ATTACHMENT A
TO
AGREEMENT FOR ENGINEERING SERVICES

SCOPE OF SERVICES

City: Columbia Water and Light
Project Title: Integrated Water Resource Plan
Engineer: Black & Veatch Corporation

Overview

The purpose of this scope of work is to develop an Integrated Water Resource Plan ("IWRP") for the City of Columbia, Missouri ("the City"), Water and Light Department. Currently, the City's Water System serves 48,000 customers in 89 square miles with a peak demand at 23.3 MGD. The Water System produces 100% of its potable water supply from groundwater wells in an alluvial aquifer which delivers water to the McBaine Water Treatment Plant. Following treatment water is conveyed to the City through two water transmission mains into Columbia, four pump stations, three ground storage reservoirs, three elevated storage tanks, and 671 miles of water mains.

The IWRP will comprehensively address water supply, water demands, water quality as it pertains to new supplies, environmental stewardship, financial management, and public outreach and involvement. This will allow for water system expansion and balanced rate structures in the future while taking into account conservation and reuse opportunities.

Scope of Work

The scope of work for this study consists of the following tasks:

A. Project Coordination

1. Kickoff Meeting - The project will be initiated by holding a meeting among key members of the Water and Light Department staff with project leaders from Consultant. The following will be discussed at the kick off meeting:

    - Review project goals and scope
    - Communication process (City staff, Consultant , University, stakeholders, citizen appointed committees, regulatory agencies, and advisory boards)
    - Key milestones and project schedule
    - Points of contact for City and Consultant staff

2. Project Review Meetings - Additional review meetings will be conducted to receive City comments on the five (5) Draft Technical Memorandums and other deliverables prepared by the Consultant. It is anticipated that three (3) project review meetings will be conducted, independent of meetings for Public Outreach. Project review meetings shall be supplemented with conference calls as necessary to ensure City input is adequately addressed.

3. Deliverables – Monthly updates will be provided and attached to each invoice to provide documentation on progress of the scope, schedule, and budget with comparison to the planned execution of the work.

B. Existing and Alternative Supply Evaluation

1. Existing Supply Capacity - Consultant will review and update the McBaine Wellfield Evaluation which was completed by Black & Veatch in 2013. This will include an update of the reliable yield of the existing supply system under a variety of alternative hydrologic, demand, and system operation scenarios.

2. Supply Expansion - Summarize alternatives for increasing raw water supply including expansion of the existing wellfield, alternative groundwater sources, and surface water supply. For this study, the ASR Well Nos. 8 and 10, and Deep Well No. 7, will be evaluated. The evaluation will investigate feasibility as a nonpotable supply or as a potable supply with future treatment.

3. Treatment Summary - Provide summary of existing McBaine Water Treatment Plant including process, capacity, and water quality.

4. Distribution System Review - Review current distribution system information to develop a thorough understanding of the study area infrastructure, distribution system capacities, pressure zone configurations, large customer locations, and required hydraulic gradients.

5. Deliverables – The preceding tasks will be consolidated into a technical memorandum summarizing existing supply, alternative supply options, treatment, and distribution. Planning level cost estimates will be provided based upon the Association for the Advancement of Cost Engineering (AACE International) Class 4 Level of estimating.

   Using available GIS mapping data develop study area map which identifies critical supply, treatment, distribution, and demand components coordinated with the City. This map will be beneficial to graphically identify information and will be used for public meetings and the final report.

C. Identify Non-Potable Supply Options

1. Alternative Sources – Alternative non-potable water supply sources including surface water, groundwater, wastewater, and storm water will be evaluated to offset potable demands by either reclamation or reuse. Examples of non-potable uses for consideration by the City will include:

    - Irrigation: Irrigation of adjacent agricultural areas, regional golf courses, and large institutional properties such as the University of Missouri grounds, hospitals, and schools.
    - Flush Water: Non-potable water can also be used within commercial and industrial facilities or buildings as toilet and urinals flushing water. Facilities with high occupancies but relatively simple plumbing systems generally provide the best opportunity of the use of reuse water flush water.
    - Cooling Water: Reclaimed water can be used in industrial or commercial cooling or air conditioning. Power plant cooling towers at the University of Missouri as well as other facilities throughout the City could be considered.
    - Other: Other opportunities to utilize reuse reclaimed wastewater such as wash down water, pump seal water, yard hydrants, and restricted site irrigation.

2. Deliverables – The preceding tasks will be summarized into a technical memorandum and appropriate data will be integrated into GIS maps developed under Task B5.

D. Demand Response Program

1. Program Development - A demand response program will be developed with consideration for residential, commercial, industrial, institutional, irrigation, and non-revenue water. Demand management options to be evaluated will include programs such as time of day and day of week water across all the classifications of use and then a number of programs specifically for certain customers. Plumbing codes and existing programs will be included (removed from any projected savings) in the program analysis and the costs of each program identified and prioritized. The cost and rate requirements for these programs will also be estimated.

2. Utility Side Management - Utility-side water conservation will be assessed including:

    - Water loss control
    - Leakage management
    - Currently main breaks and services line failures will be evaluated and benchmarked against other utility data

3. Deliverables – Consultant will utilize the Alliance for Water Efficiency's water conservation monitoring tool to predict the effects of conservations programs on demand. Results will be presented in technical memorandum for review by the City.

E. Evaluate Rate Structures

1. Alternative Rate Evaluation - Consultant will review the current water rate structures to determine flexibility to equitably recover costs for utility service from each customer class from various IWRP related activities. Alternative water rate structures which may better meet the City's goals and objectives will be reviewed. The review will include the rationale and advantages/disadvantages of each various structure.

   In accordance with the defined rate structure, a schedule of water rates will be developed to recover the projected revenues needed for utility operations, recognizing equitable cost recovery by customer class, establishing proper recovery of costs from existing retail/wholesale customers, and complying with applicable regulations and contracts. Consultant will utilize AWWA's M1 Manual guidelines with appropriate adjustments to remain consistent with industry standards in this analysis.

2. Deliverables – Deliverables will include a technical memorandum summarizing the analysis as well as input required for defining the revised rate structure in the final report.

F. Regulatory Assessment

1. Assessment – Assess the existing and pending regulatory environment and prepare a summary description of potential impacts expected for water, wastewater, and recycled water. Provide recommendations for improvements and operations to comply with anticipated regulatory requirements.

2. Deliverables – Technical memorandum summarizing the assessment and recommendations.

G. Public Outreach

1. Stakeholder Engagement Plan - Stakeholder Engagement Plan will be developed and will include information about how stakeholders will be engaged in the study process. It will define who should be engaged (target audiences), how to engage them (tools), when to engage them (schedule). Key messages to be communicated during the study process and a comprehensive media strategy will be detailed. The Consultant will meet with the Owner directly following the project kickoff meeting to develop a detailed stakeholder engagement plan.

2. Project Fact Sheet – Consultant will provide basic project information to City for development of fact sheet by the City's public relations (PR) staff. Consultant will conduct conference calls with PR staff and review draft documents prior to issuing. City shall post the fact sheet on their website and print hard copies for local distribution.

3. Project Website – Provide information to the City to be used in the development of a project website by the City. Review information and provide consultation and review of content.

4. Public Meetings - Public meetings will be held to provide an opportunity for anyone interested in a particular issue or project to become educated about it as well as to provide input throughout the process. A conference call will be held prior to each meeting to identify needs and objectives for the meeting. Consultant will prepare meeting agendas and materials, create a meeting announcement and distribution list, and distribute the meeting announcements electronically. The City will provide public notice of the public meeting.

   Public Event #1: The focus of this event will be two-fold: (1) to inform and educate participants about the planning process and the findings to date, and (2) to verify issues identified through Phase 1 activities by listening to ideas regarding a vision and potential goals. The meeting will be a workshop format and will include exercises designed to solicit potential vision and goal statements for the plan.

   Public Event #2: Using both traditional and electronic means, the vision, goals and potential strategies will be brought before the community for input. This step is critical in that it allows an opportunity for the public to further understand the development of the plan concepts and components. The presentation of these materials will show that the public's input has been considered. More detailed feedback will be encouraged regarding conjunctive use, demand response, wastewater, and other water reuse alternatives.

   Public Event #3: The IWRP Committee and the consultant team will conduct a public event where the draft plan will be presented to the public. Participants will be asked to respond to targeted questions regarding the draft plan contents and provide additional comments that may lead to refinements of the draft plan.

   The draft plan will also be posted online for a limited time for community members who were not able to attend the event. The interactive electronic presentation will outline the draft plan and will provide reviewers opportunities for feedback through an online survey tool.

City Council Presentation: The consultant team will present the study results and final report to City Council during a regularly scheduled council session.

H. Integrated Modeling

1. Integrated Model - Upon completion of the preceding tasks, the data will be linked into an integrated model to better understand the relationships and interdependencies between the various alternatives being considered. The project team will develop a customized model for the City that will help accomplish the following primary goals:

    - Demonstrate the relationships between water, wastewater, and storm water systems
    - Test how contemplated water management strategies might impact water supply reliability, wastewater treatment and discharge requirements, and overall watershed health
    - Allow for stakeholder utilities, environmental organizations, and the general public to understand benefits and tradeoffs of implementing available water management strategies.

2. Deliverable – Electronic copy of a fully integrated water resource model.

I. Integrated Water Resource Plan Report

1. Alternatives Ranking - In order to develop recommendations, a decision making process will be implemented to rank alternatives considering factors such as demand management, water rate structures, regulations, and the input from various stakeholders. We will use Criterium Decision Plus software to help in the decision making process.

2. IWRP Report - The project report will be a compilation of technical memoranda covering the different project tasks develop throughout the project. Each of the memoranda will be prepared as a draft, reviewed by Columbia Water & Light staff as well as by the IWRP Committee, and then revised to reflect this input. As the alternatives are evaluated for consideration in the overall IWRP, a summary will be drafted that summarizes the elements of the IWRP, costs of implementation, and recommended timeframes for implementation. Sequential draft reviews will be performed by the IWRP Committee, Water and Light Advisory Board, and the public as depicted in our project schedule.

3. Deliverables – Integrated Water Resource Plan Report.

H. Supplemental Services

1. Any work requested by the City that is not described in this Appendix A will be considered as supplemental services.
2. Supplemental services shall include, but are not limited to:

    a) Meetings with local, State, or Federal agencies to discuss the study;
    b) Appearances at public hearings or before special boards, other than those appearances specifically listed above;
    c) Supplemental engineering work that may result from requirements of regulatory agencies that become effective subsequent to the date of this agreement;
    d) Special consultants or independent professional associates requested or authorized by Owner;
    e) Additions to an engineering report to update or revise the final report;
    f) Pilot plant studies and tests;
    g) preparation of a hydraulic model or revisions to an existing model, except as specifically listed above;
    h) Development of an Asset Management Program;
    i) Additional progress review meetings beyond those specifically defined above.

ATTACHMENT B
TO
AGREEMENT FOR ENGINEERING SERVICES

COMPENSATION

City: Columbia Water and Light
Project Title: Integrated Water Resource Plan
Engineer: Black & Veatch Corporation

For the services described in Attachment A of this Agreement, except for Supplemental Services described in Paragraph H, the Owner agrees to pay the Engineer as follows.

A. Owner agrees to pay the Engineer a lump sum amount of four hundred eighty-nine thousand two hundred twenty three dollars ($489,223).

B. Monthly payments shall be made to the Engineer by the Owner based on the Engineer's statement of percent complete of each task grouping as indicated on the following page.

C. The entire amount of each statement shall be due and payable upon receipt by the Owner. Carrying charges of 1/2 percent per month from the invoice date shall be due for accounts that are not paid within 30 days after the invoice date.

SCHEDULE

It is understood and agreed that:

1. Engineer shall submit a draft version of the final report for Owner's review within 10 months as shown on the attached schedule.

2. Engineer shall submit a final version of the final report within 30 days following receipt of Owner's comments to the draft version of the report.