



Legislation Text

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CITY COUNCIL AGENDA ITEM

ACTION REQUESTED:

Receive the staff report regarding the implementation of the Water Advanced Metering Infrastructure (AMI) Project (Item 1 of 5)

DEPARTMENT: Water Utilities

SUBMITTED BY: Darrell Blenniss, Director

BOARD/COMMISSION

The Public Utilities Advisory Board recommended moving forward with the Water AMI implementation at a special meeting held in August. In addition, the Financial Advisory Board recommended debt issuance as the funding source for Water AMI implementation at its July meeting.

BACKGROUND:

As part of the City's continued commitment to serve our public well, Naperville Water Utilities staff has been preparing to move towards implementation of a wireless water meter reading system. This report and subsequent related agenda items, the compilation of more than a year of interdepartmental efforts, outline the necessary financial, technical, legal, and customer choice actions to successfully implement this program for Naperville's water customers.

Project History and Benefits

On June 18, 2019, City Council directed staff to issue a request for proposal (RFP) for implementation of an automated metering infrastructure (AMI) system for the Water Utility. The RFP was issued following completion of a business case analysis by West Monroe Partners, LLC, which explored the options and feasibility of implementing a new system within the utility. The business case showed that an AMI system had significant customer benefits and a lower total cost of ownership over continuing to read the meters manually.

The Water Utilities have approximately 43,500 water meters, which require monthly reads for billing. For numerous reasons, manual water meter reading is no longer viewed as a sustainable method to obtain water meter reads. This manual process currently generates estimated reads for our customers approximately 25% of the time. In addition, high employee turnover rates and environmental and man-made conditions, such as poor weather, animals and locked fences, affect the reliability and cost of the manual reading process.

With the continued decline in the number of utilities utilizing manual meter reading, staff is not optimistic about obtaining favorable bids if the manual meter reading contract is re-bid. In addition, performing this service with in-house staff was deemed cost-prohibitive, and did not afford any additional customer benefits.

Implementing an AMI system brings numerous benefits to both customers and the utility itself by allowing the following goals and objectives to be met:

- 1. Improved service levels:** Implementing an AMI system will allow the Water Utility to raise customer service levels. A new system would provide greatly reduced estimated reads, customer-side leak detection, more data to help inform customers about their usage and increased opportunities for customer water conservation. A new system will also allow for a streamlined process for final reads.
- 2. Increased accuracy and efficiency of data collection:** The current manual reading system is inadequate for a variety of reasons, primarily the City's challenge to provide accurate (non-estimated) monthly bills.
- 3. Improved Sustainability:** An AMI implementation would provide sustainability improvements resulting in fewer meter reading vehicles on the streets. The system will monitor meter health to better optimize meter replacement. The solution will also leverage several components of the existing Electric AMI system to maximize efficiency.
- 4. Improved experience with future utility billing technology:** The City intends to upgrade its utility billing platform to provide a better customer experience and capitalize on the meter reading data improvements available through this project and through past Electric Utility initiatives. This new billing platform coupled with modern meter reading technology and the Empower customer dashboard will enhance the customer experience overall and provide efficiencies for utility billing.

In addition to the above customer and process benefits, the Water Utility will have significantly more data to better manage the water system. This includes the potential to assist in ongoing efforts to reduce water loss in the distribution system prior to reaching customers.

DISCUSSION:

Procurement Process

In September 2019, Water Utilities issued RFP 19-214, Automated Meter Infrastructure, to procure a vendor for the installation of AMI hardware including meter interface units (MIUs) and data collection units (DCU's), AMI head end, integration of the city's meter Data Management System (MDMS) and associated software integration for a complete system.

Advertisement Date:	9/5/2019	Notices Sent:	232
RFP Opening Date:	10/15/2019	Planholders:	31
		Proposals Received:	5

Proposals were received from the following firms:

Aclara Technologies, LLC
Badger Meter Inc.
Core & Main / Sensus
Honeywell

United Systems

A selection team comprised of staff from the Water Utilities, Electric Utility, Finance, Legal Department and West Monroe Partners, LLC evaluated the proposals, which were scored based upon the criteria set forth in the RFP:

1. Capability, Capacity and Qualifications of the Consultant
2. Suitability and Quality of the Technology
3. Suitability and Quality of the Approach
4. Milestones and Deliverables
5. Outcomes to be Achieved

After review and scoring of the proposals, the selection committee invited the top three vendors - Aclara Technologies Inc., Core & Main/Sensus and Honeywell - to attend interviews. Following the completion of the interviews, the committee re-scored the vendors. The vendor with the highest qualification score, Aclara Technologies, LLC was recommended to start negotiations.

Several months into negotiations with Aclara, staff determined that it would be advantageous for the city to begin parallel negotiations with the next highest scoring firm, Core & Main. Parallel negotiations were conducted for several months. A statement of work, provider services agreement and final costs were negotiated with each firm. A total cost of ownership schedule was also developed for each firm.

Staff re-scored the final two firms a third time based upon the terms of each contract at the completion of negotiations, the finalized statement of work, the total cost of ownership for each solution, project technology and other factors such as vendor relationship, software platform and installation considerations. In all, over 50 categories were evaluated between the two vendors with a score of 1 - lowest to 3 - highest assigned.

A summary of the third round of scores is provided in the table below.

Provider/Vendor	Qualification Score	Initial Capital Cost	Total Cost of Ownership (20 Years)
Core & Main / Sensus	2.56	\$7,155,860.00	\$10,218,737.52
Aclara Technologies. LLC	2.23	\$7,170,362.90	\$10,991,611.78

Staff recommends the selection of Core & Main for the AMI system. Core & Main had the highest score upon completion of contract negotiations. The Core & Main solution had the lowest initial capital cost and lowest total cost of ownership over a 20-year period. Most importantly, the final contract negotiated with Core & Main contained the most favorable terms for the City, including contract completion date, outside install attempts and costs, fewer Data Collection Units, and location of Data Collector Units.

The anticipated completion date of the project is November 2021.

Financing Method and Financial Advisory Board Recommendation

Project financing will occur through a 20-year general obligation bond, which was the formal recommendation made by the Financial Advisory Board (FAB) on July 27. The board cited borrowing

as the best method to help maintain the City's cash position, take advantage of low interest rates and enhance financial flexibility as the City continues to navigate the pandemic's impacts.

Bonding will result in an estimated annual debt service payment of approximately \$442,000 from the Water Fund. The additional debt service requirements will result in annual increases to utility customers ranging between \$9 and \$11. The monthly increase is estimated between \$0.75 and \$0.90 for the duration of the 20-year payback.

Prior to 2020, various financing options were considered for the project. In addition to issuing debt, staff also considered the use of cash reserves. The most likely source for internal funding would have been revenues generated from the phosphorus removal surcharge, with a five-year payback plan to ensure no disruptions to the required IEPA regulatory improvements at the Springbrook Water Reclamation Facility set to begin in 2022. Staff also considered a hybrid approach of borrowing and use of cash reserves.

The previous options were negated by changes in the City's financial landscape following the onset of the COVID-19 pandemic. The combination of reduced interest rates on borrowing and increased value in available cash reserves presents a favorable option for a 20-year bond. By issuing debt, the City will also adhere to the concept of generational equity by spreading repayment over time for those benefitting from the project's capital assets while maintaining flexibility to use cash reserves throughout the pandemic's economic recovery.

Provider Services Agreement and Related Agreements

The Provider Services Agreement ("PSA") negotiated by the City with Core & Main, an authorized distributor of Sensus USA, Inc, provides for integration of the Sensus software with the City's various IT systems and provides for the purchase and installation of approximately 43,500 meter interface units (or "MIUs") which allow for transmission of water usage data to three elevated base stations, or data collector units. In turn, the base stations pass the data on to an interface which gathers and processes network data, which then sends it on to the City's existing data management software in use by the Electric Utility. The PSA also provides the City with the ability to acquire a license for up to 15 individuals to use the VPie Software as our meter exchange solution in order to replace the current paper-based method of tracking installation of new meters and MIUs throughout the City with digital documentation.

An extensive Scope of Work is attached as part of the PSA along with service and product warranties. The MIU warranty provided through Core & Main by Sensus provides for a full warranty for a period of 15 years with an additional five years of reduced prorated warranty coverage. The base stations have a 12-month warranty from shipment. Further, Sensus (through Core & Main) provides a system warranty for a maximum of three years. In addition, Core & Main facilitated the creation of a three-party agreement between Sensus, Core & Main, and the City by which Sensus has agreed to modify certain provisions with respect to its standard warranties, and which further provides for an additional three-year extended system warranty to commence at the end of the initial system warranty.

In addition, the City will enter into Software License and Spectrum Lease Agreement with Sensus, to be approved as part of a corresponding agenda item, by which Sensus software will be used by the City and by which the City will be provided license rights to use an FCC frequency for the City's Water AMI project. Other agreements which are to be considered, as set forth in the Resolution attached to the related agenda item, include a Base Station Maintenance Agreement and a VPie

Software Billing Agreement for the meter exchange solution described above.

Customer Bill of Rights

Naperville's Electric and Water Utilities have customers' security, privacy and health at the forefront of their public utility initiatives, along with customers' rights to options. The adoption of the aforementioned Provider Services Agreement for the installation of Water AMI requires a text amendment to the municipal code to reflect the automatic reading of water meters in addition to the electric meter reading provisions already outlined in the code.

Two specific sections of the code will be amended; the Customer Bill of Rights and an Opt-Out provision allowing for the manual versus automatic reading of meters. These sections were first codified when the City introduced automated electric meter reading. The code will be amended to place both of these provisions in the front of Title 8, in a new Chapter .5, Public Utilities, and will be applicable to both Water and Electric Utility customers.

The Customer Bill of Rights, currently applicable to Electric customers, will be amended to add the same or analogous protections to Water customers. None of the existing Bill of Rights are being diminished or removed; this simply now covers all Water and Electric customers in advance of Water AMI implementation.

Existing electric customers have the option to have their meter read manually, not automatically, by a meter reader for a one-time fee and an additional charge each month as part of the utility's commitment to customer choice. In alignment with this principle, this opt-out provision will now be available to water customers as well as part of Water AMI implementation.

Expansion of Existing Meter Data Management Systems (MDMS)

In 2010, the Electric Utility purchased the Harris Meter Data Management System (MDMS) to house all meter and customer data for the utility to facilitate utility billing. This system provides a single repository for this information and allows the utility to analyze aggregate consumption patterns to assist in rate development as well as to make better decisions for transformer sizing throughout the utility. Additionally, data in the MDMS is used for the Empower dashboard, which provides customers an easy way to view their consumption in daily, weekly, monthly and yearly formats.

To simplify the utility billing process, as well as provide a single platform for utility metering data, the existing Harris system will be expanded to include Water's information as part of Water AMI implementation. The cost to perform the integration with the Sensus system as well as support water rate analysis and non-revenue water reduction software is \$247,580. This cost includes the integration itself and the analysis module's capital expenditure of \$216,694 and the first year O&M annual software maintenance of \$30,886. This common platform will be hosted on Electric's infrastructure and funded out of the Water Utility.

Public Utilities Advisory Board Discussion and Recommendation

PUAB discussed this project at their August 25th meeting. Staff provided an overview of the final pricing and the various customer service and operational improvements that will result from an AMI system. The Board was pleased to see the final pricing was lower than the planning level estimates used in the original business case. The Customer Bill of Rights was also discussed, and the Board felt it was important to provide the same protections to water customers that currently exist for electric customers. At the conclusion of the staff presentation and the group discussion on these

matters, the Board recommended moving forward with the Water AMI implementation and the necessary code amendments for the Customer Bill of Rights.

Related Files

The following agenda items are related to this staff report and provide necessary approvals for project implementation:

- Approve the award of RFP 19-214, Automated Meter Infrastructure, to Core & Main for an amount not to exceed \$7,155,860 plus a 3% contingency and affirm bonding as the project financing source. (Item 2 of 5)
- Adopt the resolution approving a Provider Services Agreement between the City and Core & Main LP for design and installation of the Water AMI Project and related agreements. (Item 3 of 5)
- Waive the first reading and pass the ordinance amending Title 8 (Public Utilities) of the Naperville Municipal Code (Customer Bill of Rights) (Item 4 of 5; requires 6 positive votes)
- Approve the award of Sole Source Procurement 20-322, MDMS Integration Software for Water Utilities AMI, to Harris Computer Corporation. for an amount not to exceed \$247,580 (Item 5 of 5)

FISCAL IMPACT:

CIP #: WU040 - Advanced Meter Infrastructure (AMI) Project

A total of \$1,000,000 is budgeted for WU040 in 2020 for the Water AMI project. The remainder of the project cost will be budgeted appropriately in 2021.

Account Number	Fund Description	Total Budget Amount
41251500-551502	Water & Wastewater Fund	\$12,119,788

Per Council directive, contingency on construction projects is set at 3% on projects over \$500,000 and 5% on projects under \$500,000.