



**PURCHASING ITEM
COUNCIL AGENDA
Memo No. CA09-012**

1. Agenda Item Number: 36
2. Council Meeting Date: July 31, 2008

TO: MAYOR & COUNCIL
THROUGH: CITY MANAGER

3. Date Prepared: July 10, 2008
4. Requesting Department: Municipal Utilities

5. SUBJECT: Award a project agreement for design work related to Remote Site Programmable Logic Controller (PLC) Replacement, Project No. WA0824-101, to Wilson Engineers in an amount not to exceed \$141,555.

6. RECOMMENDATION: Staff recommends Council award a project agreement for the design for the Remote Site PLC Replacement, Project No. WA0824-101, to Wilson Engineers in an amount not to exceed \$141,555.

7. BACKGROUND/DISCUSSION: A programmable logic controller or PLC is a computer device used to operate remotely located facilities such as booster stations, wells and wastewater lift stations automatically without the need for operator input. The purpose of the Remote Site PLC Replacement Project is to prepare a design for the replacement of the obsolete PLC's with the manufacturer's current product at up to 54 of the Utility's water production, well, and wastewater facilities. The project will include preparing schematics and contract documents, and coordinating with the City's Job Order Contractor (JOC) during the design of the project. Replacement of the PLC's at these facilities will ensure reliability. The City's JOC contractor, as part of a separate contract, will install the new PLC's later this year.

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 firms to provide water and wastewater facility design services. The selection committee reviewed the qualifications and selected five 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 Wilson Engineers on September 6, 2007.

9. FINANCIAL IMPLICATIONS:

Cost: \$141,555
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	WTP Expansion	FY 08/09	\$141,555

10. PROPOSED MOTION: Move that Council award a project agreement for the design of the Remote Site PLC Replacement, Project No. WA0824-101, to Wilson Engineers in an amount not to exceed \$141,555, and authorize the Mayor to sign the contract documents.

ATTACHMENTS: Project Agreement

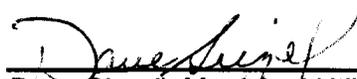
APPROVALS

11. Requesting Department



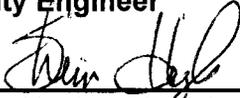
Robert Mulvey, Assistant Municipal Utilities Director

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

EXHIBIT A SCOPE OF WORK

Annual Consultant shall survey approximately 54 sites, preparing typical schematics, preparation of contract documents, and coordinating with the Job Order Construction (JOC) Contractor. The purpose of this project is to replace the Modicon 984 compact PLC's with Modicon M340's. Manufacturing of the Modicon 984 compact PLC is being reduced and eventually stopped due to newer versions. The Annual Consultant shall complete the following PLC replacement project tasks:

- Survey approximately 54 sites. The sites being evaluated include a stand-alone well or booster station or a combination of either a well and booster station or a well and an arsenic facility. Facilities being evaluated include:
 1. 19 Booster Pump Station Facilities (excludes Airport WPF, Chandler WTP, McQueen WPF, and Rural WPF)
 2. 9 Well Sites (excludes Airport, Alamosa 2, Alamosa 3, Basha Road 1, 2, and 3, and Rural Well Sites)
 3. 8 Arsenic Well Facilities
 4. 9 Wastewater Lift Stations
 5. 9 Wastewater Turnouts
- Assemble available documentation for each site being surveyed. Annual Consultant shall coordinate with the City on obtaining available drawing sets for the existing facilities. These sets will be used to establish instruments installed and assist during the design and construction services.
- Develop a PLC equipment schedule for each site. Annual Consultant shall document the components installed within the RTU cabinet. The document will be logged into an Excel spreadsheet and also be used as part of the specifications. As part of the assessment Annual Consultant shall identify and recommend to the City any Code deficiencies with the existing RTU installation. Redesign of the RTU Panel is not included.
- Create typical schematics that will be associated with the PLC equipment schedule. It is anticipated that there will be 15 construction drawings. Schematics for each site will not be included.
- Create specific drawings for up to 5 sites requiring wiring modifications. It is anticipated that a few sites may require network changes or electrical wiring/conduit modifications.
- Develop specifications and assemble a Construction Documents (Schematics and Specifications) for the JOC Contractor.

The engineering services to be provided under this Project are as follows:

TASK 1.0 DESIGN DEVELOPMENT

Subtask 1.1 Kick-Off Meeting. A kickoff meeting with representatives from Annual Consultant and the City of Chandler will be conducted at project initiation. The following will be accomplished:

- Introduce key team members
- Establish lines of communication
- Review the project scope and schedule
- Confirm specific goals and expectations
- Identify key issues affecting project development
- Request background information
- Discuss and identify preferred system operation, equipment, and suppliers for the electrical, instrumentation, and control equipment.
- Prepare and distribute meeting minutes to the attendees prepared by Annual Consultant.

Subtask 1.2 Data Collection and Review. Annual Consultant shall provide support in working with the City staff to research the archives and assemble the appropriate related drawings and related documents for the remote

facilities being surveyed. Annual Consultant shall review all existing As-built Drawings related to the Project area. The documents assembled will be used for the preliminary design for the Project area. The City shall provide the most recent instrumentation and control electrical drawings to reflect the current remote facility status.

Subtask 1.3 Site Investigation. Perform up to two site visits for each facility to confirm the existing electrical and instrumentation configurations. Confirm existing equipment specifications and operating parameters. It is believed that the new Modicon M340 PLC is smaller in size to the existing Modicon 984 compact and will be a direct switch out. It is also believed that the existing site control by SCADA is sufficient and that investigation of system operation is not required and will not be provided as part of the design effort.

The site investigation will be conducted to assist in the preparation of the PLC equipment schedule.

The PLC equipment schedule will be used and associated to the drawing schematics. A site investigation will be completed for each site.

TASK 2.0 PRELIMINARY DESIGN

Subtask 2.1 Preliminary Design Memorandum. Prepare a preliminary design memorandum for submittal to the City. Based on the available data, site investigations, and the City's design standards, Annual Consultant Engineers shall prepare a preliminary design memorandum documenting the site investigation and the modifications required per site. The following items will be included:

- Design criteria and standards for the installation of the Modicon M340
- Assessment of each site and survey report.
- Operating and control strategies
- Identification of any additional design issues and recommendations

Annual Consultant Engineers shall submit five (5) copies of the preliminary design memorandum to the City for review. A review meeting will be conducted with City staff to discuss comments to the preliminary design memorandum. These comments will be incorporated and five (5) copies of the final design memorandum will be submitted.

TASK 3.0 FINAL DESIGN

Subtask 3.1 Preparation of 60% Plans. Prepare preliminary (60%) construction documents (plans only) for the project. The 60% plans shall include the following:

- Panel Schematics: Schematics.

Five copies of the preliminary, 60 percent, plans will be submitted for review to the City's Engineering and Operations Departments. One review meeting will be conducted to discuss any comments received from the City.

Subtask 3.2 Preparation of 90% Plans and Specifications. Prepare preliminary (90%) construction documents including plans, specifications, and a construction cost estimate for the project. The 90% plans shall include the following detailed design areas:

- Panel Schematics: Schematics.
- Specifications: PLC equipment schedule and specifications.

Seven copies of the preliminary, 90 percent, plans and specifications will be submitted for review to the City's Engineering and Operations Departments. One review meeting will be conducted to discuss any comments received from the City.

Subtask 3.3 Maricopa County and Development Services Review. Maricopa County Review is not required. Annual Consultant shall submit the drawing set and specifications to Development Services. Annual Consultant will address all comments from the City's Development Services Department (DSD). Annual Consultant shall review the comments and respond in writing to regarding the action taken. Comments requiring revisions to the Design Documents will be incorporated in to the Final Design Documents.

Subtask 3.4 Preparation of 100% Plans and Specifications. The final 100% plans and specifications will be prepared including incorporation of the City comments. Five (5) reproducible sets of plans and specifications will be submitted to the City for preparation of the cost by the Contractor.

TASK 4.0 COORDINATION WITH JOC CONTRACTOR

Subtask 4.1 Coordination with JOC Contractor: Coordinate with JOC Contractor in determining the Construction Costs, Construction Schedule, and:

1. Annual Consultant shall coordinate with the JOC Contractor to update the Opinion of Probable Construction Cost provided during Task 3.0 design submittals for the Project. Annual Consultant shall assist in reviewing cost opinions and comment on their development at the design submittal stages.
2. Annual Consultant shall coordinate with the JOC Contractor to provide a construction schedule for the project at the 60 and 90 percent design submittals.
3. Annual Consultant will coordinate with the JOC Contractor regarding its preparation of the Costs for the project and include:
 - a. Review equipment price quotations.
 - b. Review material quantities and unit prices developed.
 - c. Review bids received by the JOC Contractor for work that is anticipated to be self-performed.
 - d. Field questions from bidders delivered through the JOC Contractor and prepare addenda as required by the JOC Contractor to obtain accurate price quotations. Addenda will be submitted to the JOC Contractor for reproduction and distribution.

**EXHIBIT B
FEE SCHEDULE**

		Principal	Senior Project Manager	Project Eng.	CADD Tech. III	Admin. Assist. III	Total	Total
Task	Task Description	\$ 180.00	\$ 175.00	\$ 120.00	\$ 65.00	\$ 55.00	Hours	Fee
Task 1.0 - Design Development								
1.1	Kick-Off Meeting		4	4			8	\$ 1,180
1.2	Data Collection and Review		24	80			104	\$ 13,800
1.3	Site Investigation		60	324			384	\$ 49,380
1.4	Topographic Site Survey						0	\$ -
1.5	Soils Investigation						0	\$ -
	Subtotal - Design Development	0	88	408	0	0	496	\$ 64,360
Task 2.0 - Preliminary Design								
2.1	Preliminary Design Memorandum		10	48		8	66	\$ 7,950
	Subtotal - Preliminary Design	0	10	48	0	8	66	\$ 7,950
Task 3.0 - Final Design								
3.1	60% Construction Documents		8	24	8	8		\$ 5,240
3.2	90% Construction Documents		4	12		6		\$ 2,470
3.3	Maricopa County / Development Services Submittal		4	8		4		\$ 1,880
3.4	Final Submittal		2	4		4		\$ 1,050
	Subtotal - Final Design	0	18	48	8	22	96	\$ 10,640
Task 4.0 - Bid Services								
4.1	Coordination with Job Order Contractor (JOC)		12	24			36	\$ 4,980
	Subtotal - Bid Services	0	12	24	0	0	36	\$ 4,980
	Subtotal - Wilson Labor Summary	0	128	528	8	30	694	\$ 87,930
II. Other Direct Costs								
Task No(s)	Expense Description	Unit	Total Units	Cost / Unit	Total			
2.0,3.0	Jenson Systems	LS	1	\$ 53,625	\$ 53,625			
	Subtotal - Other Direct Costs				\$ 53,625			
III. TOTAL FEE PROPOSAL								
I	LABOR SUMMARY				\$ 87,930			
II	OTHER DIRECT COSTS				\$ 53,625			
III	TOTAL FEE				\$ 141,555			