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REQUEST FOR PROPOSALS

Water Distribution System Model Rebuild
Water Distribution System Master Plan
and
Water Quality Study
for the
City of Stillwater Water Distribution System

Stillwater Utilities Authority (SUA)
Project Number 15WG06
August 8th, 2017

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I. INTRODUCTION

A. Requesting Entity Information

1. The Stillwater Utilities Authority (SUA) of the City of Stillwater, Oklahoma (City), with municipal offices (City Hall) located at 723 S. Lewis, is the requesting entity.

B. Project Background

1. The SUA wishes to improve disinfection residual in the distribution system. A number of factors may be contributing to this difficulty, including sediment buildup and encrustation of piping, need for regular maintenance such as "chlorine burns" and flushing programs, nitrification, and need for mixing in storage facilities.
2. The Stillwater Water Treatment Plant (WTP) is an 18 MGD conventional system, using lime for softening, alum as a coagulant and polymer as a coagulant aid. The WTP uses ozone as a primary disinfectant and chloramines for residual disinfection. WTP staff recently switched from alum to ferric sulfate as coagulant. WTP also recently made some adjustments to the chlorine / ammonia balance for creation of chloramines.
3. The City is currently working with Black and Veatch to review various aspects of the City's WTP treatment process, including coagulant selection, lime feed, walkways, alternatives for filter improvements; an assessment of the chemical feed systems, an evaluation of gas chlorine vs. hypochlorite, clarifier mixing, and evaluation of certain pneumatic valves.
4. The City owns three different water systems: the "Municipal System", "Rural System D1", and "Rural System C3". The systems are interconnected, but flow between them is tracked by master meters.
5. The City and Oklahoma State University (OSU) have an agreement to supply each other when needed. Most recently, the City has supplied OSU with water during a couple of major construction operations at their WTP. There are plans for OSU to supply the City with water during an upcoming project at the City's WTP.
6. The SUA wishes to improve its water model to improve its suitability for water quality modeling and generally conform it to modern practices. The model is currently in Bentley's WaterCAD SELECT Series 6. The City desires to find new model software. The model is not currently linked to the City's GIS system.
7. The model's most recent major revision was for the City's Water 2040 program in ~2014. That effort included updating demands and calibration in parts of the system's southwest pressure zone. Water 2040 also made capital improvement plan recommendations for new infrastructure serving the southwest pressure zone. Water 2040 also combined three separate water models that had previously existed separately: the Municipal System, Rural System C3 and Rural System D1.

8. Prior to the Water 2040 updates, the most recent updates to the model were an uncalibrated from-scratch build of the Rural System D1 model in ~2103, development of the Rural System C3 model in 2009 and a major update to the municipal system model in the late 1990's.
9. A map of the City's water distribution system, including pressure zones, is attached.

C. Project Overview and Objective

1. Project work will occur at various locations, including the City's Water Treatment Plant (WTP) and throughout the water distribution system, including at storage tanks and pump stations.
2. The SUA is requesting proposals from firms interested in providing engineering services for:

    a) Water Quality - General evaluation of water quality at the WTP and in the distribution system. Work will include field sampling and testing, field support, recommendations for WTP and distribution system improvements, standard operating procedures for key water quality field operation, and staff education.

    b) Water Model and Distribution System Master Plan – Update the City's water distribution system model and develop a distribution system master plan, starting at the WTP's central and northeast zone pump stations. Work will include software selection, GIS review and recommendations, field support, reconstruction of the model, development of a master plan, and staff training.

    c) Possible design of improvements to the distribution system, including tanks, pumps, linear infrastructure, chemical feed systems, and other projects generally related to improving water quality and implementing the master plan.

3. Implementation of the Project will be initiated as soon as possible after the selection process is complete.

D. Project Funding

1. Local funds are available, subject to SUA Trustee authorization.

E. Method of Payment

1. The selected Engineer will submit an invoice with progress report for work completed on a monthly or less frequent basis. SUA will pay the Engineer via Electronic Funds Transfer (EFT) based on a negotiated contract scope and related fee.

II. SCOPE OF WORK

A. The project will include the following efforts:

1. General:
    a) A single point of contact for management of all phases of the project.
    b) Work closely with staff to discover staff needs and understand the operating characteristics of the water system.
2. Project Kickoff and Data Gathering Phase:
    a) Engineer will coordinate, plan and lead and project kick off meeting.
    b) SUA staff will provide available data to the Engineer to support the project.
    c) Engineer will acquire additional data needed to complete the work.
3. Sampling, Testing and Interviews:
    a) Develop a plan for sampling and testing. Engineer will perform sampling and testing and coordinate with City staff where applicable.
    b) Interview SUA staff regarding WTP treatment, equipment history, WTP and distribution system operational history, typical operational patterns, and other information.
    c) Consult with WTP operators and distribution staff and review WTP treatment and disinfection equipment and process.
4. Valve Location and Exercising:
    a) Engineer will provide staff and equipment to exercise all system valves and record various parameters such as operational status. Data will be utilized to update GIS, support water model development, and support flushing program.
5. GIS Review:
    a) Engineer will review GIS and make recommendations for updates to the GIS to support integration with the City's water model.
    b) Staff will make updates to the City's GIS.
6. Water Model:
    a) Provide a review of water model software options.
    b) Review the City's GIS and recommend improvements to integrate the water model with the City's GIS.
    c) Recommend management strategies for managing the City's GIS and water model together.

d) Reconstruct the City's water model and integrate it with the City's GIS system. Set up the model to support master planning, water quality modeling, evaluation of ability to serve new customers, and ongoing updates to the GIS and model.

e) Analyze the City's pumping, storage, and transmission line facilities for performance with any major element of the infrastructure out of service.

f) Analyze the City's distribution systems for their ability to meet the City's current design standards for pressure, fire flow, and velocity.

g) Make recommendations to support operational flexibility in the central and northeast pressure zones.

h) Verify that the system can support Oklahoma State University's current and future demand projections.

i) Develop a master plan and capital improvements plan.

j) Recommend field instrumentation to support hydraulic and water quality modeling.

k) Model peak day demand and low day demand conditions.

l) Review needed fire flow storage.

m) Review needs for the City to provide emergency supply to OSU and for OSU to supply the City.

n) Project future demand for purposes of supporting state water rights allocation.

o) Train staff in the use of the water model and its software.

p) Identify potential future service areas.

7. Master Plan and Capital Improvements Plan:

   a) Review the City's existing master plan and capital projects list.

   b) Develop a list of capital improvements projects for the distribution system, to be prioritized and incorporated into the City's capital projects list.

8. Water Quality Report:

   a) Recommendations for implementing a water quality program, including monitoring, actions, and routine maintenance.

   b) Analysis of water quality, including chlorine residual, corrosivity, nitrification, and any other applicable issues.

   c) Review the City's WTP and distribution system for potential

improvements to the above issues.

d) Recommended operational and monitoring improvements.

e) Recommended infrastructure improvements.

f) Recommended monitoring and future studies.

g) Guidance on how to best gather and read water quality indicators such as free/total CL and ammonia, mono chloramine, HPC, ATP, and other biological water quality testing data.

h) Review of upcoming regulations and industry trends.

i) Training of WTP, distribution, and engineering staff in nitrification and water quality best practices.

9. Disinfection at the WTP:

    a) Review the type and locations of disinfectant added at the WTP.

    b) Evaluate and make recommendations for improving the type, amount, and location of disinfectant used at the WTP.

10. Unidirectional Flushing Program:

    a) Develop a GIS-based atlas, standard operating procedure, public information, and other tools needed for a successful flushing program.

    b) Field train City crews to conduct unidirectional flushing.

    c) Estimate of annual man-hours and equipment required for ongoing maintenance.

    d) Review alternative techniques such as “ice pigging”.

11. System-Wide Free Chlorine “Burn”:

    a) Develop an SOP for a chlorine burn for SUA staff to utilize, including public notification, water plant disinfection process adjustments, and distribution system operations and monitoring.

    b) Provide instructions and classroom training on the chloramine / free chlorine transition, observing and measuring progress, typical information to provide to the public.

12. Localized Chlorine “Burn”:

    a) Consult with distribution staff to review disinfection methods.

    b) Develop an SOP for disinfection of small sections of water line, including public notification, field procedures, and protection of customer connections.

    c) Review alternative techniques such as “ice pigging”.

13. Design of related improvement projects.

B. Agreements:

1. The EJCDC format for professional service agreements, as modified by SUA, will be used for contracting with SUA.

III. PROPOSAL CRITERIA

A. General Requirements

1. Proposals will be accepted by mail or hand delivery at the receptionist desk of City Hall or by mail until the deadline listed in the schedule section, below.
2. A duly authorized official of the proposing firm must sign proposals. A minimum of four (4) bound copies and a PDF on CD or flash drive of the proposal must be submitted. No reimbursement will be made for any cost incurred in preparing the proposal or any cost incurred prior to a formal NTP.

B. Equal Employment Opportunities

1. In connection with this proposal, or the ensuing project if selected, the Engineer shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, marital status, being a handicapped, disadvantaged person, or disabled War Veteran.

C. Insurance Requirements

1. The Engineer will be responsible for obtaining insurance as required by SUA and the State of Oklahoma to protect and hold harmless all City/SUA employees and City/SUA from liability in cases of accident and injury to persons or property. At a minimum, the following amounts of insurance coverage are required during the life of the contract:

a) Workers' Compensation: Statutory

b) General Liability

- Bodily Injury: $500,000
- Property Damage: $500,000
- General Aggregate: $1,000,000

c) Professional Liability

- Annual Aggregate $1,000,000

d) Automobile Liability

- Bodily Injury: $300,000
- Property Damage: $1,000,000

D. Maximum Size of Proposal

1. The proposal shall be no larger than 50 single sided letter sized pages, including covers, text and any other materials used to represent a company's qualifications. One side of paper is considered to be one page.
2. Ledger sized paper, folded to 8.5x11, is allowed if it used to convey a single message through a chart, diagram or exhibit.

E. Minimum Content of Proposal

1. General Content: Requirements include Cover Letter, Table of Contents, Schedule (indicate anticipated time frame to complete identified scope of work), quality assurance approach, and Insurance (indicate availability of insurance coverage requested).
2. General/Firm Qualifications: Engineer may include text, exhibits or illustrations to demonstrate general qualifications of the firm. Discuss the firm's approach to quality, responsiveness and overall customer service.
3. Key Personnel and Qualifications: Identify project manager and other key personnel to be utilized throughout the project. Identify their experience and qualifications to perform the work and their responsibilities in the completion of the project. Identify qualifications of subcontractors to be utilized.
4. Project Experience: Engineer should include representative projects and expertise in the area of the Project. For each project, identify role of the key personnel to be utilized in the SUA's project.
5. References: Provide reference list with contact names, phone numbers, and descriptions of similar work performed for the reference (preferably in the last 5 years). Include project cost, duration and any unique features of the work. Emphasize compliance with project schedule and budget.
6. Technical Approach: Indicate the means to achieve project goals and objectives. The Engineer may also identify innovative, cost-effective technologies that may be applicable as well as suggest changes to the proposed scope of work that may improve project results or value to the SUA.

F. Site Visits and Questions

1. A tour of the WTP and distribution system and informal sessions with plant staff will be scheduled. Attendance is not mandatory, but individual tours and meetings will not be scheduled.
2. Questions may be submitted at any time, and the answers will be made available to all interested parties.

IV. SELECTION PROCESS

A. Right to Reject

1. SUA retains the right to reject any or all proposals and to re-solicit if deemed to be in the best interest of SUA.

B. Proposal Review Process

1. SUA staff will review responses to this RFP that meet the requirements enumerated and are received prior to the designated closing date. Firms without adequate insurance, in minimum amounts set forth herein, to protect City/SUA's interest, may not be considered or evaluated.
2. Upon review of all qualified firms, the selection committee will, through its own judgment and process, rank all the proposals. The highest ranked firms may be asked to make an oral presentation or other submittal of information for further evaluation. Based on interpretations of the firms' presentations, the selection committee will then select (a) consultant(s) for the project.
3. The SUA may select a single firm for both projects or two firms, one for the water quality work and one for the model development and master planning work. Firms may submit qualifications for only the water quality work or only the model development and master planning work. The SUA prefers to select a single consultant for all work.
4. SUA will negotiate a contract for professional services based on the following process:
    a) The Engineer will be contacted and offered the opportunity to provide the services for this project. If the Engineer accepts, contract negotiations will begin.
    b) Engineer will submit a detailed Scope of Services and corresponding Fee Proposal to SUA for review.
    c) SUA will attempt to negotiate a contract at a fair and reasonable price.
    d) If SUA is unable, after good faith efforts, to negotiate a satisfactory contract with the Engineer, SUA will formally end negotiations with that Engineer and begin negotiations with the next highest ranked Engineer.

C. Keynotes

1. Emphasis will be placed upon the expertise of the project manager and other key personnel assigned to the work. Illustrative and descriptive material describing previous similar work of the key team members is highly recommended.

2. The firm shall provide a list of previous related work experience with contact persons and phone numbers. Key personnel to be utilized (names and position), relative experience and capabilities, as well as any proposed subcontractors, will be evaluated closely. Changes in key staff during the project must be approved by SUA.
3. The firm should demonstrate a general knowledge of waterworks operations and construction requirements. The proposer should also demonstrate knowledge and experience in ODEQ permitting and coordination with other government agencies, as necessary.

D. Inquiries

1. Questions regarding this RFP should be directed to Brandon Neal, bneal@stillwater.org, 405 742 8203.
2. All questions and answers will be available to all interested firms at Stillwater's Cloud site:
   - Site: cloud.stillwater.org
   - ID: wuconsultant PW: wuconsult
   - Folder: "Model, Master Plan, and Water Quality Study"

E. Schedule

1.	Issue Request for Proposals	8/8/2017
2.	Pre-Proposal Meeting	8/25/2017 1:30 PM City Hall room 2073
3.	Additional Group WTP and Distribution System Tours	TBD
4.	Deadline for Questions	9/6/2017
5.	Deadline for Proposals	5:00 PM, 9/15/2017.
6.	Select Firms for Oral Presentations	end of September
7.	Firm Presentations	end of October
8.	Select Firm and Begin Negotiations	middle of November

Water Distribution System

Legend

- Pump Station
- Water Storage Tank
- Water Treatment Plant
- To Be Removed
- Bulk Water Meter
- water lines
- Transmission Line
- City of Stillwater
- OSU

Pressure Zones (HGL)

- Yost (1159-1202)
- North East/Future Yost - tentative
- North East (1134-1094)
- Central/NE - tentative
- Central/Future NE
- Central (985-1095)
- Nottingham (1143-1155)
- South West (1094-1149)
- Twin Towers (1150-1173)
- Coyle Road (1170-1225)
- 56th (1141-1180)

N
W E
S

Date: 7/18/2017

0 0.5 1 2 Miles

School Standpipe
18,000 Gallons

Yost Booster
Station

Water Treatment Plant

N Perkins
Pump Station

CIMARRON
TURNPIKE

WASHINGTON

RSC3/RSD1 Meter

Reisbeck Tower
35,000 Gallons

Perkins Tower
750,000 Gallons

RICHMOND

Municipal/51East Meter

Washington Tank
2 Million Gallons

Municipal/RSC3 Meter

Manning Tank
2 Million Gallons

Central Zone Tower
(In Construction)
1 Million Gallons

Municipal/51East Meter

West HWY51
Booster Station

Municipal/RSC3 Meter

Municipal/RSC3 Meter

Municipal/OSU Meter

Municipal/51East Meter

Tan-Tar-A Standpipe
53,000 Gallons

Hilltop
Booster Station

HWY51 and CC
Booster Station

Stallard Tank
2 Million Gallons

6TH

Karsten Creek
Booster Station

Municipal/OSU Meter

Municipal/RSC3 Meter

Temp Range
Booster Station

OSU
Booster Station

Range Tower
500,000 Gallons

Nottingham
Booster Station

Temp Kenslow
Booster Station

PERKINS

S Perkins Booster
Pump Station

Nottingham Standpipe
23,000 Gallons

Boersma
Booster Station

Sangre
Booster Station

Municipal/RWD3 Meter

Twin Tower 1 Standpipe
(To be Removed)
19,000 Gallons

44th Tower
(In Construction)
1 Million Gallons

Twin Tower 2 Standpipe
(To be Removed)
13,000 Gallons

Coyle Standpipe
46,000 Gallons

56th Tower
1 Million Gallons