

**MEMORANDUM  
DEPARTMENT OF FACILITY SERVICES  
COUNTY OF PLACER**

To: **BOARD OF SUPERVISORS**

Date: **MAY 18, 2010**

From:  **JAMES DURFEE / WILL DICKINSON**

Subject: **SMD 1 WASTEWATER TREATMENT PLANT UPGRADE: AGREEMENT FOR PREPARATION OF FINAL UPGRADE PROJECT DESIGN**

**ACTION REQUESTED/RECOMMENDATION:** Staff recommends that your Board approve an Agreement with Owen Psomas for the final design and construction management of the Sewer Maintenance District 1 (SMD 1) Wastewater Treatment Plant Upgrade Project (Upgrade Project) in an amount not-to-exceed \$7,884,500, and authorize the Chairman to execute the Agreement.

**BACKGROUND:** SMD 1 provides sewer service to approximately 7,800 Equivalent Dwelling Units in the North Auburn area. The SMD 1 Wastewater Treatment Plant (Plant 1), constructed in 1961, uses biological and filtration processes that cannot meet current regulatory standards included in its current discharge permit with the Regional Water Quality Control Board (RWQCB). Compliance schedules which give the County protection from fines and third party lawsuits are set to expire on March 1, 2010. Staff anticipates minimum mandatory penalties of \$111,000 per year from now until the Upgrade Project is completed. In addition, the RWQCB has the ability to fine SMD 1 on a discretionary basis if they determine that we are purposely delaying the Upgrade Project to avoid the cost of improvements.

On March 10, 2009, your Board approved an Agreement with Owen Psomas for preparation of the preliminary design for the Upgrade Project; you also authorized staff to proceed with Request for Proposals (RFPs) for the final Upgrade Project design and preparation of an environmental document. At that time, your Board also directed staff to continue to explore opportunities for additional grant funding of the Regional Sewer Project, which is an alternative solution for meeting new compliance requirements that would route flows from SMD 1 to the City of Lincoln.

The preliminary design for the Upgrade Project is complete. The proposed design utilizes modern treatment technologies that will allow Plant 1 to comply with current regulatory standards and anticipated new discharge requirements. The preliminary design anticipates a two-phase capacity increase, with the first phase taking the plant from its existing capacity of 2.18 million gallons per day to 2.7 million gallons per day. The cost of completing this first phase is estimated to be \$87,000,000.

Staff has completed the process to select a consultant to complete the final design of the Upgrade Project. Requests for Proposals were sent to a total of 129 engineering firms, and four proposals were received. The RFP panel reviewed those proposals and recommended Owen Psomas as the best qualified firm to perform the work. Accordingly, staff has negotiated an Agreement with Owen Psomas to: 1) complete the final design; 2) provide engineering services during bidding, construction, and post-construction; and 3) provide support for obtaining financing through the Clean Water State Revolving Fund. The Agreement and Scope of Services are available for review at the Clerk of the Board's Office.

Staff's recommendation for award of a contract for the preparation of environmental review documents is being presented as a separate item on this agenda.

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Per your Board's direction, staff has continued to pursue additional grant funding for the Regional Sewer Project. Placer County was successful in getting an appropriation of \$921,000 in grant funds in the Federal Fiscal Year 09/10 Budget. This increases the total appropriation for regional sewer grant funds to approximately \$8,900,000. These Federal grant funds are currently supporting several sewer regionalization projects in Placer County. Staff is also working with the Placer Nevada Wastewater Authority to identify additional engineering work that could be undertaken to refine the Regional Sewer Project cost estimates. Staff is working with the Cities of Auburn and Lincoln to execute a Memorandum of Understanding that will provide the necessary local matching funds for this engineering work.

Staff recommends that your Board approve the Agreement with Owen Psomas to complete final design of the Upgrade Project. If a significant new source of grant funding for the Regional Sewer Project becomes available and your Board chooses to pursue that project, it will not be necessary to spend \$4,710,800 included in the Agreement for construction management of the Upgrade Project.

**ENVIRONMENTAL CLEARANCE:** Approval of an Agreement for engineering services is not considered a project under the California Environmental Quality Act. Environmental review of the proposed Upgrade Project will be prepared concurrently with the Upgrade Project design.

**FISCAL IMPACT:** The cost of providing services included in the Agreement is \$7,884,500. Sufficient funds are available in the SMD 1 Wastewater Treatment Plant Upgrade Capital Project to cover the cost of the design tasks and the additional services task (\$3,173,700). The remaining \$4,710,800 for the construction and post construction tasks within this Agreement will be included in the Capital Project Budget for FY10/11. The SMD 1 Operating Budget will continue to fund all pre-construction costs associated with the Capital Project from a combination of reserves and current revenues. Financing for the construction project is discussed as a separate item on this agenda.

AVAILABLE FOR REVIEW AT THE CLERK OF THE BOARD'S OFFICE: AGREEMENT AND SCOPE OF SERVICES

JD:WD.BZ.DA LM

ATTACHMENT PRE-DESIGN REPORT EXECUTIVE SUMMARY

CC: COUNTY EXECUTIVE OFFICE

T: FAC\BSMEMO2010\EE\SMD 1 UPGRADE DESIGN CONTRACT.DOC

## SMD 1 WWTP Upgrade and Expansion PREDESIGN EXECUTIVE SUMMARY

### 1 SUMMARY

Major capital improvements are required to bring the SMD 1 WWTP into reliable compliance with the waste discharge requirements and expand its capacity to allow for the current community plan growth. Significant improvements are needed throughout the entire WWTP. The following are the goals of this project:

- ▣ Provide facilities that consistently meet compliance with the NPDES permit requirements;
- ▣ Provide facilities that allow for growth consistent with the Auburn-Bowman Community Plan;
- ▣ Allow for future expansions and upgrades required to comply with potential future NPDES Permit requirements;
- ▣ Provide facilities that are efficient to operate;
- ▣ Provide facilities that can be constructed for a reasonable cost and within the County's budget;
- ▣ Expedite denitrification treatment construction to minimize mandatory minimum penalties (MMPs) for nitrate plus nitrite nitrogen effluent limit violations;
- ▣ Meet schedule requirements specified in Report of Waste Discharge (RWD) submitted to the California Regional Water Quality Control Board, Central Valley Region (RWQCB) in September 2009;
- ▣ Minimize disruptions to existing WWTP operations during construction; and
- ▣ Accommodate potential SRF Loan financing.

All the engineering costs and evaluations were reviewed with County staff, including operations and maintenance staff and engineers. The result is a consensus that the following Upgrade & Expansion project is the most cost effective and best solution for this facility.

### 2 COMPONENTS

The site layout for the proposed facilities is shown in Figure 1-1. The facilities would bring the WWTP into consistent compliance with waste discharge requirements at an average dry weather flow (ADWF) treatment capacity of 2.7 mgd. The Upgrade & Expansion project includes the following major components:

- ▣ Headworks: Complete new headworks with fine screens, flow measurement, influent sample collection and degritting equipment.
- ▣ Primary Clarifiers: Two new circular primary clarifiers, including pump stations.
- ▣ Equalization Tank: One new equalization tank with related pumps to trim the daily peak flows (inclusion with initial phase improvements to be confirmed during detailed design).

- ▣ Activated Sludge Basins: Two new aeration basins with anoxic zones, fine-bubble aeration diffusers, centrifugal blower, and recycle pumps using basically the Bardenpho process.
- ▣ Secondary Clarifiers: Two new secondary clarifiers with return and waste activated sludge pump station.
- ▣ Tertiary Filters: New Trident modular upflow clarifier filter units in conjunction with the existing filters for backup, including related pump station, backwash tanks and facilities.
- ▣ Disinfection System: New ultraviolet (UV) light disinfection system.
- ▣ Sludge Thickener: New gravity belt thickener (GBT) waste activated sludge (WAS) thickening with storage tanks and pumps.
- ▣ Anaerobic Digesters: New anaerobic digester and renovation and upgrade of the two existing anaerobic digesters, including pumps, mixing, heating and digester gas systems.
- ▣ Sludge Dewatering System: New belt press or centrifuge to dewater the sludge.
- ▣ Buildings: New Operations/Control Building, Maintenance Buildings, and Renovated Laboratory.

### 3 ESTIMATED CONSTRUCTION COST

The budget for project construction is estimated at approximately \$76 Million which includes contingencies. (All costs are presented in November 2009 dollars.)

### 4 PROJECT SCHEDULE

Scheduling is critical on this project because the County needs to complete the improvements in accordance with the Report of Waste Discharge submitted to the RWQCB while maintaining its ability to adequately treat wastewater from the SMD 1 service area throughout the construction. In addition, the WWTP discharge will be subject to MMPs for exceedance of Nitrate plus Nitrite Nitrogen effluent limits in the interim. If design for the Project starts in May 2010, bidding can occur in July 2011, with completion of the construction in December 2014.

Table 1.1 summarizes the key milestones for the project.

Table 1.1. Project Milestones.

Milestone	Date
Initiate Detailed Design	May 2010
Obtain Funding and Approve EIR	July 2011
Bid Construction	July 2011
Complete All Construction	December 2014
Compliance with Waste Discharge Requirements	April 2015



