City of Woodland

REPORT TO MAYOR AND CITY COUNCIL

AGENDA ITEM

TO: THE HONORABLE MAYOR
AND CITY COUNCIL

DATE: February 17, 2009

SUBJECT: Authorization to Apply for US Department of Interior, Bureau of Reclamation Water 2025 Challenge Grant

Report in Brief

The Water 2025 Challenge Grant Program focuses on competitive projects that can be completed within 24 months and that help to prevent water shortage crises. Eligible projects include water banks and water markets, technologies for improved water management, canal lining, and measuring devices for non-State entities.

Staff recommends City Council adopt Resolution No. ____ authorizing staff to apply for a Water 2025 Challenge Grant in the amount of $300,000 for leveraging City Water Enterprise funding to improve City water management through phased execution of the Supervisory Control and Data Acquisition (SCADA) System Project, No. 06-09, and authorize the Public Works Director to administratively process and execute the grant on behalf of the City, if awarded.

Background

The Federal Department of Interior, Bureau of Reclamation annually solicits grant proposals focused on water conservation, efficiency, and water marketing. Through a program titled 'Water 2025: Preventing Crises and Conflict in the West', the Bureau of Reclamation offers 50/50 cost sharing up to $300,000 to irrigation districts, water districts, local agencies with water delivery authority, and 18 western state agencies for projects meeting the goals of the Bureau of Reclamation in managing water supply in the West. The Water 2025 program is based on the reality that the demands for water in many basins of the West could exceed the available supply even in normal rain-fall years. The principles of the program include:

1. Recognize and respect state, tribal, and federal water rights, contracts, and interstate compacts or decrees of the United States Supreme Court that allocate the right to use water
2. Maintain and modernize existing water facilities to continue to provide water and power
3. Enhance water conservation, use efficiency, and resource monitoring to allow existing water supplies to be used more effectively
4. Use collaborative approaches and market based transfers to minimize conflicts

5. Improve water treatment technology, such as desalination, to help increase water supply
6. Existing water supply infrastructure can provide additional benefits for existing and emerging needs for water

In May 2006, staff applied for and received a US Bureau of Reclamation matching, reimbursable grant in the amount of $299,000 toward the City SCADA project which is currently under design and anticipated to begin construction in August 2009. That grant has, so far, leveraged and reimbursed approximately $40K toward the project providing a direct benefit to water enterprise ratepayers. The remainder of the grant reimbursement is anticipated to remain available and accessible as the project is being implemented.

Discussion

SCADA systems began and have grown in use since the 1960s. SCADA systems include hardware and software components for gathering process and equipment related data in real time from distant locations in order to monitor and control critical equipment and conditions. For the City municipal water infrastructure, the SCADA system will gather information that can indicate, for instance, when a leak on a pipeline has occurred, transfer the information back to a central site, alert a home station that a probable leak has occurred, carry out necessary analysis and control, such as determining if the leak is critical, and display, print or send the information in a logical and organized fashion in order to mitigate problem impacts and expedite problem resolution. Even more importantly, SCADA can warn when conditions become hazardous or of significant concern, for instance at a well, by sounding alarms and/or shutting down systems. Because the City is located in the Sacramento Valley where there is a potential for substantial conflict over water, staff believes this project is key to better management of the aquifer and optimizing the utilization of our existing water system.

Due to an impending deadline, staff submitted the initial application for this grant to meet a due date of January 14, 2009. In order to finalize and further the application, staff must submit a resolution adopted by the governing entity by the end of February, 2009. The application will be withdrawn without prejudice if Council does not approve the grant application and the assignment of an equivalent portion of the currently approved funding as 'matching funds' against the grant. The Executive Summary of the grant application is attached and the application (not included due to its size) is available for review at the Public Works Department counter and at the City Clerk's office.

Fiscal Impact

The City's matching funds for this grant are already approved and programmed within the current Capital Budget against the SCADA System Project, No. 06-09, as follows:

Budget Item	FY 08/09	FY 09/10	TOTAL
Design	$520,000		$520,000
Construction	$76,706	$1,903,294	$1,980,000
TOTAL	$596,706	$1,903,294	$2,500,000

The project does not rely on the acquisition of grant funding; however, staff believes that the project stands to directly and appropriately benefit from these grant funding opportunities.

Public Contact

The SCADA project has been briefed through the Council Infrastructure Committee and the importance of SCADA was briefly explained in the current issue of the "Woodland Water News". This bimonthly newsletter is prepared by the Utilities Engineering Division and is being distributed to City water customers in their utility bills. The City Council agenda was posted.

Alternative Courses of Action

1. Adopt Resolution No. ____ authorizing staff to apply for a Water 2025 Challenge Grant in the amount of $300,000 for leveraging City Water Enterprise funding to improve City water management through phased execution of the Supervisory Control and Data Acquisition (SCADA) System Project, No. 06-09, and authorize the Public Works Director to administratively process and execute the grant on behalf of the City, if awarded.

2. Cease further consideration of this grant application.

Recommendation for Action

Staff recommends that the City Council approve Alternative No. 1.

Prepared by: Akin Okupe
Senior Civil Engineer

Reviewed by: Doug Baxter
Senior Civil Engineer

Reviewed by: Greg Meyer
Director of Public Works

_____
Mark G. Deven
City Manager

Attachments: Resolution
Executive Summary of Grant Application

CITY OF WOODLAND

RESOLUTION NO. _____

AUTHORIZATION TO APPLY FOR WATER 2025 CHALLENGE GRANT

WHEREAS the U.S. Department of Interior established Water 2025: Preventing Crises and Conflict in the West program, (Water 2025) a Secretarial Initiative announced by Secretary of the Interior Gale Norton in June 2003, setting forth a framework to meet the water supply challenges of the future;

WHEREAS Water 2025 recognizes that state and local governments should have a leading role in meeting water supply challenges;

WHEREAS the Water 2025 Challenge Grant Program proves a mechanism for the Bureau of Reclamation to partner with irrigation and water districts, and western states, to focus federal dollars on projects that will provide the greatest benefits to the West;

WHEREAS the City is located in a geographic regional where there is substantial conflict potential in water demand;

WHEREAS the City is a water supplier providing water to a population over 50,000; and

WHEREAS the City is actively pursuing information and technologies in better management the groundwater resources underlying the City;

BE IT THEREFORE, RESOLVED by the City Council of the City of Woodland, Yolo County, California as follows:

1. The City Council has reviewed and supports a proposal for the Water 2025 Challenge Grant;

2. The City is capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan for implementation and construction of a Supervisor Control and Data Acquisition (SCADA) system for water wells, as specified in the funding plan;

3. If selected for a Challenge Grant, the City will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement; and

4. The Public Works Director is authorized to execute all necessary forms on behalf of the City of Woodland.

ADOPTED this _____ day of _____ 2009, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
Skip Davies, Mayor
City of Woodland

Attest:

_____
Sue Vannucci, City Clerk

Date: _____

PART I TECHNICAL PROPOSAL

The City of Woodland (City) is pleased to submit this proposal for the *Water for America Challenge Grant Program: Water Marketing and Efficiency Grants for Fiscal Year 2009*. Information requested in Funding Opportunity Announcement No. 09SF81168 is presented below.

1. Executive Summary

1.1 Applicant Information

Date: January 14, 2009
Applicant Name: City of Woodland
City: Woodland
County: Yolo
State: California

1.2 Project Summary

The proposed project is a Task Area B project that would expand and enhance a Supervisory Control and Data Acquisition (SCADA) system at the City's Water Control Center to assist City staff in managing water production and conservation efforts. Currently, the City utilizes 19 groundwater wells as sources for municipal, commercial, and industrial uses. These wells are controlled through pressure switches based on the surrounding pressure rather than the efficiency of the well and the location of the water demand. By expanding and improving the SCADA system, the City can better monitor and manage the well network by using the most efficient wells first, by reducing losses that result from unnecessary pumping and by monitoring water levels, pumping rates and discharge pressures and nitrate and Total Dissolved Solids concentrations at each of the city's wells.

- Pre-project transport losses: 3,223 AF/yr
- Post-project transport losses: 806 AF/yr
- Estimated water savings (AF/yr): 2,417 AF/yr
- Estimated water better managed (AF/yr):16,113 AF/yr
- Pre-project water marketed (AF/yr): 0 AF/yr
- Post-project water marketed (AF/yr): 0 AF/yr
- Average annual supply (AF/yr): 16,113 AF/yr

2. Background Data

2.1 Location and Map of Project Area

The City of Woodland's location is shown on the map on the following page. The City is located in eastern Yolo County, California, approximately 20 miles northeast of the State Capitol,

Sacramento. The City is in the greater Sacramento Valley Region within the California Central Valley.

2.2 Source of Water Supply

The City is a public water system providing potable water service to over 53,000 people through approximately 13,600 service connections. The main users are residential customers with additional users such as commercial, industrial, institutional, and landscaping. The City does not supply any water for agricultural uses but shares the groundwater aquifer with nearby agricultural users. Recent water production records are presented in Table 1, along with estimated population figures for the service area.

Table 1. Historical Service Area Population and Water Consumption

Year	Service Area Population	Water Deliveries (ac-ft/yr)
2002	51,325	16,706
2003	51,565	15,915
2004	52,155	16,375
2005	51,615	15,242
2006	51,840	15,866
2007	53,690	16,572

The groundwater basin is unadjudicated and water right is claimed as the water is pumped out of the ground. The City relies solely on groundwater to meet demands. Well capacities range from 1,200 gallons per minute (gpm) to 2,200 gpm. This yield is typical of well capacities in the Sacramento River Hydrologic Region where groundwater contributes about 31 percent of the region’s water supply. Because of the need for additional water supplies and changing environmental laws, there has been a shift to a greater reliance on groundwater. Particularly in drought years, conjunctive management of groundwater and surface water has increased (OWR, 2003).

Historically, the City has met new water demand by building new wells within the developing areas. As demand increases, new wells will be constructed, and where possible, extraction rates will be increased at existing wells. According to the City's General Plan (Woodland, 1996), population is expected to grow from 47,900 in 2000 to 65,860 in 2020. The rate of growth would be limited by the General Plan to 1.8 percent per year. The water demand is expected to increase and grow at an annual rate of 2.5 percent from 1999 -2020. (LTO Engineering, 2006). Existing and projected water demands are listed below:

Table 2:

Projected Service Area Population and Water Consumption

Year	Service Area Estimated Population [(a)]	Estimated Water Demand (ac-ft/year) [(b)]
2010	58,093	19,100
2015	62,509	20,400
2020	67,487	21,700
2025	72,518	23,200
Build-out (2026)	73,000	

(a) SACOG, 2004 (b) LTO Engineering, 2006

For future water demands, the City plans to install more wells. However, due to concerns regarding water quality and possible water supply shortages, the City is developing a surface water project in conjunction with the City of Davis and the Davis campus of the University of California to divert excess water from the Sacramento River. Groundwater in Woodland has high nitrate levels, exceeding maximum contaminant levels. One of the City's wells needs to have treatment appurtenances installed to comply with state and federal drinking water standards. Another well is on stand-by for fire flow only.

About 50 percent of City wells exceed nitrate standards and need to be monitored on a quarterly basis. Also, local groundwater is high in total dissolved solids, a condition which has resulted in wastewater discharge difficulties.

2.3 Water Delivery System

The City's 13,600 service connections are fed through a grid of cast iron and ductile iron pipes. Due to the durability of the ductile iron pipes, the City only allows ductile iron pipes in new and replacement construction. The pipes range from two-inch diameter service lines to 12-inch diameter mains. Depending on soil types and the year of installation, these water lines are in various states of condition. The proposed project will assist the City in identifying high water use areas within the distribution grid, thereby providing quicker identification of water leaks and needed repairs.

2.4 Past Working Relationships with the Bureau of Reclamation

The City’s only recent relationship with the Bureau of Reclamation has been in implementation of the Phase I portion of this project which is being supported by the Water 2025 Challenge Grant Program. The success of this implementation process and our satisfaction with the City’s relation with the Bureau of Reclamation is a key reason for our preparation of this grant application to support our Phase II effort and to strengthen the capabilities provided under Phase I funding. Award of a grant for the Phase 2 portion of the project funding would enable the two phases to be implemented in sequence, would expedite program completion and would lower overall program costs