REQUEST FOR PROPOSALS (RFP) AND PROJECT SPECIFICATIONS FOR INSTALLATION OF AUTOMATED WATER METER VEHICLE READING SYSTEM

FOR THE JEFFERSON COUNTY PUBLIC SEWER DISTRICT OF, MISSOURI

Jefferson County Public Sewer District (JCPSD) is soliciting sealed proposals from qualified companies for Water Meter Installation and Radio Read Vehicle Meter Reading System. Sealed proposals will be accepted at the District once located at 4632 Yeager Road, Hillsboro, Missouri 63050, by 2:00 p.m., on Thursday, March 28th, 2019. RFP's must be in a sealed envelope and marked "RFP for Installation of Automate Water Meter Reading System".

Provide one (1) original and free (3) copies of be proposal. Proposers are responsible for insuring that the District receives be proposal by the due date and time. Late proposals will not be accepted.

Questions regarding be specifications of the proposal must be directed to Douglas Bjornstad, P.E. District Manager, dbjornstad@jeffcopsd.org

1.0 SCOPE OF WORK: The Jefferson County Sewer District seeks to obtain a turnkey Vehicle Meter Reading System capable of meeting the current and future meter reading needs within the Water Districts service area. The scope of work involves providing and installing water meters and installation of the remote water meter reading equipment.

This project will be awarded based on a 20-year useful life expectancy (warranties) for transmitters, electronics and batteries. The Jefferson County Public Sewer District will determine the best solution for its present and future metering data collection needs. The Jefferson County Public Sewer District reserves the right to accept or reject any or all proposals based on their sole discretion.

The vendor/manufacturers of the AMR System will be the sole supplier and same brand of meter throughout the system.

The Contractor will be responsible for the appointments and installation of the new water meters within the system.

The Water District shall provide the Contractor with a current customer list and flag each meter locations to expedite the installation process.

The Contractor shall notify the Water District as to any non-working shut-off valves, potential leak situations and non-accessible meters.

The Contractor shall leave each installation site as undisturbed as possible and replace and/or redress any grass that has been disturbed around the meter pit ring & lid.

The Contractor shall pay the prevailing hourly rate of wages as determined by the Missouri Annual Wage Order and/or Federal Wage Determination. In case of a conflict between Missouri and Federal wage rates, the higher rate shall apply.

The Contractor shall have General Liability Insurance coverage and state the type and amount in the RFP. The successful bidder must be able to provide a 100% performance bond within 30 days of award.

2.0 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment and supplies necessary for the work. The Contractor shall load, unload, haul and distribute all materials, tools, equipment, supplies

and, accessories necessary for the work under this contract. All work and materials shall conform to pertinent plumbing codes, AWWA specifications and National Sanitation Foundation requirements.

3.0 LOCATION OF WORK: The Water District will provide the Contractor with a list of the work sites. The Contractor is responsible for visiting as many sites as they feel necessary to determine for themselves how much work will be involved.

4.0 COORDINATION OF WORK: The Contractor shall be responsible for furnishing a project coordinator to coordinate the replacement with all property owners: home or busniess. If access is not granted to the Contractor, the Contractor may notify the Water District if they do not give access to the Contractor.

5.0 GOAL OF JEFFERSON COUNTY PUBLIC SEWER DISTRICT: After accepting turnkey installation of all meters in the District, will be able to read water meters via radio by either walking or driving the route with a hand held or mobile device.

6.0 METERS: Jefferson County Public Sewer District is seeking qualified vendors/manufacturers of a Mobile AMR network that migrates into a fixed network radio reading system for their current water meters. It is the intent of the District to have the vendor provide meter reading equipment that is compatible with all water meters equipped with absolute encoder registers. The equipment will consist of transmitter modules, an RF Hand Held Device, and a Vehicle Reading Device. The system shall include software and hardware capable of interfacing with the Jefferson County's billing system using route-based meter data.

6.1 SYSTEM OVERVIEW: The meter reading system shall be a Mobile AMR system that easily migrates into a fixed-base data collection network, in order to enable frequent collection and updating of metering data. Meter Data software will deliver metering data to the billing system in a standard format. All system components shall be manufactured, supplied and serviced by one manufacturer.

The AMR devices (Radio Transmitters) will interface to the current water meters at Jefferson County Public Sewer District which are Sensus encoded registers. Radio Transmitters must provide transmissions to the mobile or walk by devices. The system shall have a highly robust and secure communication link, with high immunity to radio interference, and should be based on a single primary FCC licensed frequency only.

6.2 TRANSMITTER MODULES: The AMR water meter Radio Transmitter module shall be connected to and be compatible with existing Sensus water meters and transmit meter readings when the Mobile or walk-by reading devices call for readings. The Radio Transmitter shall also work in the walk by or drive by mode by receiving a valid alert tone. Once the Radio Transmitter hears the valid alert tone in the mobile setting, it comes to full power and transmits a current meter reading. The design shall be a waterproof durable High-Density Polyethylene (HDPE) enclosure.

Mechanical Specifications

Environmental conditions: operating temperature range -30°F to +165°F (-34°C to +74°C), relative humidity (condensing) 5% to 95%; waterproof enclosure - IP 68 rating.

Battery shall be totally enclosed in a water-resistant HDPE enclosure as shall the electronics

A tamper deterrent enclosure shall be used, with a tamper deterrent seal.

6.3 ELECTRONIC/FUNCTIONAL SPECIFICATIONS: The transmitter shall utilize a single licensed frequency operating in the 901-950 MHz range. The frequency shall be licensed by the FCC as a primal use frequency and owned by the manufacturer of the transmitter and licensed to Jefferson County Public Sewer District.

- The Radio transmitter shall have a high-powered transmission in order to obtain a long range of reception at the received
- The transmitter shall obtain data from the encoder register, matching the mechanical! Odometer read of up to eight (8) digits and transmit the data four times per 24 hours.
- Vendor shall provide a 20-year prorated warranty for the transmitter electronics and battery.
- All messages transmitted shall include be unique transmitter ID and unique register ID number.
- The transmitter shall support the UI-1203 protocol and be capable of transmitting all data generated by the register.
- Only current data will be transmitted. The reading and other data parameters will be retrieved from the register immediately before their transmission.
- Minimum programming shall be required at installation,
- A successful installation shall be confirmed to the installer while still at the installation site. This shall be accomplished by using an installation tool that prompts the transmitter to send a series of initial transmission upon initialization. The installation shall be successful if the installation tool receives a signal from the collector that it has received a signal from the transmitter.
- The transmitter shall meet all FCC requirements for operation in its class.

6.4 WATER METER SPEC IFICATION — Residential Mag

TYPE

Solid state, battery operated electromagnetic flow measurement system with a hermetically sealed, glass covered, electronic register with a programmable 9-digit display,

STANDARDS

Must conform to American Water Works Standard C-700 and C-710 as most recently revised with respect to accuracy and pressure loss requirements, or other appropriate American Water Works Standard. Must be compliant with NSF/ANSI Standard 61 Annex F and G.

LENGTH

Must conform to American Water Works Standard C-700 — C-710 as most recently revised.

REGISTER

The register must be an electronic device encapsulated in glass with 8 programmable digits utilizing a liquid crystal display (LCD). It will have indicators for flow direction, empty pipe, battery life and unit of measurement. The register must be hermetically sealed with a head tempered glass cover

and tamper resistant. The register shall not be removable from the measuring sensor. The register shall utilize a magnetic coupling technology to connect to a touch read, radio read or fixed base meter leading system in either an inside or pit set installation.

CASES

The register and measuring element will be an integrated unit housed within a thermal plastic external casing. This integrated unit will not be removable from the external housing. The systems shall have the size and direction of water flow through the system imprinted on the external housing.

MEASURING ELEMENT

The measuring element shall be made of a noncorrosive, lead-free glass fiber reinforced, composite alloy material. A battery powered magnetic flow sensor utilizing silver/silver chloride electrodes will be utilized to measure the velocity of the water which is linearly proportional to the volume. The measuring element will have no moving parts and will be specific for each size.

ACCURACY AND HEADLOSS TESTS

Meters shall conform to current AWWA C-700 — C-710, current revision, test bows, head loss and accuracy standards.

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.

PERFORMANCE WARRANTIES

In evaluating bid submittals, warranty coverage will be considered. All bidders are required to submit their most current nationally published warranty statements for water meter main cases, registers and measuring chambers.

6.5 READING EQUIPMENT

Radio Read Vehicle Unit

The radio read AMR system shall utilize a true two-way (interrogate and respond) communication protocol.

Upon completion of the meter reading route, the meter reading data from the Vehicle Unit can be downloaded via a PC with radio AMR software. The radio AMR software shall prepare and format the meter reading data for printing of selected management reports and transfer the meter reading data to the billing software for customer invoicing.

The Vehicle Unit shall be a complete package that permits the Owner to read meters by using any vehicle in the Owner's fleet via radio signals. The Vehicle Unit package shall include the following as a minimum:

A laptop computer connected to the Vehicle Unit with the capability to handle multiple reading of radio equipped meters and the storage of meter reading data.

Vehicle Unit radio operating software.

A magnetic mount antenna that connects to the Vehicle Unit for optimal radio reading

performance.

A power cable capable of plugging into a 12-volt “cigarette" lighter receptacle to power the Vehicle Unit.

Applicable connector cables for computer and vehicle unit.

Carrying case for all Vehicle Unit equipment.

The Vehicle Unit shall have the capability to collect and store meter readings at any time on the meter reading route via radio transmission with any meter equipped with an encodes and Radio Transmitter.

The Vehicle Unit shall send an alert signal to a Radio Transmitter connected to the meter. Upon receipt of the alert, the Radio Transmitter shall transmit the meter reading data to the Vehicle Unit. Once this data is received and all parameters are valid in the meter reading message, the Vehicle Unit will acknowledge the Radio Transmitter that the data is valid and permit the Radio Transmitter to go into a power down mode. The

The Vehicle Unit shall be capable of handling multiple readings from the Radio Transmitter simultaneously.

The Vehicle Route Software shall periodically transfer the meter reading data to the hard drive of the Vehicle Unit computer to maintain already read meters in case of a power failure.

The Vehicle Unit shall have the capability to address Radio Transmitter on a wild card alert basis. The wild card operator shall be controlled from the Vehicle Unit.

The Vehicle Unit shall retain the meter readings for later posting to the billing software by matching with the proper account through the Radio Unit and encoder register identification number.

The Vehicle Unit shall have the capability to address Radio Transmitters in conjunction with the Radio Transmitters class code option.

Vehicle Unit shall be able to store the meter reading data either on the hard disk of the laptop computer or on a computer jump drive. If stored on the computer hard drive, the meter reading data shall be able to be transferred to the computer interfacing to the billing software through file transfer to a jump drive.

The Vehicle Unit shall be capable of being powered from any vehicle that has a 12-volt power system. The Vehicle Units laptop computer shall have its own battery for backup in case of vehicle system failure. The Vehicle Unit shall provide for an optional navigation system.

All equipment shall comply with current Federal Communications Commission (FCC) requirements which include proper labeling of the Vehicle Unit. The manufacturer shall have supporting documentation available upon request of the Owner/Engineer to verify compliance.

The Vehicle Unit shall operate on the 901-950 MHz FCC licensed primary frequency. The manufacturer shall hold the primary license from the FCC for operation of the equipment on behalf of the Owner.

The Vehicle Unit shall be supplied with a portable carrying case to permit easy storage and transportability of the Vehicle Unit as one (1) unit. The carrying case shall be able to store all

components of the Vehicle Unit package required for vehicle meter reading via radio AMR.

The Contractor shall provide complete onsite vendor support for installation, training, and operation of the AMR system and hardware for Owner's staff. The trainer shall be an authorized representative of the company and be able to instinct the Owner as to the most efficient method of operation with the hardware being used. Complete installation and operating instructions must be included for all the supplied hardware.

The manufacturer shall provide complete AMR system Support following installation and training. Included in the support program shall be toll-free telephone support for a period of at least one (1) calendar year from date of startup.

6.6 SOFTWARE

The Vehicle Route Software shall feature a convenient, user-friendly pull-down menu system for directing the meter reading process. Operators shall be able to input information, such as route notes, manually via the PC's keyboard. The operator shall also be able to easily edit route data configurations when necessary. The meter reading system software shall process the information gathered by the Vehicle Route Software and provide the utility's billing software with a simple plug- and-play interface. The software should have GPS mapping overlay to quickly monitor the meter reading process.

ROUTE SOFTWARE

The meter reading operating software must operate on a Microsoft Windows (Office 365) compatible personal computer, It shall be menu driven using pull-down menus for ease of use and tracking of operating steps. Vendor shall supply minimum computer requirements for software operation

SOFTWARE INTEGRATION

The software shall have the capability to integrate more than one type of meter reading system into ore package. This may include a hand-held system, radio system, and/or a phone-based meter reading system. It shall do so easily without the need to alter route file information or interfere with the operation of each system. If using a hand-held system, the software shall provide bi-directional communications from the computer to communications/charging stands that connect to hand-held meter reading devices. The software must be suitable for use by a non-technical operator.

SOFTWARE FLEXIBILITY

The operating software shall be a basic package and require no customization on the part of the utility. This flexibility permits easy upgrading for the utility and permits the utility to stay current with the software's latest enhancements requiring no system changes.

The software shall be able to integrate with the utility's billing software whether the billing software is on a personal computer or a mainframe computer. The software shall have the capability of accepting an input tile from the billing software consisting of meter reading route data. In turn, the software shall provide the billing software an export file consisting of meter reading data from the most currently read meter route. The utility shall be able to configure the operating software to match the file transfer requirements of the billing software for both the input and export files,

The software shall provide the utility the option of loading meter route information to the meter reading devices. This information would include but not be limited to things such as. customer name and

address; previous reading(s), meter location information; and warnings of things of caution on the route. Vendor shall supply a list of any required route information needed by the meter reading operating software.

The software shall include operator error and warning indicators built-in to the software in case of operator error. The software shall provide the capability of taking surveys using alpha-numeric and yes/no responses and the ability to review and analyze the routes in use for system troubleshooting.

The software will include a means of loading a set of utility defined notes for the meter reader to use with a hand-held device. The note code field shall include the capability of using up to a five-digit note code. In addition, the software shall accept not only pre-defined digital note codes, but also alphanumeric notes.

The software shall provide the capability to split routes and combine split routes with other routes. The software shall have the capability of using utility provided high/low reading limits within the reading system being used. These limits would be included in the meter reading route as high/low reading checks during actual meter reading,

The software, depending on the meter reading system selected, shall be able to load programming software if required by the system in use. The programming software shall be integrated into the software and be of the same operating configuration as the base system.

When using a hand-held system, the software shall be able to communicate with any hand-held device in the system and inform the operator of the applications software currently in use without interfering with the integrity of the hand- held data.

The software shall include capability to produce backup disks. This function can be done either manually by the operator or include an automatic backup feature.

Online help assistance shall be provided.

SOFTWARE REPORTS

The software shall include management reports for any of the meter reading systems used in conjunction with the software. The reports shall be selectable by the utility. The required reports include but need not be limited to the following: a master route report; non route report; non read report, route note report; high/low reading exception report; manual read exception report; multiple read exception report; question survey report; marked location; register malfunction and customized report creator through a report design tool.

SOFTWARE DISPLAY

The software shall be capable of being displayed in color on a VGA monitor or on a monochrome monitor.

The Jefferson County Public Sewer District will evaluate the proposals based on many factors, including pricing, performance, benefits and features. The Jefferson County Public Sewer District reserves the right to accept or reject any or all proposals based on their sole discretion.

7.0 SELECTION CRITERIA

7.1 Positive factors from references
7.2 Compatibility with billing software
7.3 Ease of installation and overall conversion
7.4 System features
7.5 Performance Capabilities of System
7.6 Cost, although a significant factor, may not be the dominate factor

8.0 SUBMITTAL FORMAT: Proposal shall be submitted in the following format: Each item should be responded to in detail (in order) as it pertains to the proposed system. If an item does not apply to the proposed system, state so. Identify alternatives as such.

8.1 HARDWARE AND SOFTWARE:

- List all hardware for the entire system, the purpose and quantity of each piece.
- Describe the system application and data collection software.
- Propose a realistic timeline by which installation will be complete and the system will be fully operational.
- Explain backup method of obtaining meter readings should a failure of any major system component or a part of the system.
- Explain how meter readings will be obtained during the transition.
- Provide information related to the life expectancy and anticipated of each system component.

9.0 DATA FLOW: Briefly describe the data flow in the system, listing each component and how they interface. Describe the proposed system configuration. Describe in how the software will communicate with the Districts Utility Billing software.

9.1 REFERENCES: List 3 water utility reference's that are current users of the proposed radio read system. Include the name and phone number of a point of contact. Provide a list of all Utilities currently using the proposed radio read system.

9.2 TRAINING AND SUPPORT:

- Describe the initial training and continue maintenance support for the life of the installation project and beyond any applicable warranty.
- Describe how your firm will respond quickly on a daily basis, to project needs and how you will maintain close and effective communications with the District.
- Outline all expensed associated with training and system support for the life of the system.

9.3 WARRANTY: Explain warranty for all components of hardware and software provided.

9.4 INSTALLATION:

- Describe plan to schedule and implement the installation project.
- Describe in detail your firm's installation process.
- Describe in detail how you record the old and new meter information during installation.

- Describe any other enhancements that you can provide during be installation process.

10.0 Total Cost

Complete the Pricing Worksheet attached. Quantities may be adjusted. No price adjustment will be allowed for a change in quantities.

JEFFERSON COUNTY PUBLIC SEWER DISTRICT

AUTOMATIC WATER METER READING SYSTEM

PRICING WORKSHEET

Item	Quantity	Unit Price	Extended
Furnish Radio Transmitters	425	_____	_____
Install Radio Transmitters	425	_____	_____
Furnish 5/8" x 3/4" Meters	425	_____	_____
Install 5/8" x 3/4" Meters	425	_____	_____
Furnish and implement all equipment and software to read meters, including employee training.	1	_____	_____
Total system price		_____	_____
(Unit Price Only) Deduct for trade-ins (Brass Meters)		_____	_____

Other items to be considered:
Add additional sheets if necessary

Name of person/firm submitting proposal: _____

Authorized Signature: _____ Date: _____

Address: _____

Phone Numbers: _____

Notes or comments: _____

JEFFERSON COUNTY PUBLIC SEWER DISTRICT

Addendum to RFP for Installation of Automatic Water Meter Reading System

As an Addendum to the RFP and the consideration of any other type of residential meter, than that specified in the RFP, please note on a separate sheet of paper as part of your proposal.