

(Prepared by/Return to: Amy Kahler, Des Moines Water Works, 2201 George Flagg Parkway, Des Moines, IA 50321, 515-283-8760)

Meeting
CENTRAL IOWA REGIONAL DRINKING WATER COMMISSION
Technical Advisory Committee
West Des Moines Water Works A.C. Ward Treatment Plant
February 18, 2016
10:00 a.m.

Present

The following attendees were present:

Tim Hoskins (Norwalk), Seth Zrucky (Norwalk), Karen Oppelt (Altoona), Paul Moritz (Ankeny), John Gibson (Waukee), Nathan Casey (DMWW), Ted Corrigan (DMWW), Amy Kahler (DMWW), Dale Acheson (Urbandale Water Utility), Randy Beavers (Warren Water District), Diana Wilson (WDMWW), Shane Kinsey (Johnston).

Members of the public in attendance: Bethany Wilcoxon (Capital Crossroads) and Heath Picken (HR Green).

DMWW Long Range Plan RFP Update

A Request for Proposal (RFP) has recently been issued for the completion of a long-range plan for Des Moines Water Works' Core Network through 2040. The long-range plan will be funded solely by Des Moines Water Works and will cover source water, water treatment, and water distribution (up to consecutive systems' connections to DMWW) for the Core Network. Nathan Casey, DMWW, provided an overview of the Professional Services Requirements (attached).

The RFP is available and accessible online to any interested firm at www.dmww.com under Bids & RFPs in the upper right corner of the homepage. Proposals are due to Des Moines Water Works by March 10, 2016, and board approval for the selected firm will be requested at the March 22, 2016 DMWW Board of Trustees meeting. A draft report from the selected consultant will be due to Des Moines Water Works by December 1, 2016, and the consultant will present their recommendations to the Technical Advisory Committee in December 2016 or January 2017. The final report will be issued in February 2017.

Lead Service Lines/Lead In Drinking Water

In light of the unfortunate situation in Flint, MI, Ted Corrigan reported Des Moines Water Works is preparing to communicate and educate customers on lead exposure and risks. An FAQ has been developed and is available at www.dmww.com as a rotating feature.

Ted reported DMWW has approximately 12,000 lead service lines (identified as ½" taps), which have been plotted on a map. For the neighborhoods most impacted, the intent is to work through the

neighborhood association groups to educate customers. DMWW will also be offering free lead sampling for any DMWW customers who have ½" taps (or pre 1950). Ted reported the DNR has indicated any customer samples must be reported as "special samples" but will not be used for compliance reporting. Diana Wilson asked if DMWW would test non-Des Moines samples, and Ted responded that DMWW offers testing at \$18 per test for both lead and copper. After some discussion, it appears the issue of lead service lines is isolated to the Des Moines System, as other Technical Advisory participants indicated they do not believe they have lead lines in their system.

Des Moines Water Works Board Activities for February

Ted Corrigan reviewed the Des Moines Water Works Board of Trustees agenda for the upcoming February meeting:

- Award a Water System Improvement (WSI) project for unincorporated Polk County customers, replacing 2" & 4" mains. Ted reported contract pricing is up.
- Establish public hearing for Des Moines WSI project,
- Receive and file the 5-year CIP (discussed at January's Technical Advisory Committee).

Ted provided an overview of a main break on a 36" feeder main break located in Water Works Park. This will be repaired by next week. Amy Kahler reviewed DMWW's utility goals for 2016 as an informational item.

Diana Wilson advised the group of a new state program, Safe at Home, that affects how customers are identified in utility billing records.

Next Meeting Date

The next meeting will be March 17, 2016 at Des Moines Water Works.

Assignments

No assignments were given.

Meeting adjourned at 11:00 a.m.

II. PROFESSIONAL SERVICES REQUIREMENTS

A. SCOPE OF SERVICES

The general scope of services for the long range planning study shall include review of existing DMWW facilities, evaluation of source water, water treatment, and distribution infrastructure, along with development of staged implementation plans through the year 2040.

B. DETAILED STUDY SCOPE OF SERVICES

The purpose of the long range plan is to provide a usable document with which the DMWW can schedule and budget required improvements. The plan shall include recommendations for improvements on a staged plan for the design years 2020, 2025, 2030, 2035, and 2040.

Part 1 – Data Collection and Critical Review

- Task 1-1: Review existing facilities and operational records to become familiar with system operations.
- Task 1-2: Become familiar with DMWW provided population and water demand projections. Projections include DMWW service area and consecutive customer service areas.
- Task 1-3: Perform critical review of DMWW provided water demand projections for DMWW service area and consecutive customer service areas.
- Task 1-4: Become familiar with and incorporate into long range plan DMWW existing 5-year Capital Improvements Plan (CIP).
- Task 1-5: Request other supporting data as may be required to effect the scope of services.

Part 2 – Source Water Evaluation and Planning

- Task 2-1: Evaluate capacity of existing source water to provide for current and future water demands during normal and drought conditions. Include in evaluation current plans for the Maffitt Chain-of-Lakes and the Fleur wetland.
- Task 2-2: Evaluate source water for ability to meet current and future drinking water regulations based on current treatment techniques. Identify areas of concern with respect to the ability of the treatment facilities to meet future regulations. Include in evaluation current plans for the Maffitt Chain-of-Lakes and the Fleur wetland.
- Task 2-3: Propose new source waters as required to meet future water production demands. Provide schedule of implementation and opinions of probable costs for new source waters for the design years 2020, 2025, 2030, 2035, and 2040.

Part 3 – Water Treatment Facility Evaluation and Planning

- Task 3-1: Perform tour, assessment, and analysis of unit processes and equipment at Fleur, McMullen, and SWTP.
- Task 3-2: Use population growth estimates and water demands for the design years 2020, 2025, 2030, 2035, and 2040 to evaluate current production capacities.
- Task 3-3: Provide alternatives for expansion and/or upgrades of the three water treatment plants to meet future demand projections. Alternatives should include opinions of

probable costs and be staged based on water demand projections for the design years 2020, 2025, 2030, 2035, and 2040.

- Task 3-4: If required to meet future demands, provide a minimum of two locations and source water for new production facility. New facility locations should include opinions of probable costs and be staged based on water demand projections.
- Task 3-5: Develop alternatives for improvements to each of the three water treatment facilities with respect to meeting possible future drinking water requirements. Alternatives should include opinions of probable costs and be staged based on water demand projections for the design years 2020, 2025, 2030, 2035, and 2040.
- Task 3-6: Develop alternatives for improvements to each of the three water treatment facilities with respect to maintaining compliance with drinking water requirements. Include in recommendations information provided in Nitrate Management Plan and Disinfection By-Product Rule Compliance Project.
- Task 3-7: Create schematic drawings of existing source water and water production facilities. For alternatives, provide basis of design parameters including sizing, preliminary siting, and schematic drawings. Recommendations to be staged for the design years 2020, 2025, 2030, 2035, and 2040.

Part 4 – Water Distribution System Analysis

- Task 4-1: Collect and review historic data including billing data, meter data, historic water use, and water loss date.
- Task 4-2: Determine system water use characteristic. Water use characteristics will be determined based on the following components: residential, non-residential, large use, and non-revenue for each of the design years. Confirm system-wide peaking factors for maximum day and maximum hour.
- Task 4-3: Obtain existing water model from DMWW. Update existing model from DMWW provided GIS data to ensure the model includes all existing facilities. Perform review of the existing facilities and model inventory and ensure that the network connectivity is acceptably representative and that all model data for facilities is accurate.
- Task 4-4: Perform a model validation using provided SCADA data. Make adjustments to model as necessary to establish acceptable correlation. Any field testing required to calibrate the model further with recorded results will be provided by DMWW.
- Task 4-5: Develop design demand scenarios to be used for water system evaluation. These design demand scenarios will be based on DMWW provided projections for the design years 2020, 2025, 2030, 2035, and 2040.
- Task 4-6: Develop water use projections for the current 200 largest water uses. Include largest water uses in design demand scenarios.
- Task 4-7: Conduct a hydraulic analysis, using extended period simulation, of distribution system as the basis for developing distribution improvement plans, including a review of future water requirements. Analysis should include average day, maximum day, maximum hour, and winter day. Include in analysis the following:
 - a. Investigation of areas of high or low operating pressure and make recommendations for resolution.
 - b. Evaluation of existing major transmission system components to meet current and future water demands.
 - c. Evaluation of existing pumping and storage facilities to meet maximum day and peak hour requirements.

- Task 4-8: Evaluate connections to consecutive customers for ability to meet customer provided water and pressure demands. As necessary provide recommendations for improvements to customer connections. Recommendations to include opinions of probable costs and be staged for the design years 2020, 2025, 2030, 2035, and 2040.
- Task 4-9: Develop alternatives for improvements to, or construction of new, distribution system infrastructure including:
- a. Major transmission systems (12-inch and larger).
 - b. Pumping or booster stations.
 - c. Finished water storage facilities.
 - d. Connections to consecutive customs or major water users.
- Alternatives should include opinions of probable costs and be staged based on water demand projections for the design years 2020, 2025, 2030, 2035, and 2040.
- Task 4-10: Review use of aquifer storage and recovery wells throughout the Des Moines Metro area. Provide guidance on the number of wells which can be supported, how far apart the wells should be located. Provide locations for additional wells as an option to meet future peak demands.
- Task 4-11: Review the most recent fire protection rating for the Des Moines service area to estimate maximum fire flow requirements, based on zoning, for the distribution system and to identify system deficiencies.
- Task 4-12: Review and update current customer level of service standards including minimum and maximum pressures, and pipe velocity.
- Task 4-13: Review current strategy for water main replacement and corrosion control. Provide guidance on improving strategy to reduce water main breaks.
- Task 4-14: Create schematic versions of hydraulic model facility elements for use in the model using a combination of: existing distribution system hydraulic model, GIS data, facility drawings, details, and input from DMWW staff.

Part 5 – Develop Long Range Plan

- Task 5-1: Summarize findings of existing system and system conditions.
- Task 5-2: Prepare recommendations for source water supply, water treatment infrastructure, major (12-inch and larger) distribution system improvements, pumping, and storage. Include with recommendations and evaluation of each alternatives and provide a narrative on how the recommended alternatives were selected. The plan will be staged to show priorities and an implementation schedule for all improvements based on water demand projections. The staged plan should provide basis of design parameters including sizing, preliminary siting, and schematic drawings. Plan should be staged for the design years 2020, 2025, 2030, 2035, and 2040.
- Task 5-3: Prepare budgetary opinions of probable construction cost for recommended improvements.

Part 6 – Report Preparation and Submittal

- Task 6-1: Develop draft chapters for each major scope section. Submit draft chapters to DMWW for review and comment.
- Task 6-2: Prepare draft long range plan by compiling previously submitted and reviewed chapters. Submit draft plan to DMWW staff for review and comment.
- Task 6-3: Incorporate DMWW comments, as appropriate, and finalize report.

- Task 6-4: Submit the final Long Range Plan to DMWW in a written technical report signed and certified by a professional engineer in the state of Iowa.
- Task 6-5: Provide five (5) hard copies of the Final Report. In addition, provide one (1) copy of an electronic version of the final report in Adobe Acrobat (.pdf) format.

Part 7 – Project Management

- Task 7-1: Develop an overall project work plan and project schedule that describes the sequencing and execution of the tasks within each part of the scope of service.
- Task 7-2: Provide management functions required to successfully complete the work, including correspondence with DMWW; consultation with DMWW staff; supervision and coordination of services; development and implementation of a project specific work plan, scheduling and assignment of personnel resources, administration and coordination of approved subconsultants, continuous monitoring or work progress; and invoicing for the work performed.
- Task 7-3: Attend project initiation meeting with DMWW staff.
- Task 7-4: Attend other meetings and site visits as necessary to complete plan.
- Task 7-5: Attend meetings to present findings of long range and review alternatives for improvements.
- Task 7-6: Attend meetings to review final report with DMWW.
- Task 7-7: Attend CIRDWC Technical Committee meeting to present final report.
- Task 7-8: Attend Water Works Board of Trustees meeting to present final report.