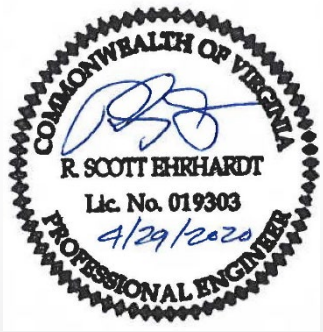
Dewberry

Advanced Metering Infrastructure (AMI)

Halifax County Service Authority

May, 2020



SUBMITTED BY:

Dewberry
551 Piney Forest Road
Danville, VA 24540

SUBMITTED TO:

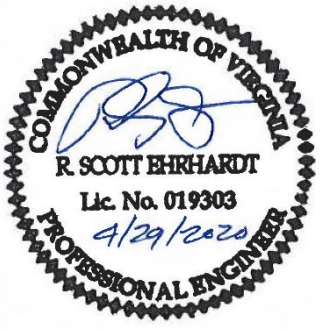
Halifax County Service Authority

Halifax County Service Authority

Request for Proposals: Advanced Metering Infrastructure Project

Issue Date: May 4, 2020

Due Date: June 11, 2020



Halifax County Service Authority
South Boston, VA

REQUEST FOR PROPOSAL FOR AMI- ADVERTISEMENT FOR BIDS

Halifax County Service Authority (HCSA) is seeking proposals from qualified Vendors experienced in the supply and installation of all hardware and software that together comprise the proposed Advanced Metering infrastructure (AMI) system. Bidding Documents will be available electronically on the HCSA website: http://www.hcsa.us/projects.html.

All prospective bidders must submit a written notice of intent to bid to the Issuing Office Thursday, June 4 at 5:00 PM in order to be placed on the bidders list and receive addenda directly. Questions regarding any element of this RFP document or the bidder response process shall be directed to the Issuing Office.

The Issuing Office for the Bidding Documents is:

Dewberry
551 Piney Forest Road
Danville, VA 24540
Contact: Leslie Barksdale, PE; 434-549-8504; lbarksdale@dewberry.com

A pre-bid conference will be held on Wednesday, May 20 at 10:00 AM EST via Microsoft Teams. Attendance at the pre-bid conference is encouraged but not mandatory. Bid security shall be furnished in accordance with the Instructions to Bidders.

Bids for the HCSA Advanced Metering Replacement Project shall be clearly marked in the lower left-hand corner as follows: RFP - AMI SYSTEM & WATER METERS PURCHASE AND INSTALLATION, along with the company name, date, and time bid is due. The submission shall include one (1) signed original, and one (1) full electronic PDF copy saved on a USB flash drive along with Appendix A: HCSA AMI Technical Questionnaire submitted in Word format and Appendix B: Pricing Sheet submitted in Excel format with all calculation formulas present. Bids will be submitted to:

Mr. Mark Estes
Halifax County Service Authority
2529 Houghton Avenue
South Boston, VA 24592

Bids must be received no later than Thursday, June 11, 2020 at 2:00 PM EST, at which time the Bids received will be publicly opened and read. The principle work to be performed under this contract consist of supplying and implementing an entire AMI system, including meter reading equipment, related software, maintenance, training, technical support, and installation for approximately 4,476 residential and commercial water services. HCSA is requesting bids for the following products and services and for the upgrade of its meter reading system that includes, but is not limited to the following:

- Cold-water meters completed with absolute encoder registers and automatic, two-way meter reading endpoints (also known as Meter Interface Unit or “MIU”)
- Communication network capable of collecting hourly meter reads and system generated alert information from the MIUs and transmitting the data to a head-end computer system
- Handheld devices and software to program and/or initialize the endpoints and collect installation data
- Head-end computer hardware and software required to collect, store, and manage the data

- Meter Data Management System (MDMS)
- Customer web portal to display interval consumption data and other information
- Design, installation, and testing of acceptable complete and working information interfaces between the system installation, head-end control, meter data management and presentation software/hardware and HCSA's CIS and other systems, such as its field work order system.
- Training of HCSA employees in endpoint installation, field maintenance, diagnosis and troubleshooting, and system use and operation and maintenance
- Provide all training documentation, including technical manuals and operating procedures
- Shipping and managing the equipment inventory during the course of project deployment
- Disposal of old meters and associated equipment
- Installation of fixed Data Collection Units ("DCUs"), including the communications links between those collection units and the system control components.
- Provision of all necessary radio licenses, firmware, third-party software or operating systems to ensure a complete and working system
- Satisfactory testing of all software, hardware and procedures prior to the deployment of the system according to the system testing and acceptance process set forth in the contract, and satisfactory testing at the completion of the project or at major milestones
- Installation of new meters, retrofit registers, and AMI endpoints
- Coordination, scheduling, communications and documentation for all installation services
- Project management to ensure all products and services are coordinated
- HCSA wishes to consider the following optional services:
    - Vendor hosted MDMS and customer web portal
    - Monitoring, operation and maintenance of the data collection network and endpoints

+ + END OF ADVERTISEMENT FOR BIDS + +

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1 RFP BACKGROUND AND PURPOSE

1.1 Name of Soliciting Body

Halifax County Service Authority (HCSA)
2529 Houghton Avenue
South Boston, Virginia 2492

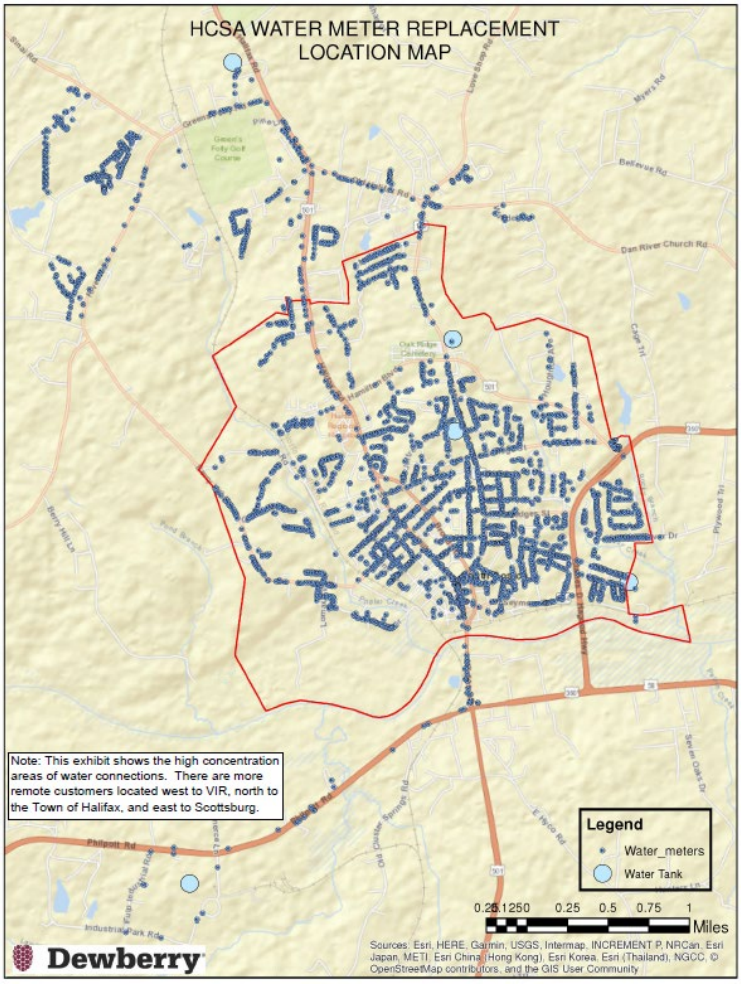
1.2 Project Location

Halifax County, Virginia

1.3 Project Background

HCSA provides water service to about 4,500 residential and commercial customers in Halifax County, Virginia. The service area includes the Towns of South Boston, Halifax, Scottsburg and Virginia International Raceway (VIR). Figure 1 includes the largest service area within the Town of South Boston. The most remote location to be served is VIR, 18 miles southwest of South Boston. HCSA is currently utilizing predominately a manual (direct) reading process for more than 80% of its meters. Approximately 760 Mueller System HotRod AMR units have been installed over the past several years as part of the Authority's meter replacement program. Except for the recently installed HotRod radios and accompanying new meters, most of the utility meters have surpassed the useful life target of 15-20 years, with most exceeding 30 years of operational service.

Figure 1. HCSA Service Territory Map



HCSA has meters on all services and water sources. All customer sectors are metered including separate meters for single family residential, commercial, industrial, institutional, and educational facilities. All customers are billed a base rate for the meter (by size) and by the volume of water consumed. Production facilities (water treatment plant effluent) metering assets are adequate and do not require replacement as part of this project.

Based on physical inspection, a general understanding of typical water meter configurations and settings was obtained. Most of the meters and meter boxes were confirmed to be beyond their useful life and need to be replaced. Some meter boxes have been repeatedly repaired by HCSA personnel. Below is a summary of the existing meters by size and quantity.

Table 1 – Existing Meter Details

Meter Size	Quantity
¾”	4,032
1”	145
1 ½”	161
2”	100
3”	16
4”	14
6”	6
10”	2

HCSA currently has three staff dedicated to meter reading including two-meter readers and one-meter reader supervisor. The service area covers over 830 square miles and has 32 unique meter reading routes currently. There are three billing groups for customers. Group 1 is billed on even months, Group 2 is billed on odd months, and Group 3 (mostly commercial customers) is billed every month. This requires the meter reading for two billing groups each month. It takes approximately 9 working days to complete the initial monthly meter reads. Re-reads require an additional 5 working days.

When collecting meter usage information, approximately 75% of man hours are used on direct read meters where the meter reader must open a meter box and manually record the water consumption on a handheld device. The remainder of the time is used on drive by AMR routes, although the reliability of the existing system requires improvement. Because of the manual read/drive-by dual read environment, HCSA office staff must operate in two different overlapping software systems.

1.4 Project Purpose

This Request for Proposal (RFP) is intended to solicit bids from Proposers (also known as “Contractor” and “Vendor”) capable of satisfying the HCSA needs for a new meter reading system. HCSA wishes to procure and implement a cost-effective AMI system that meets current industry performance criteria related to the communication methodology, software and hardware. The finished AMI solution shall also provide for advanced data analysis through an effective Meter Data Management System (MDMS) and options for an integrated customer portal. The design criteria contained within this RFP are based on operational objectives including:

- Improve customer service (especially for limited income and senior citizen residents)
- Access to real-time data that can notify of abnormal water usage
- Improve planning capabilities
- Reduce water loss/non-revenue water
- Improve water conservation/water accountability
- Replace all water meters and meter boxes
- Reduce current labor effort through read automation and systems interfacing
- Improve customer service through an interactive customer web portal with online customer bill pay.
- Improve cash flow and reduce long-term operating costs

Preference will be given to those Vendors that effectively demonstrate technical abilities to meet County objectives for metering technology. In addition, preference will be given to Vendors with capability for expanded integration such that HCSA users (e.g. Customer Service performing a remote disconnect/reconnect or Billing personnel identifying malfunctioning meters) will be able to properly manage customer accounts through automated data exchanges between the MDMS and the existing Customer Information System (CIS) through its

vendor. The County possesses the following software systems for consideration of interface with the selected vendor MDMS: Publiq (formerly QS1) billing software.

The components of the AMI system sought by HCSA include the following:

- Water meters and meter boxes
- AMI endpoints (i.e. MIUs)
- Hardware and software required to effectively utilize the proposed system
- Two-way endpoint functionality and performance
- Training program
- Network and system acceptance testing
- Ongoing maintenance, customer service and support
- Program management, plan and project schedule
- Installation and implementation of all system components
- Meter Data Management System (MDMS) required to interface with existing related systems
- Leak detection options
- Customer web portal

This document provides information to help interested Proposers prepare their responses and facilitates the subsequent evaluation and comparison thereof. In that regard, the RFP:

- Provides information essential to making meaningful recommendations and realistic commitments
- Specifies the desired format and content of written responses
- Outlines the evaluation and Proposer selection procedures
- Establishes a performance standard for the selected Proposer

1.5 Point of Contact

Leslie Barksdale, PE
Dewberry
551 Piney Forest Road
Danville, VA 24541
lbarksdale@dewberry.com
434-549-8504

1.6 Anticipated Timeline

The timing of this project is of the utmost importance for effective management of funding and project resource oversight. The selected Vendor will be required to complete full deployment of the AMI infrastructure no more than 18 months upon the receipt of the notice to proceed. Detailed project timelines will be established with the selected Vendor and will be adjusted as necessary on coordination between the County and the selected Vendor based on resource availability and scheduling requirements. The final agreement with the Vendor may include liquidated damages for project schedule violations. The following milestones are provided for planning purposes only and may be altered at the sole discretion of the County:

Table 2 - AMI Project Timeline

Milestone	Date
Response Evaluation, Scoring, Shortlisting/Interviews, Vendor/Due Diligence, Weighted Vendor Selection	June 2020
Preferred Solution Selection	July 2020
Contract Award / Notice to Proceed	September 2020
Substantial Completion NTP plus 1.5 years	March 2022

2 INSTRUCTIONS TO PROPOSERS

A. Procurement of goods and services shall be conducted in accordance with procurement laws of the Commonwealth of Virginia.

B. Bid submission shall include one (1) signed original, and one (1) full electronic PDF copy saved on a USB flash drive along with Appendix A: HCSA AMI Technical Questionnaire submitted in Word format and Appendix B: Pricing Sheet submitted in Excel format with all calculation formulas present. Bids will be submitted to:

Mr. Mark Estes
Halifax County Service Authority
2529 Houghton Avenue
South Boston, VA 24592

C. Questions related to the requirements of the Request for Proposal shall be directed in writing or by e-mail to:

Leslie Barksdale, PE
Dewberry
551 Piney Forest Road
Danville, VA 24540
lbarksdale@dewberry.com
434-549-8504

D. All questions must be received by 2:00 pm EST, Thursday, June 4, 2020 to ensure that questions can be accurately answered prior to the due date. HCSA will assume no responsibility for oral instructions, suggestion or interpretation of the RFP.

E. All questions will be compiled and responded to in writing via addendum to the RFP by 5:00 pm EST, Friday, June 5, 2020. The addendum shall be provided to all Proposers that have received an RFP package from HCSA and will be sent directly to the bidders list, as well as added to the HCSA website.

F. Proposals must be submitted in a sealed envelope with the outside marked in the lower left-hand corner as follows: RFP - AMI SYSTEM & WATER METERS PURCHASE AND INSTALLATION.

G. Proposals will be time stamped upon receipt and retained unopened in a secure location until opening.

H. All proposals shall be received by 2:00 p.m. Thursday, June 11, 2020. No consideration will be given to date of postmark.

I. Modification of or corrections to proposals are not acceptable after proposals have been opened. Erroneous proposals may be reclaimed or superseded at any time prior to time of opening. Any new proposal must be marked: RFP - AMI SYSTEM & WATER METERS PURCHASE AND INSTALLATION.

J. Proposers must submit proposals that provide evidence that the Proposer has the capabilities, expertise, and the experience to provide services as described in the RFP. HCSA may make such investigations as it deems necessary to determine the ability of the Proposer to perform the work, and the Proposer shall furnish to HCSA all such information and data for this purpose, as HCSA may request. HCSA reserves the right to reject any proposal if the evidence submitted by, or investigated of, such Proposer fails to satisfy HCSA. The Proposer understands the full scope of work and is properly qualified to carry out the obligations of the contract and to complete the work contemplated herein.

K. Proposers shall be responsible for familiarizing themselves with the RFP. There will be a virtual pre-bid meeting as note in the advertisement.

L. HCSA anticipates the following timetable for selecting the successful Proposer.

ACTIVITY	DATE
PROPOSAL ISSUE DATE	**MAY 4, 2020**
DEADLINE FOR SUBMITTING QUESTIONS	**JUNE 4, 2020**
DEADLINE FOR SUBMITTING PROPOSALS	**JUNE 11, 2020**
EVALUATION OF PROPOSALS	**JUNE 12, 2020**
INTERVIEWS (IF CONDUCTED)	**JULY 6, 2020**
HCSA BOARD APPROVAL OF SOLUTION SELECTED AND CONTRACT AWARD	**JULY 16, 2020**
VENDOR NOTIFICATION OF SOLUTION SELECTION	**JULY 17, 2020**

M. Interviews. Proposers may be required to present their proposal to the HCSA selection committee. This provides an opportunity for the Proposer to clarify or elaborate on the proposed AMI system. This is a fact finding and explanation session only and does not include negotiation. HCSA will schedule the time and location (virtual as necessary) of these presentations. Interviews may or may not be conducted.

N. HCSA reserves the right to accept or reject any or all proposals submitted, in whole or in part, and to waive any informalities or technicalities, which at HCSA's discretion is determined to be in the best interests of the County. Further, HCSA makes no representations that a contract will be awarded to any Proposer responding to this request. HCSA expressly reserves the right to reject any and all proposals responding to this invitation without indicating any reasons for such rejection(s). HCSA reserves the right to postpone due dates and openings for its own convenience and to withdraw this solicitation at any time without prior notice.

O. Proposers shall examine this RFP and contract documents and exercise their own judgment as to the nature and scope of the work required. No plea of ignorance of conditions or difficulties that exist or may hereafter arise in the execution of the work under this contract as a result of failure to make necessary examinations and investigations, shall be accepted as an excuse for any failure or omission on the part of the Proposer to fulfill the requirements of the contract.

P. Proposers can use subcontractors in their bids. The Proposer (“Prime”) shall be fully responsible to HCSA for the acts and omissions of all subcontractors and of persons indirectly employed by them. Subcontractors will be subject to the terms and conditions of the contract and RFP, just as the prime Proposer will be. Any and all subcontractors must be identified in the proposal. These subcontractors may be evaluated under the same criteria as the “Prime” Proposer, except for cost.

3 PROPOSAL REQUIREMENTS AND CONTENTS

3.1 General

A. Proposals shall be signed by an authorized representative of the Company. By submitting a proposal, the Proposer certifies that all information provided in the response to this Request for Proposals is true and accurate. All information requested should be submitted. Failure to submit all information requested may result in HCSA requiring prompt submission of missing information and/or giving a lowered evaluation of the proposal. Proposals which are substantially incomplete or lack key information may be rejected by HCSA. Mandatory requirements are those required by law or regulation or are such that they cannot be waived and are not subject to negotiation.

B. The respondent's package shall include a completed and signed Certificate of No Collusion and one manually signed original and three copies of the proposal.

C. Proposal should be prepared simply and economically, providing a straightforward, concise description of capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.

D. Each copy of the proposal should be bound or contained in a single volume where practical. All documentation submitted with the proposal should be contained in that single volume.

3.2 Proposal Instructions

Proposals should be as thorough and detailed as possible so that HCSA may properly evaluate Proposer capabilities to provide the required goods/services. Proposals should include a description of any significant task not listed in the Scope of Work (SOW) which they know to be necessary, either as reimbursable expenses under the contract or as a service to be contracted for separately by HCSA. Proposers are encouraged to provide additional services which will enhance their ability to meet HCSA's objectives. HCSA may add or make changes to the SOW of this RFP for goods/services, as mutually agreed to and at a price mutually agreed upon, of a similar nature as those specified. Proposers are required to submit the following in Tab format:

A. Cover Page: List Proposer's Company Name and Proposer Contact Information

B. Transmittal Letter (1-page maximum)

C. Company Overview of Manufacturer and Distributor as Applicable (1-page maximum)

D. Executive Summary (maximum of 10 pages):

a. Describe your ability to meet the needs of HCSA AMI project including, but not limited to, the specifications and requirements outlined in this document and present information that outlines your qualifications as a preferred Vendor for this project.

b. Clearly address the qualifications of the Proposer to provide the goods/services as described in the RFP. Information should include administrative responsibilities of the contract, knowledge and experience associated with the proposed system, related software, and water meters.

c. The supplier/manufacturer to be used for services and equipment. The AMI technology supplier/manufacturer should have produced at least one AMI system that has been in commercial use for ten (10) years.

E. Project Approach:

a. Outline in detail your proposed SOW with all major tasks and/or key milestones and a project schedule that includes, but not limited to: securing an FCC license (if required), network delivery, installation, system integration and configuration (including transfer files with the Utility's billing system), meter and AMI endpoint delivery, and testing of new system

b. Provide timeline/schedule for completing the work, highlighting critical points in the process

c. Any materials or services expected from the HCSA

d. Provide the proposed project team structure, including subcontractors, to be assigned to support the project. Describe each person's chief role, responsibility, associated credentials, and base location. Confirm the availability of key personnel to fulfill the obligations as described in the statement of work in a professional and timely manner. Provide list of staff to be assigned to this project and their associated credentials

e. If subcontractors are utilized, Proposer should describe the role of the subcontractor, the type of arrangement between the firms, the names and addresses of all firms, and description of the work that each firm will perform

f. Present a detailed summary of your systems integration plan with HCSA's existing billing software and for billing read request/response, mass meter changeout, customer portal as well as information on the proposed field installation data management application.

g. Describe your acceptance or recommendation of alternatives to the SOW and Technical Specifications based on unique elements of your recommended solution.

h. Sample acceptance test plans for each component of the proposed solution

i. Installation Plan for AIM System and Meters

F. Training Plan

a. Provide a recommended training plan for the Utility (and align the appropriate training session to the time during the project at which it should be completed) covering all areas as outlined in the training section of the HCSA Functional Requirement Workbook

b. Training shall include a minimum of sixteen (16) hours, occurring only Monday through Friday EST, of on-site instruction. Complying with the minimum period specified above will not relieve the Prospective Bidder of providing enough service to place the AMI system in satisfactory operation.

c. Training must be accompanied by training materials (agenda, presentations, descriptions of major components, workbooks, job aides)

d. Detail the proposed training schedule. The training on operation of the AMI system shall not occur until after the software has been installed and the billing interface file has been written, tested, and is working successfully to transfer meter reading data to the billing system.

G. Description Summary of Similar Projects (2 pages maximum):

a. Detailed description of experience on similar projects

b. Provide a minimum of five (5) projects similar in scope to the work described in this RFP, including a name and telephone number of a contact for each client who can verify the information provided

c. Provide one-page organization chart showing all firms involved and key personnel assignments and responsibilities should be included

H. Certificate of No Collusion (form included with RFP)

I. Virginia State Corporation Commission Registration Information (form included with RFP)

J. Qualified Reference Statement Sheet:

a. References should include AMI projects of comparable size to HCSA or larger

b. Referenced systems must be completed projects and fully operational

c. At least three references should also be provided for sub-contractor(s)

d. References with integration with HCSA utility billing software is preferred

K. Equipment Specifications and Warranty Details by Part or Device

L. MDM Software Specifications and Draft Software Hosting Agreement

M. Certified Propagation Analysis

N. Technical Sheets (Specifications) of Proposed Equipment and Software

O. Marketing Material (Optional)

P. System Diagrams (Required):

a. System configuration/software interface and description for each component of the proposed solution

b. AMI Head End System and Network Infrastructure

Q. HCSA Functional Requirements Worksheet (Appendix A; include Exceptions Statement page, as necessary):

a. Vendors interested in providing components of the RFP can respond to that specific section in the workbook and respective component in the pricing sheet

b. Proposers must respond to all narrative sections that apply to the proposed solution. Answers should provide sufficient detail and clarity for the selection committee to comprehend the methods and general approach and to formulate a thorough evaluation. Proper responses to the questions shall be informative but succinct.

R. Detailed Pricing Sheet:

a. Proposer should identify all costs associated with acquisition of the system to include hardware, installation, equipment tools, software, AMI infrastructure, AMI implementation, support and maintenance, future upgrade cost, training, taxes, insurance, and any other relevant cost – to be identified as one-time or annual costs

b. Bid pricing shall be held for minimum of 180 days after bid opening

c. Pricing indicated on the bid form shall include all cost related to providing a fully functioning AMI system for HCSA use. All costs must be included within the bid form.

d. Quantities are assumed for comparison of bid and are not guarantees

e. Payment shall be based on the quantities authorized and approved by the HCSA. The final contract amount shall be adjusted upward or downward based on the actual quantities installed

f. At a minimum, the breakdown of costs shall include the items listed in Appendix B: Cost Proposal. Proposer shall identify any additional items/services and costs required for installation of a fully functioning system. The unit quantities indicated in Table are based on data provided below in Table 3-1. Table 3-1 qualifies the use of Hersey Mueller meters throughout the HCSA system and assumes full compatibility in assigning unit quantities shown. In the event the Proposer offerings are not compatible, thus requiring full meter and/or MIU replacement, Proposer shall utilize the Unit write-in column to provide adjusted quantities necessary for successful conversion of all meters to AMI and replacement of meters indicated in Table 3-1 with new.

Table 3.1- Existing Meters and Quantity of Supply

EXISTING CONDITIONS			SCOPE OF WORK		
Meter Size (in.)	Total	Recently Replaced and Converted to AMR	New Hersey- Mueller Mi.Net meters that have AMI capability	Convert from Mueller HotRod AMR to AMI	Replace Meter and Add AMI
0.75	4032	1108	333 of the 1108	1108	2924
1	145	21	10 of the 145	18	127
1.5	50	17		15	35
2	100	39		36	64
3	15	7		4	11
4	10	5		3	7
6	6	4		4	2
10	2				2

4 PROJECT SCOPE AND REQUIREMENTS

4.1 General Information

HCSA seeks to enter a contract with a qualified Vendor responsible for supplying and implementing an entire AMI system, including meter reading equipment, related software, maintenance, training, technical support, and installation, but retains the right to issue components therein separately. The information in this Section is to be used to help the Proposer complete the questions in Appendix A. HCSA Functional Requirements. Proposers ***must*** respond to all narrative sections in Appendix A that apply to their solution. Answers should provide sufficient detail and clarity for the selection committee to understand the Proposer's systems technical capabilities, costs, and the project management/implementation approach to be utilized.

The Proposer shall provide all labor, materials, equipment, software, training, support services, and other associated requirements inclusive of all costs for the full and complete installation and execution of the new AMI system. The Proposer shall be responsible for obtaining all applicable federal, state, and local permits and licenses required for installation and operations of the proposed system.

This RFP considers a complete turn-key solution that includes the following components:

- Cold-water meters completed with absolute encoder registers and automatic, two-way meter reading endpoints (also known as Meter Interface Unit or "MIU")
- Communication network capable of collecting hourly meter reads and system generated alert information from the MIUs and transmitting the data to a head-end computer system
- Handheld devices and software to program and/or initialize the endpoints and collect installation data
- Head-end System ("HES") and software required to collect, store, and manage the data
- Meter Data Management System (MDMS)
- Customer web portal to display interval consumption data and other information
- Design, installation, and testing of acceptable complete and working information interfaces between the system installation, head-end control, meter data management and presentation software/hardware and HCSA's CIS and other systems, such as its field work order system.
- Training of HCSA employees in endpoint installation, field maintenance, diagnosis and troubleshooting, and system use and operation and maintenance
- Provide all training documentation, including technical manuals and operating procedures
- Shipping and managing the equipment inventory during project deployment
- Disposal of old meters and associated equipment
- Installation of fixed Data Collection Units ("DCUs"), including the communications links between those collection units and the system control components.
- Provision of all necessary radio licenses, firmware, third-party software or operating systems to ensure a complete and working system
- Satisfactory testing of all software, hardware and procedures prior to the deployment of the system according to the system testing and acceptance process set forth in the contract, and satisfactory testing at the completion of the project or at major milestones
- Installation of new meters, retrofit registers, and AMI endpoints
- Coordination, scheduling, communications and documentation for all installation services

- Project management to ensure project timeline adherence, for network and systems testing oversight, and coordinate installation activities with the County project team and project communications
- HCSA wishes to consider the following optional services:
    - Hosting of the MDMS and customer web portal
    - Monitoring, operation and maintenance of the data collection network and endpoints
    - Leak options

The County is seeking a Meter Data Management System with the capability to provide detailed data analytics with an integrated Customer Portal. The Customer Portal should allow for customization of viewing account alerts and information to be disseminated by the County to their customers, and provides for customer account creation, one log-in capabilities with the County's online payment processing software, and intuitive design for ease of customer use.

4.2 Responsibilities of HCSA

- Designated HCSA representatives shall have the authority to relay instructions, approve the execution of the proposed work tasks, receive information, determine the percent of earned values based on work accomplishments, and express HCSA's policies and decisions. The selected Vendor shall be aware that HCSA reserves the right to eliminate any portion of work that it deems unnecessary prior to and during the project.
- HCSA shall make available to the Contractor information in the HCSA's possession, which it believes is pertinent to the Project.
- HCSA shall make all reasonable efforts to provide access to, and provision for the Provider, or the Provider's subcontractors, sub-consultants, and sub-vendors, to enter upon public and private lands as required to perform the work under this Agreement.
- HCSA shall examine all studies, reports, sketches, estimates, specifications, drawings, proposals and other documents presented by the Provider and shall render in writing decisions pertaining thereto within a reasonable time so as not to delay the work of the Provider.
- HCSA shall designate in writing a person to act as the HCSA' s Project manager with respect to the work to be performed under this Agreement.
- HCSA shall give prompt notice to the selected Vendor whenever HCSA observes or otherwise becomes, aware of any defect in project.
- HCSA makes no representation or warranty of any nature whatsoever as to the accuracy of information or documentation provided by the HCSA to the Provider, which were generated or provided by third parties.

4.3 Contractor Responsibilities Summary

- Contractor shall provide all the hardware and software that together comprise the proposed AMI system. This includes MIUs, wire and wire connectors, data collection units, repeaters, and related software and interfaces. The Contractor shall also determine the installation locations for the data collection units.
- Contractor shall manage, monitor, coordinate, and ensure that all contract work activities are completed. The selected Contractor shall provide HCSA with a clear, understandable, and easily accessible method for determining the progress of work.
- Contractor shall determine the methods and means of installing the meters and meter reading equipment, consistent with this RFP.

- Contractor shall propose detailed goals and milestones for deliveries or accomplishments within the project schedule as approved by HCSA.
- Contractor shall be ultimately responsible for coordinating all aspects of work among its project team, HCSA staff, and any HCSA representatives involved in this project.
- HCSA staff will be ready to assist in providing the Contractor with any available information. However, the Contractor will be responsible for gathering additional information as needed (such as specific plumbing conditions within a property) to complete the work.
- The Contractor shall coordinate and conduct core staff meetings throughout the project on a time schedule requested and/or deemed necessary by HCSA. HCSA may require weekly meetings at the beginning of the project and may reduce the frequency of these meetings as the work progresses. The meetings shall be held to allow HCSA staff to review the progress of work. Additional work sessions, briefings, and/or decision meetings shall be held whenever key finding or decisions need to be concluded. The Contractor shall prepare meeting notes to be submitted to HCSA after each meeting.
- Contractor shall provide HCSA staff with public relations assistance as required. This shall include, but not be limited to, providing charts, brochures, materials for public meetings or media distribution, photographs for news releases, and materials for technical articles or presentations. All contacts by the media as it relates to the Program shall be referred to HCSA.

The Contractor shall provide all required, necessary, and reasonably implied services, reports, analyses, correspondence, applications, meetings, and other preparation of documents and communications necessary to obtain approvals and cooperation of agencies such as Environmental Protection Agency (EPA), Occupational Safety and health Administration (OSHA), Federal Communications Commission (FCC), Federal Aviation Administration (FAA), Virginia Department of Natural Resources (DNR), Army Corps of Engineers, railroads, utilities, and various municipalities, for all activities related to the Program. All correspondence, applications, responses to agencies, and other reports and communications shall be prepared by the Contractor and reviewed by HCSA. The Contractor shall be responsible for establishing working relationships with agencies and municipalities to expedite approvals and mitigate negative impacts and shall hand-deliver items when necessary. Applications and associated fees to agencies shall be signed and paid by HCSA.

4.4 Project Assumptions

A. HCSA is open to any system configuration for an AMI system. For Proposer to be considered, at least one complete AMI system must be proposed.

B. Specific requirements of the AMI system are detailed in this RFP, especially Appendix A, the Questionnaire Summary of Functional Requirements (“Appendix A” or “Questionnaire”). Some items in the Questionnaire may not be required, and other items not listed in the Questionnaire may subsequently become requirements. The primary purpose of the Questionnaire is to serve as a document to solicit competitive responses to meet HCSA’s immediate and anticipated future requirements. Since HCSA considers this a procurement of equipment, and professional service, not a procurement of a commodity, we anticipate that through the evaluation process, individual requirements may change, and fees or costs are subject to negotiation.

C. Contractor will act as a “Prime” with overall responsibility for the proposal that addresses all the requirements of the complete solution. The Prime Contractor will either meet all requirements themselves, or establish partner/subcontractor relationships with other firms, as needed. The Prime Contractor shall be fully responsible to the HCSA for the acts and omissions of all subcontractors and of persons indirectly employed by them. Subcontractors will be subject to the terms and conditions of the contract and RFP, just as the Prime Proposer will be. Any and all subcontractors must be identified in the

bid. These subcontractors may be evaluated under the same criteria as the Prime Proposer, with the exception of cost.

D. Subcontractor relationships shall be reflected in the contractual documents; in the financial and business risks; and that the obligation would extend until HCSA has taken final acceptance.

E. HCSA shall rely upon the representations made during the RFP process, including those in the Proposal, while selecting a firm. The successful Proposer(s) shall be required to warrant their representations are accurate and shall accept full responsibility for its responses to the RFP.

F. HCSA reserves the right to reject any proposals it determines not responsive to the RFP. Furthermore, HCSA reserves the right to reconsider any proposal submitted during any phase of the procurement process; meet with select firms at any time to gather additional information; add or delete functionality from the scope of work up until the final contract signing, acknowledging these changes may result in increased or decreased effort/pricing.

G. Any and all third-party software solutions proposed as part of the Proposer's solution are subject to the same requirements of this RFP, unless otherwise stated.

H. HCSA intends to formalize all participating parties' rights, duties and obligations in written agreements.

4.5 Project Organization & Implementation

A. HCSA expects to form a team to support the implementation by working with the selected Vendor(s) during the implementation planning activities. The Proposer shall include an approach for involving and engaging all HCSA's partnering agencies within their proposal and clearly state expectations for HCSA's team within the Narrative Response section of this RFP.

B. HCSA is looking for a Vendor to propose an implementation plan and any phasing recommendations that are appropriate for the size and complexity envisioned for the project. Proposals shall include detail on any phasing recommendations and how the Proposer has been successful with this approach in the past.

C. HCSA is looking for Proposer's to put forward a comprehensive training approach that will meet the needs of HCSA and its Partnering Agency system users. Procedure documentation, internal control documentation, and training manuals are expected deliverables. These materials are envisioned to support the end-user training for the new system prior to go-live and support ongoing training of new users.

D. HCSA expects the selected Proposer will support the go-live activities and provide a limited amount of support post go-live. Proposal shall detail the Proposer's recommendations on post go-live support based upon their experience with cities of similar size and complexity as HCSA and its Partnering Agencies.

4.6 Water Meters

Meters shall meet or exceed American Water Works (AWWA) Standards as most recently revised with respect to accuracy and pressure loss requirements, or other appropriate AWWA Standards. Meters shall be new, of the latest production model, with the latest standard equipment, including items specified.

A. Applicable documents. The following documents in effect on the date of this RFP, form a part of these requirements to the extent specified herein:

- American National Standards Institute (ANSI) B1.20.1 "Pipe Threads"
- ANSI B 16.1 "Cast Iron Flanges"
- ANSI/NSF 372, ANSI/NSF Standard 61.
- AWWA C700, 701, 702, 704, and 707, as applicable

B. Meter main case. Corrosion resistant lead-free high-copper alloy.

C. Pipe connections. Lead-free high-copper alloy pipe connections.

D. Serial numbers and labeling. The manufacturer's serial number shall be stamped on the main case of all meters.

E. Head loss. Meter assembly shall have flow performance capability in conformance with AWWA Standards. Maximum head loss through the meter/strainer assembly shall not exceed those listed by AWWA standards per meter size.

F. Technical data. Proposer shall provide all manuals, diagrams, tolerance charts, exploded views, parts numbers, pricing, electronic diagrams, and any Materials Safety Data Sheets (MSDS) within thirty (30) days of the Notice to Proceed.

G. Strainers. Each 5/8", 3/4", or 1" meter must be provided with a replaceable, corrosion-resistant integral strainer screen. Meters 2" and larger shall have an integral or attached strainer.

H. External case bolts. All external case bolts, cap bolts, washers, and nuts shall be of sufficient strength for the purpose and must be of non-corrosive material designed for easy removal after long service.

I. Interchangeability. All meters of the same size or capability shall be manufactured to permit complete interchangeability of all parts (e.g., discs, pistons, chamber tops, chamber bottoms, etc.).

J. Rejection. Water meters that do not meet the requirements of this specification shall be rejected by HCSA, removed by the manufacturer at its own expense and replaced within the delivery date specified.

K. Meter registers

- For meters to be used in meter pits or vaults, the register and wire connection shall be waterproof and corrosion proof.
- Be readable with the new system and have a large easy to read display.
- Have a flow indicator to assist with leak detection.
- Have manufactured date and unit of measure easily displayed.
- Be able to withstand high and low/below freezing temperatures and being submerged in water for extended durations.
- Each encoder register shall have a unique identification number that can be read electronically when the meter is interrogated and transmitted to or stored in the MIU.
- Report 100-gallon increments.
- Impact resistant, high resolution meter register allowing inline serviceability, tamper-proof seal pin.

4.7 Meter Boxes

**Meter boxes will only be replaced where the existing box is damaged and cannot be reused. Contractor shall seek approval in writing by the Inspector prior to replacement. **

A. Provide meter boxes for 5/8-inch through 2-inch meters of the following materials:
- Non-traffic bearing locations: Cast iron, polyethylene, or concrete. Meter boxes of polyethylene construction shall not be installed in roadways.
- Traffic bearing locations: Cast iron.
- Sidewalks and Traffic area where snow plowing may occur: Cast Iron - top and all features fully flush.

B. Provide meter box with reading lid. Provide lids with spring-type latching devices. Lids shall contain sufficient metal that meter box can be easily located with metal detector. Cast words "WATER METER" into lid with letters of 1/2-inch height and raised 3/32-inch.

C. All meter box lids shall be cast iron rated for H20 loading.

D. All AMI register transmitters shall be flush mounted with the meter box lid in traffic, road and sidewalk areas where snow removal may occur.

E. Extensions: Meter box extensions 3-inches and 6-inches in height shall be available from manufacturer as standard item.

F. Cast-Iron Boxes: Clean and free from sand blow-holes or other defects conforming to requirements of ASTM A48, Class 30B. Bearing surfaces shall be machined so that covers seat evenly in frames.

- Boxes and lids shall have dipped, coal-tar-pitch, varnish finish.
- Provide lock-type meter boxes when required by Project Drawings. Lock mechanisms shall work with ease.

G. Concrete Meter Boxes: Made of Class A concrete, with minimum 4000 psi compressive strength. Construct to dimensions shown on Project Drawings.

- Castings: Free from fractures, large or deep cracks, blisters or surface roughness or any other defects that may affect serviceability.
- Concrete meter lids are not permitted.
- Data Transmission

The system shall include provisions to ensure data transmission accuracy (for example, error checking), security (for example, encryption), and immunity from outside (electromagnetic) interference as well as fading and other forms of signal degeneration or attenuation (such as multi-path fading) to prevent accidental loss or interception of customer or meter reading data.

4.8 Network Propagation Study

Each Proposer shall provide analysis of network RF propagation and assume responsibility for delivering network design based on the quantity of collector units, repeaters, and other network equipment to achieve 100% coverage of County water customers and a read success rate of 98.5% of all available reads over a three day period. The proposed network design should be all inclusive for operation of 100% of the County's service addresses in proper operational mode and certified by the Proposer as accurate.

The propagation study shall consider and identify key elements that may affect the long-term performance of the proposed AMI solution. The propagation study model considerations should include, but are not limited to, meter locations (inside or outside the structure, above/below ground, etc.), meter distance to proposed collector sites, population density, future growth plans, territory boundaries, read requirements (read delivery time for billing, special reads, etc.), operating frequency, earth curvature, topography, the percentage of time in which the signal strength meets the required value, clutter properties from building or average height of obstacles, transmitter height requirements, antenna polarization, and transmitter power requirements. The completed propagation study should provide the necessary information to strategically place collectors in the most cost-efficient manner.

Contractor will establish attachment criteria in consultation with the HCSA for any use of HCSA-owned water storage assets for AMI infrastructure.

4.9 System Architecture

Proposer shall describe proposed architecture of the following items in the AMI system:

A. Software and hardware architecture and roadmaps for each of the proposed products.

B. Communication infrastructure from the meter to the AMI server.

C. AMI control computer - Include a diagram with all hardware elements. Network switches, hubs or

additional infrastructure changes required must be proposed and estimated costs must be reflected. Describe and justify the proposed server processor and storage capacities.

D. Proposer shall provide a software architecture diagram and a description of all the proposed software, including all third-party middleware, database engine, report generator, etc. Descriptions shall include version numbers of all products.

4.10 Endpoints

Endpoints (also known as Meter Interface Units "MIUs") must be available in versions that work in water meter vaults as well as inside buildings. MIU device should be designed to operate in conditions subject to water submergence (i.e., meter boxes or vaults) and heat. Indicate if there are different models of MIUs for indoor, outdoor wall-mounted, and vault installations. If so, provide responses to the requirements in this section for each version for those features that are different, clearly specifying which version they apply to.

If there is more than one version of the MIU (e.g., one with more advanced features or memory and one with less, or single port versus multi-port), provide responses to the requirements in this section for each version for those features that are different, clearly specifying which version they apply to.

A. Each MIU shall have a unique, permanent ID number that is transmitted with the meter readings.

B. Each transmitter should be permanently labeled with the manufacturer's name, model number, transmitter identification number, reading output, and date of manufacture and should include a bar code of the transmitter serial number.

C. Wire connections between the meter register and the MIU must be sealed and waterproof.

D. MIU shall employ actionable alerts including but not limited to:

- Tamper or Meter Disconnected
- Bad read in register message
- Small customer-side leak detected
- Large customer-side leak detected
- No flow detected – specific period of time set in the host software
- Reverse Flow / Backflow
- High flow rate detected – specifics set by host software
- Battery life and health
- Register tamper detection alert
- Register removal alert

4.11 Data Collection Unit

A. Proposer is solely responsible for determining the mix of data collectors, repeaters, and MIU placement strategies needed to meet or exceed the reading success rates guaranteed in the proposal.

B. Proposer must include estimates of the costs of mounting and any continuing site rental costs in its proposal.

C. The AMI network design should seek to utilize existing County elevated assets for fixed location of collectors before proposing alternative collector locations on County-owned properties. Contact HCSA directly for access to locations and addresses of assets.

4.12 Radio Components

A. Proposer shall be responsible for obtaining all necessary licenses on behalf of HCSA. Licenses shall be assigned to HCSA. Licenses must be obtained and assigned radio frequencies verified as suitable for use

with the AMI system(s) before any AMI equipment is delivered to HCSA. If license frequencies are reallocated and no longer available to HCSA after installations have begun and this could have been reasonably anticipated by the Proposer, HCSA reserves the right to cancel the contract and orders for all or part of the system, and receive a full refund from the Proposer of all amounts paid, in addition to other damages incurred.

B. All system radio components shall incorporate open architecture communications technology such as established by the LoRa Alliance, that support the use and interoperability of third-party devices which can bring added value to the system. Please describe these capabilities in detail.

4.13 Head-End System

The AMI system may be managed and controlled by one or more components, including one or more control and communications computers, file servers, etc. Describe all in response to this section. Hardware and Network Configuration. Vendor will provide all the hardware and software needed for a complete and working system.

4.14 System Software

Software may be required to:

- Operate the control computer that interacts with other AMI system components to obtain meter readings
- Manage the database of meter readings and other information
- Interface to HCSA's Customer Information and Billing system and other information systems

A. Interface to Billing System. The AMI system should automatically provide data, corresponding to all the accounts in a billing cycle, meter reading route or other grouping presented to it, to the CIS in a standard, nonproprietary format (e.g., fixed-field ASCII).

- HCSA prefers that the proposed interfaces to CIS emulate existing interfaces used by HCSA for meter reading, eliminating the need for HCSA to amend its existing systems. HCSA billing software is QS1 and preference shall be given to system that will seamlessly integrate with it.

B. Database. HCSA requires a meter reading database as part of the AMI system. Any Proposer-supplied database used to store and manage meter readings must be non-proprietary, ODBC-compliant, and SQL-compliant. HCSA shall be entitled to make copies of the software, including any third-party software, and any user manuals for backup and archival purposes.

C. Third-Party Software. HCSA desires that the Proposer shall own all software, except for commercial generic third-party packages used to support the Proposer's system (e.g., relational database management system, report generator). Proposer must secure for HCSA sublicenses or direct licenses for all third-party software necessary for the systems to function as proposed. Indicate the warranty, licensing, and support provisions for any such packages. Such specialized third-party software should be under the control of the Proposer and be subject to the provisions of the license and warranty, maintenance and escrow guarantees.

4.15 Documentation

A. System Manuals. Documentation adequately describing all major functions, detailed step-by-step operating procedures for each screen and activity, and technical reference manuals for the system and its components shall be provide for use by HCSA personnel.

B. Third-Party Software Manuals. Manuals for any third-party software components incorporated into the system shall be available online or on CD/DVD in a printable format.

C. Guarantees and Warranties Disclosure. Proposer must assign material and equipment guarantees and warranties from all manufacturers and suppliers to HCSA and deliver copies of such guarantees and warranties and the necessary assignments to HCSA in order to assure HCSA of the full benefit of such guarantees and warranties.

4.16 Support

A. General. Service is a paramount consideration in the use of the proposed products. A statement by the proposer must be included in your proposal that will ensure HCSA that maintenance services will be provided at a minimum for the next five years either by the proposer or his agent. If an agent is used, an assurance must be provided by the proposer that they will provide the service, or that the service will be provided by another agent in case of default.

B. Initial Support Period. Proposer should provide onsite support during the installation period at no additional cost to HCSA beyond the annual component and software maintenance fees.

C. Telephone Support. Proposer shall provide trained persons to answer technical questions and guide HCSA employees through the use or diagnosis of the system through a toll-free number. Telephone support shall be available at a minimum from 7:00 a.m. through 5:00 p.m. EST time Monday through Friday.

D. Onsite Support. Proposer shall be required to provide onsite assistance at the request of HCSA. Onsite support should be rendered within twenty-four (24) hours of receiving a request for support. On-site training or evaluation when phone line technical support fails to timely address the issue or at the request of HCSA. Indicate what company(ies) will be providing the support and where their office(s) are located.

E. Loaner Equipment. Proposer shall make available loaner equipment in a timely manner to ensure continued, seamless utility operations of meter reading, maintenance and billing functions affected by the system at no additional cost to HCSA.

4.17 Installation

A. General. HCSA plans to have the AMI system installed by the end of 2021

B. Installation Schedule. HCSA and the Proposer shall establish an overall schedule for installation of the entire project. Proposer will provide HCSA an updated schedule at the beginning of each week.

C. HCSA Project Manager. HCSA will designate an employee or agent who will manage the project on behalf of HCSA. The function of this Project Manager is to coordinate with the Contractor and promote compliance by the Proposer with the specifications. The designation of a Project Manager shall not relieve the Proposer of its full responsibility to comply with the terms of the Contract and/or all plans and specifications.

D. Proposer Staff.

- **Contract Manager.** Proposer shall designate a Contract Manager, who shall have the authority to handle and resolve any disputes or contract issues with HCSA. Disputes that cannot be handled at this level must be handled in accordance with the dispute section of the Contract.
- **Installation Manager**. Proposer shall designate in the proposal an Installation Manager, who shall be responsible for managing the entire installation project on a day-to-day basis on behalf of the Proposer and for seeing that all installations are carried out in a professional manner and in compliance with the procedures required by the system Proposer/manufacturer, HCSA, and all other applicable local, state, and federal regulations.
- **Installers**. HCSA reserves the right to require Proposer to retrain, reassign, or remove from the project any employee or subcontractor who fails to perform workmanlike and competent work. In addition, all

installation employees are required to comply with the local codes of the jurisdiction where the work is taking place.

Licensed Contractor. Proposer shall engage by employment or subcontract at least one person who shall maintain a valid and current contractor's license suitable for water distribution construction and maintenance. These people will be appropriately licensed and registered in Virginia. This person(s) shall be responsible for supervising the work of all Installers and correcting any problems or damage to plumbing occasioned by the changing of meters or registers and the installation of the AMI equipment under this contract.

- **Bonding, Background Checks**. Proposer shall bond all Licensed Plumbers and Installers in a manner appropriate for HCSA.

  Uniforms and Identification. Proposer's field personnel shall wear easily recognizable uniforms and prominently displayed picture identification badges containing Proposer's name, employee name, title and signature, employee picture, and employee I.D. number.

- **No Solicitation.** No proposer, or its employees or agents, may solicit business from or perform work for the HCSA's customers while engaged on any contract associated with this project

4.18 Items to be supplied by Proposer

A. General. Proposer will supply the following components and aspects of installation: overall project management; training and direct supervision of installers; appointment scheduling; problem solving and complaint handling; and inspection, testing, and quality control.

B. Tools and Materials. Proposer shall furnish all supplies, materials, tools, and equipment necessary for the successful and timely completion of all meter and AMI installations under this contract as specified herein.

C. Vehicles. Proposer shall be responsible for all vehicles it uses on the project. Proposer should provide service vehicles onsite stocked with common fittings and supplies needed for normal service restoration and/or replacement. Proposer's vehicles, including private vehicles used for the work, shall have the company logo prominently displayed on both sides of the vehicle. Any employee of the Proposer or its subcontractors who drives a vehicle in connection with this project must have a valid driver's license for the class of vehicle being driven and must be insured as set forth in the Sample Agreement.

D. Call Center. Proposer should provide a call center and a toll-free number that customers can call to schedule installation appointments, to ask questions concerning the project, or to report problems concerning installations.

E. Field Communications. HCSA requires that all the Proposer's installers, plumbers, inspectors, and supervisory personnel be equipped with cellular phones or radios so that problems or questions can be addressed immediately, and the Installation Manager can be contacted immediately if needed.

Proposer's responsibility for materials. The proposer shall be responsible for all material, equipment, fixtures, and devices furnished. These materials, equipment, fixtures and devices shall comply with the requirements and standards of all Federal, State, and local laws, ordinances, codes, rules, and regulations governing safety and health.

Proposer shall take full responsibility for the storage and handling of all material furnished until the material is incorporated in the completed project and accepted by HCSA. Proposer shall be solely responsible for the safe storage of all material furnished to or by him until incorporated in the completed project and accepted by HCSA.

4.19 Account Data and Installation Scheduling

A. Account Data File. Prior to the start of the installations, HCSA will provide the Proposer with an electronic file containing the information necessary to create work orders for meter and AMI installation.

B. Customer Notification. The text of all Proposer letters, door hangers, and other communications with customers must be submitted to HCSA Project Manager for approval at least 2 weeks prior to use.

C. Notification of Owners. The owner may authorize the Proposer to make an appointment with a tenant or the owner's representative. Proposer shall document such authorization.

D. Appointment Scheduling. Proposer shall be responsible for scheduling and handling all installation appointments. Proposer shall notify customers of any changes in schedule at least 24 hours in advance of the original appointment.

4.20 Installation Procedures

A. Operations. Describe your proposed installation sequence and process. Describe handheld units used, installation program, daily work plans, appointment scheduling, installation procedures, work order system, reports generated etc.

B. Service Lateral Information. Installers will need to identify the service lateral pipe material and diameter prior to the meter location for a meter replacement or retrofit installation. Describe how your installation process can capture this information.

C. Cross Connection Control Inspections. As part of the project the Installation contractor will be required to complete a cross connection control inspection of the residential and commercial customers.

D. Pilot Testing. Prior to the commencement of full-scale installation, but after the Proposer has installed the AMI system control computer and a sufficient quantity of data collection units, the Proposer shall install the meter reading equipment and, meters (if applicable), on three of HCSA's routes. During this Pilot test and a period not longer than ten (10) business days following it, HCSA and the Proposer shall evaluate the procedures for public notification, scheduling installations, meter and MIU installation, data transfer to HCSA's billing system, meter reading over the system, installation data management and project control, and problem resolution, to ensure they are working and effective. No work will be started on other routes until the AMI system equipment is determined to be working to performance requirements on the test routes, the project control procedures and systems are determined to be performing accurately, and the installation procedures have been approved by HCSA.

E. Site Conditions. Before, or at the time of installation, the Proposer shall inspect the existing water meter setting, including piping and control valves. If the Proposer determines that conditions are such that damage to the existing piping would result, the Installation Manager shall immediately contact the HCSA Project Manager, and shall postpone installation at that site until the HCSA Project Manager authorizes the Proposer to proceed with the work.

F. Meter Replacement. Installer should ensure he is at the correct location and meter, and check for running water prior to commencing meter change-out. Installer must turn off the water to the building. If the meter is inside, before replacing the meter, the Installer must verify there is an acceptable permanent ground wire spanning the installation site and connected to the plumbing on both sides of the meter. If there is not, the Installer shall use a jumper cable to ensure electrical grounding during installation and note the absence of a grounding wire on the work order. Installer shall then replace the meter, using new gaskets or washers. Installer shall put plastic caps on the inlet and outlet of the old meter and handle the

meter with care in the event of post- removal testing. All meter adapters, bushings, or other hardware necessary to install the new water meter in the consumer's existing meter setup must be furnished by the Proposer. Proposer is required to install standard connections (meter couplings) for all 5/8" thru 2" meters if none exists currently. Proposer shall provide in the pricing tables a price for installing a permanent grounding wire (materials and labor) at each location where one does not exist.

G. Strainers. If there is a strainer at any installation, the Installer shall clean it and restore it.

H. Valves. The control valve located on the main service line immediately upstream of the meter shall be defined as the "stop and waste" valve. If the Installer cannot shut off water using the stop and waste valve (details must be documented on a work order), he or she shall have the option of closing the curb valve, or using a non-Freon-based freezing tool to restrict flow of water in the pipe. At no time shall an Installer use crimping or cause any permanent injury to the plumbing to restrict water flow. It is the premise owner's responsibility to provide an accessible, visible stop and waste valve. If an inside control valve is not visible, the Proposer shall contact HCSA's field inspector who will verify there is no accessible stop and waste valve, cite the owner, and explain the corrective measures that must be taken. The curb valve is the appropriate point at which to shut off water service to the home/dwelling so that an inoperable or defective stop and waste valve can be repaired or replaced. If the curb stop valve cannot be located or is inoperable, the Proposer shall notify the HCSA Project Manager and HCSA will rectify the problem.

I. Internal Plumbing Irregularities. Proposer shall report to the HCSA Project Manager, prior to the installation of a meter, any internal meter and/or plumbing irregularities including but not limited to meters installed backwards and disconnected meters or any other indication of tampering such as magnets, if meter has been removed and replaced with connecting pipes; if registers are disconnected from meters; if there are illegal connections before a meter; if there are unmetered connections of a customer's plumbing to a service lateral, fire pipe, or water main; or if there are any other violations of HCSA's regulations. Proposer shall not proceed with the installation of a meter until the HCSA Project Manager has authorized such installation in writing.

J. Meter Vault Work. Proposer shall be responsible for removing and properly disposing of any reasonable amount of dirt needed to access a meter in a meter vault. If a water meter vault is flooded so that the meter is fully or partially submerged, the Installer must pump out the vault before changing the meter. The pumped-out water shall be disposed of in a safe and proper manner as to not cause harm to the surroundings or to others. Installer must ensure that the water service is not in any way contaminated, even intermittently, by standing water in the meter vault. All waste resulting from cleaning the meter vault as well as replacing the ring and lid must be cleaned up and disposed of properly by the Proposer. The existing ring and lid, if replaced, shall be disposed of by the Proposer. The proposer is responsible for any required traffic control. The work must comply with all appropriate traffic safety regulations.

K. Service line Damage. Proposer shall be responsible for repairing any service lines it damages at its sole cost and expense, unless the Installation Manager has reported, prior to commencement of installation, a condition of antiquated or inferior plumbing to the HCSA Project Manager and the HCSA Project Manager has authorized the Proposer to proceed with the work. In the event a service line fails during or after the installation procedure has been authorized to proceed, the Proposer's licensed plumber will oversee the repair work required to restore the water service line to working order. The cost of this work will be negotiated between proposer and HCSA prior to beginning meter replacement work. Any damage done by the Proposer outside the area and scope of the work of the contract shall be repaired or replaced at the Proposer's sole cost and expense.

L. Salvage Old Meters. All meters removed as part of this project will be the responsibility of the successful Contractor. Contractor shall indicate a salvage price for each meter in the pricing sheet.

5 EVAULATION AND AWARD

The evaluation and selection of a Vendor and the contract will be based on the information submitted in the Vendor's proposal plus references and any required on-site visits or oral presentations. Failure to respond to each of the requirements in the RFP may be the basis for rejecting a response.

Elaborate proposals (e.g. expensive artwork) beyond that sufficient to present a complete and effective proposal, are not necessary or desired.

5.1 Preliminary Evaluation

Received proposals will be reviewed for completeness and compliance with RFP guidelines. All incomplete RFPs submitted may be determined nonresponsive and removed from the evaluation process. To be considered complete, RFPs shall include all required submittals listed in this RFP and shall be signed and dated. All content of a proposal submitted is subject to verification. Misleading or inaccurate responses shall result in disqualification. In the event that all proposers do not meet one or more of the requirements, the HCSA reserves the right to continue the evaluation of the proposals that most closely meet the requirements of this RFP.

5.2 Proposal Evaluations, Interviews and/or Site Visits

The HCSA RFP Selection Committee will make the final selection and recommendation following the evaluation of the proposals which may include site visits and interviews, if deemed necessary, with some or all of the Proposers. However, the HCSA may make preliminary selection(s) on the basis of the original proposals only, without negotiation, interviews and/or site visits with any Proposers.

If interviews and or site visits are conducted, the Selection Committee may choose to assign additional points for these processes or re-evaluate, re-rate and/or re-rank the finalists' proposals based upon the written documents submitted and any clarifications offered in the interviews.

5.3 Evaluation Criteria

This describes the evaluation process that will be used to determine which proposal provides the greatest benefits to HCSA. Discussions may be conducted with respondents determined to be reasonably qualified, and HCSA reserves the right to reject any and all proposals. As part of the evaluation process, the Evaluation Committee will interview Proposer references and other parties to confirm Proposer's performance on previous projects.

HCSA reserves the right to terminate this process at any time, and no guarantee is expressed or implied that obligates HCSA to contract for the proposed project. HCSA will negotiate a contract with the highest evaluated respondent, as determined by the Evaluation Committee.

Proposers shall be treated fairly and equally with respect to any opportunity for discussion and revision of their offer. To obtain the best and final value offers, revisions may be requested after submissions and before award of the Contract.

The evaluation criteria will be used to determine which proposal is the most advantageous to HCSA. Each member of HCSA's Evaluation Committee will score each technical proposal against the weighted criteria on a scale of 0-10. The average score for each criterion will be multiplied by the weight shown in the table. The full Evaluation Committee will then convene to review and discuss these evaluations and to combine the individual scores to arrive at a composite qualification/technical score and ranking for each respondent. At this point, respondents with an unacceptably low qualification/technical score will be eliminated from further consideration.

After the technical and cost proposals have been reviewed and scored by the Evaluation Committee, a short list of the top respondents will be created. The short-listed Proposers may be invited to present their qualifications to and answer questions from the Evaluation Committee. The Evaluation Committee will then discuss the presentation results and rescore each short-listed proposal. HCSA may choose to waive the short list step in the evaluation process.

Table 4 - Selection Criteria

Weights	Evaluation Criteria	Questionnaire Correspondence (ref. Appendix A)
40	Total life cycle cost: total present value of initial and ongoing costs to acquire, install, operate, repair and maintain the system (including DCU site costs and backhaul communications) over 15 years, discounting uniformly at HCSA's inflation–adjusted cost of capital. Lowest life-cycle cost.	A
25	Meets or exceeds technical requirements: Degree to which proposed system addresses technical specifications, performance requirements, and desirable features (exclusive of IT integration).	B
10	Project/Implementation Plan: proposed procedures and policies for project management, QA/QC, security, safety, training of installers, customer contact, scheduling appointments, troubleshooting and problem solving. Ability to keep to schedule.	C
10	IT integration: plans for integration between AMI system, MDMS, customer portal and HCSA's information systems; minimization of customization; configuration procedures and testing; and functionality. The ability of the system to manage and maintain data integrity, security, accessibility, flexibility, and nonproprietary interfaces. The Contractor's ability to develop, document, and support interfaces with HCSA's billing system and other IT systems	D
10	Warranties and Support: period and extent of warranty coverage on meter reading system components. Overall system performance guarantees. Protection in the event of excessive failures. How the Proposer will deliver maintenance and operational support, as well as training. Response modes and times.	E
10	Ease of Operation and Maintenance: The ease of ongoing use and maintenance of the system's hardware components, including component installation, programming, software upgrades and repair, effective use of the software, and diagnostic and reporting capabilities.	F
10	Experience of Proposed Staff: Relevant, related experience of the proposed Project Managers and staff proposed for this Project, including sub-contractors.	G
10	Experience with Proposed System: History of deployment of proposed system, including number of units installed, number of systems and their	H

	sizes, and ages of deployments. Experience in the industry (with prior systems). History of adherence to proposed budgets.	

5.4 Interviews

Each qualified Proposer shall be prepared to explain their proposal at an interview. This should include demonstrating proposed products as much as reasonably possible to help verify compliance with the specifications contained herein.

The focus of the demonstration is to determine how well the proposed system will meet user needs. System deficiencies will be documented and discussed with Proposer personnel to identify potential solutions. All expenses related to demonstrations and solutions of deficiencies are the responsibility of responding prospers.

5.5 Proposer Site Visits

After the on-site interviews, Proposers may be selected for further demonstrations of the system at clients comparable to the HCSA. Additionally, during the visit stage, we may elect to visit the corporate headquarters and manufacturing plant of the finalists to meet the management and staff, and tour production plant. HCSA will pay for their own staff and their consultant travel, lodging and meals.

5.6 Reference Checks

The Evaluation Committee may at any time investigate a Proposer's ability to perform the work. The Evaluation Committee may in addition to references supplied, request additional information about a company and its experience with previous contracts. Proposers may choose not to submit information in reply to the Evaluation Committee's requests; however, if failure to submit such information results in questions about the Proposer's ability to perform, the evaluation committee may at its discretion discontinue further consideration of a particular proposal.

5.7 Criminal History and Background Investigation

HCSA reserves the right to conduct criminal history and other background investigations of the Vendor, its officers, directors, shareholders, or partners and managerial and supervisory personnel retained by the Vendor for the performance of the contract.

6 GENERAL TERMS AND CONDITIONS

6.1 RFP Proposal and Clarification

HCSA reserves the right to request clarification of information submitted and to request additional information of one or more Proposers. Each Proposer shall examine the RFP documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the RFP shall be made in writing to Dewberry. HCSA shall not be responsible for oral interpretations given by any employee, representative, or others. The issuance of a written addendum sealed by a licensed engineer is the only official method whereby interpretation, clarification, or additional information can be given. Dewberry will provide by email to all Official RFP holders any addenda that are issued to this RFP. Official RFP holders are those who: 1) obtain an RFP upon request from HCSA; 2) receive an RFP directly from Dewberry; 3) download a bonafide copy from the HCSA website and notify Dewberry to be placed on the list.

6.2 Proposal Withdrawal

Any proposal may be withdrawn up until the time set above for the opening of the proposal. Any proposals not so withdrawn shall constitute an irrevocable offer for a period of 90 days to provide to HCSA the services set forth in this RFP.

6.3 Contract Award

HCSA reserves the right to accept or reject any or all proposals, to waive irregularities and technicalities, and to request resubmission or additional information. HCSA reserves the right to award the contract to the most responsible and responsive Proposer, resulting in a negotiated agreement, which is most advantageous to and in the best of interest of HCSA. HCSA shall be the sole judge of the proposal and the resulting negotiated agreement that is in its best interests, and HCSA's decision shall be final.

6.4 Contract Documents

The contract entered into by HCSA, and the Proposer shall consist of this RFP, any addenda issued, the submitted proposal by the Proposer, HCSA's Standard Form Agreement, Performance Bond, Payment Bond, and any approved change orders issued, all of which shall be referred to collectively as the Contract Documents.

6.5 Performance and Payment Bonds

Prior to execution of an agreement with the awarded Contractor, a Performance Bond and Payment Bond each in the amount of 100 percent of the contract price, with a corporate surety approved by the Owner, shall be required from the for the faithful performance of the contract. Attorneys-in-fact who sign Performance and Payment Bonds must file with each bond a suitable certified and effective dated copy of their power of attorney.

6.6 Contract Time

Proposer shall commence the Work required by the Contract Documents on or before a date to be specified in a written “Notice to Proceed” issued by Owner and to substantially complete the work within 270 consecutive calendar days thereafter.

6.7 Progress Payments

The Schedule of Values established in the proposal will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Owner and Owner’s representative. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period. Applications for Payment shall be submitted with no greater frequency than on a monthly basis. Upon approval of the Application for Payment by Owner or Owner’s representative, payment shall be made by Owner within 30 days.

6.8 Retainage

Five percent (5%) of contract total will be held until close-out documents are received and all punch list items are completed.

6.9 Escrow

It is the option of the Proposer to establish an escrow account for deposit of retained funds. Proposer shall have thirty (30) days from Notice of Award to request an escrow account. Forms and requirements to establish such an account are available from the Owner upon request. Funds retained by not so deposited will not be subject to accrued interest.

6.10 Acceptance of Goods/Services

Goods/services delivered shall remain the property of the Contractor until a physical inspection or actual usage of the goods/services is made and thereafter accepted to the satisfaction of HCSA. The goods/services must comply with the specifications and terms and conditions of the Request and be of the highest quality. In the event the goods/services supplied to HCSA are found to be defective or not to conform to specifications, HCSA reserves the right to cancel the contract upon written notice to the Contractor and return products to Contractor at the Contractor's expense.

6.11 Termination for Convenience

HCSA shall have the right to terminate at HCSA's convenience, with or without cause, any contract resulting from this RFP by specifying the date of termination in a written notice. In this event, the Proposer shall be entitled to just and equitable compensation for any satisfactory work completed. All work produced shall become the property of HCSA.

6.12 Assignment of Interest

The Proposer shall not assign any interest in the resulting contract and shall not transfer any interest in the same without prior written consent of HCSA, of which HCSA shall be under no obligation to grant.

6.13 Release of Data

No reports, information or data given to or prepared by the Proposer under the resulting contract shall be made available to any individual or organization by the Proposer without the prior written approval of HCSA, which approval HCSA shall be under no obligation to grant.

6.14 Gender Reference

Words of any gender used in any contract resulting from this RFP shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, and vice versa, unless the context otherwise requires.

6.15 Binding Effect

The terms, provisions, covenants and conditions contained in any resulting contract shall apply to, insure to the benefit of, and be binding upon the parties hereto and upon their respective heirs, legal representatives, successors, and permitted assigns except as otherwise expressly provided.

6.16 Governing Law

The laws of the Commonwealth of Virginia shall govern any contract resulting from this RFP.

6.17 Non-Discrimination

During the performance of any contract resulting from this RFP, the Proposer agrees:

- Not to discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Proposer. The Proposer shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- To conform to the provisions of the federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Act of 1975, as mended where applicable, and Section 11-51 of the Code of Virginia.

- That in all solicitations or advertisements for employees placed by or on behalf of the Proposer to state that the Proposer is an equal opportunity employer.
- The Proposer shall include the provisions of the foregoing paragraphs 1, 2, and 3 in every purchase order for Vendor(s) associated with HCSA.

6.18 Insurance Requirements

- Proposer shall furnish a copy of a certificate of insurance in accordance with the requirements set forth below. All insurance shall be provided by companies authorized to conduct business in the Commonwealth of Virginia. Insurers should have a rating of "A- ", Class VII, or better, in the latest evaluation of A.M. Best Company, or as otherwise approved by HCSA. During the performance of any contract resulting from this RFP, the Proposer shall have and keep current insurance with equivalent coverage and minimum limits as follows:
- Worker's Compensation Insurance in compliance with the statutory limits of the Commonwealth of Virginia.
- Public Liability Insurance in amount not less than $1,000,000 for any occurrence involving bodily injury, and not less than $1,000,000 for any occurrence involving property damage. This coverage shall include contractual liability, broad form property damage, independent Proposers, and personal injury.
- Automobile liability insurance in an amount not less than $1,000,000 combined single limit bodily injury and property damage. This coverage shall include liability for the use of hired and non-owned vehicles.
- The insurance specified herein shall name HCSA as additional insured with regard to work performed under any subsequent contract. The policy(ies) shall provide that HCSA is to receive written notice by certified mail, sixty (60) days in advance of cancellation or alteration of the policy(ies). Proposer shall provide HCSA with copies of certification of insurance coverage and proof of payment of all premiums.

6.19 Debarment Status

By submitting the proposal, Proposers certify that they are not currently debarred by HCSA from submitting bids or proposals on contracts for the type of goods and services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

6.20 Ethics in Public Contracting

Proposer hereby certifies that it has familiarized itself with Article 4 of Title 11 of the Virginia Public Procurement Act, Section 11-72 through 80, Virginia Code Annotated, and that all amounts received by it, pursuant to this procurement, are proper and in accordance therewith.

6.21 Partial Invalidity

Neither any payment for, nor acceptance of, the whole or any part of the goods/services by HCSA, nor any extension of time, shall operate as a waiver of any provision of any contract resulting from this RFP, nor of any power herein reserved to HCSA, or any right to damages herein provided, nor shall any waiver of any breach of any contract be held to be a waiver of any other or subsequent breach. Failure of HCSA to require compliance with any term or condition of any contract shall neither be deemed a waiver of such term or condition nor a waiver of the subsequent enforcement thereof.

6.22 Release and Ownership of Information

HCSA shall make a good faith effort to identify and make available to the Proposer all non-confidential technical and administrative data in HCSA's possession which HCSA may lawfully release including, but not limited to contract specifications, drawings, correspondence, and other information specified and required by the Proposer and relating to its work under this contract. HCSA reserves their rights of ownership to all material given to the Proposer by HCSA and to all background information, documents, and computer software and documentation developed by the Proposer in performing any contract resulting from this RFP.

6.23 Subcontractors and Assignments

The Proposer shall not sublet or assign this contract or any portion thereof without the prior written consent of HCSA. In seeking consent for any subcontract or assignment, the Proposer shall furnish all information required by HCSA to permit HCSA to ascertain the qualifications of the proposed Subcontractor to perform the work, and the Proposer shall submit a copy of the subcontract to HCSA for approval. The subcontract shall incorporate by reference all provisions and conditions of the contract resulting from this RFP.

HCSA's approval of a Subcontractor shall not relieve the Proposer of any of its responsibilities, duties or liabilities hereunder. The Proposer shall continue to be responsible to HCSA for performance of the Subcontractor and the Subcontractor, for all purposes, shall be deemed to be an agent or employee of the Proposer. Nothing in the contract resulting from this RFP or any subcontract shall create any contractual relationship between any Subcontractor and HCSA.

6.24 Examination of Records

The Proposer agrees that HCSA or any duly authorized representatives shall, until the expiration of three (3) years after final payment hereunder, have access to and the right to examine any and copy any directly pertinent books, documents, papers, and records of the Proposer involving transactions related to any Contract resulting from this RFP. The period of access provided in this paragraph for records, books, documents, and papers and software which may be related to any arbitration, litigation, or the settlement of claims arising out of the performance of any subsequent contract or any subsequent Contracts with Vendors shall continue until disposition of any appeals, arbitration, litigation, or claims.

6.25 Hold Harmless

The Proposer, in any Contract resulting from this RFP, shall pay all royalties and license fees necessary for performance of the Contract. The Proposer shall defend all suits or claims for infringement of any patent rights or any other proprietary rights arising from or related to performance of the resulting contract and shall save HCSA harmless from any and all loss, including reasonable attorney's fees, on account thereof.

6.26 Attorney's Fees

In the event of any action brought by either party against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for fees, costs and expenses as may be set by the court.

6.27 Utilization of Information

As may be allowed by law, any information, ideas, or concepts that HCSA receives during the procurement process from any Proposer's written proposal, any discussion or interview with the Proposer or as a result of any portion of the procurement process for the services described in this RFP shall become the property of HCSA. HCSA may use this information for any purpose without compensation to the Proposer from whom the information was received.

6.28 Public Convenience and Safety

All participants involved in this Contract shall, always, conduct the work in such a manner as to insure the least obstruction practicable. The convenience and safety of the public and of the residents along and adjacent to the work sites shall be provided for in an adequate and satisfactory manner. No material or obstruction shall be placed within fifteen (15) feet of any fire hydrant. Footways and portions of highways adjoining the work sites shall not be obstructed more than is necessary.

6.29 Drug Free Workplace

All participants involved in this Contract shall provide and maintain a drug free workplace, including certification, in accordance with the Federal Drug Free Workplace Act of 1988 (40 CFR Part 32).

6.30 Safety and Health Regulations

All participants involved in this Contract shall comply with all applicable safety and health regulations, standards and codes including but not limited to: Occupational Safety Health Administration (OSHA) requirements in the General industry (1910) and Construction (1926) Standards, NC OSHA Guidelines and Regulations, Manual for Uniform Traffic Control Devices (MUTCD), NFPS's Life Safety Code 101, and State of Virginia Building codes and other state and local regulations as they apply.

HCSA, its officers and employees do not propose to administer, implement, or be responsible for any safety and health program. The County will not provide any legal, insurance, or safety advice and/or counsel to any participant, supplier, or their employees.

HCSA shall have access to any worksite, permits, or safety-related documentation upon request. All serious incidents resulting in the injury and/or hospitalization of any persons must be reported to the County immediately and in writing within eight hours.

Other occurrences with serious accident potential, such as equipment failures and/or damage to any properties, must also be reported to the County immediately. Investigations, inspections, citations, or work stoppages must be reported immediately.

HCSA reserves the right to suspend work and/or terminate the contract if safety procedures are not followed, or if there is a refusal to comply. A contractor selected by the County will complete unfinished work. The cost of completion and any claims arising from the uncompleted work will be borne by the initial contractor.

Participants involved with this Contract will be responsible for:

1. Erecting and maintaining all necessary safeguards to protect persons and property including, but not limited to barricades, signs, and safety apparatus.
2. Obtaining all necessary permits prior to the beginning of work.
3. Responding to complaints and claims, within a reasonable period not to exceed two working days.

4. Training of employees and subcontractors' employees as required by the OSHA standards and providing the personal protective equipment needed to perform their tasks safely.
5. Writing a safety program covering the work performed and providing a copy of the program to employees. Confined space testing must be performed, and permit must be prepared and presented prior to entry in compliance with OSHA Standard Number 1910.146.
6. Providing the name of an on-site employee who is responsible for safety and an evening phone number so that they may be contacted.
7. Exceeding the minimum safety regulations to protect citizens, County employees, contractor, and subcontractor employees and/or property from harm related to the work process as necessary or required by the County.
   Warning those who may be injured by the contractor or the subcontractors' actions and taking necessary precautions to protect those individuals from injury.
8. All participants shall be responsible to restore any altered property to its original condition. Property so altered shall be approved by the County Manager or his authorized representative.
9. If any damage occurs to any property, the responsible participant shall be responsible to repair it to its original condition at its sole expense and shall indemnify and save harmless the County of Sawmills from any damage caused herein.
10. Providing a "competent person" on the job at all times when work is being performed.
11. Disposing of all waste generated by the participant sues paints, coolants, oils, and all debris in accordance with Local, State, and Federal regulations at the contractor's expense.

APPENDIX A – TECHNICAL QUESTIONNAIRE
METER DATA
(COMPLETED APPENDIX A TO BE PROVIDED IN MICROSOFT WORD WITH BID PACKAGE)

Base Bid Models

Size (in)	Manufacture	Model	Minimum Flow Rate (gpm)	Flow Range (gpm) & Accuracy Range (%)					
				Low	Accuracy	Med	Accuracy	High	Accuracy
5/8									
3/4									
1									
1 1/2									
2									
3									
4									

Global Requirements and Infrastructure			
#	**Requirement**	**Explanation**	
A.	**METER**		
1	Does your meter proposed in the base bid meet the requirements of the RFP?	☐ YES ☐ NO Description:	
2	Will all parts or interchangeable equivalent parts be readily available from the meter manufacturer for a period of twenty (20) years from the date of purchase?	☐ YES ☐ NO Description:	
3	Please describe the manufacturing quality control procedures of your meters and test results to be provided.		
B.	**REGISTER**	**ENCODED REGISTER TYPE**	
	ITEM	**ANALOG**	**DIGITAL**

1	Please indicate what is the lowest reading resolution on the register based on the size of the meter.		
	100 gallons		
	10 gallons		
	1 gallon		
	0.1 gallon		
	0.01 gallon		
	Other		
2	Will the register require a battery? If so, please indicate the life of the battery and the warranty.		
3	Will the register conduct nightly leak detection testing? If yes, please explain procedure.		
4	Is the register capable of indicating when a backflow event has occurred? If yes, please explain procedure		
5	Will the register be capable of measuring bi-directional flow? If yes, please explain procedure.		
6	List the tamper alarms for your meter and register, and how this is accomplished.		
7	State the volume indicated by one revolution of the leak indicator hand for a:		
	5/8” meter:		
	3/4” meter:		

APPENDIX A – FUNCTIONAL REQUIREMENTS
ENDPOINTS

	Requirement	Proposer's response
#	**MIU's (ENDPOINTS)**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Can the existing wiring (2-wire) that is installed from the meter to the outside touch pad reader be re-used to install the new meter and MIU?	☐ YES ☐ NO
2	Are the MIU's impact resistant and weatherproof? Indicate environmental tolerances.	☐ YES Description: ☐ NO
3	Will the MIU generate alarms? Please describe all the alarms generated by the MIU?	☐ YES Description: ☐ NO
4	Does the MIU have multiple ports for reading more than one register? Indicate the total amount of ports.	☐ YES Total: ☐ NO
5	Describe how the MIU is programmed? Options, features, when and where the MIU can be programmed.	
6	Can the default meter reading interval be changed?	☐ YES ☐ NO
7	What is the battery life guarantee for the MIU, programmed at the default settings? Please provide a copy of the guarantee.	
8	Does the system provide a warning in advance of battery failure?	☐ YES ☐ NO
9	Does your system provide replacement batteries? If yes, please indicate the cost of the replacement batteries	☐ YES ☐ NO
10	What is the default transmission level for sending data from the MIU to the DCU's, and from the DCU's to the AMI server? Can the default transmission level be changed? How?	
11	Is the data transmitted between the MIU and DCU encrypted? If yes, explain the type of encryption.	☐ YES ☐ NO

12	What is the maximum length of cable between the meter and the MIU?	
13	Describe the communication system used from the MIU's to the DCU's. Is the transmission on a license or unlicensed frequency?	
14	Do you have a MIU that can operate over the cellular network?	☐ YES ☐ NO
15	Is your MIU compatible with other meter and register manufactures? Please describe.	☐ YES ☐ NO
16	Are reads stored in the MIU? Indicate the amount of reads that are stored in the MIU at any given time.	☐ YES Total: ☐ NO
17	Can the MIU automatically distinguish different makes and models of meter registers upon connection?	☐ YES ☐ NO
18	Does the MIU have to be programmed or modified to accept different makes or models of meter registers?	☐ YES ☐ NO
19	Can an installer confirm the MIU is communicating with the DCU or AMI server prior to leaving the premise?	☐ YES ☐ NO
20	If an MIU was not reporting to a DCU or the AMI server, can the MIU be read with a handheld unit remotely?	☐ YES ☐ NO

APPENDIX A – FUNCTIONAL REQUIREMENTS
INFRASTRUCTURE AND SOFTWARE

	Requirement	Proposer's Response
#	**AMI SYSTEM & SOFTWARE INFORMATION**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	What is the name(s) of the proposed software and on what operating system does it run?	
2	What language is the proposed software written in?	
3	What are the hardware requirements for running in the proposed software? Is it a cloud solution?	
4	What is your relationship to the proposed software? Developer, Owner, Agent or Licensor?	
5	How many clients are using the most current version?	
6	List the names of clients using the most current version, along with the number of accounts and application.	
7	Will software source code be escrowed and made available at no additional cost to HCSA in case of vendor default, merger or dissolution? Indicate the number of years the software will be escrowed.	☐ YES Number of Years: ☐ NO
8	Will software license be a license in perpetuity?	☐ YES ☐ NO
9	Will software maintain log of problems encountered when: Accessing meters/ AMI modules/ Communications Network? Uploading reads from meters? Uploading reads to information/ billing system?	☐ YES ☐ NO
10	Describe the capacity of your proposed system for meter reading including the following:	
	Total number of meters supported	
	Indicate number of readings/meters for monthly reads	
	Indicate number of readings per meter for hourly or more frequent reads	

	Indicate number of readings per meter for on request reads	
11	Describe any system capabilities to validate meter readings.	
12	Does the software allow the HCSA to generate customizable reports? Explain how this is completed.	☐ YES ☐ NO
13	How will you handle hard to read meter accounts (difficult to get a signal from the AMI module to the DCU)?	
14	Does the software identify meter rollovers?	☐ YES ☐ NO
15	Does the system provide access to the raw data reads collected by the network?	☐ YES ☐ NO
16	Describe software support direct customer interfaces such as: remote read out devices, audible in home alarms, internet messaging, etc.	
17	Can custom notes be entered on an account-by-account basis?	☐ YES ☐ NO
18	Do you have an interface to upload readings into the Billing Software?	☐ YES ☐ NO
#	**DATA COLLECTION UNITS (DCU's) for AMI SYSTEM**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Indicate the mode of operation and schedule by which the DCU captures, stores, and retransmits data received from MIUs back to the AMI server.	
2	Indicate what FCC or other regulatory agency licenses, if any, the system will require.	
3	What is the radio frequency, and available band width of the communication system between MIU and DCU?	
4	Describe procedures HCSA may use to identify and remove interlopers on its licensed frequency(ies) or overpowered signals on unlicensed frequencies.	
5	Describe provisions, such as firewalls, to ensure integrity of data and programming, and prevent unauthorized reprogramming	

6	Indicate the estimated number of data collection units needed to achieve that level of performance. Describe the proposed amount of redundancy in signal reception.	
7	What is the proposed power source for the DCU's?	
8	How does the system preserve data should power to a DCU/repeater be lost?	
9	Indicate the recommended locations, elevations, and mounting options for DCU placement.	
10	Indicate the recommend maintenance intervals and procedures for the fixed DCU's	
11	Indicate the mode of operation and schedule by which the repeater captures, stores, and retransmits data received from MIUs back to the DCU.	
12	Indicate options for mounting repeaters and power source options. If powered by a battery indicate guaranteed life of the battery.	
#	**BACKHAUL SYSTEM**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Indicate available options and the preferred or recommended method for transmitting meter readings and other AMI system data from the DCU(s) to the AMI server.	
2	Please indicate any additional benefits the Utility could incorporate into their daily operation using the proposed backhaul system.	
#	**AMI HOSTED SERVER (Head end)**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Describe the hosted AMI server system operating system, updates, etc. that is included with the annual hosting fee.	
2	What is the recommended computer (PC, tablet, smart phone) requirements for accessing the AMI server (operating system, internet connection, etc.) that HCSA should have to properly access the AMI system?	
3	Describe the emergency power source for the AMI server in case of power failure?	

4	How many users can access the hosted server at the same time?	
5	What is the back-up procedure for archiving the data on the server?	
6	Can HCSA download a copy of the archived data?	☐ YES ☐ NO
7	Describe how HCSA would access the archived data.	
#	**METER DATA MANAGER**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Does your system include a Meter Data Management System (MDMS)?	☐ YES ☐ NO
2	Please describe your MDMS including its capabilities and limitations (information maintained for meters, readings, system requirements, computer storage space needs for 4,000 meters).	
3	Does the MDMS include an archive of all meter reads, including their date, time and status?	☐ YES ☐ NO
4	Does the MDMS have the capability of importing in the Utility's existing Account #, Customer #, Meter # and Serial # into the MDMS from the Utility's CIS System?	☐ YES ☐ NO
5	Does the MDMS have the ability to distinguish a sewer deduct meter or an irrigation meter?	☐ YES ☐ NO
6	What are the retention periods for individual reads, hourly reads, daily reads, weekly reads and monthly reads?	
7	Describe how your system has the ability to separate meters into groups (e.g., by routes, types of customer, billing cycles) for review.	
8	Can your MDMS perform time of day customer consumption analysis by customer or groups of customers?	☐ YES ☐ NO
9	Describe the MDMS capabilities for developing water loss plan /sub-district monitoring plan. Will the plan include sub-district comparisons to master meter?	

10	Could acoustically leak detection devices be monitored in the MDMS and included as part of the plan?	☐ YES ☐ NO
11	Can your MDMS import data from Utility master meters to perform non-revenue water analysis?	☐ YES ☐ NO
12	What file format is required for importing the master meter hourly readings?	
13	Can your MDMS perform water conservation behavior analysis of customers?	☐ YES ☐ NO
14	Does the MDMS provide a separate file of billing reads?	☐ YES ☐ NO
15	Please provide the names of utilities using your MDMS with Utility billing software.	
16	Is the utility (CIS) sent copies of the customer notifications? Describe how?	☐ YES ☐ NO
17	Can the notifications be "customized" to HCSA needs?	☐ YES Description: ☐ NO
18	Can customer alerts (i.e. leak detection alarm) be sent to a customer through e-mail or text message?	☐ YES ☐ NO
19	Can selected accounts be "tracked" for specialized reporting to the utility?	☐ YES ☐ NO
20	Is data from the MDMS available interactively by the customer via the internet or other means?	☐ YES ☐ NO
21	Describe how the customer interface is performed.	
22	How often are system updates issued and what is required to implement these updates?	
23	Describe the security system used on the customer portal to prevent others from obtaining other customer's usage history.	
#	**LEAK DETECTION**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Does your system support acoustic leak detection (ALD)? If yes, please list make and model of ALD devices, where devices can be installed, and installation density.	☐ YES ☐ NO

2	Describe in detail how the ALD system works in conjunction with the proposed AMI solution. Show user interface, sample reports, and screen shots.	
3	Can the system to complete nighttime leak detection (via monitor water consumption at assumed no flow periods).	☐ YES ☐ NO
4	Can the system to detect very large leaks and notify the utility as soon as they are detected?	☐ YES ☐ NO
5	Can the system give an indication of unauthorized usage? Describe this capability, if available	☐ YES ☐ NO
#	**INTERFACE WITH BILLING SYSTEM AND OTHER SOFTWARE**	**Evaluation Criteria B - Technical Requirements (ref. page 30)**
1	Do you have an interface to upload readings into the QS1 Billing Software?	☐ YES ☐ NO
2	Do you have experience in interfacing with the QS1 billing system?	☐ YES ☐ NO
3	Please list the utilities using your system and the QS1.	
4	Can you provide billing meter reads, based on a billing cycle, to QS1 for use in generating monthly bills?	☐ YES ☐ NO
5	Describe security features of the AMI database including logging, and authorization levels.	
#	**INTERFACE WITH BILLING SYSTEM AND OTHER SOFTWARE**	**Evaluation Criteria D – IT Integration (ref. page 30)**
1	List the default information fields in the AMI database. Can HCSA add or modify fields in database tables? If so, describe provisions and limitations.	
2	Indicate what information is provided to the billing system by the AMI system. Indicate what information is required by the AMI system from the billing system so that the former may respond.	
3	Describe the procedures for updating relevant account information within the AMI system and/or meter reading database when account information is changed in the CIS.	

4	How many concurrent users can the system accommodate?	
5	Can the system process batch transfer of meter reading data in the background while allowing users to conduct queries and other transactions?	☐ YES ☐ NO
6	Do you have interface to the following (if yes describe)?	
	Work Order System.	☐ YES ☐ NO
	Mapping Software such as GIS.	☐ YES ☐ NO
	Engineering Models.	☐ YES ☐ NO
	Data Management and Special Studies capabilities.	☐ YES ☐ NO
7	Describe the proposed system expandability and compatibility with new and developing technology (both software and hardware).	
#	**SECURITY**	**Evaluation Criteria D – IT Integration (ref. page 30)**
1	Describe the physical interfaces, protocols, and security and authentication procedures supported on every interface of the communication network.	
2	Describe provisions to ensure data transmission accuracy (for example, error checking), security (for example, encryption), and immunity from outside (electromagnetic) interference as well as fading and other forms of signal degeneration or attenuation (such as multi-path fading) to prevent accidental loss or interception of customer or meter reading data. Describe how this is accomplished.	
3	Describe how the system addresses stored data system integrity and security (so that the readings from the meters, ID numbers, and other data are always associated with the correct meter and customer) and data access security. Describe how the system will ensure against loss of stored data.	

4	Describe the security and anti-tamper features on the hardware, software, and communication interfaces of the AMI Communication solution.	
#	**WARRANTIES**	**Evaluation Criteria E – Warranties and Support (ref. page 30)**
1	Please describe all warranties for component, workmanship, security, and installation for the AMI system including but not limited to:	
	Meters	
	Registers	
	MIU's	
	DCU's, and repeaters/other collectors	
	AMI server	
	AMI software	
	MDMS	
	Other	

APPENDIX A – FUNCTIONAL REQUIREMENTS
INSTALLATION

	Requirement	Proposer's Response
#	INSTALLATION	Evaluation Criteria C – Project Implementation (ref. page 30)
1	Describe your proposed installation sequence and process (as a separate attachment, as needed). Describe daily work plans, appointment scheduling, installation procedures, number of installers required to meet the schedule, work order system, reports generated, etc. Include ideas/suggestions for pilot program, installation incentives to customer, etc.	
2	How long after an install will you provide 24-hour call response to complaints about leaks, loss of pressure, or other problems associated with installation work? Indicate your response time to the premise for investigation.	
3	QC program - Please describe your complaint/install issue process management with the customer and the reports generated for review by HCSA including but not limited to: response to complaints, improper installations, leaks after installation, and your installation control and audit procedures.	
4	Describe in detail the proposed system for ensuring that all data pertaining to installation is correctly recorded during installation, and that all data transferred to the CIS is accurate.	
5	Describe when old piping would become a failure for Installer to replace a meter designated for replacement? Describe your procedures for notifying HCSA and rectifying problem installs.	
6	Describe meter replacement procedure including checking for running water, valve inspection, ground wire installation, meter replacement, meter and register testing, seal wire installation, and bleeding air out of service, etc.	

7	If the shut off valve is not capable of shut down, will you use a freeze tool employing CO2 or another environmentally safe refrigerant to stop the flow of water during installation? When installation is complete, will you verify proper thawing of the line and the return of full water flow to the water?	☐ YES ☐ NO
8	Describe your process for handling an inaccessible or obstructed meter.	
9	What is your procedure for dealing with a shut-off valve that will not reopen after a meter has been replaced?	
10	Do you provide a GPS location of the meter and/or AMI unit installed?	☐ YES ☐ NO
11	HCSA will accept work and provide payment to the proposer based on successful installations. Describe in detail your parameters of a successful meter replacement, and AMI install?	
12	List all data that will be provided to HCSA upon successful install (e.g. meter readings and serial numbers, MIU ID, account ID, register ID, etc.)	
13	Please explain any Public Communications Assistance you would provide to the HCSA to help improve the installation process?	
14	What are your performance standards for installations regarding the following:	
	Late arrivals	
	Changed Appointments	
	Missed Appointments	
	Inspection sample	
	Customer Complaints	
	Complaint resolution	
	Data Discrepancy	
	Problem account follow-up	
15	Can the installation program used on the handheld be modified to include additional information such as service lateral material, diameter, and cross connection control inspections?	☐ YES ☐ NO

16	Are your installers trained in Cross-connection control inspections?	☐ YES ☐ NO

APPENDIX A – FUNCTIONAL REQUIREMENTS

TRAINING

	Requirement	Proposer's Response
#	SYSTEM DOCUMENTATION AND TRAINING	Evaluation Criteria C – Project Implementation (ref. page 30)
1	Indicate SOP's you are able to provide.	
	Meter Reading	☐ YES ☐ NO
	Billing Run	☐ YES ☐ NO
	Special Reads	☐ YES ☐ NO
	MDMS	☐ YES ☐ NO
	Customer Access to a customer portal	☐ YES ☐ NO
	Customer Leak Detection	☐ YES ☐ NO
	Sub-district area leak detection	☐ YES ☐ NO
	List any additional SOP's	☐ YES ☐ NO
2	Will you supply, at no charge, application system documentation listed below that is clearly written, user-oriented? Provide description otherwise.	☐ YES ☐ NO
	System overview description	
	System flow chart	
	File description and record layouts	
	Program functions and logic descriptions	
	Program listings	
	Descriptions of all system controls	
	Job control listings (if applicable)	
	Backup and recovery procedures	
	Standard operating procedures (SOP)	
	Screen layouts	

	Data entry procedures	
	Report descriptions	
	Description of all user messages	
	Operating system software documentation (user manual)	
	Hardware technical documentation	
3	Will you provide training and documentation for user interface and system operations including the items below? Include any additional items not on the list below or additional description as needed.	☐ YES ☐ NO
	System overview description	
	System flow chart	
	File description and record layouts	
	Program functions and logic descriptions	
	Program listings	
	Descriptions of all system controls	
	Job control listings (if applicable)	
	Backup and recovery procedures	
	Standard operating procedures (SOP)	
	Screen layouts	
	Data entry procedures	
	Report descriptions	
	Description of all user messages	
	Operating system software documentation (user manual)	
	Hardware technical documentation	
4	Will you provide a method to track and monitor all changes to software, hardware, operation, and maintenance procedures and equipment?	☐ YES ☐ NO
5	Describe the training you offer pre-installation, during installation and post installation. Indicate all the areas of training for HCSA staff, including but not limited to: training curriculum, training objectives and outline, training aids, supplemental training, testing and evaluation of trainees to ensure they have learned the course content and	

	can perform the necessary functions on the system.	
6	Describe in detail the ongoing training support available during the 5-year maintenance period.	
7	Describe your handling of bugs in your software and subsequent fixes for these bugs?	
8	Are you willing to make software modifications, and do you support those modifications?	☐ YES ☐ NO
9	How are new releases and enhancements developed and notification of availability made to your customers?	
10	How often do you do product upgrades, and are the costs of upgrades included in the annual maintenance?	
11	After initial installation training has been conducted, what type of day to day support is available? Please describe any support tools available to HCSA staff such as afterhours "hot-line" support, website to look up help information, call center for questions, etc. Please list specific support available.	
12	Do you have an extended support plan beyond the initial 5-year maintenance period? Please describe and include annual cost.	☐ YES ☐ NO
13	Will there be a single point of contact familiar with the HCSA project that will be the training leader/point person for training issues/questions during and post installation?	☐ YES Name of Contact: ☐ NO

APPENDIX A – FUNCTIONAL REQUIREMENTS
MAINTENANCE

	Requirement	Proposer's Response
#	**SYSTEM SUPPORT INFORMATION**	**Evaluation Criteria F – Ease of Operation and Maintenance (ref. page 30)**
1	Describe your annual maintenance agreement included in your proposal.	
2	Does the annual cost include all firmware updates and patches for the lifecycle of the software?	☐ YES ☐ NO
3	Describe how upgrades to system components are completed over the communication network. If support for the component does not exist indicate how it will be addressed in the future.	
4	Is there local (24 hour) on-site service for the following items? If not indicate response time or remote capabilities:	☐ YES ☐ NO
	AMI Modules	
	Communications Network	
	Installation Media	
	Installation Troubleshooting	
	Software	

Appendix B - HCSA AMI COST PROPOSAL

ITEM	DESCRIPTION	Use only one column		Unit	BID UNIT PRICE	BID PRICE
		Est. Qty. (Cond. #1)	*Est. Qty. (Cond. #2 - write in quantity)			
1- METERS/HARDWARE						
1	3/4" Meter	2,924		EA	$	$
2	1" Meter	127		EA	$	$
3	1-1/2" Meter	35		EA	$	$
4	2" Meter	64		EA	$	$
5	3" Meter	11		EA	$	$
6	4" Meter	7		EA	$	$
7	6" Meter	2		EA	$	$
8	10" Meter	2		EA	$	$
9	Meter Interface Unit (MIU)	4,017		EA	$	$
					Section 1 Subtotal	$
2 - INSTALLATION						
1	MIU only - Convert Existing Mueller HotRod AMR to AMI	845		EA	$	$
2	MIU only - Integrate Existing Hersey-Mueller Mi-Net meters to AMI	343		EA	$	$
3	3/4" Meter & MIU	2,924		EA	$	$
4	1" Meter & MIU	127		EA	$	$
5	1-1/2" Meter & MIU	35		EA	$	$
6	2" Meter & MIU	64		EA	$	$
7	3" Meter & MIU	11		EA	$	$
8	4" Meter & MIU	7		EA	$	$
9	6" Meter & MIU	2		EA	$	$
10	10" Meter & MIU	2		EA	$	$
11	Installation - Project Management	1		LS	$	$
					Section 2 Subtotal	$
3 - ANCILLARY ITEMS						
1	Existing Meter Box Lid Drilling	4,010		EA	$	$
2	Replace Meter Box Lid (pre-drilled)	200		EA	$	$
3	Meter Box and Lid Replacement - Cast Iron	40		EA	$	$
4	Meter Box and Lid Replacement - Polyethylene	90		EA	$	$
5	Meter Box and Lid Replacement - Cast Iron (in concrete or asphalt)	10		EA	$	$

6	Meter Box and Lid Replacement - Polyethylene (in concrete or asphalt)	10		EA	$	$
7	Back-up Drive-by Meter Reading Device	2		EA	$	$
					Section 3 Subtotal	$
4 - SYSTEM SOFTWARE - List separately the software/product or similar licenses required and associated costs, note if ongoing or one time.						
1				LS	$	$
2				LS	$	$
3				LS	$	$
4				LS	$	$
5				LS	$	$
					Section 4 Subtotal	$
5 - AMI INFRASTRUCTURE - Indicate quantities as required to support AMI system.						
1	Antennas			EA	$	$
2	Data Collectors			EA	$	$
3	Repeaters			EA	$	$
4	New Pole Set			EA	$	$
5	Backhaul Network			LS	$	$
6	AMI Server			LS	$	$
7	Other (specify)			LS	$	$
					Section 5 Subtotal	$
6 - AMI IMPLEMENTATION						
1	Pilot Testing and Pre Go-Live	1		LS	$	$
2	Coordination with HCSA and its agents	1		LS	$	$
3	Planning and Analysis	1		LS	$	$
4	Documenting the System	1		LS	$	$
					Section 6 Subtotal	$
7 - SUPPORT AND MAINTENANCE - If the Proposer has different tiers of support pricing, provide the level of support recommended.						
1	Year 1	1		LS	$	$
2	Year 2	1		LS	$	$
3	Year 3	1		LS	$	$
4	Year 4	1		LS	$	$
5	Year 5	1		LS	$	$
					Section 7 Subtotal	$

Proposer Detailed Response:

8 - FUTURE UPGRADE COSTS						
1	**Upgrades** - If not included in Support and Maintenance provide the costs for future upgrades. If upgrades of your software are bundled with the support and maintenance indicate so in the Support and Maintenance section. Provide details for all options as an additional narrative.	1		LS	$	$
					Section 8 Subtotal	$
Proposer Detailed Response:						
9 - TRAINING						
1	**Training** - Provide the total cost for training and detail the number of hours and rate for standard and additional training. List differences, if any, in the hours or rates for training different types of end-users (i.e. those that may only use one module of the system versus those "power" users that would learn each and every part of the system).	1		LS	$	$
					Section 9 Subtotal	$
Proposer Detailed Response:						

10 - OTHER COSTS						
1	Detail any and additional miscellaneous costs associated with the Proposer's System. Provide line-item detail and descriptions. Be specific in matching costs with activity (travel, meetings, hotel, etc.)	1		LS	$	$
					Section 10 Subtotal	$

Proposer Detailed Response:

* ***The unit quantities indicated in the bid form are based on data provided in Table 3-1 of the specifications. Table 3-1 qualifies the use of Hersey-Mueller Mi.Net and Mueller HotRod throughout the HCSA system and assumes full compatibility in assigning unit quantities shown (Cond. #1). In the event the Proposer offerings are not compatible, thus requiring full meter and/or MIU replacement, Proposer shall utilize the Unit write-in column (Cond. #2) to provide adjusted quantities necessary for successful conversion of all meters to AMI and replacement of meters indicated in Table 3-1 with new.***

ALTERNATE #1 - REMOTE DISCONNECTION (ADDER FOR FUNCTIONALITY CONSIDERATION)						
1	AMI Meter with Integral Cut-off Valve and MIU (3/4" only)	2,924		EA	$	$
2	Software, Hardware Modules, and Other for Fully Operational Remote Cut-off	1		LS	$	$
					Alternate #1 Subtotal	$

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between Halifax County Service Authority ("Owner") and

("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: see attached bid.

ARTICLE 2 – THE PROJECT

2.01 *The Project, of which the Work under the Contract Documents is a part, is generally described as follows: supplying and implementing an entire AMI system, including meters, meter reading equipment, related software, maintenance, training, technical support, and installation for approximately 4,476 residential and commercial water services.*

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Dewberry, 551 Piney Forest Road, Danville, VA 24540.

3.02 The Owner has retained Dewberry Engineers Inc. ("Engineer") to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 550 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 580 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of

requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $450 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $300 for each day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

A. **Contract price: (_____)**

B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract:

a. 95 percent of Work completed (with the balance being retainage); and

b. 95 percent of cost of materials and equipment not incorporated in the Work (i.e. stored materials - with the balance being retainage).

B. Upon Substantial Completion of the entire construction to be provided under the Contract Documents, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 150 percent of Engineer's estimate of the value of work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to the final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of 5 percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 5 inclusive).
2. Performance bond (pages 1 to 3 inclusive).
3. Payment bond (pages 1 to 3 inclusive).
4. General Conditions (pages 1 to 70 inclusive).
5. Supplementary Conditions (pages 1 to 17 inclusive).

6. Specifications as listed in the table of contents of the Project Manual.

7. Addenda (numbers 1 to X inclusive).

8. Exhibits to this Agreement (enumerated as follows):

   a. Contractor's Bid (pages 1 to X inclusive).

9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:

   a. Notice to Proceed.

   b. Certification of Substantial/Final Completion

   c. Work Change Directives.

   d. Change Orders.

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:	CONTRACTOR:
Halifax County Service Authority	
By:	By:
Title:	Title:
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:	Attest:
Title:	Title:
Address for giving notices:	Address for giving notices:
	License No.: *(where applicable)*