



**PURCHASING ITEM
FOR
COUNCIL AGENDA
Memo No. CA09-044**

1. Agenda Item Number:
25
2. Council Meeting Date:
August 28, 2008

TO: MAYOR & COUNCIL
THROUGH: CITY MANAGER

3. Date Prepared: July 28, 2008
4. Requesting Department: Municipal Utilities

5. SUBJECT: Award a project agreement to Rothberg, Tamburini, and Winsor for Solids Management Study at the Surface Water Treatment Plant (SWTP), Project No. WA0822-101, in an amount not to exceed \$40,425.

6. RECOMMENDATION: Staff recommends Council award a project agreement to Rothberg, Tamburini, and Winsor for Solids Management Study at the Surface Water Treatment Plant (SWTP), Project No. WA0822-101, in an amount not to exceed \$40,425.

7. BACKGROUND/DISCUSSION: In 2004, the quality of raw water entering Chandler's Surface Water Treatment Plant (SWTP) changed, a direct result of heavy rains and runoff from fire-impacted land within the Salt River Watershed. The raw water contains a large amount of suspended solids that must be removed during the treatment process. As designed, all solids produced at the Plant are gravity thickened and then dewatered using solar drying beds. Because of the substantial increase in solids production, the drying beds are not adequate to handle the sludge volume. A belt filter press is being leased to provide dewatering of additional sludge as a short-term solution. The goal of this study is to recommend a plan to help the SWTP minimize solids production in the short-term, and to develop a cost effective solution for handling solids in the future.

8. EVALUATION PROCESS: The consultant selection process was conducted in accordance with established City policies and procedures. On May 22, 2007, staff received statements of qualifications from twenty-two (22) firms to provide water and wastewater facility design services. The selection committee reviewed the qualifications and selected five (5) firms for recommendation of contract award. The selection committee consisted of the following members:

- John Knudson, Senior Engineer, Municipal Utilities
- Tim Krawczyk, Engineer Assistant, Contract Administration
- Doug Toy, Senior Engineer, Municipal Utilities
- Ray Dubois, Water Distribution Superintendent, Municipal Utilities
- John Pinkston, Wastewater Facilities Superintendent, Municipal Utilities
- Dennis Mittlestedt, Resident

Council approved the selection of Rothberg, Tamburini, and Winsor on August 7, 2007.

9. FINANCIAL IMPLICATIONS:

Cost: \$40,425
Savings: None
Long Term Costs: None
Fund Source

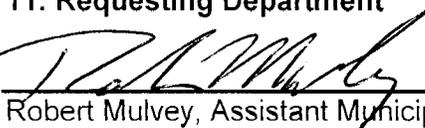
<u>Acct. No.:</u>	<u>Fund Name:</u>	<u>Program Name:</u>	<u>CIP Funded:</u>	<u>Amount:</u>
603.3820.0000.6814.9WA209	Water SDF	Water Treatment Plant Expansion	FY 08/09	\$40,425

10. PROPOSED MOTION: Move that Council award a project agreement to Rothberg, Tamburini, and Winsor for Solids Management Study at the Surface Water Treatment Plant (SWTP), Project No. WA0822-101, in an amount not to exceed \$40,425, and authorize the Mayor to sign the contract documents.

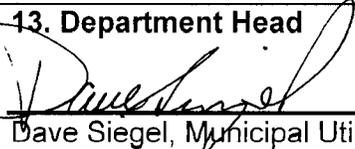
ATTACHMENTS: Location Map

APPROVALS

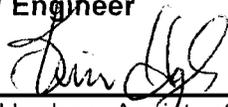
11. Requesting Department


Robert Mulvey, Assistant Municipal Utilities Director

13. Department Head


Dave Siegel, Municipal Utilities Director

12. City Engineer

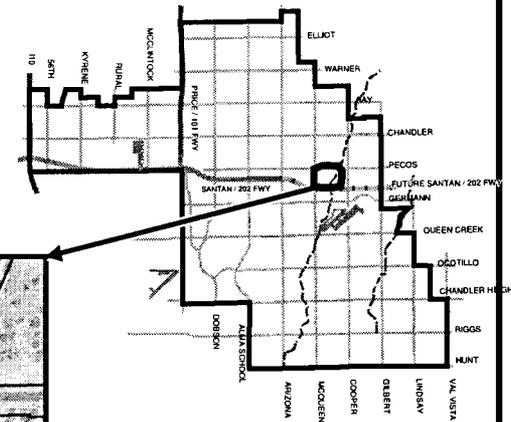

Sheina Hughes, Assistant Public Works Director/
City Engineer

14. City Manager


W. Mark Pentz



SURFACE WATER TREATMENT PLANT (SWTP) SOLIDS MANAGEMENT STUDY PROJECT NO. WA0822-101



MEMO NO. CA09-044

 PROJECT AREA



EXHIBIT A SCOPE OF WORK

The existing 45 - million gallon per day (mgd) surface water treatment plant (WTP) uses coagulant in several processes to treat approximately 45-mgd during current summer conditions. The City of Chandler (the City) plans to expand the capacity of the WTP to 60-mgd in the 2008-2009 Fiscal Year. Coagulant (alum) is added in the pre-sedimentation basins, and coagulant plus polymer are added to the conventional sedimentation and Actiflo® settling processes. Polymer is also used for sludge thickening process at the gravity thickener and with the belt press.

Solids produced and removed in the pre-sedimentation and settling processes are thickened, dewatered in either drying beds or in a leased belt filter press (BFP), and disposed via landfill. It is important that the material be as dry as possible to reduce hauling costs and disposal fees, as well as meet the requirements of the landfill. The current operation using air-drying has not been able to produce a material of adequate dryness in reasonable times. The BFP is used frequently. Because of the higher water content, hauling and disposal costs are high. The BFP also requires significant expenditures for polymer.

The facility also has the ability to add powdered activated carbon (PAC) to control taste and odor when the quality of the water being treated exhibits potential for creating these problems in the finished water supply. When using PAC, solids production is increased and the solids produced tend to settle poorly.

The goal of this study is to develop a recommended short-term plan that will allow the WTP to operate efficiently and to develop a cost effective, long-term solution.

WORK TASKS

ANNUAL CONSULTANT shall perform the services defined below which are divided into the following tasks for the project.

Workshop No. 1 - Kickoff Meeting

- A. Prior to formally beginning the project, ANNUAL CONSULTANT shall prepare the project Work Plan. This document shall present the scope of work, the schedule, budgets and responsibilities of the various project team members.
- B. An initial workshop shall be held. This workshop shall be attended by the entire project team. Workshop objectives include establishing a final work plan and schedule, delineating responsibilities and lines of communication, collecting and reviewing existing data, identifying additional data requirements, and discussing the concerns and expectations of the City personnel for the study. Because of the short-term concern for operations during the high-demand period, this shall be discussed to develop and clear understanding of the City's short term goals.

Task 1 - Residuals Characterization/Solids Balance

ANNUAL CONSULTANT shall initiate data collection and summarize the quality and quantity of solids currently being produced at the WTP based on the data from the City and the design of the facility. Projections for solids production at higher flows shall also be developed.

- A. ANNUAL CONSULTANT shall review the existing City data for completeness and anomalies, and recommend additional tests or procedures. Specific issues include the production rates of raw solids and thickened material.
- B. ANNUAL CONSULTANT shall summarize the solids production information from the WTP Design.
- C. ANNUAL CONSULTANT shall summarize the current solids production information at the production rates being experienced today. Also, the production at the 45-mgd design capacity shall be estimated based on actual operations.
- D. ANNUAL CONSULTANT shall summarize the projected solids production information and size future solids facilities to handle the solids production corresponding to a design capacity of 60-mgd.

- E. ANNUAL CONSULTANT shall prepare existing and future solids balance based on the data above.
- F. ANNUAL CONSULTANT shall perform site visits to other City facilities using dewatering equipment shall be held at this time.

Task 2 – Evaluate Existing Facilities

- A. ANNUAL CONSULTANT shall assess existing system capacity compared to current production.
- B. ANNUAL CONSULTANT shall review current operations and develop potential short-term solutions that shall allow the WTP to meet demands over the next peak season. These solutions shall likely not include significant capital expenditures.
- C. The potential short-term efforts shall address operating schedules, chemical used (amount and type), possible leasing or renting equipment, contract assistance, and other similar areas.
- D. ANNUAL CONSULTANT shall present interim findings on short-term solutions to the City's project manager for consideration. These findings may be used to implement changes separately by the City with their own staff and resources. If requested, ANNUAL CONSULTANT shall provide support for this type of effort under a separate task order.

Task 3 – Identify Future Conditions

- A. In order to develop the long-term solution, ANNUAL CONSULTANT shall address future loads, water chemistry and treatment chemicals used at the future design flow.
- B. Address regulatory issues that may impact alternative selection.
- C. ANNUAL CONSULTANT shall use the projections for future conditions to evaluate long-term solutions that shall potentially include both operational and capital expenditures.

Task 4 – Develop and Analyze Alternatives

- A. ANNUAL CONSULTANT shall identify the range of alternatives that address both short- and long-term needs. An evaluation of potential alternatives shall be developed.
- B. Evaluation criteria shall be included in the memorandum for the City's considerations. General advantages/disadvantages and relative order of magnitude costs shall be used for use in screening. The potential alternatives shall be screened on criteria such as capital cost, annual cost, present-worth cost, labor requirements, operational complexity, reliability, maintenance requirements, flexibility/adaptability, odor/dust generation, onsite land requirements and ability to be disposed.
- C. Based on input from the City at the first workshop and information collected early in the effort, ANNUAL CONSULTANT shall suggest the four most feasible alternatives for the City's consideration.

Task 5 - Evaluate Short-Listed Solids Management Alternatives

- A. ANNUAL CONSULTANT's project team and City staff shall rank the short-listed alternatives with respect to the non-monetary criteria established with City staff. A weighing factor shall be used to indicate its relative importance. Based on ranking and criteria weighing, a composite score shall be calculated for each alternative to assist in making a final decisions. A discussion of advantages and disadvantages of each alternative shall be generated in a summary matrix.
- B. Workshop No. 2 shall be held to present each alternative, along with the comparative cost and non-monetary ranking and to discuss long-term recommendations.
- C. Based on this workshop, a summary addressing the pre-design criteria, facility requirements, timing of implementation for facility design and construction, and revised preliminary capital construction costs shall be prepared for the preferred long-term solids management plan. The implementation of the preferred alternative may be phased. This summary shall form the basis for the draft report.

Task 6 - Prepare Draft Report

- A. ANNUAL CONSULTANT shall summarize short- and long-term solutions and the efforts performed to date.
- B. ANNUAL CONSULTANT shall combine the task efforts and workshop minutes into a draft report. Five (5) copies of the draft report shall be delivered to the City for review and comment.
- C. ANNUAL CONSULTANT shall refine capital and operating costs for the feasible alternatives.
- D. ANNUAL CONSULTANT shall meet with the City to review comments on the draft report.

Task 7 - Prepare Final Report

ANNUAL CONSULTANT shall incorporate City review comments on the draft report into a final report. Ten (10) copies of the final report along with an electronic version shall be delivered to the City for distribution.

**EXHIBIT B
FEE SCHEDULE**

STUDY PHASE		
Work Plan and Kickoff Meeting-Workshop #1		
	Prepare draft work plan and distribute	\$604
	Attend meeting in Chandler and visit site	\$1,920
	Prepare mtg. Minutes; finalize work plan & distribute	\$656
1	Residuals Characterization/Solids Balance	\$2,023
2	Evaluate Existing Facilities	\$3,472
3	Identify Future Conditions	\$2,171
4	Develop/Analyze Alternatives	\$3,920
Workshop # 2 Screen Alternatives		\$2,554
5	Evaluate Short-listed Alternatives	\$4,423
6	Draft Report	\$10,339
	QA/QC of draft report	\$1,040
7	Final Report	\$4,331
	Distribute Final Report	\$772
Travel		\$2,200
TOTAL FEE		\$40,425