

AGENDA
MAPLE PLAIN CITY COUNCIL – WORKSHOP MEETING
MAPLE PLAIN CITY HALL
JANUARY 20, 2014
5:30 PM

1. **CALL TO ORDER**
2. **ADOPT AGENDA**
3. **UPDATE AND INFORMATION SHARING ON THE MAIN STREET AND RAINBOW PROJECT**
4. **WATER METER REPLACEMENT PROJECT UPDATE**
5. **PUBLIC WORKS VACANCY**
6. **OTHER ISSUES**
7. **ADJOURNMENT**

Memorandum

To: Mayor and City Council Members
From: Tessia Melvin, City Administrator
Date: January 20, 2014
Re: Update and Information Sharing on the Main Street and Rainbow Project

BACKGROUND

The City of Maple Plain will be improving services for the Main Street West and Rainbow Avenue – Utility and Street Improvements. This project includes reconstruction of Main Street West from Halgren Road (County Road 83) to the west City Limits and Rainbow Avenue from Main Street West to Parkview Road. Generally, this project consists of sanitary sewer, water main and storm sewer improvements, curb and gutter installation, and street reconstruction.

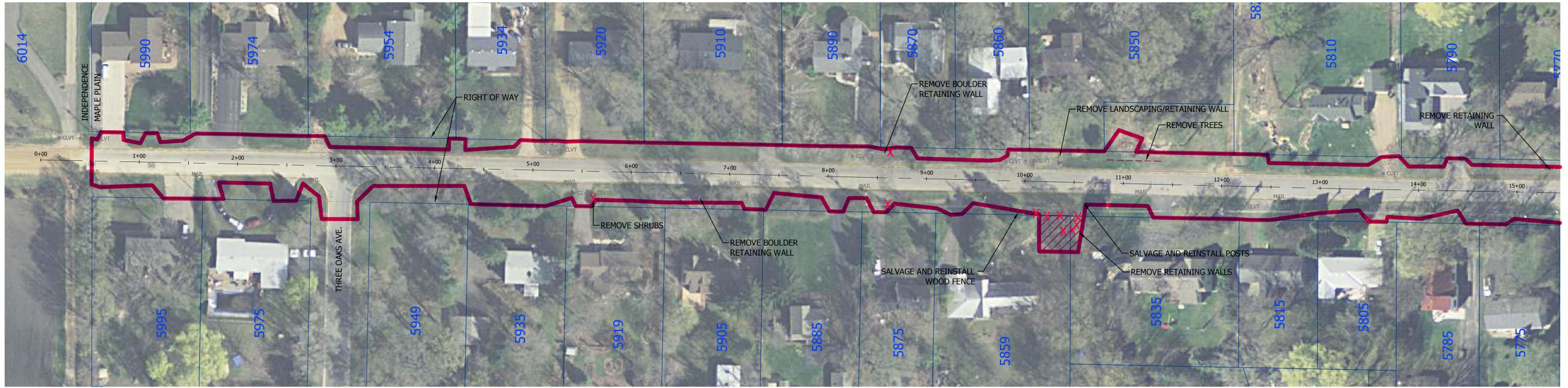
CURRENT SITUATION

Staff will be holding a Public Information Meeting on Thursday, January 23, and want to ensure that the City Council has all of the information they need to help residents understand the project and address any concerns. The City Engineer has provided nine attachments and will be available at the meeting with another colleague.

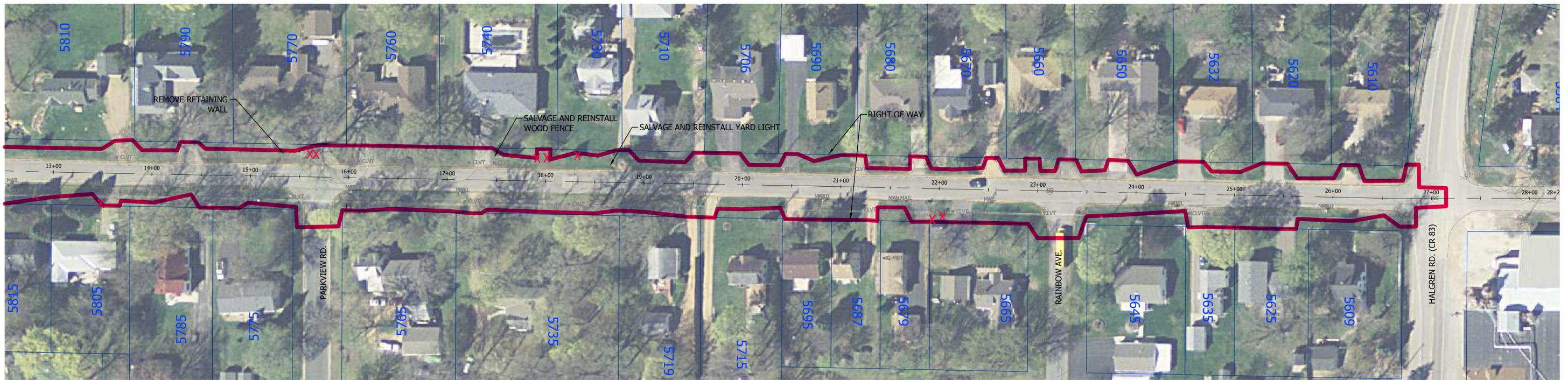
**Maple Plain - Main Street and Rainbow Avenue Utility and Street Improvements
Proposed Project Schedule - Revised 01/16/2014**

Item	Date
Council Worksession (Rural/Urban Section & Rainbow Park)	1/20/2014
60% Plans to City Staff (except storm and street)	1/21/2014
Public Information/Neighborhood Meeting	1/23/2014
90% Plans, Specifications and Opinion of Probable Cost to City	2/10/2014
Approve Plans and Specifications and Set Bid Date	2/24/2014
Pre-Bid Meeting	3/13/2014
Bid Opening	3/24/2014 or 3/25/2014
Award Contract	3/24/2014 or 4/7/2014
Preconstruction Meeting	April 2014
Neighborhood Meeting	April/May 2014
Begin Construction	May 2014
Substantial Completion	September/October 2014
Assessment Hearing	October/November 2014
Final Completion	Spring 2015
Record Drawings to City/Project Close-out)	Spring/Summer 2015

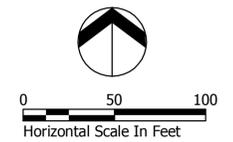
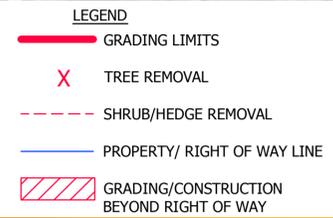
Submit Ad to The Pioneer	2/25/2014
Submit Ad to Finance & Commerce	2/25/2014
Publish Ad in Finance & Commerce	2/26/2014
Publish Ad in The Pioneer	3/1/2014



MAIN STREET W - WEST HALF



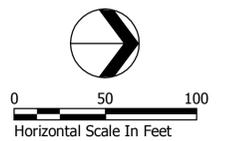
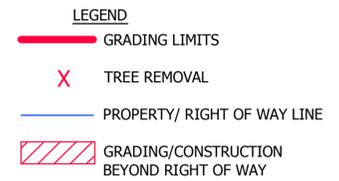
MAIN STREET W - EAST HALF



MAIN STREET W GRADING LIMITS - URBAN SECTION

MAPLE PLAIN, MINNESOTA
 MAIN ST W AND RAINBOW AVE UTILITY AND STREET IMPROVEMENTS

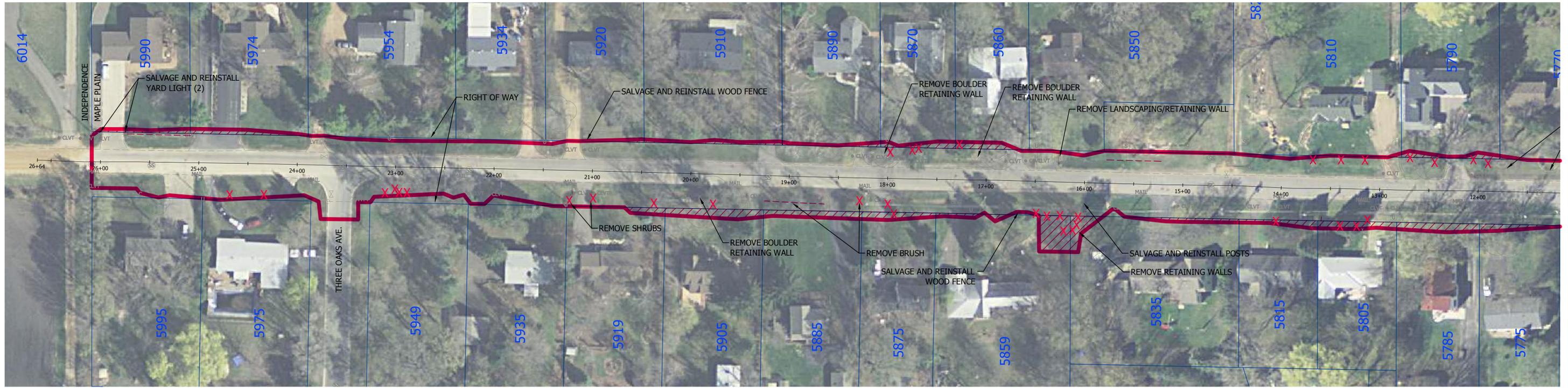
FIGURE 2



RAINBOW AVENUE GRADING LIMITS - URBAN SECTION

MAPLE PLAIN, MINNESOTA
 MAIN ST W AND RAINBOW AVE UTILITY AND STREET IMPROVEMENTS

FIGURE 3



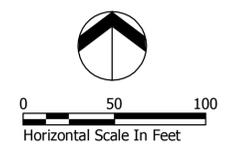
MAIN STREET W - WEST HALF



MAIN STREET W - EAST HALF

LEGEND

- GRADING LIMITS
- X TREE REMOVAL
- - - SHRUB/HEDGE REMOVAL
- PROPERTY/ RIGHT OF WAY LINE
- ▨ GRADING/CONSTRUCTION BEYOND RIGHT OF WAY



MAIN STREET W GRADING LIMITS - RURAL SECTION

MAPLE PLAIN, MINNESOTA
 MAIN ST W AND RAINBOW AVE UTILITY AND STREET IMPROVEMENTS

FIGURE 1



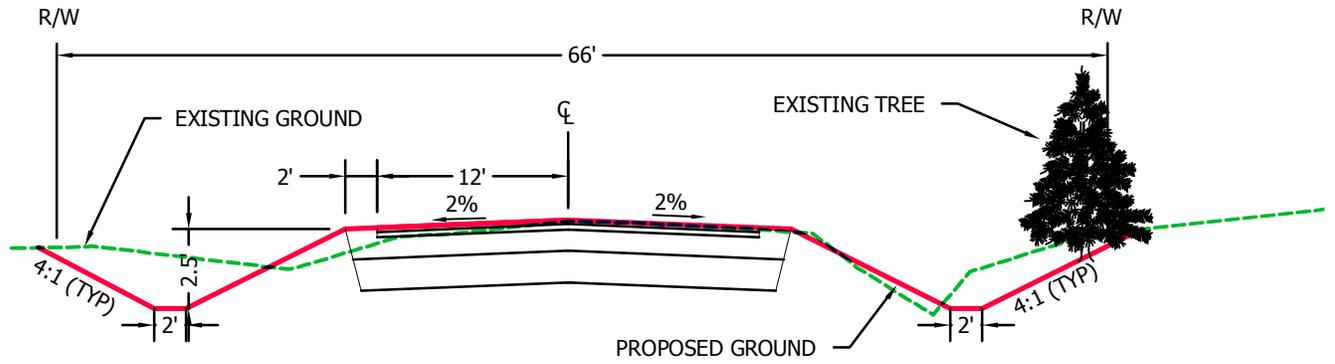
Plot Date: 01/17/2014 - 8:46am
 Drawing name: V:\193802390\193802390\CA\DWG\For Council Workshop 1-20-14\Plan View - Rural.dwg
 Xref: 193802390_XSXT, 193802390_MKP-AdjListed

Main Street West / Rainbow Avenue - Utility and Street Improvements

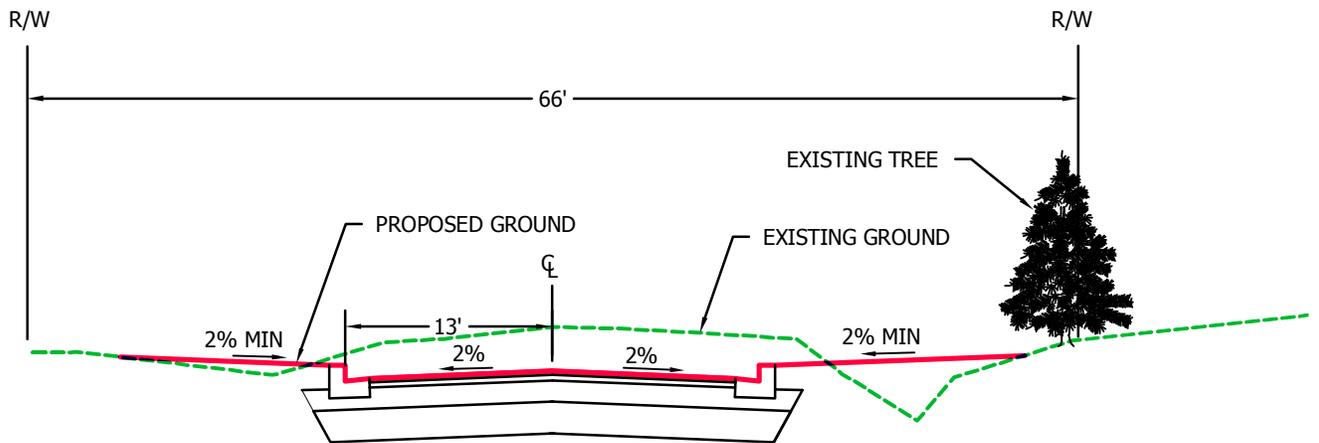
Feasibility Report

Estimated Assessments

Street - Percentage Assessed	Average Cost Per Parcel - Urban	Average Cost Per Parcel - Rural	Urban - Average cost per year, (10 years, 5.82% interest)	Urban - Average cost per year, (15 years, 5.82% interest)	Urban - Average cost per year, (20 years, 5.82% interest)	Rural without Walk - Average cost per year, (10 years, 5.82% interest)	Rural without Walk - Average cost per year, (15 years, 5.82% interest)	Rural without Walk - Average cost per year, (20 years, 5.82% interest)
Main Street West - 20%	\$ 8,266.13	\$ 7,386.03	\$ 1,142.83	\$ 863.24	\$ 728.86	\$ 1,021.15	\$ 771.33	\$ 651.26
Main Street West - 35%	\$ 14,466.22	\$ 12,924.85	\$ 2,000.02	\$ 1,510.37	\$ 1,275.55	\$ 1,786.92	\$ 1,349.76	\$ 1,139.64
Rainbow Avenue - 20%	\$ 7,678.57	N/A	\$ 1,061.60	\$ 801.88	\$ 677.05	N/A	N/A	N/A
Rainbow Avenue - 35%	\$ 13,437.97	N/A	\$ 1,857.86	\$ 1,403.35	\$ 1,184.89	N/A	N/A	N/A



RURAL SECTION



URBAN SECTION

CROSS SECTIONS - MAIN STREET WEST STATION 21+00

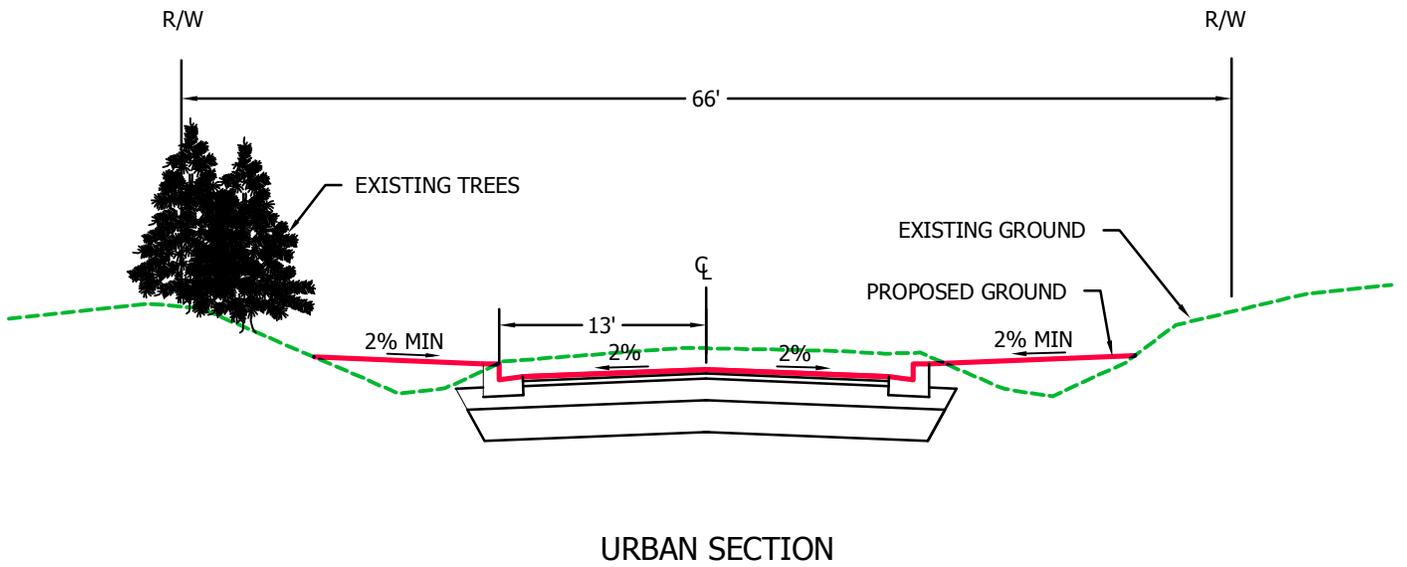
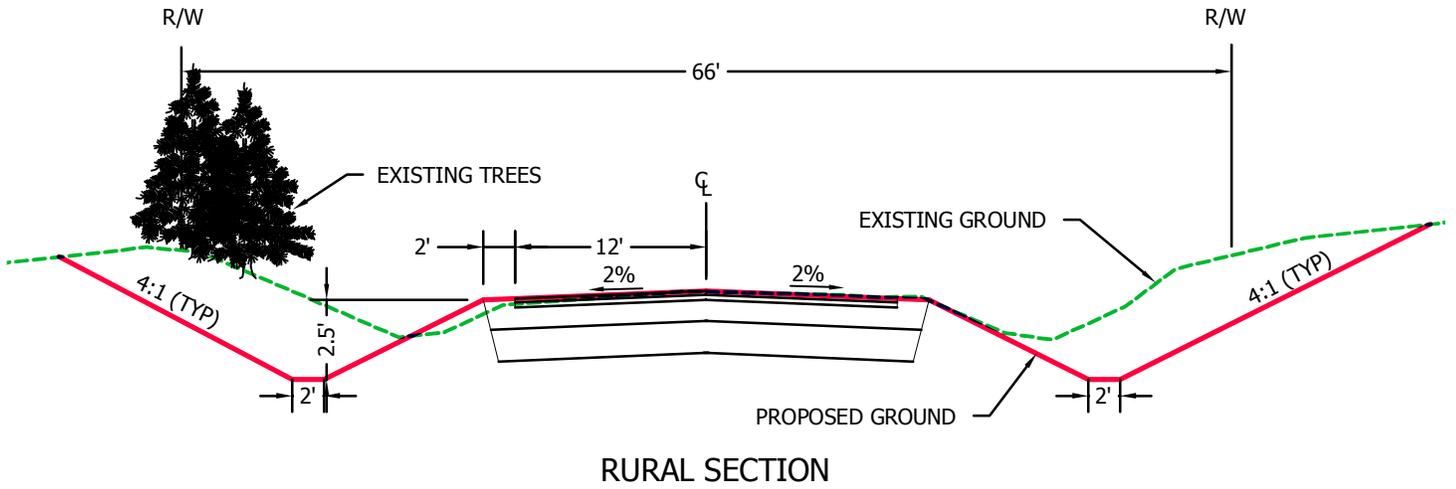
CITY OF MAPLE PLAIN

FIGURE: 2

MAIN STREET W AND RAINBOW AVE UTILITY AND STREET IMPROVEMENTS



2335 Highway 36 W
St. Paul, MN 55113
www.stantec.com



CROSS SECTIONS - MAIN STREET WEST STATION 9+00

CITY OF MAPLE PLAIN

FIGURE: 1

MAIN STREET W AND RAINBOW AVE UTILITY AND STREET IMPROVEMENTS



2335 Highway 36 W
St. Paul, MN 55113
www.stantec.com

18+00

19+00

20+00

MAIN STREET W

21+00

22+00

EP: 13+14.88+00

13+00 13+15

1019

5735

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5715

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EXISTING PIPE AND OVERLAND FLOW ROUTE

EXISTING PIPE AND OVERLAND FLOW ROUTE

PARK BOUNDARY

PLAYGROUND

G-METER

PT: 10+30.60

PC: 9+23.78

RAINBOW AVE



Memorandum

To: Mayor and City Council Members
From: Tessia Melvin, City Administrator
Date: January 20, 2014
Re: Water Meter Replacement Project Update

BACKGROUND

The City's water meter for residential and commercial are in need of replacement. Staff began exploring this option by replacing the meter reading system with a radio-read system. This is estimated to cut staff time for two individuals from one week to four hours. However, the vendor that staff was working with had some internal problems and did not have a sales representative in this area.

During the City's interim period, staff looked at another consultant; however, this equipment would include electronic mount system. This would increase the efficiency even more than the radio-read system, but would require additional infrastructure costs. The current water meter system is not efficient and effective. Attached are some spreadsheets on the estimated lost revenue of the City due to inefficient water meters.

RECOMMENDATION

Staff is suggesting at using both RFPs in the bidding process so that the Council can compare comparable products with each other and make a decision that is best for the City. Staff is recommended that bids include separate pricing for products and installation. Attached are the two RFPs created by two vendors.

**THE CITY OF MAPLE PLAIN
WATER METER REPLACEMENT SPECIFICATION
FOR METERS, HARDWARE, SOFTWARE
AND RADIO FREQUENCY METER READING SYSTEM**

GENERAL INFORMATION

0.1 Purpose of Request for Proposals

The purpose of this request for proposals is to solicit sealed proposals from qualified vendors to establish a contract for the purchase of a state-of-the-art radio frequency walk-by/drive-by automated meter reading (AMR) system. Under this specification a single manufacturer shall supply all equipment necessary to furnish a fully functional automated meter reading management system. While the primary function shall be to provide accurate and timely meter reading data for billing purposes, the system shall also furnish consumption and other pertinent data to facilitate enhanced operation and management of the total water distribution system, as described herein.

0.2 Overview

The Radio Frequency Meter Reading System shall collect water consumption, leak and tamper data for all residential, commercial, and industrial water meters within the City of MAPLE PLAIN utility system and the system shall communicate all collected data to the utility billing system. The system shall also have the capability to record complete Water Meter Data Profiling information from the Water AMR Module or related device. That data must be available for download from the AMR device at the City's request. Meter radio transmitters shall be 100% compatible with the City's existing water meters. In addition, radio transmitters shall be compatible with new water meters and encoders manufactured by a minimum of 4 other water meter manufacturers.

0.3 Implementation

The successful vendor shall provide all meters, meter upgrades, hardware, software, support and training necessary to complete this project.

0.4 Billing Software Compatibility

The City of MAPLE PLAIN uses **BANYON** billing software. All new route management software and all new meter mounted radio transmitters must be 100% compatible with the City's existing software. Route management software provided as part of the contract must be capable of uploading and downloading meter reading data from the City's billing software. The successful vendor must document that the proposed Route Management software is compatible with and has been interfaced with the City's existing Utility Billing Software. The City staff utilizes 100% IBM compatible computers.

0.5 Key Considerations

Key considerations in our decision making process include: A one piece integral register/radio package with no exposed wiring, availability of complete Data Logging capability, the quality and availability of bidder's local customer and system support, the bidding company's experience in AMR technology, the proposed system's reliability and flexibility to migrate to network technologies.

PART 1

TECHNICAL SPECIFICATIONS FOR WATER METERS

Cold Water Meter Specifications - Displacement Type

1. Type: Magnetic drive sealed register, nutating disc or oscillating piston, positive displacement type. Due to noise and/or low accuracy, single-jet, and multi-jet meters are not allowed. Plastic electronic style meters will not be considered.
2. Length and Size: Must conform to American Water Works Standard C-700 as most recently revised.
3. Cases: All meters shall have a non-corrosive, low lead, waterworks bronze outer case.
4. Accuracy and Head Loss Test: Because the Utility feels no meter reading system can be a substitute for poor quality meters, the Utility requires that all meters shall conform to the flow rates and head loss standards listed in Table #1. These standards may exceed AWWA C-700, current revision, test flows, head loss and accuracy standards.

TABLE #1				
Size	Safe Max. Operating Capacity	Maximum Allowable Pressure Loss	Accuracy % @ Min. Flow Rate	+/-1.5% Test Flow
5/8" x 3/4"	20 GPM	5.0 PSI / 15 GPM	98.5% @ 1/4 GPM	1/4 - 20 GPM
3/4"	30 GPM	5 PSI / 25 GPM	97% @ 3/8 GPM	3/4 - 30 GPM
1"	50 GPM	6.5 PSI / 50 GPM	95% @ 3/4 GPM	1-1/4 - 50 GPM

Cold Water Meter Specification - Turbine Type

1. Turbine Meters: Meters to be furnished under this specification will be of the Turbine Type Class II, and will equal or exceed all requirements of AWWA Standard C-701-88. Turbine meters sizes 2" through 6" shall be made of low lead bronze.
2. Encoder: The electronic encoder supplied with turbine meters shall be of the same specification and the same manufacturer as those specified for the 5/8" x 3/4" through 2" positive displacement meters.

Cold Water Meter Specifications - Compound Type

1. Compound Meters: Meters shall equal or exceed all requirements of AWWA Standard C-702-92. All compound meters shall have a built in test plug for field-testing.
2. Meters to be furnished under this specification shall be low lead and be of the single main case type, with the high flow side, low flow side, and cross-over valve assembly built into one main meter case.
3. Encoder: The electronic encoder supplied with compound meters shall be of the same specification and the same manufacturer as those specified for the 5/8" x 3/4" through 2" positive displacement meters.

PART 2

TECHNICAL SPECIFICATIONS FOR DIGITAL ENCODER REGISTERS

Mechanical Specification for Encoder Register – Absolute Type for Water Meters

1. Each water meter shall have available an electronic wheel type encoder register of the straight reading type.
2. The encoder shall consist of a mechanical local register with a test hand that covers the entire dial face, a mechanical totalizing odometer, and electronic circuitry to communicate an industry standard ASCII protocol to the radio device. LCD or other types of electronic totalizer registers are not acceptable. It shall be capable of direct visual reading at the meter and shall have a full test dial on the face of the register.
3. All reduction gearing, number wheels, and electronics shall be contained in a permanent, hermetically sealed, tamperproof enclosure made of glass and brass. Plastic register enclosures are not suitable for pit, submersed or high humidity environments and will not be acceptable.
4. A totally enclosed lead wire shall be factory connected to the encoder. The connection shall be fully factory sealed to prevent moisture intrusion. Terminal screws or custom connectors, which may lead to moisture intrusion into the register, are not acceptable.
5. The encoder register shall have a low flow indicator color-coded red to indicate the register reads in gallons.
6. The encoder register shall be tamper protected through the use of a specially designed stainless steel screw. Plastic push pin type tamper detection shall not be acceptable.
7. The encoder shall be manufactured by the same company as the meters.

PART 3

SPECIFICATIONS FOR AN AUTOMATED METER READING SYSTEM

SYSTEM DESCRIPTION

1. The Automatic Meter Reading (AMR) System shall be a one-way bubble-up RF system capable of reading all water meters within the system. The AMR system shall have a demonstrated & documented migration path to new and upcoming network technologies.
2. The AMR system shall utilize a non-licensed FCC radio frequency band to communicate meter-reading data, tamper conditions and leak detection notification to a walk-by or drive-by system.
3. The AMR system shall be comprised of a radio transmitter located at the water meter that transmits readings, tamper and leak data to the Receiver when the Receiver is in the proximity range of the transmitted signal.
4. The radio transmitter and encoder register must be of the one piece, integral mount design with no exposed wires of terminal screw connections.
5. The AMR system shall be able to process and maintain the information gathered from each Transmitter in a database for billing purposes.

PERFORMANCE REQUIREMENTS

1. In combination with Transmitters located at the meter, the AMR system must be capable of performing the following functions:
 - 1.1. **METER READING** - The Transmitter shall bubble-up and transmit readings every four seconds.
 - 1.2. **HIGH RESOLUTION** - To provide useful consumption data the AMR system shall record usage through the meter to the closest one (1) gallon increment on residential sized meters, 5/8" through 1". For 1 1/2" and 2" meters usage shall be recorded to the nearest ten (10) gallons.
 - 1.3. **LEAK DETECTION** – To assist in the timely identification of potential water leaks, the transmitter on water meters shall report information to the utility in regard to potential leaks.
 - 1.4. **DATA LOGGING AND PROFILING** – To assist in the City's customer service and efficiency efforts, each AMR module must contain complete Data Logging and Profiling functionality. The modules must have the ability to store up to 21,000 unique data points and be available for download by the City at their request.

COMMUNICATION PARAMETERS

1. The AMR system shall be comprised of a radio frequency transmitter and receiver. The transmitter and Receiver will operate as a non-licensed system in the 902 to 928 MHz utility frequency band.
2. The transmitter shall operate at a nominal 916.45 MHz+/- 1 MHz, requiring only FCC certification under part 15, Subpart C and no customer license.

MOBILE METER READING HARDWARE & SOFTWARE REQUIREMENTS

ROUTE MANAGEMENT SYSTEM

1. **Route Information:** Utility shall be able to select up to five fields from route management software to be used for the purpose of meter reading.
2. **Meter Reading:** The meter Transmitter sends data to the AMR reading system including: ID number, meter reading and tamper or leak (optional) status.
3. The mobile reading system must be portable and adaptable to any vehicle with a 12VDC cigarette lighter.

HANDHELD READING SYSTEM

1. The handheld reading system shall be comprised of a handheld data collector with an integrated receiver board and no external antenna for reading RF transmitters.
2. The handheld must be of a rugged design sealed to meet an IP67 waterproof rating of up to 3' submerged, operate in extreme temperature conditions (-22°F to 131°F / - 30°C to 55°C), withstand drops of 5' to concrete, and shall contain a 40-key alphanumeric keypad with tactile operation for data entry. The handheld shall operate on a Windows CE platform.
3. The handheld shall contain a powerful 2200 maH lithium-ion battery to prevent memory and to extend field life.

4. A sharp color touchscreen display is required to provide eight rows of twenty characters each to provide information necessary for meter reading.
5. To meet the needs of different utilities, the handheld operator shall be able to select five fields from the route management software for display on the account records in the handheld. The handheld reading software shall also have leak detection capabilities when reading.
6. The handheld system shall provide a flexible solution to read manual or RF transmitters broadcasting in the 902 – 928 MhZ bandwidth.
7. Handheld shall utilize FTP protocol through a RS232 serial connection or a 4GB flash drive to upload and download account information to the route management software. A Main Line and Secondary Loader-Charger assemblies shall be available to maintain the handheld batteries and to communicate route data from the host PC.
8. Handheld shall incorporate an IR data port and programming software that can be used for uploading and downloading account information and to program ORION transmitters while in the field or in the office.

SOFTWARE REQUIREMENTS

1. The AMR system shall be a Geographic Information System (GIS) based meter-reading system. Software shall be available to meet the utilities reading system requirements.
2. Water leak detection shall be available with the software. The Transmitter sends an alarm condition to the meter reading software when the meter is read. The system reports the leak condition when a one hour window of no usage is not found within a 24 hour time period. The system shall automatically reset when the next one-hour window of no usage is found.
3. Software shall include:
 - 3.1 GPS system for locating the reading vehicle GIS database for meter reading
 - 3.2 MAP based user interface unread meter list interface also available display of potential leak conditions.
 - 3.4 Backup memory for previously read meters
 - 3.5 The AMR system shall have the ability to store all utility account readings. A 2GB jump drive can be used to upload or download approximately 8,500 records. A complete reading system upload or download can be accomplished through a system network card.
 - 3.6 Route management software shall be provided which allows transfer of route information from the reading system to the utility computer. Software shall provide splitting, re-sequence and combining of routes. Management reports shall include meter reading, exception and productivity information along with standard and customized reporting features.
 - 3.7 Route management software requires an interface program be written to allow the billing software and the route management software to communicate with each other. Appropriate documentation regarding interface requirements must be supplied to the billing vendor. Successful bidder must provide assistance to the utility in order to complete the interface program.

FCC REQUIREMENTS

1. The Transmitters and Receiver shall be certified by the manufacturer and shall not require a license under Part 15, Subpart C.

INSTALLATION, TRAINING AND SUPPORT

- 1 The manufacturer's certified training personnel shall set-up and test the reading system and route management software at the utility location. Upon successful completion of the set-up, the manufacturer's certified training personnel shall provide a minimum of two (2) days training at the utility site on the operation and maintenance of the system. Training shall include training of field technicians on the installation of field transmitters. Initial configuration and initial test are the complete responsibility of the successful bidder. Follow up training will be available. The bidder must provide all on-going support and service.

WARRANTY

1. All hardware included with the reading system shall include a minimum 1-year manufacturers warranty on all hardware and software components of the system. Annual extended warranties are also available. Software supplied with the system shall be updated and maintained by the manufacturer for a period of one (1) year from the date of system purchase, for compatibility with all other components of the system. Annual software service agreements are also available. The manufacturer shall also supply a system support diagnostic program to insure timely response and assistance in the event of temporary system malfunction.

EXPERIENCE AND PRODUCT SUPPORT

Experience

- 1 Manufacturer shall supply references of three systems of similar size and installation type that have been sold, not trials or pilots.

Product Support

2. Manufacturer shall provide continued support of the AMR system after completion of training. Technical support shall be available 24 hours a day, 365 days a year.

THE CITY OF MAPLE PLAIN
WATER METER REPLACEMENT,
AUTOMATIC RADIO FREQUENCY
MOBILE METER READING/TOUCHREAD SYSTEM
PROJECT SPECIFICATIONS

The work included under this contract and covered by these specifications consists of supplying and installing a completely operational two-way migratable radio frequency AMR system in the City of Maple Plain (Here after defined as "the City") capable of being migrated to a fixed base AMI system. This work involves, but is not limited to, providing and installing new water meters with true encoded registers, water meter Smart Point units, accessory wire, seals, gaskets and all necessary hardware.

The successful Contractor will supply and install a MOBILE METER READING vehicle based AMR system. The system supplier will provide and install one (1) handheld meter reading and endpoint installation device capable of capturing GPS locations as well as having the ability to be used as an installation and testing tool. These devices will be installed at the same location where the City's current meter reading devices are installed.

The system will be complete and operational, capable of automatically producing operational and accounting reports, including up to two (2) days of on-site start-up services and training for utility personnel in all aspects of the hardware and software.

A mobile meter reading device will be supplied to permit the Utility to read meters by using any vehicle in their fleet via radio signals utilizing a primary licensed frequency on 900 - 950 MHz band. The MOBILE METER READING DEVICE must be able to receive meter readings a minimum of 2,500 feet from meter transceiver units. The complete MOBILE METER READING DEVICE package, as a minimum, will include the following:

- A laptop computer connected to the mobile meter reading device with the capability to handle multiple reading of radio equipped meters and the storage of meter reading data.
- Mobile Meter Reading Device radio operating software.
- A magnetic mount antenna that connects to the MOBILE METER READING DEVICE for optimal radio reading performance.
- A power cable capable of plugging into a cigarette lighter to power the reading device.
- Applicable connector cables for the computer and MOBILE METER READING DEVICE.

updating of metering data. Meter Data Manager (MDM) software will deliver metering data to the billing system in a standard format when utilizing a fixed base system.

All system components will be manufactured, supplied and serviced by one vendor.

The AMR devices will interface to true encoder registers and provide full support to the UI-1203, or prior approved protocol.

The system will have a highly robust and secure communication link, with high immunity to radio interference, and should be based on a single, licensed primary use frequency in the 900-950 MHz range.

AMR Spec
~~MXU~~ Electronic/Functional Specifications

- The transmitter will utilize a single licensed frequency in the 900 – 950 MHz band. The frequency will be licensed by the FCC as a primary use frequency and owned by the manufacturer of the transmitter and sub-licensed to the City.
- The transmitter will use *100 milliwatt or more mW* ~~high-powered 2 Watt~~ transmission in order to obtain a long range of reception at the receiver.
- The transmitter will obtain data from the encoder register, matching the electronic odometer read of up to eight (8) digits.
- Vendor will provide a 20 year prorated warranty for the transmitter electronics and battery.
- All messages transmitted will include the unique transmitter ID and unique register ID.
- The transmitter will support the UI-1203 protocol and be capable of transmitting all data generated by the register. *exclusive*
- Only current data will be transmitted. The reading and other data parameters will be retrieved from the register immediately before their transmission.
- Minimum programming will be required at installation.
- A successful installation will be confirmed to the installer while still at the installation site.
- The transmitter will have the ability to send a signal in a Normal mode, Boost mode and Buddy mode. *exclusive*
- A short-range link (radio or magnetic loop) will enable a field technician to set the transmitter's timing interval in the field using a HHD (Hand Held Device). The *exclusive*

of the collected data. The unit will also allow for note input and the collection of meter readings not on the pre-defined route in any of the three reading methods.

Successful meter readings will be confirmed by an audible tone to alert the meter reader in the event of a faulty or missed reading. The device will provide a programmable audible warning for a potentially dangerous or special warning situation which may be associated with a particular meter location.

In addition, the RF handheld reading device will include, but not be limited to, the following features for all reading methods:

- Microsoft Windows Mobile 6 Operating system
- Microprocessor: Intel X Scale processor, 624 MHz
- Operating Memory: 128 MB SDRAM
- Data Storage Memory: 1 GB
- Internal RF antennae.
- Alphanumeric keypad
- Durable weatherproof housing
- 3.0" wide x 2.3" high or larger color display (3.8" diagonal or greater)
- Backlit displays
- Field adjustable contrast displays
- Tactile response keypad
- Weigh less than three pounds (48 oz.)
- Field adjustable audible tone
- 1 GB megabyte of memory
- Durable carrying belt with hand straps
- Watertight gun connectors
- Compatible to read Sensus Touch Read Meters
- Function Keys
- Durable weatherproof housing.
- Ten (10) to twenty (20) line character back-lighted color LCD display with the ability to display text and graphics.
- Field adjustable contrast for display.
- Tactile response keypad.
- Weigh – 29.5 Ounces
- Field adjustable audible tones.
- Durable carrying belt with hanger clips.
- Watertight reading gun connectors.
- 5 function keys.
- Escape key.
- Directional scrolling pad – up, down, left and right.
- Next record and previous record key.
- User defined note code function.
- HELP function.
- Flexible SEARCH capabilities.

“Touch” Reading Gun Accessory: The “touch” reading gun accessory will be a cordless meter reading gun that transmits “touch” reading information to the RF handheld device via a low-power bi-directional RF link. The reading gun will be capable of transferring “touch” reading information to the RF handheld device from a minimum of twenty (20) feet distance from the handheld device. Multiple reading guns will be capable of interfacing with more than one RF handheld device. Each reading gun will have memory sufficient to hold up to ninety nine (99) “touch reads”. The gun will be capable of holding complete route information for up to ten (10) individual records. The reading gun will also be capable for use as a standalone reading gun or “visual reader”.

The reading gun will be powered by a rechargeable NiCad battery pack. The gun’s display will be a two (2) line by twenty (20) characters LCD capable of displaying meter reading information and route information. The gun will have three (3) user buttons (scroll up, scroll down and toggle) between display of meter reading and route information data and a trigger.

As a secondary operation, the RF handheld will also have the capability of providing optional programming features for the Transmitter.

Communication/Charging Stand: The communication/charging stand will be housed in a suitable material that can be wall or table top mounted. It will have the capability of recharging the handheld unit and also provide the communication port connection to the computer. The stand will be capable of recharging a handheld unit in fourteen – sixteen (14 – 16) hours.

The stand will be able to accommodate any handheld of the same manufacturer and model series regardless of the handheld's operating capabilities (i.e., manual read type, touch read type, radio read type). The stand will hold one handheld at a time and be capable of connecting in a series to accommodate additional units.

FCC Regulations: All equipment will comply with current Federal Communication Commission (FCC) requirements which include proper labeling of applicable units. The Bidder will have supporting documentation available upon request to verify compliance.

Installation and Training: Complete installation and operating instructions will be included for all of the supplied hardware and software equipment. Proposal must include any additional costs for training and assistance to install and begin operation of the handheld units. The vendor will also inform the customer what pre-installation activities are to be completed and what support material will be needed for the initial installation.

Performance Warranties: In evaluating bid submittals, warranty coverage will be considered. The vendor will be required to state its warranty and/or guarantee policy

PERFORMANCE

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as listed below without affecting long-term accuracy or causing any undue component wear. Maximum head loss through the meter / strainer assembly shall not exceed those listed in the following table per meter size. The meter must be warranted to perform to the accuracy levels set forth below for twenty (20) years from the date of shipment.

MINIMUM OPERATING CHARACTERISTICS

Meter Size	Low Flow (95% Min.)	Operating Range (98.5-101.5%)	Pressure Loss (Not to Exceed)	Maximum Operating Pressure
5/8"	0.03 GPM	0.11 – 25 GPM	4.0 PSI @ 15 GPM	200 PSI
5/8" x 3/4"	0.03 GPM	0.11 – 35 GPM	2.0 PSI @ 15 GPM	200 PSI
3/4"	0.03 GPM	0.11 – 35 GPM	2.0 PSI @ 15 GPM	200 PSI
1"	0.11 GPM	0.4 – 55 GPM	2.0 PSI @ 25 GPM	200 PSI

PRESSURE CAPABILITY

System shall operate up to a working pressure of 200 pounds per square inch (psi), without leakage or damage to any parts. The accuracy shall not be affected by variation of pressure up to 200 psi.

ADVANCED REPORTING

The system must be capable of having at the minimum the following reporting capabilities:

- Programmable leak detection
- Programmable reverse flow detection
- Empty pipe alarm
- Tamper alarm

Programmable data logging capability must include:

- Peak flows and volumes within intervals
- Minimum of 5,000 data points
- Intervals must be programmable from 15 minutes to daily

Alarms must be logged including date and time of event. Logs must be downloadable.

MINIMUM OPERATING CHARACTERISTICS

Meter Size	Low Flow (95% Min.)	Operating Range (98.5-101.5%)	Intermittent Flows (98.5-101.5%)	Pressure Loss (Not to Exceed)
1-1/2"	0.25 GPM	0.5 – 160 GPM	200 GPM	6.9 PSI @ 160 GPM
2"	0.25 GPM	0.5 – 160 GPM	200 GPM	4.3 PSI @ 160 GPM
3"	0.5 GPM	1.0 – 400 GPM	500 GPM	3.2 PSI @ 400 GPM
4"	0.75 GPM	1.5 – 800 GPM	1000 GPM	6.4 PSI @ 800 GPM

MEASURING CHAMBER

The measuring chamber shall consist of a measuring element, removable housing, and all-electronic register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearings and be essentially weightless in water. The measuring chamber shall be capable of operating within the above listed accuracy limits without calibration when transferred from one main case to another of the same size. The measuring shall be so configured to capture all flows as specified above, without the requirement of an automatic valve.

DIRECT MAGNETIC DRIVE SYSTEM

The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. The direct drive system is designed to extend service life, enhance low flow sensitivity and provide extended flow capacity and overall accuracy of the meter assembly. Any and all additional intermediate, magnetic or mechanical, drive couplings are not acceptable.

ELECTRONIC REGISTER

The meter's register is all-electronic and does not contain any mechanical gearing to display flow and accurate totalization. The electronic register includes the following partial list of features:

- AMR resolution units fully programmable
- Pulse output frequency fully programmable
- Integral data logging capability
- Integral electronically resettable accuracy testing feature
- Large, easy-to-read LCD display

elements and a high degree of sustained accuracy through the entire range of the meter is to be considered mandatory.

GUARANTEES

Warranties on all products will be provided on a nationally published basis and enclosed with the proposal

REJECTED MATERIAL

The manufacturer will, at his own expense, replace or satisfactorily adjust or repair all units rejected for failure to comply with these specifications, if acceptable by the City.

TRAINING

The successful bidder will provide on-site training for utility personnel in the care and repair of meters and remote units, installation procedures and operation of interrogators. The successful bidder will also cooperate with the utility data processing department to insure a smooth transition of data conversion from the interrogator to computer input and use of software programs.

INSTALLATION OF WATER METERS

GENERAL SPECIFICATION

The Contractor must be experienced in the installation of water meters with remote reading devices, along with radio frequency automatic meter reading systems.

GENERAL SPECIFICATION – METER CHANGEOUT

The Contractor will be responsible for the initial contact of the resident in writing by 1st Class U.S. Mail to obtain access to the home. It is understood the Contractor may be required to work evenings and weekends to gain access to perform the installations. The Contractor will make a minimum of three attempts to gain access to the residence. If after three attempts no contact has been made with the resident or if on the first attempt the resident refuses to allow installation of the meter, the Contractor will inform the City of the address and nature of the problem. The City will then take the necessary steps to secure access for the Contractor to the residence or place of business.

Work not included or at extra cost consists of replacement of inoperable valves, freezing the service line or repair or replacement of interior house plumbing. The Contractor will advise the City of the extra work required as soon as possible. The City may approve the extra work at an agreed unit price for the valve replacement or service line freezing.

General – Installation of water meter and TRANSMITTER

Meter will be installed horizontal two (2) to four (4) feet above the floor with dial pointing up.

Outside reading devices or meter interface units will be visually and physically accessible located approximately forty-two (42") inches above the ground on the front of the house or as approved by the City. The Outside Reading Device (ORD) will be located as close as possible to the cable entrance hole.

METER AND VALVES

The size of the meter to be installed will be pre-determined by the City or by the meter size selection presented herein.

Determine if the existing interior valve is operable and located close to the water service entrance point. If the existing valve is not operable, the Contractor will attempt to shut-off water service utilizing the City's existing exterior curb box. If the existing curb box is inoperable the installation contractor will notify the City of the problem and reschedule the installation.

REMOTE RECEPTACLE OR METER INTERFACE UNIT AND CABLE

Before drilling cable entrance hole, check to insure its location is free of interference with electrical wiring, beam ends, piping or other obstructions. This can be done by measuring from a common point inside and outside of the building. Drilling a small hole or driving a long thin nail through the wall may aid in finding a suitable location for the hole.

Drill a 1/4" diameter hole, slanting slightly upwards to minimize rain entrance. Thread cable through the entrance hole.

Mount the receptacle housing or meter interface unit in accordance with the manufacturer's specifications.

TESTING

After installation is complete, open all valves and check for leaks. Correct leaks as necessary.

Run water through the meter and check to make sure meter operates.

Check reading of register and receptacle or meter interface unit with test equipment. Check wiring between receptacle and meter with test equipment. Check TRANSMITTER operation with test equipment and confirm proper operation. Program Utility's unique password and verify proper operation and password.

Memorandum

To: Mayor and City Council Members
From: Tessia Melvin, City Administrator
Date: January 20, 2014
Re: Public Works Vacancy

BACKGROUND

Ron Maas announced his retirement for mid-March 2014. With this date quickly approaching us, staff has created a timeframe to find his replacement. It is important to have a person on board before Ron leaves, so Ron will help train his replacement and carry forward the institutional knowledge that goes along with the position and Department.

STAFF REPORT

Staff suggests approving a starting salary hiring range and direction to post the vacancy.

POSITION BACKGROUND

After talking with Public Works, it has been determined that the Department needs someone with previous water and sewer experience. Thus, it is preferred that the new hire have a Class C water and Class D sewer licenses. Water licenses can only be issued after a minimum of three years of having worked under a licensed individual; sewer licenses require one year. Staff agrees that the current job description will fit the Department's needs.

SALARY

Based on staff research from 2012, which is attached, surrounding cities pay between \$19.94 and \$25.87 per hour.

HIRING TIMELINE

Post Position: January 21-February 3

Interviews: February 5 and 6

Meet the Council: February 10

Begin Work: February 24

PUBLIC WORKS II

Cities alphabetic order.

Info Yr	Position Title	City	Pop	Current	Minimum	Maximum
2011	Public Works Worker II	Maple Plain		\$48,214		
2012	Public Works Worker II	Maple Plain		\$49,661		
SURROUNDING						
2011	Parks, Streets/Utility Foreman	Delano	5,359		\$42,536	\$51,813
2009	Street Maintenance	Greenfield		\$53,102		
2009	Public Works III	Independence		\$43,846		
2011	Public Works Director	Loretto	609	\$52,000		
2011	Sewer & Water Operator	Medina	5,026	\$56,971	\$45,427	\$58,760
2010	PW Maintenance Worker	Orono	7,896	\$50,440	\$42,869	\$50,440
2011	Water/Wastewater Operator	Rockford			\$35,360	\$58,531
2011	Utility Operator I	Watertown	4,216	\$44,099	\$39,951	\$49,894
2011	Utility Worker II	Watertown	4,216	\$49,574	\$42,748	\$53,386

METRO/CENTRAL (1,000-3,000)

2011	Public Utilities Worker	Carver	3,024	\$44,886	\$42,515	\$47,674
2011	Public Utilities Supervisor	Carver	3,024	\$68,593		
2010	Maintenance Supervisor	Clearwater	1,436	\$46,238		
2011	Water & Sewer Worker	Excelsior	2,360	\$47,653		
2011	Water & Sewer Worker	Excelsior	2,360	\$52,874		
2011	Lead Operator	Foley	2,651	\$54,372	\$30,024	\$54,372
2010	Public Works Coordinator	Lauderdale	2,322	\$57,866	\$46,301	\$57,866
2011	Public Utilities Director	Norwood Young America	3,637	\$59,467	\$40,123	\$57,179
2011	Sewer & Water Worker	Tonka bay	1,549	\$53,248	\$45,240	\$53,248
2010	Maintenance Lead	Winsted	2,317	\$44,703	\$36,837	\$47,674
Average - Surrounding						
				\$50,005	\$41,482	\$53,804
				\$50,440	\$42,642	\$52,599
Average - All Cities						
				\$51,761	\$40,828	\$53,403
				\$52,000	\$42,526	\$53,317

Low	\$43,846	\$35,360	\$49,894
High	\$56,971	\$45,427	\$58,760

Low	\$43,846	\$30,024	\$47,674
High	\$59,467	\$46,301	\$58,760

CITY OF MAPLE PLAIN
Job Description

JOB TITLE: Public Works Worker I

DEPARTMENT: Public Works
JOB LOCATION: Maple Plain
SUPERVISOR: City Administrator
STATUS: Full-Time, Non-Exempt
FLSA EXEMPT: No

CREATED: January 1, 2008

Position Summary

Performs various types of duties related to the operation and maintenance of the City's streets and other infrastructure, public facilities, community parks, and utilities – water, wastewater, and storm water. Uses equipment necessary to perform tasks in compliance with equipment manuals. Follows all safety procedures related to job and equipment operation.

Essential Duties

A. General

- Develops and maintains a thorough working knowledge of all City department policies and procedures in order to help facilitate compliance with such policies and procedures.
- Exhibits respectful and cooperative relationships with co-workers, City management, City Council, general public and City consultants and contractors in an effort to help establish, maintain and enhance Maple Plain's reputation as a well-managed City.
- Demonstrates by example the service excellence and integrity expected from all City staff.

B. Public Works

- Assist with regular and seasonal tasks related to the operation and maintenance of the City's streets, sidewalks and trails system.
- Uses light and heavy equipment, and hand and other power tools necessary to performing the assigned tasks.
- Operates snowplow equipment and clears City streets, sidewalks and parking lots of snow and ice in accordance with City snowplowing policy.
- Performs routine street maintenance including: pothole filling, patching, and painting of municipal streets, curbing and sidewalks.
- Assists with periodic street sweeping, and clearing debris from City streets as necessary.
- Conducts routine preventative maintenance on equipment and records them in appropriate log books.
- Reports all equipment failures and maintenance.
- Ensures proper use of City compost facility and that it is managed in accordance with all City, State and Federal environmental rules and regulations.
- Performs other duties as apparent or assigned.

C. Parks

- Maintains community parks and park facilities, and operates equipment necessary to perform such maintenance.
- Identifies and conducts preventative maintenance on park maintenance equipment and park facilities.
- Trims and removes brush, trees and weeds from all public property.
- Performs other duties as apparent or assigned.

D. Public Utilities

- Reads water meters quarterly.
- Ensures proper and efficient function of the City's storm sewer system through regular cleaning and maintenance.
- Inspects ditches and drainage structures to ensure proper function, and cleans as needed.
- Conducts operational checks to lift stations, pumps and operational components.
- Performs preventative maintenance and minor repair of pumps, motors, water and sewer distribution lines, gate valves, hydrants, water meters, sewer lift stations, and other minor equipment.
- Performs other duties as apparent or assigned.

E. Other duties as assigned.

Supervisory Responsibilities

None.

Qualification, Education & Experience Requirements

High school diploma or equivalent.

Class C water operator certificate.

Class D wastewater operator certificate.

Three years of previous municipal public works experience, including:

- Operation and preventative maintenance on light and heavy equipment and vehicles.
- Operation a water treatment facility.

Minnesota Class B commercial drivers' license with air brakes endorsement.

Additional or Desirable Experience

Water treatment facility operations.

Completion of post-secondary education or vocational training program.

Safety

It is the responsibility of all City staff to promote and contribute to a safe work environment. This is accomplished by proactively identifying and correcting the unsafe condition, or notifying the appropriate personnel to address the problem.

All employees shall follow all City and other applicable safety policies and procedures related to the job. Operates all equipment according to proper safety procedures and standards; does not exceed load limits, performance abilities and adheres to all traffic laws.

Work Environment

This position frequently works near heavy equipment and moving mechanical parts, fumes and airborne particles, and toxic or caustic chemicals. The employee may also be confronted with confining spaces and precarious positions, and subjected to all possible weather extremes.

Many of the essential duties of this position are required to be performed regardless of temperature or weather conditions.

Schedule

The workweek will consist of 40 hours of work, with the potential for scheduled and unscheduled overtime hours as determined by management. Overtime hours shall include, but not be limited to, evenings, early mornings, weekends and holidays. The employee is expected to be available on call during evenings, weekends and holidays unless absent due to an illness or pre-approved vacation.

Physical Demands

Physical demands include: standing, walking, sitting, reaching with hands and arms, climbing, crouching, kneeling, or crawling. The employee must have the ability to regularly lift and/or move up to 25 pounds, frequently lift and/or move up to 50 pounds, and occasionally lift and/or move 100 pounds.

While performing the duties of this job, the employee must be capable of hand and foot coordination and use of hands to finger, handle, or feel objects, tools or controls. Specific vision abilities required by this job include vision, distance, color vision, peripheral vision, depth perception, and the ability to adjust focus with or without correction. Hearing shall be normal as needed.

Language Skills

Ability to read and interpret documents such as safety rules, operating, repair, maintenance and training manuals, instructions, and procedure manuals. Ability to communicate effectively orally and in writing to the City staff, City Council and general public.

Mathematic Skills

Ability to make arithmetic computations using whole numbers, fractions and decimals. Ability to compute rates, ratios and percentages. Ability to compute, decipher and interpret mathematical analysis regarding water and wastewater standards and requirements. Ability to compute the amount of material(s) required for various projects.

Reasoning Ability

Ability to solve and deal with practical problems. Ability to interpret a variety of instructions in written, oral or other forms.

Other Knowledge, Skills & Abilities

Ability to read, review and interpret City maps and development, construction and other plans relating to the location of water and wastewater mains, storm sewers and street. Knowledge of safe vehicle and equipment operation.