



AGENDA ITEM EXECUTIVE SUMMARY

Agenda Item number: 6.d

Title:

Recommendation to Award the Proposal for SCADA Program Management – Phase 2 to Concentric Integration

Presenter:

Tim Wilson

Meeting: Government Services Committee

Date: July 22, 2019

Proposed Cost: \$469,700

Budgeted Amount: \$500,000

Not Budgeted:

Executive Summary (if not budgeted please explain):

For reliability, efficiency and safety, the water and wastewater treatment and pump facilities require continuous automated operation. Currently, the backbone of this operation is controlled by the water and wastewater Supervisory Control and Data Acquisition (SCADA) systems. Both the water and wastewater utility’s SCADA system are comprised of computer hardware and software systems. Due to the aging infrastructure, the SCADA system lacks security constraints, backup systems, has no integration to the City network and has limited data acquisition; therefore it is nearing the end of its life.

In 2016 Concentric was selected as part of a request for qualifications process. Over the last two years Concentric successfully completed the first phase of the project. During this phase Concentric successfully worked with several departments within the City creating a SCADA network, updating the software packages and upgrading the lift stations. In the next phase of this project, Concentric will provide program management services and subcontractor coordination. It will also involve technological improvements, the installation of the system at remote sites and the professional services to oversee and coordinate this phase of the project. Concentric will provide verification of installations, quality control testing of all equipment, and manage the work by subcontractors. In addition, they will configure and coordinate the SCADA network design and configuration with the City’s information system network and team.

Concentric has great knowledge of the City’s current networks and the SCADA Master Plan. They have collaborated closely with Public Works and the Information Systems staff during the planning phase of this project, being the most qualified firm. Public Works recommends continuing this project with Concentric Integration to implement and oversee the next phase of improvements.

Attachments (please list):

- * Concentric Proposal Phase 2

Recommendation/Suggested Action (briefly explain):

Recommendation to award the Proposal for SCADA Program Management – Phase 2 to Concentric Integration for a not to exceed price of \$469,700.



May 28, 2019

Mr. Tim Wilson
Environmental Services Manager - Public Works
City of St. Charles
2 E. Main Street
St. Charles, IL 60174

Subject: PROJECT PROPOSAL - SCADA System Improvements - Phase 2 - Rev1

Concentric Project Number: 180360.50

Dear Mr. Wilson:

The Supervisory Control and Data Acquisition (SCADA) System Master Plan focused on phased, strategic, and specific recommendations to implement appropriately automated, efficiently managed, energy optimized and flexibly accessible facilities across the City. Phase 1 of the SCADA improvements is currently near completion, and includes upgrading the SCADA computer architecture, programmable logic controller (PLC) replacement for the Lift Stations, and programming development for the West WWTP and water system facilities.

This proposal lays out the second phase of improvements that focuses on the following:

- PLC replacement for the West WWTP.
- PLC replacement and programming enhancements for the water system sites.
- Additional Historian data analysis tools and dashboards.
- Design services for water and WWTP instrumentation and process automation improvements that will be implemented during Phase 3.

The improvements in this second phase include some equipment that will be purchased/bid out, as well as professional services to oversee, design, program, coordinate, and provide a single point of responsibility for the City. Because of Concentric's close collaboration with staff during the planning phase of the improvements, and the ongoing Phase 1 implementation project, we would propose the opportunity to continue to work with the City overseeing and implementing the improvements the City has budgeted for in Phase 2.

Following is a detailed Scope of Services for the Phase 2 SCADA System Improvements Project.



10. The following control panels include PLCs and OITs that will be replaced:
- a. PLC-2201 - Headworks/Aeration
 - b. PLC-2601 - UV Plant Panel
 - c. PLC-2601 - UV Manufacturer's Panel
 - d. PLC-2701 - RAS/WAS
 - e. PLC-2801 - Digester

Water System Improvements

The improvements at the water system facilities primarily include replacing all the “Active Mature” Allen Bradley SLC PLCs with fully supported Ethernet-based CompactLogix PLCs, as well as replacing the obsolete Standard PanelView operator interface terminals (OITs) with new PanelView Plus 7 OITs. The majority of equipment for this work was purchased during Phase 1. Some additional purchases for network switches and the Well 3/4 Reservoir panel PLC will be required in Phase 2. Although this work was originally planned in Phase 1, due to shifting priorities in the City chose to move forward with work at the West WWTP and push the Water System work to Phase 2. Work completed during Phase 1 included the following:

- Control panel wiring schematics.
- Preliminary PLC programming (program documentation and process control review).
- Preliminary SCADA graphics development.

Generally, Phase 2 work will include the following:

- Programming planning and redevelopment to provide improved process controls and operations, which will improve the quality of the City's water system data acquisition. Programming planning will take place in the first portion (summer) of the phase and will involve process control workshops to identify the data and estimated changes to the PLC programming required. The second portion of phase 2 (fall) will involve implementing the PLC programming and related SCADA changes at the water treatment facilities once the planned process and SCADA related data acquisition changes have been made.
- PLC/OIT hardware replacement.

Phase 2 includes the following tasks:

1. Replace existing Allen-Bradley SLC Series PLCs with CompactLogix Series (L30, L33 or L36) PLCs at all the water sites.
2. Replace existing Standard PanelViews with PanelView Plus 7 Operator Interface Terminals (OITs).



meters, weather data, etc.). We understand the City is pursuing improvements in tracking assets utilizing improved GIS/GPS data, tracking work orders, as well as better connecting public works water data to people that need to understand it. Our proposal includes the following sub-tasks:

- Complete a preliminary design review and analysis of the City's water/wastewater information management and business intelligence needs. Preliminary design will include up to 40 hours of in-person and phone based interviewing to review information needs with key stakeholders in the City. City staff will be both presented with ideas and asked to discuss what types of data needs each group has. This sub-task also includes a basic (<20 hours) analysis of the City's plan for other public works data management tools outside this contract such as asset management, work orders, and related GIS and field GPS data collection.
- Review and document up to four BI (alarming, reporting, dashboarding, information management) software packages and their features, capabilities, licensing, and costs. Present City staff with a comparison of the above to assist in evaluating purchasing options. Concentric will coordinate soliciting competitive pricing from shortlisted vendors. A total of **\$50,000** has been budgeted for the first phase of BI software improvements in this phase. Details of licensing, options, and features will be presented prior to purchase. The City should plan for future BI software improvements in future phases, as this phase is intended to get the City started with reporting and historian basics.
- Conduct a half-day onsite BI workshop with key City stakeholders to review BI stack recommendations and finalize software selection and implementation details.
- Complete the design of the required upgrades and provide updated Visio (object-based) diagrams reflecting the proposed BI software improvements.
- Coordinate the purchase, licensing, configuration, and installation of the updated recommended software. Configure software to connect to the existing Rockwell SCADA data and up to TWO outside relational data sources (additional can be added in the future).
- Provide three onsite training sessions:
 - 2 Hours - Operators/Public Works staff for basic reporting, data entry, and system functions.
 - 4 Hours - For "Power Users" to configure reports, dashboards, and related BI tools.



Warranty

The warranty listed in the attached Standard Terms & Conditions document (Paragraph 13):

- DOES apply
- DOES NOT apply

Fee

The fee for the overall SCADA Phase 2 project is summarized in the table below. The estimated sum total of the project is \$464,700, with \$379,700 being related to a direct contract with Concentric (this proposal), and the additional estimated \$85,000 as bid equipment, subject to future review of final pricing by the City as subcontracted and bid pricing is finalized.

Concentric Labor

Scope Item	Concentric Labor
Program Management and Coordination	\$77,100
Design (Panel Drawings, network design, Instrument/automation design)	\$71,600
SCADA Programming (PLC, PanelView, SCADA development)	\$132,600
PLC Design Process Review & Workshops	\$20,000
BI Development (Historian, data portal, etc)	\$45,000
IT network configuration	\$3,000
Installation verification, QC/Testing, and Training	\$35,400
Sub-Total	\$384,700

Materials & Software to be Bid

Materials/Equipment	Equipment
PLCs, Network Switches, BI Software	NTE \$85,000
Sub-Total	NTE \$85,000

Total Project

	Equipment
Concentric Labor	\$384,700
Materials & Software	\$85,000
Total Project	\$469,700

This agreement is valid for 90 days from the date of this proposal.



Standard Terms & Conditions

1. The submitted proposal and these Standard Terms & Conditions constitute and are herein referred to as the Agreement.
2. Concentric Integration is herein referred to as Concentric, and the party with whom Concentric is entering into this Agreement with is herein referred to as Owner.
3. Concentric may submit requests for periodic progress payments for services rendered. Payments shall be due and owing by the Owner upon receipt of Concentric's invoice for services. Payments to Concentric after sixty (60) consecutive calendar days from the date of Concentric's invoice for services shall include an additional late payment charge computed Owner an annual rate of twelve percent (12%) from date of Concentric's invoice; and Concentric may, after giving seven (7) days written notice to the Owner, suspend services under this Agreement until Concentric has been paid in full all amounts due for services, expenses, and late payment charges.
4. This Agreement may be terminated, in whole or in part, by either party if the other party substantially fails to fulfill its obligations under this Agreement through no fault of the terminating party; or the Owner may terminate this Agreement, in whole or in part, for its convenience. However, no such termination may be effected unless the terminating party gives the other party: (1) not less than ten (10) calendar days written notice by certified mail of intent to terminate, and (2) an opportunity for a meeting with the terminating party before termination. If this Agreement is terminated by either party, Concentric shall be paid for services performed to the effective date of termination, including reimbursable expenses. In the event of contract termination, the Owner shall receive reproducible copies of Drawings, Custom Developed Applications and other documents completed by Concentric.
5. Concentric agrees to hold harmless and indemnify the Owner and each of its officers, agents and employees from any and all liability claims, losses, or damages, to the extent that such claims, losses, or damages are caused by Concentric's negligence in the performance of the services under this Agreement, but not including liability that may be due to the sole negligence of the Owner or other consultants, contractors or subcontractors working for the Owner, or their officers, agents and employees. In the event claims, losses, or damages are caused by the joint or concurrent negligence of Concentric and the Owner they shall be borne by each party in proportion to its negligence.
6. The Owner acknowledges that Concentric is a Limited Liability Company and not a Professional Service Corporation, and further acknowledges that the corporate entity, as the party to this contract, expressly avoids contracting for individual responsibility of its officers, directors, or employees.
7. The Owner and Concentric agree that any claim made by either party arising out of any act of the other party, or any officer, director, or employee of the other party in the execution or performance of the Agreement, shall be made solely against the other party and not individually or jointly against such officer, director, or employees.
8. For the duration of the project, Concentric shall procure and maintain insurance for protection from claims under worker's compensation acts, claims for damages because of bodily injury including personal injury, sickness or disease or death of any and all employees or of any person other than such employees, and from claims or damages because of injury to or destruction of property including loss of use resulting therefrom, alleged to arise from Concentric's negligence in the performance of services under this Agreement. The Owner shall be named as an additional insured on Concentric's general liability insurance policy. The limits of liability for the insurance required by this Subsection are as follows:

Workers Compensation:	Statutory Limits	Excess Umbrella Liability:	\$5,000,000 per claim and aggregate
General Liability:	\$1,000,000 per claim / \$2,000,000 aggregate	Professional Liability:	\$5,000,000 per claim
Automobile Liability:	\$1,000,000 combined single limit		\$5,000,000 aggregate
9. Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, the total liability, in the aggregate, of Concentric and their officers, directors, employees, agents, and any of them, to the Owner and anyone claiming by, through or under the Owner, for any and all claims, losses, costs or damages whatsoever arising out of, resulting from or in any way related to the project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability or breach of contract or warranty expressed or implied of Concentric or their officers, directors, employees, agents or any of them, hereafter referred to as the "Owner's Claims", shall not exceed the total insurance proceeds available to pay on behalf of or to Concentric by their insurers in settlement or satisfaction of Owner's Claims under the terms and conditions of Concentric's insurance policies applicable thereto, including all covered payments made by those insurers for fees, costs and expenses of investigation, claims adjustment, defense and appeal.
10. Concentric is responsible for the quality, technical accuracy, timely completion, and coordination of all Designs, Drawings, Custom Developed Applications and other services furnished or required under this Agreement, and shall endeavor to perform such services with the same skill and judgment which can be reasonably expected from similarly situated professionals.
11. The Owner may, at any time, by written order, make changes within the general scope of this Agreement in the services to be performed by Concentric. If such changes cause an increase or decrease in Concentric's fee or time required for performance of any services under this Agreement, whether or not changed by any order, an equitable adjustment shall be made and this agreement shall be modified in writing accordingly. No service for which an additional compensation will be charged by Concentric shall be furnished without the written authorization of the Owner.
12. All Drawings, Custom Developed Applications, and other documents prepared or furnished by Concentric pursuant to this Agreement are instruments of service in respect to the project, and Concentric shall retain the right of reuse of said documents and electronic media by and at the discretion of Concentric whether or not the project is completed. Electronic copies of Concentric's documents for information and reference in connection with the use and occupancy of the project by the Owner and others shall be delivered to and become the property of the Owner; however, Concentric's documents are not intended or represented to be suitable for reuse by the Owner or others on additions or extensions of the project, or on any other project. Any such reuse without verification or adaptation by Concentric for the specific purpose intended will be at the Owner's sole risk and without liability or legal exposure to Concentric, and the Owner shall indemnify and hold harmless Concentric from all claims, damages, losses and expenses including attorneys' fees arising out of or resulting therefrom.
13. Concentric warrants that the services provided for under this Agreement will be completed in a good and workmanlike manner in accordance with applicable codes, ordinances, regulations or other legal Owner. For a period of one (1) year after the Owner receives beneficial use of the installation, Concentric will provide a limited warranty to the Owner for any defect due to improper materials or workmanship supplied by Concentric. Any such warranty provided to Owner shall be provided by Concentric without expense to the Owner for the one (1) year period described herein. CONCENTRIC'S WARRANTY IS A LIMITED WARRANTY FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF BENEFICIAL USE OF THE INSTALLATION. This warranty is limited to only defects in material and workmanship on products purchased and fully installed by Concentric and excludes defects caused by improper use, abuse, accident, acts-of-God (including but not limited to lightning), alteration, or other conditions beyond Concentric's control, as determined by Concentric, and all manufacturer's products or workmanship as covered by their respective warranties. For manufacturer's products or workmanship, Concentric will deliver to Owner all manufacturers' warranties of products. IN CONSIDERATION OF THE LIMITED WARRANTY CONTAINED HEREIN THE OWNER AGREES AND ACKNOWLEDGES THAT SUCH WARRANTY REPLACES ALL OTHER WARRANTIES EITHER EXPRESS OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Concentric's warranty is limited to repair or replacement of a defective product without cost to the Owner. OWNER WAIVES ALL CLAIMS TO INCIDENTAL OR CONSEQUENTIAL DAMAGES. This limited warranty extends only to the Owner and not to subsequent buyers/owners. Owner must give written notice of a defect within the one (1) year warranty period described above. In the event of any dispute between the Owner and Concentric, such dispute shall be resolved in accordance with these Standard Terms & Conditions and the Agreement.
14. Any provision or part thereof of this Agreement held to be void or unenforceable under any law shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the parties. The parties agree that this Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision which comes as close as possible to expressing the intention of the stricken provision.
15. This Agreement contains and embodies the entire and integrated agreement between parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral.