.

- Installation of approximately 150 feet of 4-inch PVC piping to connect the well to the District's existing 4-inch AC water distribution main.
- Installation of 50 feet of 6-inch PVC sewer piping and connection to the District's existing 6-inch sewer main to provide for drainage of filter backwash water.
- Construction of a small well house to provide a secure enclosure for the well, filter, treatment equipment, control panel and electrical panel.

Project Benefits:

By providing an immediate supplemental source of drinking water, the Meadow Lane Groundwater Well Project meets two of the four Drought Solicitation Package primary project objectives:

- Provide immediate regional drought preparedness.
- Increase local water supply reliability and the delivery of safe drinking water.

In addition, the project supports The Human Right to Water Policy by ensuring that the District's residents have water for human consumption, cooking and sanitary purposes. This is especially applicable to Twain Harte during the present drought. The District's only water supply has been cut to 50% by TUD, its water provider. Because Twain Harte is a mountain town with very little unnatural landscaping, it cannot depend on restricting outdoor watering to meet this reduction. Rather, District customers must severely cut indoor water use to make it to the 50% reduction. This is especially true during summertime when water demands more than double, primarily due to a doubling of population, not outdoor watering.

By increasing District water supply, the project promotes region-wide conjunctive water use and increases reliability of the surface water source that is shared by most of Tuolumne County's residents. By increasing reliability of this shared water source, the project is increasing the reliability for a number DAC's and two tribal communities.

The project not only increases drought reliability, but also reliability in the event of emergencies. The existing surface water source for most of Tuolumne County is delivered through open ditch systems. In some remote locations, the ditch is supported on a wooden flume that is vulnerable to wildfires, which are common in the region. It is also susceptible to contamination and terrorism. This project provides increased water supply reliability to the District in these events and also to other communities served by TUD through an existing water system interconnection.

Cost and Schedule:

All Anticipated Project Costs: $445,000 (see attached cost estimate)

Potential Sources of Project Funding:

California Department of Public Health – Drought Emergency Grant

United States Department of Agriculture – Emergency Community Water Assistance Grant

Potential Sources of Local Match:

California Department of Public Health – Drought Emergency Grant

United States Department of Agriculture – Emergency Community Water Assistance Grant

In-Kind Labor – Engineering and Construction

Earliest Start Date (Construction): Well Drilling on June 1, 2014

Project Schedule:

Conceptual/Planning: February 15, 2014 – April 22, 2014

Environmental *(CEQA/NEPA):* May 1, 2014 – May 15, 2014

Permitting: May 1, 2014 – June 1, 2014

Design: April 22, 2014 – June 1, 2014

Construction/Implementation: June 1, 2014 – August 1, 2014

Project Timing and Phasing:

This schedule includes drilling and testing of a well prior to construction of other improvements. It also includes fast-track bidding due to the water shortage emergency. If a funding source is not identified after the well has been drilled and tested, the project schedule may be postponed until a funding source is identified.

Completed Work:

Potentially, all work could be completed by the time a grant is awarded. If an alternate funding source is not identified before the grant award, CEQA, design, permitting, and well drilling and testing will be complete before grant award.

Project Objectives

Please check each objective, priority, or preference that the proposed project meets. Descriptions will be detailed in the "Purpose and Need" section that follows.

T-S IRWM Primary Objectives:

X Improve water supply sources and/or distribution within DAC and urban areas that have declining water quantity/quality or other water system reliability issues (e.g. fire-flow, contamination, etc.)

_ Reduce the negative impacts of storm water, urban runoff, and nuisance water.

_ Reduce contamination in groundwater, natural streams, raw water conveyance systems, and reservoirs.

_ Improve infrastructure: to meet wastewater discharge or disposal requirements and deliver drinking water that meets drinking water standards and customer expectations.

_ Improve watershed health in support of increased water yield and ecosystem function.

_ Improve the condition and ecosystem function of meadows.

_ Assist in the protection and recovery of sensitive, special status, threatened, culturally sensitive, and endangered native aquatic and other water dependent species in the region.

_ Identify, preserve and promote the regeneration and restoration of wetlands, vernal pools, and native plant riparian habitat; and reduce invasive species.

_ Reduce the risk of localized flooding in urban areas.

_ Increase renewable energy production for water management.

X Improve energy efficiency and reliability of surface water conveyance systems.

_ Increase current and future water use efficiency (WUE) by both municipal (residential and commercial) and agricultural end users.

X Develop sufficient reliable and affordable water supplies to meet regional demands of existing and projected water supply needs under a multiyear drought now and into the future.

_ Improve integrated land use and natural resource planning to support watershed management actions that restore, sustain and enhance watershed functions.

Proposition 84 Program Preferences:

_ Includes Regional Projects/Programs.

X Integrate water management within hydrologic region.

_ Effectively resolve significant water related conflicts within or between regions.

X Contribute to attainment or one or more objectives to CALFED.

X Address critical water supply/quality needs of DAC. (**Indirectly by protecting shared water source.)**

_ Effectively integrate water management with land use planning.

_ Flood Management -projects that provide multiple benefits.

Proposition 84 Program Statewide Priorities:

Drought preparedness:

X Promote water conservation, conjunctive use, reuse and recycling.

_ Improve Landscape and Agricultural Irrigation Efficiencies.

_ Achieve a Long-Term Reduction of Water Use.

_ Efficient ground water basin management.

_ Establish System Interties.

Use and reuse water more efficiently:

_ Increase urban and agricultural water use efficiency measures such as conservation and recycling.

_ Capture, store, treat and use storm water runoff (such as percolation to usable aquifers, underground storage beneath parks, small surface basins, domestic storm water capture systems or the creation of catch basis or sumps downhill of development or projects outlined in PRC §30916 - Coastal Conservancy.)

_ Incorporate and implement low impact development (LID) design features, techniques and practices to reduce or eliminate storm water runoff.

Climate change response actions:

X Advance and expand conjunctive management of multiple water supply sources.

_ Water management system modifications that address anticipated climate change impacts, such as rising sea level, and which may include modifications, or relocations of intakes or outfalls.

_ Establish migration corridors, re-establish stream flood-plain hydrologic continuity, re-introduce anadromous fish populations to upper watersheds, and enhance and protect upper watershed forests and meadow systems.

_ Reduce water demand and wastewater loads and may reduce energy demands & Green House Gas emissions, including water use efficiency, recycling, water system energy efficiency, and reuse of runoff.

Expand environmental stewardship:

_ Proposals that contain projects that practice, promote, improve and expand environmental stewardship to protect and enhance the environment by improving watersheds, floodplains and Instream functions and to sustain water and flood management ecosystems.

Practice integrated flood management:

_ Proposals that contain projects that practice, integrated flood management to provide multiple benefits including; better emergency preparedness and response, improved flood protection, more sustainable flood and water management systems, enhanced flood plain ecosystems and Low Impact Development techniques that store and infiltrate runoff while protecting groundwater.

Protect surface water and groundwater quality:

X Protect and restore surface water and groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses.

_ Salt/Nutrient management planning as a component of the IRWM Plan.

Improve tribal water & natural resources:

X Projects that include the development and/or implementation of Tribal consultation, collaboration, and access to funding for water programs and projects to better sustain Tribal water and natural resources. **(Indirectly by protecting shared water source)**

Ensure equitable distribution of benefits:

_ Projects that increase the participation of small and disadvantaged communities in the IRWM process.

_ Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations.

X Projects that address critical water supply or water quality needs of Disadvantaged Communities within the Region. **(Indirectly by protecting shared water source)**

Cal Fed Primary Objectives:

_ Ecosystem quality

X Water supply

_ Water quality

_ Levee system integrity

Strength of Project

Purpose and Need:

The primary purpose of the Meadow Lane Groundwater Well Project is to provide a supplemental, non-surface water source to enable the District and other communities who also depend on the same surface water source as the District, to continue to supply water to for basic human needs throughout this drought and droughts in the future. The need for this project is immediate. Without it, the District may not be able to provide its customers enough water to meet basic health, sanitation and fire suppression needs.

The District declared a water shortage emergency on January 29, 2014, after observing the following conditions:

- 15% of normal rainfall (3")
- 20% of normal snowpack (largest source of water supply)
- 3-month precipitation forecasts showing a 40% chance of below average rainfall
- Only two water storage reservoirs (Lyons and Strawberry) at 18% combined capacity

In February 2014, data analysis revealed that TUD would no longer be able to supply water to the District within 120-150 days. As a result, TUD implemented a mandatory 50% reduction to all wholesale customers, cutting the District's only water supply source in half. In an effort to continue to meet its customer's basic water needs, the District also implemented a mandatory 50% conservation ordinance. District customers have responded positively by conserving 25% of normal use, but these results show that conservation levels will likely not reach 50%, especially during summer months when water demands normally more than double winter demands due to tourism doubling its normal population.

In order to meet basic health and safety water needs, the District must obtain alternate water supply sources to supplement the surface water it purchases from TUD. TUD plans to continue the District's 50% water reduction requirement since recent analysis shows that the water supply will only yield about 75% of total normal consumption demands this year. Water supply will be even more severely impacted during summer months since a large portion of TUD's water storage is not available to meet summer demands. During summer months, Strawberry Reservoir levels are restricted for recreational use and TUD's water supply primarily consists of storage in Lyons Reservoir (equal to less than two month's normal summer use, excluding fish releases and evaporation) and snowmelt flowing into the reservoir. With the snowpack only at 18% of normal in mid-April, Lyon's is projected to stop spilling by the end of May (more than one month earlier than normal).

In addition to providing for immediate needs, the project will also promote region-wide conjunctive use, providing better overall management of the watershed's resources and providing for water supply reliability during drought and other emergencies.

Integrated Elements of Project:

The Meadow Lane Groundwater Project is a perfect link with the Regional Conservation Project. In order to continue to provide water for basic human needs throughout this drought, there must be an increase in water supply and a decrease in water use. Coupled with the Regional Conservation Project, the District will be able to reduce its dependency on surface water by more than 50%, even during high summertime demands. This not only provides water reliability for the District, but also for most of Tuolumne County residents (including multiple DAC's and two tribal communities) who depend solely on the same surface water source.

Existing Data and Studies:

Existing wells in the nearby area have been tested and well drilling reports obtained to provide information on groundwater within the same topography. All show consistent levels of groundwater and wells that have been or are capable of producing 100+ gallons per minute.

Readiness to Proceed

Please describe the readiness to proceed of the proposed project for each category.

1. Status of California Environmental Quality Act (CEQA):

   CEQA is in process. A categorical exemption is anticipated to be complete by May 15th

2. Status of National Environmental Policy Act (NEPA):

   NEPA is in process. A categorical exclusion is anticipated to be complete by May 15th

3. Status of local, state, and federal permitting requirements:

   Need well permit and County encroachment permit – anticipated completion in June

4. Capacity of proponent to carry out the proposed project:

   Twain Harte CSD has capacity to carry out the project, including performing construction, contracting for construction and procuring materials and equipment.

5. Feasibility analysis for the proposed project:

   Preliminary engineering has shown the project to be feasible. Further test drilling will be required to complete feasibility (anticipated in June).

6. Status of necessary engineering, designs, blueprints, and work plans:

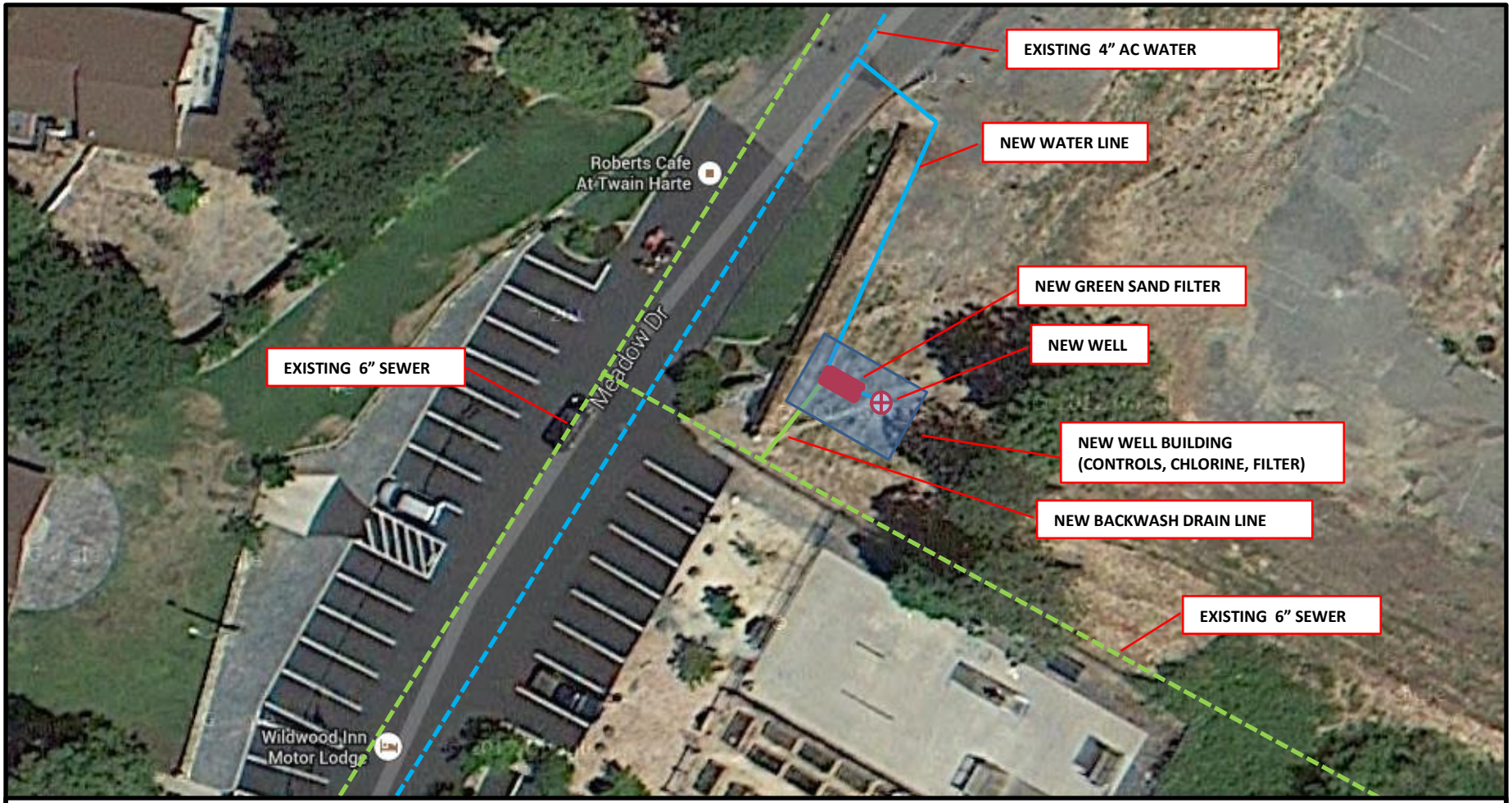
   Design will primarily consist of basic specifications and schematic drawings and is anticipated to be complete in June.

7. Status of necessary authority and approvals to implement the proposed project:

   The District Board of Directors will vote to initiate the proposed project in May and will approve any contracts involved in project implementation.

8. Status of matching funds for proposed project:

   The District is waiting to hear on other grant applications, but is already proceeding with existing budgeted funds from its capital reserves to begin implementing the project.



TWAIN HARTE
PARKS & RECREATION
FIRE
WATER
SEWER
COMMUNITY SERVICES DISTRICT

EXHIBIT MAP

MEADOW LANE GROUNDWATER WELL PROJECT
Twain Harte, CA

NOT TO SCALE

Meadow Lane Groundwater Well Project

Construction Cost Estimate

Date: April 24, 2013
By: Tom Trott & Robb Perry

Item No.	Description of Item	Unit of Measure	Approx. Quantity	Unit Price	Item Total
Construction					
Well Drilling					
1	Drill & Seal Well	LS	1	$30,000.00	**$30,000**
2	Well & Pump Test	LS	1	$6,500.00	**$6,500**
Well Improvements					
3	Well Head	LS	1	$10,000.00	**$10,000**
4	Pump & Motor	LS	1	$10,000.00	**$10,000**
5	Well Piping/Wiring	LF	500	$30.00	**$15,000**
6	Well Control Panel	LS	1	$4,500.00	**$4,500**
Well Treatment					
7	Green Sand Filter	LS	1	$125,000.00	**$125,000**
8	Chlorine Treatment Improvements	LS	1	$5,000.00	**$5,000**
9	Turbidimeter	EA	1	$5,000.00	**$5,000**
10	Static Mixer	EA	1	$1,500.00	**$1,500**
Site Improvements					
11	Well House	LS	1	$25,000.00	**$25,000**
12	Electrical Connection	LS	1	$10,000.00	**$10,000**
13	Radio & Controls	LS	1	$12,000.00	**$12,000**
14	Flowmeter	EA	1	$1,500.00	**$1,500**
15	PVC Waterline (4-inch)	LF	150	$45.00	**$6,750**
16	Waterline Connection	LS	1	$1,500.00	**$1,500**
17	Valving	LS	1	$1,000.00	**$1,000**
18	Backwash Drain Line	LS	1	$3,500.00	**$3,500**
	Construction Subtotal				**$273,750**
	Construction Contingency	**20%**			**$54,750**
Construction Total					**$328,500**
Support Costs					
19	Engineering/Bidding/Surveying	LS	1	$60,000.00	**$60,000**
20	Title 22 Water Quality Testing	EA	1	$2,000.00	**$2,000**
21	Environmental Documentation	LS	1	$2,000.00	**$2,000**
22	Operations Labor/Construction Support	LS	1	$35,000.00	**$35,000**
23	Project Management/Coordination	LS	1	$15,000.00	**$15,000**
24	County Encroachment Permit	LS	1	$2,500.00	**$2,500**
Support Total					**$116,500**
Total Project Costs (Rounded)					**$445,000**

Well Benefit = 100 GPM year round (80% of winter use / 36% of summer use)