# REQUEST FOR PROPOSALS

# GEORGETOWN MUNICIPAL WATER AND SEWER SERVICE

# *ADVANCED METERING INFRASTRUCTURE SYSTEM*

**REQUEST TO PROVIDE PROPOSALS FOR PROVIDING ADVANCED METERING INFRASTRUCTURE (AMI), METERS, AND SYSTEM INSTALLATION FOR Georgetown Municipal Water and Sewer Service, Kentucky**

Georgetown Municipal Water and Sewer Service

**CONTACT FOR QUESTIONS**

For general questions about the RFP, contact [AMI-RFP@gmwss.com]

**SUBMITTAL INFORMATION**

Date Issued: 10/22/2026

Submittal Deadline: 12/17/2026

Submit To: [https://gmwss.com/procurement/]

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# SECTION A: PROJECT INTRODUCTION & INSTRUCTIONS FOR PROPOSERS

Georgetown Municipal Water and Sewer Service (GMWSS) intends to acquire an Advanced Metering Infrastructure (AMI) system and related products, software and services (collectively, the "System"), for all of its approximately 16,112 water meters.

## A.1 Project Background

*The following is a summary of GMWSS's current water meter system:*

- GMWSS Customer Population Base: Approximately 40,500
- Number of existing water customers: 16,112
- Any existing AMI-ready meters:
    - Approximately 2,032 meters ≤ 1" are Master Meter. Specific model information is not available, but most have the Acculinx register.
    - There are some Master Meter Sonata meters in the field.
    - There are Master Meter Octave and Sensus Omni meters in the field for larger applications >=1.5".
- Total number of new AMI meters to be installed: Approximately 16,076 meters <=2". GMWSS is seeking a full AMI System upgrade on all meters of this size, but would like unit pricing for meter retrofits. Approximately 5 meters >= 3" will be installed.
- Total number of existing meters to be retrofit with MIU: Approximately 31 meters >= 3" will need to be retrofitted.
- Date of last major water meter upgrade: System has seen consistent meter upgrades throughout service area since approximately 2002. For additional detail on meter information, please see Attachment 2 – Meter Data.
- Goals of GMWSS for implementing AMI: Modernize metering infrastructure through deployment of a state-of-the-art AMI system, improve customer access to usage and billing data, increase billing transparency, and enable more frequent meter reads.
- Project / Program Objectives: Establishing and implementing a simple, user-friendly customer portal for customers, deployment of universal endpoints, and increased billing transparency.

*The following is a summary of GMWSS's current Customer Information System (CIS)*

- CIS make, version number: Visual Intelligence Portfolio (VIP) by Software Solutions v.6.9.1.9702
- Type of customer service web portal: Online bill-pay via Invoice Cloud.
    - Customers have the option to pay bills via credit card, PayPal, Apple Pay, etc. They do not have an AMI-style customer/utility portal.
- Type of Work Order Management System (WOMS): VIP syncs digital work order data to/from ESRI's Field Maps Tasks
- Type of Geographic Information System (GIS): ESRI's ArcGIS Pro and ArcGIS Online

Please refer to the table below for current meter by size numbers (approximate).

| Meter Size (in inches) | Number of Meters | Number of Retrofits |
|---|---|---|
| 5/8" | 15,491 | |

| | | |
|---|---|---|
| 1” | 255 | |
| 1 ½” | 36 | |
| 2” | 294 | |
| 3” | 4 | 24 |
| 4” | 1 | 7 |

Please refer to the below tables for additional meter installation details.

| **Small and Medium Meter (5/8’’ - 2’’) Locations** | **Number of Meters (%)** |
|---|---|
| Indoors | <1% |
| Outdoor Restricted | 1% |
| Outdoor Accessible | 88% |
| Confined Space | 10% |
| **Large Meter Locations (> 2”)** | **Number of Meters (%)** |
| Indoors | 17% |
| Behind Locked Gates | 0% |
| Backyards | 0% |
| Confined Space | 83% |

Please refer to the below table for meter box setting information estimates.

| **Meter Box Sizes, Setting** | **Number of Meter Boxes (%)** |
|---|---|
| Springfield Plastic - 18" Corrugated PVC 18"X 24" Smooth Inside Meter Tubs – in Grass, Dirt | 90% |
| 14” x 8” Box – Concrete, Asphalt | 10% |

## A.2 System Requirements

**GMWSS is soliciting proposals from qualified vendors to provide a complete System with the following Minimum and Optional Requirements as described below.**

### A.2.a. Minimum System Requirements

**The basic components of the System sought by GMWSS include the following:**

- Water meters equipped with AMI meter interface units (MIUs) to replace all existing residential water meters.
- Meter interface units, or "MIUs" capable of encoding, storing and transmitting meter reading and other data, such as tampering alerts.
- Installation of new meters, retrofit registers (if applicable), and MIUs.
- A GMWSS-dedicated network or non-GMWSS-dedicated communications service to collect and transport meter reading and other information from the MIUs to a Head End System (HES).
- Handheld devices and software necessary to program and/or initialize the MIUs and collect installation data.
- AMI-compatible lids for outside set meter boxes, or the modification of existing lids.
- HES to collect, store, and manage the data which is delivered through the network.
- A meter data management system (MDMS) that can store meter reads and consumption data and allow that data to be queried, exported and summarized, and from which standard reports can be generated.
- The design, installation and testing of information interfaces between the AMI system's software components and GMWSS's customer information system (CIS) and other systems, such as its field work order system.
- All related documentation, including technical manuals and operating procedures.
- Training of GMWSS's employees in MIU installation, maintenance, diagnosis and troubleshooting, as well as system use, operation and maintenance.
- Shipping and managing the inventory of AMI equipment during project deployment.
- Where appropriate, installation of fixed data collection units, including the communications links between those collection units and the HES.
- 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 of system performance at the completion of the project or at major milestones.
- Coordination, scheduling, communications, and documentation of all installation services.
- Project management to ensure all products and services are coordinated.

### A.2.b Optional System Requirements

GMWSS wishes to consider including the following optional items:

- Installation or replacement of infrastructure in or around the meter box (such as meter boxes, curb stops, shut off valves, meter box re-setting/leveling, etc.), as needed.
- Disposal of old meter reading equipment including old remote reading devices, touchpads, and AMR and AMI MIUs, as appropriate.
- A customer web portal to display interval consumption data and other meter-related information.
- Additional smart Utility features not required as part of the base offering (acoustic leak sensors, remote shut-off valves, pressure sensors, etc.) and their associated software, as appropriate.
- Salvage of old meters and meter box lids, as appropriate.
- Operation and maintenance of the data collection network (if GMWSS-dedicated).

## SECTION B: INSTRUCTIONS TO PROPOSERS

## B.1 Obligations of Proposer

GMWSS assumes no responsibility for any costs incurred by any Proposer in responding to this RFP. Your good faith response to the requested information is solicited without the creation of any obligation between parties, explicit or implied. GMWSS will complete a thorough review and evaluation of all responses. Proposals that do not meet the minimum requirements noted in the Technical Specifications section will likely not be considered at the sole discretion of GMWSS.

## B.2 Pre-Proposal Conference

A mandatory Pre-Proposal Conference will be held virtually on 11/12/2026 at 3:00 PM ET. Please join using the following Zoom Meeting information:

Link: [https://us02web.zoom.us/j/83868055821?pwd=scTxjee1sbh9aBJqXgMxAZ2rk9FCTL.1]

Meeting ID: 838 6805 5821

Passcode: 068372

Via Phone: +13126266799,,83868055821#,,,,*068372# US (Chicago) or
+16465588656,,83868055821#,,,,*068372# US (New York)

Representatives from GMWSS departments Customer Service, Meter Reading, Distribution, IT, and Finance will be available for discussions at this meeting. The purpose of the pre-proposal conference is to provide assistance to interested contractors in the interpretation of the Request for Proposal (RFP), Sample Contract, and other technical and contractual matters.

Email Notification: Proposers shall submit an email notification of their intention to attend this virtual Pre-Proposal Conference no later than 3 PM ET on 11/5/2026.

**Send notification of intent to attend and who will be attending** to [AMI-RFP@gmwss.com].

Nothing stated or discussed during the course of this Pre-Proposal Conference shall be considered to modify, alter or change the requirements of the RFP, unless it shall be subsequently incorporated into an addendum to the RFP. All questions asked during the pre-proposal conference deemed to be pertinent by GMWSS will be addressed in an Addendum following the pre-proposal conference. In no event may a Proposer rely on any oral statement by GMWSS or its agents, advisors or consultants.

## B.3 Tentative Proposal Selection Schedule

| ACTIVITY: | # of Weeks | DATE: |
|---|---|---|
| Issue RFP | | 10/22/2026 |
| Pre-proposal Conference | + 3 weeks | 11/12/2026 |
| RFP Questions to GMWSS – Deadline | + 4 weeks | 11/19/2026 |
| Proposals Due | + 8 weeks | 12/17/2026 |
| Short-listed Proposers Notified | + 13 weeks | 1/21/2027 |
| Presentations by Short-listed Proposers | + 15 weeks | 2/4/2027 |
| Request Best and Final Pricing | + 16 weeks | 2/11/2027 |
| Preferred Proposal Selected | + 17 weeks | 2/18/2027 |
| Contract Negotiation | + 20 weeks | 3/11/2027 |
| GMWSS Board of Commissioners Consideration / Approval | + 30 weeks | 5/20/2027 |
| City Council Consideration / Approval | + 32 weeks | 6/3/2027 |
| Award and Notice to Proceed | + 34 weeks | 6/17/2027 |

## B.4 Addenda, Questions and Interpretations

GMWSS reserves the right to cancel the Request for Proposal or to eliminate parts thereof, if it determines, in its sole discretion, that such cancellation or elimination is in the best interest of GMWSS.

GMWSS reserves the right to amend this RFP, by addenda, prior to the date set for receipt of the submission of proposals. Addenda or amendments will be posted on GMWSS's website.

Parties that registered to attend the Pre-Proposal conference shall be notified of addenda by email; however, it shall be the Proposer's responsibility to ascertain if addenda have been issued. All such addenda shall become part of the RFP and all Proposers shall be bound by such addenda.

Addenda, including postponement of the date for receipt of proposals, may be issued up to 3 days prior to the date the proposals are due.

**All questions by Proposer(s) as to the interpretations of the RFP must be received no later than 3pm ET on 11/19/2026 in writing via email to: [AMI-RFP@gmwss.com]**

Proposing firms shall promptly notify GMWSS of any omission, ambiguity, inconsistency or error that they may discover upon examination of the RFP.

GMWSS will not be bound by any information, explanation, clarification, or any interpretation, oral or written, by whosoever made, that is not incorporated into an addendum to the RFP. No response will be made to inquiries received after the RFP Questions Deadline.

## B.5 Protests

Any formal protest which is to be made by an aggrieved Proposer concerning the Proposal solicitation must be submitted in writing to [CAzevedo@gmwss.com].

The protest must be received within three (3) business days after such Proposer knows or should have known of the facts giving rise thereto. The protest shall include a clear and detailed statement of the basis upon which it is filed. The failure of the Proposer to file any protest within the time limits prescribed herein shall be deemed a material prejudice to the interests of GMWSS and shall constitute an absolute waiver of the protest and the right to thereafter prosecute same.

## B.6 Modification and Withdrawal of Proposals

Proposals may be withdrawn after they have been submitted, but only before the deadline established for receipt of Proposals. Withdrawn Proposals may be resubmitted, but only in the manner in which the Proposal was originally submitted. Withdrawal requests must be signed by the Proposer(s) and must be received by GMWSS no later than the submittal deadline.

## B.7 Rejection of Proposals

GMWSS reserves the right to reject any and all responses to the RFP and/or to waive any informalities in evaluating the RFP responses if it deems this to be in the best interest of GMWSS, its customers, and the general public. GMWSS reserves the right to qualify Proposers as it deems in its best interest.

GMWSS will not award a contract to a Proposer who fails to furnish evidence satisfactory to GMWSS that it has the ability, equipment, and experience to furnish the kind and quality of materials and services required, that it has furnished materials and services of similar character and magnitude, and that it has sufficient capital and plant to enable it to prosecute this project successfully within the time limit given for this contract. Intending vendors who cannot fully satisfy these requirements are requested not to submit a proposal. Failure to qualify in this respect may be considered sufficient cause to reject any proposal whatsoever.

Additionally, GMWSS reserves the right to disqualify Proposers, before and after the Opening of Proposals, upon evidence of collusion with intent to defraud or other illegal practices upon the part of any Proposer(s).

## B.8 Confidentiality

Georgetown Municipal Water and Sewer Service is a public entity as defined by state law and, as such, it is subject to the Kentucky Public Record Law KRS 61.870 to 61.884. Under said law, all GMWSS records are public (unless otherwise declared by law to be confidential), subject to inspection and may be copied by any person. Any privileged or confidential information in the Proposer's proposal shall be specifically identified as such by the Proposer. If any information is considered to be confidential, the Proposer shall agree to indemnify GMWSS for any and all attorney fees GMWSS may incur in defending the withholding of such information. Should GMWSS receive a request for the release of any information in the Proposer's proposal in accordance with the open records law, GMWSS will review the Proposer's proposal, giving consideration to the portions that the Proposer indicated contained trade secrets, privileged information, or confidential commercial or financial data, and may release only that information which has not been identified as confidential. Proposers will be notified of any open records requests prior to the release of such information. If, in the opinion of GMWSS's legal counsel, GMWSS is

nonetheless compelled to disclose any portion of such information to anyone or else stand liable for contempt or suffer censure or penalty, GMWSS may disclose such information without liability.

## B.9 Award and Contract Development

GMWSS's Evaluation Committee will select the most-preferred Proposer in accordance with Section C below. After the selection of the most-preferred Proposer and prior to any commencement of work, GMWSS will negotiate and execute a contract and scope of work with the selected Proposer.

# SECTION C: EVALUATION OF PROPOSER'S RESPONSE

After the Proposal packages have been opened, GMWSS's Evaluation Committee will evaluate the Proposers' responses, including financial data, Proposers' references, Proposers' experience and other data relating to the Proposers' responsibility and qualifications to perform the Project satisfactorily. Proposers may be required to submit additional or supplemental information to GMWSS, if necessary, for GMWSS to determine whether the Proposer(s) meet all of the standards outlined.

## C.1 Completeness of Answers

All questions and requests for specificity must be answered. All specifications incorporating "shall," "must," etc., are requirements, and failure to comply with these must be specifically noted as exceptions. All specifications incorporating "should," "desires," etc., are highly desirable features. In the case of a specific requirement not followed by a request for an explanation, Proposer must explicitly affirm that the system or component meets that requirement. Simply taking exception to a requirement without providing an explanation, and where appropriate alternative specifications and language, shall be deemed non-responsive, and may result in rejection of the proposal.

Requesting a discussion of a requirement or provision of this RFP without providing explicit alternative language may also be deemed non-responsive and may result in rejection of the proposal.

Proposers are required to submit, in writing, the names, addresses and telephone numbers of any proposed major subcontractors or equipment manufacturers, and to submit other material information relative to proposed major subcontractors or equipment manufacturers.

GMWSS's evaluation committee will determine which Proposers are responsive to the material terms and conditions of the Request for Proposal. GMWSS will then determine who is technically, financially and otherwise responsible to perform the Project satisfactorily and who has the capacity to meet all other requirements of the proposed Project.

## C.2 Minimum Evaluation Requirements

GMWSS's evaluation committee will evaluate Proposers' responses to section 1: Proposer & Subcontractors Information to ensure the following minimum evaluation requirements are met. If the Proposer does not comply with the following minimum evaluation requirements, GMWSS reserves the right to deem that Proposal non-responsive, and may result in rejection of the proposal.

| **Comply?** | Requirement |
|---|---|

| Y/N | |
|---|---|
| | Proposer shall have a minimum of seven (7) years' experience with water AMI. |
| | Proposer's Key Personnel shall have a minimum of five (5) years' experience with water AMI and have at least three (3) completed water AMI projects. |
| | Proposer shall have at least three (3) completed water AMI projects in the last 5 years utilizing the proposed AMI Technology (network & MIUs) which have at least 15,000 completed water AMI MIU installations per project. |
| | Proposer or its Primary Subcontractor shall have at least three (3) completed water AMI projects in the last 5 years utilizing the proposed meter which have at least 15,000 completed water meter installations per project. |
| | The Proposer's Installation Subcontractor (or the Proposer if not utilizing an Installation Subcontractor) shall have at least three (3) completed water AMI projects in the last 5 years with at least 25,000 completed water AMI MIU installations per project. |
| | Proposer shall provide one (1) verifiable project reference for each of the following: AMI Technology, Meters, and Installation Company. References shall be provided in response to Section 1.5 References. |

## C.3 Evaluation Criteria[1]

Discussions may be conducted with proposers determined to be reasonably qualified, and GMWSS 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.

GMWSS reserves the right to terminate this process at any time, and no guarantee is expressed or implied that obligates GMWSS to contract for the proposed project. GMWSS will negotiate a contract with the highest evaluated respondent, as determined by its 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 below will be used to determine which proposal is the most advantageous to GMWSS. Respondents with an unacceptably low qualification/ score will be eliminated from further consideration. GMWSS will incorporate lifecycle cost into the evaluation via a Value for Money (VFM) ratio. The offer with the highest VFM ratio represents the best value.

$$\textbf{VFM Ratio} = \frac{\text{Total Weighted Score}}{\$\ \text{Total Lifecycle Cost}}$$

Where:

[1] *Reference checking and oral presentations by vendors are used to help evaluate proposals against these evaluative criteria; they are not separate criteria. [GMWSS may choose to add References as an evaluative criterion.]*

Total Weighted Score = Sum of [individual technical scores * individual criteria weights]
Total Lifecycle Cost = Net Present Value (NPV) of [initial capital cost + 20 years of annual O&M]

A short list of the top respondents may be created. The short-listed proposers will be invited to present their qualifications to and answer questions from the evaluation committee. The evaluation committee will then rescore each short-listed proposal. GMWSS may choose to waive the short list step in the evaluation process.

## C.3a Evaluation Criteria Table and Weighting

| Weights | Evaluation Criteria |
|---|---|
| **5%** | **Strength of Contractor:** Contractor's (and subcontractors) financial strength, stability and track record. Experience in the industry as well as R&D for new and improved capabilities. Ability to support production schedules for proposed equipment. |
| **10%** | **Experience of Proposed Staff**: Relevant, related experience of the Project Managers and staff proposed for this Project, including sub-contractors. |
| **28%** | **Current System Capabilities:** The degree to which the proposed system addresses technical specifications, performance requirements, and desirable features, including enhanced functionality and security. |
| **24%** | **Software, Data Management, and Interfaces:** The ability of the solution to provide data integrity, security, accessibility, flexibility, and interfaces to other enterprise systems. Capability for software and firmware upgrades to add new features and ensure longevity. Includes software lifecycle and interoperability to support third-party devices on the network. |
| **19%** | **Installation Management:** Proposed procedures and policies for project management, risk management, QA/QC, security, safety, training of installers, customer contact, scheduling appointments, troubleshooting and problem solving. Ability to keep to schedule. |
| **14%** | **Customer Management:** Ability to manage customer interaction before, during, and after installations. Professional appearance when completing the Project. Responding to customer concerns in an efficient and satisfactory manner. |

## SECTION D: Preparation of Proposals

### D.1 Proposal Submission Directions

All proposals shall be submitted electronically via GMWSS's procurement portal: [https://gmwss.com/procurement/]

No late proposals will be considered. Proposals received prior to the advertised hour of opening will be kept secured and sealed. Submitted proposals shall be date stamped upon receipt by a representative of GMWSS's Purchasing department. Proposer assumes the risk of its method of delivery.

GMWSS desires all Proposals to be identical in format in order to facilitate comparison. While GMWSS's format may represent departure from the Proposer's preference, GMWSS requires strict adherence to the format.

Upon submission, all proposals become the property of GMWSS and are subject to public record laws.

Proposers shall submit an electronic version of its Technical Proposal and an electronic version of its Project Pricing Proposal. The pricing and warranty tables included in the Project Pricing Proposal *must be submitted in Excel format*. Failure to conform to this requirement may be grounds for disqualification.

### D.2 Multiple Proposals

For alternative proposals, such as an alternate technology or an AMI system based on collaboration with other area utilities, submit the technical and pricing information under separate covers and titles, and submit these in a separate envelope or email as a stand-alone complete proposal.

### D.3 Font Type & Size – Page Margins & Limit – RFP Document Title – Submission Format

| | |
|---|---|
| Preferred Fonts: | Arial, Calibri, and Times New Roman |
| Font Sizes: | 11 for the body of the responses;<br>Charts and tables no smaller than 10 whenever possible. |
| Preferred Margins | 1 inch |
| Page Limits: | There is no specific page limit to the proposals *but brevity and concise answers will be appreciated* |
| Proposal Submission: | Proposal shall be submitted in two separate pdf attachments |
| Titles for Submissions | Titles should follow the following format:<br><br>"COMPANY NAME - Proposal for Advanced Metering Infrastructure System, Technical Proposal – for GMWSS"<br><br>"COMPANY NAME - Proposal for Advanced Metering Infrastructure System, Pricing Proposal – for GMWSS" |

## D.4 Proposal Layout & Contents

Each proposal shall be submitted in a sealed envelope and prominently marked as follows:

RFP No.:
Opening Date:
Company Name:

**The response for this RFP is comprised of two (2) parts that will need to be submitted:**

- Part 1: The Technical Proposal
- Part 2: The Pricing Proposal

**D.4a The TECHNICAL PROPOSAL includes the following:**

- RFP TITLE PAGE
    - RFP title
    - Name of the proposer
    - Managing office address / Company Headquarters
    - Telephone number
    - Name and email address of contact person
    - Date of submission
- TABLE OF CONTENTS
    - Include a clear identification of the material included in the proposal by page number
- TERMS & ABBREVIATIONS
- PROPOSER'S RESPONSE TO SECTIONS 1 through 22 (and their applicable subsections)
- APPENDIX A: Resumes
- APPENDIX B: Attestation Regarding Disputes
- APPENDIX C: Exceptions to Technical & Performance Requirements
- APPENDIX D: Financial Data

**D.4b The PRICING PROPOSAL includes the following:**

- TITLE PAGE listing the
    - RFP title
    - Name of the proposer
    - Managing office address
    - Telephone number
    - Name and email address of contact person

- Date of submission

- **PROPOSER'S RESPONSE TO PRICING PROPOSAL:**

  Required Bid Tab

  - SECTION 1: Cost to supply and install MIU components, meters, and registers and labor for installing equipment.
  - Section 2: Cost to supply and install Lids, Boxes, Network components, and Professional Services.
  - SECTION 3: Annual cost to supply ongoing O&M costs and as-needed equipment replacement costs over 20 years.
  - SECTION 4: Annual warranty coverage over 20 years for MIU and meter hardware

  Optional Bid Items: Cost of additional services including additional field labor line items, customer information portal, network maintenance contract, additional system features, and disposal of existing equipment.

  Excessive Failure Rates: Component maximum annual failure rate information.

- **EXCEPTIONS TO CONTRACT**

## D.5 Additional Instructions / Guidelines

- Use the template beginning with the RFP Cover Page (after this section D)
- The template is meant to be filled in by the Proposer for ease of completing all the required information.
- Prior to submission, delete this Introduction/Instructions section so the submission begins with the RFP Cover Page and update the Table of Contents
- Proposer should leave the question/background and answer the questions directly below in the space indicated.
- Proposers will not be penalized if they alter the format but we request that this template be followed as closely as possible.
- If there is a YES or NO option in responding to a question, indicate response by leaving the applicable answer.
- Again, these instructions are NOT part of the proposal submission and should be deleted prior to submission.

## RFP TECHNICAL & PERFRORMANCE REQUIREMENT RESPONSE COVER PAGE

**RFP title**

**Name of the proposer**

**Managing office address**

**Telephone number**

**Name and email address of contact person**

**Date of submission**

## TERMS & ABBREVIATIONS

The following terms and definitions are used herein:

**AASHTO** – American Association of State Highway and Transportation Officials

**ANSI** – American National Standards Institute

**ASCII** – American Standard Code for Information Interchange, character encoding standard

**ASQ** – American Society for Quality

**AWWA** – American Water Works Association

**CIS** – Customer Information System

**DCU** – Data Collection Unit

**FM** – Factory Mutual (Global), a testing laboratory

**FTP** – File Transfer Protocol

**GIS** – Geographical Information System

**GPS** – Global Positioning System

**HES** – Head End System

**HMRU** – Handheld Meter Reading Unit

**Installation Period** – The period that begins on the Commencement Date stated in GMWSS's issued Notice to Proceed and ends upon the certification of Substantial Completion.

**IEC** – International Electrotechnical Commission

**IP Code** – Ingress protection code (referring to enclosure protection and resistance to ingress of foreign solids or liquids)

**MDCU** – Mobile Data Collection Unit

**MDMS** - Meter Data Management System

**MIU** – Meter Interface Unit (Endpoint)

**NSF** – National Sanitation Foundation

**ODBC** – Open Database Connectivity, a standard application programming interface

**OSHA** – Occupational Safety and Health Administration

**PSI** – Pounds per Square Inch

**Route Release** – A group of accounts determined by GMWSS released to the Proposer for installations. The accounts may be grouped by meter reading route, zip code, or other group based on geographic proximity and logistics.

**SAML** – Security Assertion Markup Language

**SaaS** – Software as a Service

**SQL** – Structured Query Language

**WAN** – Wide Area Network

**XML** – eXtensible Markup Language, used to store and transport data

## INTRODUCTION & CAPABILITY STATEMENT

- *Provide a summary of up to 1 page describing your company and your partner subcontractors' background qualifications for completing the defined Scope of Work & Technical Requirements in this RFP.*
- *Please use an easily printed blue for all responses throughout this proposal.*

*For Example:*

| | |
|---|---|
| ***Name of Company*** | *Acme Tools, Inc*<br>*Acme Tools, Inc* |

# 1 MINIMUM EVALUATION REQUIREMENTS FOR PROPOSER & SUBCONTRACTORS

- *Please use an easily printed blue for all responses throughout this proposal.*

*For Example:*

| | |
|---|---|
| ***Name of Company*** | *Acme Tools, Inc*<br>*Acme Tools, Inc* |

## 1.1 Company Information

Fill in the following as they pertain to the Proposer's company:

| | |
|---|---|
| **Name of Company** | |
| **Number of Years in Business** | |
| **Number of Active AMI Projects** | |
| **Number of Completed AMI Projects** | |
| **Number of Employees with years of service at current company** | |
| **Local staff/offices** | |
| **Is Proposer ready, willing, and able to perform the Scope of Work and meet the Technical Requirements as described in this RFP?** | |
| **Authorized Representative's Name** | |
| **Authorized Representative's Title** | |
| **Authorized Representative's Phone Number** | |
| **Authorized Representative's Email** | |
| **Authorized Representative's Signature** | |

## 1.2 Proposer Team's Company Backgrounds

Using the following tables, provide company backgrounds for Proposer, their Installation Subcontractor (if applicable), and any Primary Subcontractors* regarding each company's water AMI experience.

*(*Primary Subcontractors are those who are considered an integral part of Proposer's team but are separate business entities from Proposer)*

a. **PROPOSER:** Use the following table to note **ALL** water AMI projects that have commenced or have been completed in the last 5 years.

| Customer Name | Total # of Meters | AMI Technology (Network & MIU) | Meter (Vendor) | Project Start Date | Percentage Complete | Project Completion Date (if applicable) |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

b. **INSTALLATION SUBCONTRACTOR:** Use the following table to note **ALL** water AMI projects that have commenced or have been completed in the last 5 years.

| Customer Name | Total # of Meters | AMI Technology (Network & MIU) | Meter (Vendor) | Project Start Date | Percentage Complete | Project Completion Date (if applicable) |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

c. **PRIMARY SUBCONTRACTORS:** Use the following table to note **ALL** water AMI projects that have commenced or have been completed in the last 5 years.

| Customer Name | Total # of Meters | AMI Technology (Network & MIU) | Meter (Vendor) | Project Start Date | Percentage Complete | Project Completion Date (if applicable) |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 1.3 Proposer's Team: Key Personnel and Primary Subcontractors

a. Use the following table to identify Proposer's key personnel for this project.
Use the "BACKGROUND" area to summarize their experience
Attach resumes for team members in **APPENDIX A.**

**Proposer's Key Personnel:**

| NAME | ROLE/TITLE | REPRESENTATIVE WATER AMI PROJECTS | # OF METERS | Years with Company |
|---|---|---|---|---|
| | | | | |
| **BACKGROUND** | | | | |
| | | | | |
| **BACKGROUND** | | | | |
| | | | | |
| **BACKGROUND** | | | | |
| | | | | |

b. Use the following table to identify Proposer's Primary Subcontractor partners (including Installation Subcontractors) for this project.
Use the "BACKGROUND" area to summarize their experience.
Attach resumes in **APPENDIX A.**

**Proposer's Primary Subcontractor's Key Personnel**

| COMPANY | NAME | ROLE/TITLE | PRODUCT | SERVICE |
|---|---|---|---|---|
| | | | | |
| **BACKGROUND** | | | | |
| | | | | |
| **BACKGROUND** | | | | |

## 1.4 Project & Contract Management

- *Proposer will designate a Project Manager who*
  - *Shall be responsible for managing the overall project on behalf of the Proposer*
  - *Should be onsite throughout the duration of the project*
  - *Shall have managed at least five (5) comprehensive or system wide water AMI projects*
  - *GMWSS shall approve the Project Manager or a change in the Project Manager.*

- *Proposer will designate a Contract Manager, who*
  - *Shall have the authority to handle and resolve any disputes or contract issues with GMWSS*
  - *Disputes that cannot be resolved at this level must be resolved in accordance with the dispute section of this Contract.*
  - *Attach resumes in **APPENDIX A.***

| Proposed Candidate | Name, Title | Reference Name, Title, Company, Phone Number, Email |
|---|---|---|
| **Project Manager** | | |
| **Contract Manager** | | |

## 1.5 References

| Client contact details | Reference #1: AMI technology | Reference #2: Meters | Reference #3: Installation Company |
|---|---|---|---|
| **Name** | | | |
| **Title** | | | |
| **Phone number** | | | |
| **Email address** | | | |

| | | | |
|---|---|---|---|
| **Number of meters or MIUs** | | | |
| **Equipment Deployed (vendor & model)** | | | |
| **Network** | | | |
| **MIU** | | | |
| **Meter** | | | |
| **Date(s) Started** | | | |
| **Project Status (% Complete or Date Completed)** | | | |
| **Key Subcontractors** | | | |

## 1.6 Financial Information

a. Is the Proposer an incorporated subsidiary or joint venture? **YES / NO**
   i. If YES, proposer shall include relevant financial information of its parent companies attached in **APPENDIX D: Financial Data**

b. In support of the financial stability of the firm, Proposer must provide a minimum of <u>one</u> (1) of the following as a separate document:

   i. **Option A)**

   A statement regarding the firm's financial stability, including information as to any current or prior bankruptcy proceedings

   ii. **Option B)**

   A Dun & Bradstreet (D&B) Supplier Evaluation Report (SER), or similar type report. All costs associated with this report shall be borne by the Proposer

   iii. **Option C)**

   A copy of a certified financial statement for each of the last three years prepared by an independent certified public accounting firm or Federal Tax Return for previous years

c. Indicate which option applies to proposer: **Option A / B / C**
   **i.** Submit any applicable paperwork for Options A, B or C in **APPENDIX B: Attestation Regarding Disputes**

## 1.7 Loss of Agreement and/or Inability to Fulfill Requirements

- *GMWSS shall evaluate the facts and at its sole discretion may reject the Proposer's response if the facts discovered indicate that completion of an agreement resulting from this RFP may be jeopardized by selection of Proposer.*
- *Submit all applicable responses/explanations regarding any pending terminations or defaults to be in **APPENDIX B: Attestation Regarding Disputes***

a. Does the Proposer have any pending project or contract terminations? **YES / NO**

b. Has the Proposer experienced any such settlement or termination for default in the past five (5) years as defined below? **YES / NO**

c. Does the proposer have any current, proposed, or pending litigations? **YES / NO**

d. Does the proposer have any current insurance policy claims? **YES / NO**

    i. **IF YES TO ANY OF THE ABOVE QUESTONS:**
    Proposer shall submit full details of all terminations for default, settlements to avoid litigation, pending terminations, litigations, or insurance policy claims experienced in the past five (5) years including the other party's name, address, and telephone number.

    Termination for default is defined as "*notice to stop performance due to Proposer's non-performance or poor performance*", and the issue was either: (a) not litigated; or (b) litigated and such litigation determined Proposer to be in default.
    Proposer shall also present its position on the matter.

# 2 SCOPE OF WORK & OVERALL SYSTEM CHARACTERISTICS

*The directions below should be deleted prior to submission of RFP response*

- *Please use an easily printable and readable blue (or blue) for all responses throughout this proposal.*

*For Example:*

| | |
|---|---|
| ***Name of Company*** | *Acme Tools, Inc Acme Tools, Inc* |

- *GMWSS recognizes that the AMI system features, characteristics, and actual performance levels are the result of the interaction of system components and are to be addressed in this section.*
- *All questions and requests for specificity must be answered in accordance with AMI RFP Instructions*
- *Proposers must respond to all statements incorporating "provide," "indicate," etc.*
- *Answer questions as they are specifically asked and include answers directly below the questions in the space provided*
- *All specifications incorporating "should," "desires," etc., are highly desirable features.*
- ***All specifications incorporating "shall," "must," etc., are requirements, and failure to comply with these must be specifically noted as exceptions***
  - *In the case of a specific requirement not followed by a request for an explanation, Proposer must explicitly affirm that the system or component meets that requirement by selecting the provided **Y / N** option.*
  - *Simply taking exception to a requirement without providing an explanation and, where appropriate, alternative specifications and language, shall be deemed non-responsive, and may result in rejection of the proposal.*
- ***Any exceptions to complying with Technical and Performance Requirements should be noted in 2 places:***
  - *1: In that specific section in table provided*
  - *2: Compiled and dropped into **APPENDIX C: Exceptions to Technical & Performance Requirements***

***To avoid repetition, Proposers are strongly advised to read through the entire RFP Technical Requirements before responding.***

***If an answer has already been provided in response to an earlier question, make reference to it – do NOT repeat text. Adding a link to that section is encouraged but not necessary.***

## 2.1 System Overview

a. Provide an overview of the proposed AMI system detailing the different components of the solution including the water meters, AMI meter interface units, type of AMI network, AMI software applications, software implementation, training, support, and field installation.

## 2.2 Proposed System Summary Table

Use the following table to indicate the proposed system and applicable details.

| | |
|---|---|
| **AMI water meters brand** | |
| **AMI meter interface units** | |
| **Type of AMI network** | |
| **AMI software applications** | |

## 2.3 System Architecture

a. Provide a schematic depicting the system's components and configuration. The schematic should provide a system overview and should be understandable to non-subject matter experts.

b. Provide a brief overview of the architecture and normal functioning of the system.

## 2.4 Read Success Rate

- *Meters with MIUs from which transmissions are blocked by readily identifiable temporary physical barriers beyond the control of GMWSS or Proposer are not included in the calculation of the below noted success rates.*
- *Within the requirements below, meters from which readings are not received shall not be geographically clustered.*

The following table includes the required data collection network for the Read Success Rate.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 2.4 | | a. At least one meter-register reading within a three-day interval from at least 98.5% of all meters on which the system is installed. |
| | | b. At least 95.0% percent of all readings taken hourly or at more frequent intervals daily. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe how network performance is tracked and reported.

## 2.5 Network Design and Coverage

| Section | Comply? Y/N | Requirement |
|---|---|---|

| | | |
|---|---|---|
| 2.5 | | a. The data collection network shall be designed to provide 100% coverage of GMWSS's existing customer meters. |
| **Any Proposed Alternative Specification or Language:** | | |

## 2.6 Meter Reading Interval

a. Using the table below, indicate the default interval at which the MIU interrogates the meter (e.g., once per hour)

b. Can the interval be changed for individual meters or a selected group of MIUs at the same time?

   i. If so, indicate the settable range of this interval.

| Default Interval | Can Interval be Changed for Individual and/or Group? | Setting Range for Interval |
|---|---|---|
| | | |

c. Describe the procedure required to change the interval and reset it.

   i. Can changing the interval be accomplished over-the-air from the HES? **YES / NO**

   ii. Will changing the interval change the expected MIU battery life, provide specific parameters or examples (e.g., "15-minute interval will reduce expected battery life by X")? **Y/N**

   iii. Any additional information needed to describe the procedure.

## 2.7 Read on Demand

a. Can the system obtain a real-time read on demand "over-the-air" from the MIU/meter by sending the MIU a signal? **Y / N**

b. What is the expected time interval between a user's on-demand reading request and the response?

## 2.8 Tamper Detection

a. Using the table below, provide a list of the tamper conditions that will be provided to the system operator (e.g., Missing MIU, cut wire, meter register separation, tilting of meter, empty pipe). For each, indicate:

   i. whether the alarm is transmitted instantly or with the next MIU transmission

   ii. the number of times or over what period of time a tamper indication will be provided to the system operator before it is automatically cancelled

   iii. whether the tamper indication can or must be reset or reprogrammed by the system operator or field service technician, and how this is accomplished

| Alarm Name or Condition | Brief Description | What Triggers Alarm | Where Alarm Appears | When is Alarm Transmitted | Alarm Triggered by? | Automatically Cancelled? | How Alarm is Resolved/Cancelled |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

## 2.9 Leak and High Flow Detection

a. Use the table below to briefly describe the system's approach to detecting:

| | |
|---|---|
| **Continuous flow (that is, consecutive non-zero intervals)** | |
| **Low flow leaks (many but not all consecutive intervals non-zero** | |
| **Abnormally high flow ("broken pipe")** | |

b. Are the threshold levels for reporting of these anomalies definable by GMWSS?
**Y / N**
   i. If YES, are they applied to individual customers or groups of meters?

## 2.10 Questionable Reads and Rollovers

a. Describe system capabilities to validate meter readings for reasonableness, such as unusually high or low readings.

b. Describe how system handles potential meter rollovers. Indicate if these functions are provided by the MDMS.

## 2.11 Hard-to-Read Meters

a. How will the system obtain readings from meters in basements, ravines, vaults, and other transmission constraining settings? Describe Proposer's approach which may include the use of repeaters, remote antennas, other MIUs, slower transmission rates, etc.

## 2.12 Other Detection Features

a. List other conditions (for example, reverse flow) the system can detect. Describe how these are accomplished, and how they are reported.

## 2.13 Component Firmware

The following table notes the requirements for component firmware

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 2.13 | | a. Proposer shall provide any available upgrades or patches to MIU, DCU, repeater and other collection network component firmware for a minimum of 15 years, at no additional cost beyond annual maintenance fees for this equipment. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Using the table below, indicate the number of firmware releases over the past 12 months for each system component and provide firmware release notes.
   i. Indicate if and how firmware patches or upgrades would be applied to each system component.

| # of Firmware Releases over past 12 Months | Component Updated / Release Notes | How are firmware patches/upgrades applied? | Downtime required? (hours) |
|---|---|---|---|
| | | | |

c. Indicate if any recent system or software updates have rendered existing hardware obsolete, unsupported, or incompatible, and identify any replacement cost if applicable.

## 2.14 Federal Funding

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 2.14 | | a. This procurement is funded in whole or in part with financial assistance from the U.S. Environmental Protection Agency (EPA). The selected contractor shall comply with applicable federal requirements and the terms of GMWSS's EPA award and state-administered funding agreement. |
| | | b. **Disadvantaged Business Enterprises (DBEs):** GMWSS encourages eligible Minority Business Enterprises (MBEs), Women's Business Enterprises (WBEs), and other Disadvantaged Business Enterprises (DBEs) to compete as prime contractors and subcontractors. GMWSS will make good-faith efforts to provide DBEs an opportunity to compete for this. |
| | | c. **Build America, Buy America (BABA):** The contractor shall comply with the BABA requirements applicable to this federally funded infrastructure project. Covered iron and steel, manufactured products, and construction materials permanently incorporated into the project shall meet the applicable domestic production requirements, unless a waiver applies or is approved by the appropriate federal agency. The contractor shall identify covered products and provide GMWSS with manufacturer or supplier documentation demonstrating compliance before the products are incorporated into the project. The contractor shall not rely |

| | | |
|---|---|---|
| | | on a waiver unless it confirms that the waiver covers the specific product, funding program, project, and purchase date. |
| | | d. **AMI Water Meter Waiver:** The EPA and Department of the Interior general waiver for AMI water meters may be used only within its scope and dates. For covered AMI water meters purchased through **December 19, 2026**, the waiver covers the meter and its components. For covered purchases made **December 20, 2026 through December 19, 2027**, the meter housing must be domestically manufactured or produced; other AMI meter components remain waived during that period. The waiver expires after December 19, 2027, unless EPA issues a replacement or extension. |
| | | e. **American Iron and Steel (AIS):** The contractor shall comply with the AIS requirements applicable to this project. Iron and steel products covered by AIS shall be produced in the United States, unless EPA has approved an applicable AIS waiver. The AMI water meter BABA waiver does not, by itself, waive a separate AIS requirement. The contractor shall identify potentially covered iron and steel products and provide GMWSS with manufacturer or supplier certifications and other documentation needed to demonstrate AIS compliance. If a covered product cannot meet AIS, the contractor shall promptly notify GMWSS and provide information needed for a waiver request. The product shall not be used as an AIS-compliant item unless an applicable waiver is approved. |
| | | f. **Records and Review:** The contractor shall maintain and provide, upon request, procurement records, product descriptions, country-of-origin and manufacturing information, certifications, purchase dates, and waiver documentation needed to verify compliance with DBE, BABA, and AIS requirements. The contractor shall notify GMWSS before substituting a product or supplier if the substitution could affect compliance. |
| **Any Proposed Alternative Specification or Language:** | | |

## 2.15 Manufacturing Facilities

a. Using the table below, list the manufacturing facility, facility location (country and state/province), ISO9000 or equivalent certifications for manufacturing facilities for each major component of the system (meters, MIUs, DCUs).

| Manufacturing Facility | Product line (meters/MIUs/lids/etc.) | Location (country/state/province) | ISO9000/ Equivalent Certification |
|---|---|---|---|
| | | | |

# 3 ADVANCED SYSTEM CHARACTERISTICS

## 3.1 Transmitting Interval

a. Indicate the default interval for transmitting readings from the MIU (e.g., once per day), and whether or not the interval can be changed. If so, indicate the settable range of this interval.

b. Describe the procedure required to change the interval and reset it. If changing the interval will change the expected MIU battery life, provide specific parameters or examples (e.g., "4-hour interval will reduce expected battery life by X").

c. Indicate how many full meter register readings and how many increment count reads are transmitted by the MIU at one time.

d. Describe how missing reads may be recovered/retransmitted from the MIU, including automatically backfilling missing interval data.

## 3.2 Elapsed Time (Latency)

a. Using the table below, indicate the longest possible elapsed time from a when a meter is read by the MIU to when that meter reading is available at the AMI HES. (For example, if the meter is read every hour and the data is transmitted every 4 hours to a data collector, and every hour to the HES, then the longest elapsed time would be 6 hours.)

| Meter Read Frequency | Data Transmission Frequency to Collector | Data Transmission Frequency to HES | Longest Elapsed Time |
|---|---|---|---|
| | | | |

## 3.3 Time Synchronization and System Commands

a. Indicate if meter readings from MIUs are time-synchronized (e.g., meters are all read at the top of the hour). If so, explain how this is achieved and the clock in the MIU is set. Indicate the accuracy of the synchronization (e.g., +/-15 seconds).

b. In addition to time-synchronization, describe other commands or information that may be sent to the MIU from the HES or data collection unit in the course of the normal operation and maintenance of the system.

## 3.4 Radio Communication Band and Licenses

a. Using the table below, indicate
   i. What radio frequencies are used for interactions between the MIUs and DCUs?
   ii. What FCC license(s), if any, the system will require? (Include the cost of licenses in the price schedule as part of the Pricing Proposal)
   iii. What is the expected length of time to acquire any necessary licenses?

| Radio Frequencies Used | Applicable FCC License | Estimated Time to Acquire License | Associated Costs |
|---|---|---|---|
| | | | |

The following table notes the requirements for radio communication band and licenses.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 3.4 | | a. Proposer shall be responsible for obtaining all necessary licenses on behalf of GMWSS and in GMWSS's name. |
| | | b. Local frequency licenses shall be assigned to GMWSS. |
| | | c. For national frequencies, GMWSS must be provided an irrevocable right to use the license for its System, so long as the system is in service. (Note if there are any separate charges for this right in the pricing proposal) |
| | | d. Proposer shall work with and coordinate with the FCC to determine required frequency and its availability. |
| | | e. Ownership of FCC licenses shall be transferable from Proposer to GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

## 3.5 Support for Interference

a. Describe procedures that will be used to assist GMWSS to identify and remove interlopers on its licensed frequency(ies) or overpowered signals on unlicensed frequencies.

b. Indicate who will be responsible to contact FCC for resolution.
   i. If GMWSS is responsible, describe provisions offered by Proposer or its system to assist in this effort.

   ii. If Proposer is responsible, indicate the length of time such protection will be offered in association with this proposal/contract.

## 3.6 Data Transmission Integrity and Security

a. Describe measures, such as encryption, error checking and retransmission, transmission of prior reads, etc., used to ensure the accuracy, integrity and security of data transmitted between the MIU and the HES.

b. Describe any security certifications currently held related to the proposed solution.

c. Indicate the frequency of and type of security audits and penetration tests conducted by the Proposer on the system.

d. Fill in the table below:

| Measure | Security Certifications | Audit Type | Audit Frequency |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | | | |

## 3.7 Additional Features

a. Describe any additional current capabilities of the proposed system not already described above, such as remote shut-off or turn-on, pressure monitoring, temperature monitoring, chemical concentration monitoring, smart city applications, etc.

b. List specific third-party sensors or controllers that are supported (such as acoustic leak detection devices) and their capabilities.

c. Describe the system's ability to add instrumentation (pressure, temperature, chemical, leak, etc.) and to collect distribution system performance information and transmit the information from such MIUs.
   i. Indicate whether additional software would be required for any additional feature listed.

d. Fill in the table below:

| Additional Capability | Supported 3rd Party Sensor/Controller | Additional Instrumentation | Additional Software Needed | Associated Costs |
|---|---|---|---|---|
| | | | | |

e. Refer to the RFP Pricing Table, which includes preliminary numbers of units for different types of sensor devices. GMWSS will work with selected vendor to implement the optional proposed features during the contracting phase, as applicable and if the optional features are selected by GMWSS.

## 3.8 Planned/Future Capability

a. Indicate any planned future capabilities for the equipment being proposed, the anticipated development and availability schedule, and the expected procedures for upgrading GMWSS's system, if applicable.
   i. Include a product roadmap of planned future capabilities.

b. Fill in the table below:

| Future Capabilities | Anticipated Development | Availability | Summary of Upgrade Procedures | Upgrade Level of Effort |
|---|---|---|---|---|
| | | | | |

# 4 AMI NETWORK PROPAGATION STUDY

| Section | Comply? Y/N | Requirement |
|---|---|---|
| **4** | | a. The Proposer shall provide a radio-propagation planning-study package sufficient for GMWSS to understand, compare, and audit the basis of the |

| | | |
|---|---|---|
| | | proposed AMI network design. The package may be produced using the Proposer's commercially available or proprietary planning platform, including a customized implementation, provided that it includes the disclosures and deliverables required herein. |
| | | b. GMWSS does not require delivery of a native editable model file, proprietary algorithms, or a planning-software license unless expressly negotiated. The Proposer shall instead provide a model-run report or equivalent read-only export and other records sufficient for an independent review of material assumptions, predicted results, and design changes. |
| | | c. If the proposed network uses cellular for MIU connectivity, Proposer shall provide a coverage map from the corresponding carrier or perform a drive-by study to develop and provide a coverage map. |
| | | d. The Proposer shall submit a completed AMI network propagation study identifying assumptions material to the predicted result, as applicable to the proposed technology. At a minimum, the form shall identify:<br>a. Network propagation coverage maps including meter and network infrastructure locations;<br>b. number and types of network devices needed;<br>c. redundancy details;<br>d. operating band(s) and channel assumptions;<br>e. endpoint and network equipment assumptions;<br>f. antenna patterns and heights;<br>g. effective radiated power or equivalent transmit assumptions;<br>h. receive or communications criterion;<br>i. terrain, clutter, building, and vegetation data with source/date;<br>j. installation-class treatment;<br>k. margins or loss allowances;<br>l. map resolution;<br>m. diversity/retry assumptions;<br>n. calibration status;<br>o. site constraints;<br>p. and known exclusions or limitations. |
| **Any Proposed Alternative Specification or Language:** | | |

e. Provide results and a description of the AMI network propagation study conducted for the proposed AMI system.

f. Re-confirm the below information regarding Read Rate Success and Network Coverage in the table below

| Section | Comply? Y/N | Requirement |
|---|---|---|
| **2.4 & 2.5** | | g. At least one meter-register reading within a three-day interval from at least 98.5% of all meters on which the system is installed |
| | | h. At least 95.0% percent of all readings taken hourly or at more frequent intervals daily. |
| | | i. The data collection network shall be designed to provide 100% coverage of GMWSS's existing customer meters. |
| **Any Proposed Alternative Specification or Language:** | | |

# 5 WATER METER SPECIFICATIONS

## 5.1 General Meter Requirements

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 5.1 | | a. GMWSS expects the manufacturer of meters submitted as part of the proposal to submit its meters to a comprehensive quality control and testing procedure before shipping |
| | | b. All meter accuracy tests shall be conducted in accordance with AWWA test methods and meter standards. |
| | | c. The manufacturer shall furnish to GMWSS an electronic copy of the test results for each meter shipped. |
| | | d. Specific information contained within the test results shall include the manufacturer serial number, flow rates, results of each flow rate test, the size of the meters being tested, the model number, the date, and the tester. |
| | | e. Equipment shall be subjected to inspection to ensure compliance with the specifications. |
| | | f. Shipments of equipment shall be subject to sampling (according to ANSI/ASQ Z1.4) and testing for compliance with specifications. |
| | | g. Shipments failing the sampling and testing protocol shall be rejected in their entirety and returned to the supplier. |
| | | h. Any individual pieces of material which fail inspection shall also be rejected and returned to the supplier. |
| | | i. All freight costs and any other costs incurred by the rejection will be borne by the supplier. |

| | | |
|---|---|---|
| | | j. Meters shall be guaranteed to operate under a working pressure of 150 psi without leakage or damage to any part. |
| | | k. Fire Service meters and strainers shall have the Underwriter's Laboratories, Inc. (UL), or Factory Mutual (FM) approval for use on fire lines. |
| | | l. The manufacturers shall guarantee the entire meter, including the register for a period of 15 years from the date of shipment against all defects in material and workmanship. Any other guarantee by the manufacturer shall be stated in its proposal. |
| | | m. The following documents in effect on the date of this RFP, form a part of these requirements to the extent specified herein:<br>a. American National Standards Institute (ANSI) B1.20.1 "Pipe Threads"<br>b. ANSI B1.20.1 "connections" and B.16.1 "Cast Iron Flanges"<br>c. AWWA C7xx series, as applicable<br>d. NSF 61 lead standard and ASTM B-62 |
| **Any Proposed Alternative Specification or Language:** | | |

## 5.2 Meter Serial Numbers and Labeling

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 5.2 | | a. The manufacturer's serial number shall be permanently marked on all meters. The serial number shall consist of all numeric digits. |
| | | b. The size and model shall be permanently marked on all meters. The direction of the flow through the meter shall be properly indicated. |
| | | c. The serial number should also be provided on two bar code labels attached to the meter. |
| | | d. GMWSS prefers that the serial number include digits representing the year of manufacture. |
| | | e. Individual shipping pallets (if applicable) shall be marked to identify contents and quantity. GMWSS desires that this information also be in the form of bar codes for scanning. Meter shipments shall be accompanied by a computer file of the meter serial numbers for import into GMWSS's database, VIP. |
| **Any Proposed Alternative Specification or Language:** | | |

## 5.3 Meter Registers

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 5.3 | | a. Meter registers should have a flip cap to prevent dirt from interfering with the visual inspection of the register, its ID number, its indicators, and other information. |
| | | b. The register and wire connection shall be waterproof and corrosion proof. |
| | | c. Registers shall be capable of reporting down to 0.1 gallon increments through the reading system. GMWSS prefers 0.01 gallon transmitted resolution for all meters less than 3". |
| **Any Proposed Alternative Specification or Language:** | | |

d. What is the number of transmitted digits?

e. Does the meter use a battery? **Y / N**
   i. If so, can the low battery alarm can be transmitted through the MIU?

   ii. How long is this alarm available before meter fails to fully function?

## 5.4 ID Numbers and Labeling

The following table notes the requirements for ID numbers and labeling.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 5.4 | | a. Each encoder register shall have a unique identification number with a minimum of 8 digits that will be transmitted electronically when the meter is interrogated. |
| | | b. For new meters, this number shall be the same as the number stamped into the meter base. This register number shall also be visually readable on the register display or the cap. |
| | | c. GMWSS prefers that this number be permanently stamped into the cap. The register should be shipped with an attached bar code corresponding to the register number. |
| **Any Proposed Alternative Specification or Language:** | | |

## 5.5 Small (5/8” x 3/4"-2”) Meters

- *GMWSS prefers static meters for small sizes. Provide responses and prices in the Pricing Proposal for each type separately, if available, so GMWSS can compare prices for both positive displacement and static meters.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 5.5 | | a. Connection types: 5/8” x 3/4" through 1" meters shall be threaded connections. 1.5” and 2" are flanged connection with bolt and gaskets. |
| | | b. Meter lay lengths shall be as follows:<br>a. 5/8” x 3/4" shall be 7.5”<br>b. 3/4" shall be 7.5”<br>c. 1” shall be 10.5”<br>d. 1.5” shall be 13”<br>e. 2” shall be 17” |
| **Any Proposed Alternative Specification or Language:** | | |

c. If a fully composite meter is proposed, describe the approach to minimize the risk of cross threading.

d. If available, provide pricing for remote disconnect meters in the Pricing Proposal.

e. Indicate if the meter(s) proposed provide(s) the following? If yes, please provide details, including indicating the method of data capture and delivery for each question.
   a. Ambient temperature readings?
   b. Water temperature readings?
   c. Temperature alarms? Indicate if these are shown in the HES, Customer Portal, or Both.
   d. Pressure readings?
   e. Acoustic leak detection?
   f. Other advanced alarms? If yes, provide detail.

## 5.6 Large (3”- 4”) Meters

The following table notes the requirements for large meters.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 5.6 | | a. All large meters shall be furnished with flanges on both ends. Flanges shall be of round type, faced and drilled. Some large meters may be drilled with just bolts, others use bolts and nuts. |

| Any Proposed Alternative Specification or Language: |
|---|

# 6 METER INTERFACE UNIT (MIU)

a. Is Proposer proposing more than one version of the MIU (e.g., one with more advanced features or memory and one with less, single-port versus multi-port, etc.)? **Y/N**

   i. If YES, Proposer must provide responses to the requirements in this section for each version for those features that are different, clearly specifying which version they apply to.
   - *Price differences between versions shall be clearly indicated in the Pricing Proposal.*

## 6.1 Specifications and Physical Characteristics

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 6.1 | | a. The MIU shall be provided in a waterproof casing rated IP67 or better (submersion up to 1 meter of depth) in accordance with the IP code, IEC standard 60529. |
| | | b. The MIU enclosure should be composed of ultraviolet (UV)-inhibiting ABS or similar material. |
| | | c. All materials used in the MIU must be non-hazardous under normal conditions. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Use the table below to provide the following specifications and descriptions
   i. Proposed MIU(s), including physical characteristics and dimensions
   ii. Environmental tolerances, including temperature and humidity ranges.
   iii. Proposed models of MIUs including indoor, outdoor wall-mounted, and/or vault installations
   - *GMWSS prefers a single model with appropriate mounting brackets for different situations*

e. Describe features of the MIU that prevent corrosion or degradation of mechanical or electrical performance (e.g., encapsulation or coating).

| Proposed MIU | MIU Model (Indoor - outdoor wall mounted - vault installations) | Physical Characteristics | Dimensions | Environmental Tolerances | Corrosion Prevention Features |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

f. Provide any additional information here.

## 6.2 Battery and Operating Life

The following table notes the requirements for battery and operating life.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 6.2 | | a. The MIUs shall be designed for a 20-year operating life including battery, transmission strength and all other system performance. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Describe the expected MIU battery life as a range of years within two standard deviations of the average expected life under normal or default MIU meter interrogation and transmission settings and the climate in GMWSS's locale.

c. Describe the MIU's low battery warning system, the warning time in months provided before failure under normal conditions, and how this is accomplished (e.g., based on battery voltage or the number of transmissions).

d. Are there any differences in expected MIU battery life when reading different types and makes of meter registers?

e. Can the MIU be read in a mobile configuration as well as fixed? **Y/N**
    a. If YES, indicate if there is a different expected battery life for each reading method.

f. Fill in the following table.

| **To what extent would the following functions affect battery life?** | |
|---|---|
| **i. Installing firmware over the air** | |
| **ii. Extracting 5-minute reads from the meter for a one week period (as part of use study or evaluation of meter sizing)** | |
| **iii. on-demand reads more than 4 times per year; and activating a control valve (if available) more than 2 times per year** | |
| **iv. on-demand reads more than 8 times per year; and activating a control valve (if available) more than 4 times per year** | |

## 6.3 Transmission Characteristics

a. What is the duration and strength of radio signals from the MIU in normal or default mode?
b. Provide default transmission intervals (1,2,3,4 times per day). Are there other transmission options?
c. Can transmission intervals be configured? Can those interval configurations be made remotely?
d. Are all transmission interval options considered "normal" operating settings for 20-year battery life? If no, please indicate expected battery life for each configuration.
e. Please describe interval backfill features if one or more transmissions are not received by the HES.
f. What is the maximum period of time the system will automatically backfill intervals?

## 6.4 Data Storage

a. How many meter readings at what intervals, and what resolution are normally stored in the MIU (e. g., 120 days of one hour reads)?

b. Use the following table to note the maximum number of reads that can be recovered in mobile and fixed collection.

| Collection Method | # of Meter Readings | Intervals | MIU Storage Resolution |
|---|---|---|---|
| **Mobile Collection** | | | |
| **Network Collection** | | | |

c. Describe what happens as capacity is approached.

d. Describe what happens when capacity is exceeded. For example, does new data overwrite old data?

## 6.5 Connection to Meter Registers

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 6.5 | | a. GMWSS requires a tamper-resistant, weatherproof connection that is immune to submergence in water as well as oils and salts. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Describe the proposed normal wiring connection between the MIU and the meter, and any options.
    i. If in-line waterproof connectors are to be installed between the MIU and meter, GMWSS prefers that each end of the connector be factory potted to the wire leads from the meter and MIU, respectively.

c. Describe any proposed method (such as a wire connection designed to release under tension) for connecting registers to MIUs attached to a vault lid that might prevent damage to the meter reading equipment or wires if vault lids are removed abruptly.

d. Describe any provisions for rodent proofing connector cable.

e. Briefly describe installation procedures, including connection to meters, programming, and provisions to avoid installer's mistakes in installation.
    i. Describe any provisions to prevent mis-wiring in the case that connections use manual splicing or gel-caps.

f. Describe any provisions for the MIU to automatically detect the correct register resolution needed for the connected register type.
    i. If the MIU has this ability, Proposer must provide quality control measures to ensure the correct resolution is transmitted to the HES.

## 6.6 Mounting and Installation

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 6.6 | | a. Prices for mounting brackets, if separate from lids, must be included in the prices for the MIUs in the Pricing Proposal. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Describe provisions and requirements for mounting MIUs (elevation, orientation, etc.).

c. Describe mounting brackets provided for different installations.
    i. Provide photographs and diagrams of any brackets or lid assemblies used to mount the MIU in pit and vault applications.

d. For installations in meter boxes, indicate the minimum requirements for the internal dimensions of the meter box (e.g., space between the meter and the underside of the lid).

## 6.7 ID Number and Labeling

- *GMWSS desires that the MIU be shipped with one permanent bar code label for installation control purposes.*

| Section | Comply? Y/N | Requirement |
|---|---|---|

| | | |
|---|---|---|
| 6.7 | | a. Each MIU shall have a unique, permanent ID number that is transmitted with the meter readings. Indicate the number of digits in the ID number. |
| | | b. The MIU shall be permanently labeled on the outside with the manufacturer's name, model number, MIU identification or serial number, bar code of this number, required FCC labeling, input/output connections, and date of manufacture. |
| | | c. Individual shipping pallets (if applicable) shall be marked to identify contents and quantity. MIU shipments shall be accompanied by a computer file of the MIU serial numbers for import into GMWSS's database, VIP. |
| **Any Proposed Alternative Specification or Language:** | | |

## 6.8 Multiple Meters/Registers

The following table notes the requirements for multiple meter/registers.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 6.8 | | a. Pricing for dual-port MIUs, if available, shall be included in the pricing proposal. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Describe any special provisions of the MIU to handle dual-register meters, or multiple meters in close proximity.

   i. Indicate if there are multi-port versions of the MIU, and the number of ports for meter registers or other devices for each model of MIU being proposed.

   ii. Describe added features or benefits of using a multi-port MIU.

c. Describe any restrictions on installing MIUs in close proximity.

## 6.9 Antennae

a. Is an external antenna option available? **Y/N**
   a. If YES, under what circumstances is an external antenna needed or used?
   b. If YES, is the external antenna ADA compliant?

b. Please indicate in the table below
   a. dimensions of available antennae
   b. maximum length of wire between antennae and meter

| External Antennae Required/Optional? | When is External Antennae Needed? | Available Antennae Dimensions | Maximum Wire Length Between Antennae & Meter |
|---|---|---|---|
| | | | |

## 6.10 Tampering

a. Describe physical features (seals, tamper resistant bolts, etc.) to minimize and detect tampering with the MIU.

b. Describe safeguards that prevent accidental or malicious effects to the MIUs, such as disruption of the MIU's firmware, parameter or clock changes, continuous waking of MIU leading to battery failure, or unwanted activation of water shutoff (if supported).

## 6.11 Mobile Operation

a. Can the MIU be read in both drive-by/walk-by and network mode? **Y/N**

b. If the MIU can be read in both modes, please indicate whether the MIU needs to be programmed from one mode to the other mode.

c. If the MIU needs to be programmed, describe the procedures for converting the MIU from one mode to the other mode and indicate whether it can be programmed to do so with drive-by mobile device or on-site with programmer and/or via the network.

## 6.12 Programmability

a. Describe MIU programming requirements (including equipment), procedures and options (e.g., transmission interval).
b. Can the MIU be pre-configured in the factory? **Y/N**

c. Indicate provisions to avoid installation errors, improper connection to meters, and programming mistakes.

d. Indicate if successful initial communication between the MIU and the HES can be verified in real time in the field while the installer is present, and how long it takes.

e. Briefly describe procedures that need to be followed to replace failed MIUs.

## 6.13 Meter Register Number

To ensure data integrity and to detect meter swaps, fill in the table below.

| | |
|---|---|
| Can the MIU store a meter register number? | **Y/N** |
| Is this number transmitted with the meter reading data? | **Y/N** |
| Can this number be captured automatically by the MIU or can be programmed into the MIU from a field programming unit? | **Y/N** |

## 6.14 Compatibility with Different Meter Registers

*a. The MIU should be compatible with all meter brands furnished with absolute encoder registers and electronic registers and read at minimum eight (8) digits.*

a. Fill in the table showing the degree of compatibility of Proposer's MIUs with GMWSS's makes and models of water meters in table below.

| Existing Meter – Manufacture/ Model | Register ID no. | ≥ 8-digit reading | Reverse flow | Empty Pipe | High use | Possible leak | No usage ≥30 days | Low register battery | Valve position | Meter failure | Magnetic tamper | Encoder removal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

# 7 METER BOX OR VAULT LIDS

- *The cost of any lid replacements or modifications, mounting hardware or remote antennas must be included in Proposer's pricing.*

## 7.1 Existing Lids

a. Use the following table to indicate whether existing concrete or metal meter box or vault lids, respectively, are to be drilled, replaced, and/or left alone in order for the Proposer's system to operate to the performance criteria specified.

| Type of Lid | Action Needed to Operate (Drilled/Replaced/Left Alone) |
|---|---|
| **Concrete** | |
| **Metal** | |

## 7.2 Replacement Lids

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 7.2 | | a. Proposer shall determine whether a lid replacement is needed at each individual location, based upon a mutually agreeable Standard Operating Procedure, to be developed following Notice to Proceed. |
| | | b. The replacement lid shall not rest higher than the existing one. |
| | | c. The lid shall be fitted to the correct size box. |
| | | d. If the lid is not flush for any reason outside the installers control, such as sinkage over time, the entire box and lid will require replacement, including possible remediation of the sidewalk panel or other related surfaces. |
| | | e. Dimensions of replacement lids shall be:<br>i. 18" Diameter 2-section meter box lid |
| | | f. Replacement lids shall be composite material. |
| **Any Proposed Alternative Specification or Language:** | | |

## 7.3 Non-Ferrous Lids

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 7.3 | | a. All non-ferrous lids proposed must have sufficient weight or a locking mechanism that prevents them from being dislodged or from floating. |
| | | b. All non-ferrous lids must have a ferrous element (e.g., section of rebar) that enables them to be discovered by a metal detector when buried. |
| **Any Proposed Alternative Specification or Language:** | | |

## 7.4 Remote Antennas

- *GMWSS prefers that no part of the MIU or remote antenna be higher than the plane of the top of the lid, particularly for meters in pedestrian areas*

a. Will any remote antennae be used (where the portion protruding through the lid relays the signal to an MIU below the lid)? **Y/N**

b. What are the specifications around such device?

c. Is the device traffic rated? **Y/N**

d. How far above the lid does the MIU antenna protrude?

## 7.5 Lids in Traffic Areas

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 7.5 | | a. All non-ferrous lids proposed must have sufficient weight or a locking mechanism that prevents them from being dislodged or from floating. |
| | | b. Any replacement lid or remote antenna mounted above the lid or otherwise exposed in a paved area where there is a reasonable chance that it could be subject to vehicular traffic or parked on by a heavy vehicle must be rated heavy duty AASHTO H-20/HS-20. |
| | | c. Any replacement lid or remote antenna mounted above the lid or otherwise exposed and installed in residential sidewalks separated by a parkway from the street must be rated as least medium duty. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Describe how lids located in streets and other areas of traffic will be addressed. Describe the proposed solution for large sized (or odd sized) cast-iron lids that may not be economical to replace with traffic rated composite lids.

## 7.6 Large Meter Vaults

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 7.6 | | a. In the case of Bilco-style vault doors or steel plates, Proposer shall provide a proven option that does not compromise either a) the integrity and safety of the door or plate or b) the Proposer's system to operate to the performance criteria specified. |
| **Any Proposed Alternative Specification or Language:** | | |

e. Provide a diagram indicating vault lid mounting configuration, with dimensions, including any mounting brackets or lid assemblies, and indicating any protrusion of any part of the MIU above the top plane of the lid.

## 7.7 Replacement Boxes

- *GMWSS is considering box replacements as an optional item for this RFP. The cost of any box replacements must be included in Proposer's pricing.*
- *Estimated box replacement quantities and dimensions are provided in the RFP Pricing Tables, including estimates of boxes located in hardscape or softscape. These quantities are provided for estimating purposes only. Exact locations and specifications are not available. Actual numbers may vary in the field.*

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 7.7 | | a. Box replacements will be based on the existing box condition being deteriorated or damaged, such that it is a potential safety hazard to the public or puts the meter asset located within at risk of damage. A Standard Operating Procedure for assessment of the box condition will be provided to the Proposer after the Notice to Proceed is issued. |
| | | b. Dimensions and material of replacement boxes shall be:<br>a. 18" Diameter X 24" Depth, Smooth Inside, Corrugated PVC |
| **Any Proposed Alternative Specification or Language:** | | |

# 8 DATA COLLECTION UNITS, REPEATERS AND OTHER NETWORK DEVICES

- *Respond separately to all of the relevant requirements of this section for each type of network data collection or repeater device proposed*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 8 | | a. *Pricing Proposal* shall include pricing for the installation, operation (including electric service, if required), backhaul communications, and maintenance costs of each device. |
| | | b. For sites where GMWSS has no facilities, pricing must include tower or roof leasing costs for a GMWSS-dedicated or shared network. |
| | | c. *Pricing Proposal* shall include costs for solar panels, if appropriate. |
| | | d. If communication equipment is to be installed on third-party sites, the successful Proposer shall obtain, or assist GMWSS in obtaining, 20-year rights for installing and operating that equipment (joint-use agreement); these rights will be transferred to GMWSS at no additional cost at the time of successful system acceptance. |
| **Any Proposed Alternative Specification or Language:** | | |

## 8.1 Mode of Operation and Communication to HES

a. Describe the method and schedule by which the DCU/repeater captures, stores, and retransmits data received from MIUs back to the AMI HES. Indicate available options (cellular, Wi-Fi, Ethernet, etc.) and the preferred or recommended method for communicating with the HES.

b. Describe what is involved in switching from one WAN technology to another.

c. Describe the process of a DCU that is not able to communicate with the HES. How often will the DCU attempt to re-connect to the HES? Describe the battery implications of these attempts to re-connect to the HES.

## 8.2 Data Retention

a. Is meter data stored in the DCU? **Y/N**

b. If yes,

   i. Describe the available memory capacity of the DCU in terms of the number of meter readings and usage intervals stored (in total and per MIU).

   ii. Specify what combination of full meter readings and consumption increments are stored.

   iii. Is the resolution of the consumption increments stored less than the transmitted meter resolution (e.g., gallons versus tenths of gallons)? **Y/N**

   iv. How many days of meter readings will the DCU store in the event it is disconnected from the network?

## 8.3 Network Infrastructure

a. What is the proposed number of data collection units and repeaters to achieve the levels of system performance specified?

The following table notes the requirements for network infrastructure.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 8.3 | | b. The Proposer shall be solely responsible for determining the mix of data collectors and repeaters (if relevant), MIU placement strategies, and MIU communication configuration needed to meet or exceed the specified performance requirements. |
| | | c. GMWSS shall only be responsible for the costs associated with the proposed network infrastructure and life-cycle cost submitted in the Pricing Proposal. Costs associated with additional network devices, installation changes, 3rd party sites, or additional O&M that are necessary to meet the specified performance requirements, shall not be reimbursed. |

| Any Proposed Alternative Specification or Language: |
|---|

## 8.4 Redundancy

a. What is the percentage of MIUs from which transmissions are expected to be received by only 1 collector, 2 collectors, and 3 or more data collectors in the proposed system?

b. If repeaters are used, indicate, based on the propagation study, the average number of MIUs from which signals would no longer be received if a repeater failed.

## 8.5 Locations

- *A list of GMWSS facilities at which network infrastructure may be installed is included in this RFP as Attachment 3 – Potential Network Locations.*
- *GMWSS takes no responsibility for network coverage or design by providing potential sites to the Proposer.*

## 8.6 Mounting

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 8.6 | | a. DCUs/repeaters installed on GMWSS facilities must not interfere with access by GMWSS personnel to any part of the building or structure on which they are mounted, nor in any way compromise the structural integrity. |
| | | b. For each device installed on GMWSS facilities, mountings, support system, cabling, etc., must be pre-approved, as well as inspected and accepted, by GMWSS engineer. |
| | | c. Antennae shall not extend more than 10 feet above water tanks. Antennae shall not extend more than 2 feet off of any communication towers. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Indicate proposed options for mounting DCUs/repeaters. Indicate minimum and maximum required and recommended heights for antennae. Provide specifications with photographs and dimensions of mountings.

## 8.7 Power Supply, Surge Protection

a. Describe the proposed primary power source for DCUs/repeaters.
   i. If solar, provide specifications for solar panel.

ii. If electrical, indicate expected kilowatt-hours per month of electrical consumption, and expected maximum watts per device.

b. Describe DCU battery, and recommended preventive maintenance battery change interval.

c. Describe provisions for electrical isolation and protection against static discharge and indirect lightning strikes.

## 8.8 Site Costs

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 8.8 | | a. The Proposer shall include in the *Pricing Proposal* the attachment fees and estimated monthly lease cost for collectors or repeaters that are not to be installed on GMWSS-owned facilities. |
| **Any Proposed Alternative Specification or Language:** | | |

## 8.9 Programming

a. If the protocol does not store and immediately forward, describe the default transmission interval for sending data from the DCU to the HES.

b. Describe any programmable features for DCUs, such as data reporting schedules, and describe procedures for programming or configuring them.

c. Briefly describe the procedures by which a DCU/repeater is installed and incorporated onto the network.

## 8.10 Diagnostics, Maintenance and Repair

a. Describe the DCU and repeater diagnostic information, including tamper and other alarms, which are recorded and transmitted by the DCUs and repeaters.

i. Describe the DCU diagnostic information that is normally monitored by the HES.

b. For dedicated networks, describe recommended DCU and repeater preventive maintenance intervals and procedures.

i. Indicate in terms of FTEs the level of effort required to maintain the proposed network solution.

ii. Describe the type of work expected if GMWSS performs the maintenance internally.

c. Briefly describe maintenance procedures in the event of a device malfunction or damage.

## 8.11 Collector Firmware

a. For a GMWSS-dedicated network, indicate if the collector firmware is upgradeable, and, if so, describe how it is upgraded. Indicate if firmware upgrades can be performed over the network.

## 8.12 Other Applications

a. For dedicated networks, describe other applications that may use the system's radio frequency network and data collectors, such as communications for smart sensors or devices such as pressure sensors, water quality sensors, distribution leak sensors, etc.

# 9 BACK UP MOBILE METER READING SOLUTION

- *If Proposer's system includes an option for a back up mobile meter reading solution such as drive-by or walk-by meter reading that could be utilized in the case of a temporary network failure, please provide responses to this section.*

## 9.1 General Operation

a. Describe the proposed solution for collecting back up meter reads and whether it is a drive-by or walk-by solution, specifically describing the collection of both daily and hourly meter reads.

b. Describe the process for loading routes to and from the mobile reading device.
   i. If data can be transmitted wirelessly, describe this process and requirements.
   ii. Describe how those electronic readings will be transmitted to GMWSS's CIS for billing.

## 9.2 Hardware Components

a. Describe the hardware components of the mobile walk-by or drive-by meter reading system.

b. Indicate
   i. which components are ruggedized and/or weatherproof
   ii. any vehicle-specific requirement for the successful operation of the back up drive-by meter reading system

## 9.3 Mobile Data Collection Software

a. Describe the software for the back up drive-by or walk-by meter reading system.

b. Indicate what map-based features are included (such as navigation, ability to identify the next meters in a route, and audio/visual indicators during the collection of meter reads).

i. Provide screen shots.

c. Indicate whether the software has the ability to accept a manual reading and/or notes in the account record.

## 9.4 Capacity and Collection Speed

a. Use the following table to answer capacity and collection speed questions.

| | |
|---|---|
| What is the maximum vehicle speed for the normal collection of meter readings if system is a drive-by solution? | |
| What is the storage capacity of the mobile reading device (number of meter reads)? | |
| What is the average time required to collect a meter read (both daily and hourly) using the mobile reading device? | |
| Describe any events that would require the driver to stop the vehicle to collect data. | |

## 9.5 Communications Protocol

a. Indicate if and how the communication protocol from and to the MIU for the mobile reading device is different from the communications protocol used for fixed network data collectors.

## 9.6 Accessories

a. Indicate connecting hardware and software, including cables, modem, cradle, battery, charger, etc., are required for the unit to be fully functional.

# 10 PORTABLE INTERROGATION, FIELD PROGRAMMING, AND TESTING DEVICES

- *Portable programming units may be required to program MIUs or meter registers.*
- *Portable field test units may be required to diagnose problems with meter registers, MIUs, or the system.*
- *The possible functions are aggregated in this section.*
- *Proposer shall respond to this subsection separately for each separate device if there is more than one, denoting the responses as appropriate.*

## 10.1 Physical Characteristics

a. Indicate if the programmer and/or handheld interrogators are dedicated units, or software that can be put on a third-party phone, tablet, or other device.

b. If third-party tablets or other devices may be used for programming, meter reading and diagnostics, what are the minimum hardware requirements?

c. In the below table, describe the dimensions, weight, environmental tolerances, resistance to dropping and submergence, and other physical characteristics of the proposed unit(s).

| Proposed Unit(s) | Dimensions | Weight | Environmental Tolerances | Resistance to Dropping | Other Physical Characteristics |
|---|---|---|---|---|---|
| | | | | | |

d. Provide pictures of the proposed unit(s).

## 10.2 Functions/Modes of Operation

a. Describe the functions of the unit(s).
    i. Provide representative screen shots.

## 10.3 Field Programming and Installation

- *GMWSS prefers that the new meter reading and register number be captured automatically through the MIU and visually displayed.*

a. Is the unit capable of programming the MIU with any information required for operation that was not factory pre-programmed into the MIU? **Y / N**

The following table notes the requirements for programming and installation

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 10.3 | | The unit shall be capable of capturing, at a minimum, the new meter reading, register number, old meter reading and address manually. |
| **Any Proposed Alternative Specification or Language:** | | |

## 10.4 Field Testing and Diagnostics

a. Is the unit able to ascertain the remaining life of the battery in an MIU? **Y/N**

The following table notes the requirements for field testing and diagnostics

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 10.4 | | The unit shall be able to diagnose problems with a meter register or MIU, unless the system incorporates an alternate way to make such diagnoses. |
| **Any Proposed Alternative Specification or Language:** | | |

## 10.5 Portable Interrogation

a. Is the unit capable of alerting (if necessary) and receiving the signals from MIUs? **Y/N**

b. Is the unit capable of downloading all the consumption profile data stored in an MIU, if that is a capability of the MIU? **Y/N**

c. How far away can an MIU be and still be read by the device?

## 10.6 GPS Receiver

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 10.6 | | The unit shall be capable of capturing GPS coordinates within 3-meter accuracy. |
| **Any Proposed Alternative Specification or Language:** | | |

## 10.7 Capacity

a. Identify how much data, or how many work orders, each unit can accommodate, and how many meter readings a portable interrogator can accommodate.

## 10.8 Bar Code Reader

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 10.8 | | The unit shall include or be capable of capturing and recognizing bar codes to capture meter or MIU identification numbers from bar code labels on these components. |
| **Any Proposed Alternative Specification or Language:** | | |

## 10.9 Camera

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 10.9 | | The unit shall be equipped with a digital camera, including flash, for capturing medium-resolution images of meter registers, meters, site conditions, etc., in conjunction with installation, maintenance and troubleshooting. |

| **Any Proposed Alternative Specification or Language:** |
|---|

## 10.10 Accessories

a. What connecting hardware and software, including cables, modem, cradle, battery, charger, etc., are required?

## 10.11 Batteries

a. Use the following table to

   i. Provide the unit operation life in hours on a fully charged battery when the unit is involved in installation and programming, including taking up to 5 pictures of each installation.

   ii. Provide time it takes to fully recharge the unit's battery after a full day of normal use.

   iii. Indicate if the battery can be recharged outside of the unit and/or from a 12-volt vehicle system.

| Hours of Operational Battery Life | Recharge Time | Battery Recharged outside of unit? | Battery Recharged from 12-volt vehicle system? |
|---|---|---|---|
| | | | |

b. Explain how the unit ensures against accidental data loss in case of a dead battery.

c. Explain how a battery can be replaced.

## 10.12 User Interface

a. Indicate the angular range of readability.

b. Describe any audible tones used by the unit (e.g., confirming a reading or successful programming, warning of an out-of-limits condition, low battery, etc.).

## 10.13 Manual Entry

a. Can the unit permit manual entry of meter readings and other information (for example, the information necessary to complete a meter or MIU investigation or repair work order)? **Y/N**

   i. Provide screen shots for this other information, including notes or comments.

## 10.14 Portable Interrogator Vehicle Mounting

a. Describe any provisions for mounting and operating the unit within a vehicle.

## 10.15 Number of Units

The following table notes the requirements for number of units.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 10.15 | | a. Proposer shall supply all units required for Proposer and its installers. |
| | | b. An additional 5 units are required for System maintenance by GMWSS employees. |
| | | c. Pricing and totals for these latter units, including extra batteries, cradles, car chargers, cables, etc., shall be included in the Pricing Proposal. |
| | | d. GMWSS shall be entitled to purchase additional units for no more than the unit prices included in the Pricing Proposal. |
| **Any Proposed Alternative Specification or Language:** | | |

# 11 INSTALLATION/FIELD TESTING SOFTWARE

- *Please use this section for responses related to the software application used to manage field installations of MIUs and manage portable field test units/interrogators/programmers detailed in Section 10.*

## 11.1 System Description

a. Provide a detailed description of any hardware (e.g., cradles) or software needed to support portable programmer/reader/field test units.

b. Describe in detail the functions of the software used to manage this operation, and the reports produced.

## 11.2 Interface to AMI Head-End System

a. Describe the mechanism and procedure for downloading and uploading data from installation hardware to the AMI HES and/or any other information system normally used in the maintenance of the AMI system.

## 11.3 Interface to CIS

a. Describe the mechanism and procedure for downloading and uploading data from the AMI HES and/or any other information system to GMWSS's customer information system and/or its mobile field work order management system.

# 12 AMI HEAD-END NETWORK CONFIGURATION AND SOFTWARE

## 12.1 AMI System Head-End Software

- *GMWSS prefers that meter readings for billing are provided automatically in response to an automated request from the billing system following a billing calendar.*
- *GMWSS prefers that database synchronization also be automated.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 12.1 | | a. The software shall enable GMWSS to effectively obtain all of the meter readings and other data generated by the system, monitor and manage the AMI system, including underperforming or nonperforming MIUs, repeaters, data collection units and backhaul communications, and determine remediation measures. |
| | | b. The software shall interface with the MDMS and/or GMWSS's CIS. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Indicate normal modes of operation of the AMI system software, including batch processing and single meter reading query processing.

d. Describe the steps a system operator must perform to obtain meter readings from the meters at the customers' premises, if the functions are not totally automated.
   i. If these functions are performed by the meter data management system instead of the HES, then so indicate and DO NOT DUPLICATE responses.

## 12.2 Event Data Storage

a. Indicate what data is stored in the HES

b. Use the table below to indicate how much data, in terms of number of months of data, number of meters, full reads versus increments, meter resolution, and number of reads per day are stored

| # of Months of Data | # of Meters | Full Reads or Increments | Meter Resolution | # of Reads Per Day Stored |
|---|---|---|---|---|
| | | | | |

## 12.3 Interface to CIS and MDMS

- *The HES should automatically transfer appropriate data to the MDMS in a standard, nonproprietary format (e.g., fixed field ASCII).*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 12.3 | | Each record provided to the MDMS shall contain at a minimum: account number, MIU ID number, port number (if the MIU is multi-port), meter ID number and/or meter register number, meter readings, units (size of smallest digit), date and time for each meter reading, and tamper indications. |
| **Any Proposed Alternative Specification or Language:** | | |

## 12.4 Backup and Failover

a. Describe the back-up capabilities and procedures to ensure that the HES and consumption data is not corrupted or lost.

b. Describe how the system software and functions are quickly and easily accessible to users even in the event of a failure at the Proposer's data center.

## 12.5 Alerts

a. Describe any provisions for the system to trigger e-mail or electronic message notification to subscribed users of certain alarms or conditions.

b. Describe capabilities to enable/disable those notifications as needed.

## 12.6 Reports

- *The system should be able to export data from analyses and reports in standard CSV format.*
- *The HES should automatically transfer appropriate data to the MDMS in a standard, nonproprietary format (e.g., fixed field ASCII)*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 12.6 | | a. Reports must be able to be directed to a printer, screen, or data file. |
| | | b. The standard reports shall include, as a minimum:<br>i. Received signal strength from MIUs<br>ii. Number/percentage of reads received from MIUs |

| | | |
|---|---|---|
| | | iii. A list of meters (including address or identifying information) that are being interrogated at a higher-than-normal rate (e.g., every 15 minutes instead of hourly)<br>iv. MIUs from which no transmissions have been received, and the ability to sort them by the number of missing days<br>v. MIUs from which there are cut-wire alarms, and the ability to sort them by the number of days the condition has persisted<br>vi. Any other flags created by meters and MIUs, such as empty pipe, low battery, reverse flow, or magnetic tamper<br>vii. Redundancy in coverage of MIUs by collectors<br>viii. MIU density per collector<br>ix. Duplicate MIU or meter serial numbers; meters/registers associated with more than one MIU; MIUs registered to more than one meter/register<br>x. Mismatch between a meter register ID number and MIU (indicating possible meter change)<br>xi. "Orphan" MIUs; that is, MIUs transmitting but not associated with an account<br>xii. Data retrieval times/data latency<br>xiii. Remaining battery life in MIUs, meters and/or meter registers and other network components, or low battery life alarms, including the ability to sort by the number of days the unit has been in alarm status<br>xiv. Network component status, including communication retries, memory errors, connection errors, and whether the network components pass or fail the Proposer's operating specifications<br>xv. A listing of current AMI control system hardware, software and firmware versions and configurations for routine maintenance purposes<br>xvi. A list of components that required time synchronization within specified dates<br>xvii. Installation records |
| **Any Proposed Alternative Specification or Language:** | | |

c. Provide a list, with brief descriptions and screen shots or sample pages, of:

   i. all the standard reports provided for system and component performance

   ii. missing or late data

   iii. errors, anomalies, tampering, and alarm conditions

   iv. data transfer, management, and administration

d. Describe the extent to which reports can be customized. List any limitations or flexibilities that exist.

## 12.7 Ad-Hoc Reports and Export

- *The software should support ad hoc queries and custom reports, using a built-in report writer or a third-party commercially available report writer that is included with the HES.*

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 12.7 | | a. Permissible report customization shall not void any software product warranties, nor prevent any overlay of future software releases. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Indicate how to access the HES for ad hoc reports.

## 12.8 Access

a. Describe how the system provides secure remote access to AMI system functions, reports and data from other workstations or web browsers on or outside GMWSS's network.

b. How many users can simultaneously access the system for queries and for data entry?

## 12.9 Database Access

- *Any database file structure used to store and manage meter readings at the AMI HES should be non-proprietary, ODBC-compliant and SQL-compliant, and provided by a standard commercial database supplier.*

The following table notes the requirements for database access.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 12.9 | | a. Changes in database table structures shall be transparent to GMWSS from one revision of the AMI HES to another. |
| | | b. The database shall be accessible by GMWSS (read-only, replication or placement in a data warehouse). |
| **Any Proposed Alternative Specification or Language:** | | |

c. Will the data structure of the head-end database allow new data elements? **Y/N**

d. What are the procedures for correcting misinterpreted or mis-assigned data?

## 12.10 System Administration and Security

a. Describe normal procedures for system administration.

b. Describe the security infrastructure of the proposed HES; how security is implemented at the presentation, application, database, and network levels; logging of system access and database transactions for all actions, and items captured as part of the security log.

# 13 METER DATA MANAGEMENT SYSTEM

- *Software is required to manage the database of meter readings and other information created by the AMI system. This software may be distinct from the HES used to manage the AMI system. Meter reading data management capabilities shall be described in response to this section.*

## 13.1 System Architecture

a. Provide a software architecture diagram and a description of all of the proposed software, including all third-party middleware, database engine, report generator, etc. The diagram should be understandable to a non-subject matter expert.
Include version numbers of all products.

## 13.2 Mode of Operation

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.2 | | a. The software shall collect and maintain historical meter read data, including at a minimum: meter identification number, meter attributes, meter location, account and location identification, meter reads, read dates and times, failures to read, tampering alerts, and leak detection, for each meter in the system. |
| | | b. The MDM software shall provide reports of the current status and reading history of individual accounts and selectable groups of accounts. |
| | | c. The software shall be able to sort and list accounts and their meter reading data. |
| | | d. The software shall also be able to create user-defined account groups and aggregate consumption profiles. |
| **Any Proposed Alternative Specification or Language:** | | |

e. What are the normal modes of operation of the AMI system software, including batch processing and single meter reading query processing?

f. Indicate if the software is capable of collecting and retaining information from GMWSS's AMR system (Sensus AutoRead).

## 13.3 Online Storage

The following table notes the requirements for online storage

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.3 | | a. The system shall maintain at least two years of "live" (that is, instantly accessible) hourly meter reads. |
| | | b. Additional data shall be available on a retrieval basis. |
| **Any Proposed Alternative Specification or Language:** | | |

c. As defined above

i. What is the maximum number of meters the MDMS can support with live storage of data?

ii. What is the maximum number of years of live data that can be supported?

## 13.4 Interface to CIS

- *Customer information shared and synchronized with the CIS should include billing cycle, rate class, customer account-premise-meter relationship, meter type, etc.*
- *GMWSS prefers that meter readings for billing are provided automatically in response to an automated request from the CIS following a billing calendar.*
- *GMWSS prefers that database synchronization also be automated.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.4 | | a. The MDMS must interface to GMWSS's CIS system to provide monthly or on demand meter readings both individually and in batch upon request by the system; synchronize data related to meters, service locations and customers; and provide status reports of alerts for accounts. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Has the Proposer integrated the proposed MDMS with the CIS software, Visual Intelligence Portfolio (VIP) by Software Solutions version 6.9.1, used by GMWSS? **Y/N**

c. Briefly describe the process by which the MDMS is integrated with GMWSS's CIS.

d. Describe the steps a system operator must perform to obtain meter readings from the meters at the customers' premises for billing purposes if the functions are not totally automated.

e. Describe the process by which the MDMS would be synchronized with GMWSS's CIS. Indicate the recommended synchronization frequency.

## 13.5 Meter Reads/General

a. Describe the functions provided by the system "out of the box," including:

   i. Input, process, store, and analyze consumption, and interval data from multiple AMI technology collection systems, field tools, and GMWSS's existing meter reading data transfer systems.

   ii. Input, process, store, and analyze consumption pressure and other sensor measurements, if available.

   iii. Identify and report tamper flags and missing or incomplete meter data.

   iv. Support scheduled and on-demand meter readings.

## 13.6 Analysis of Usage

a. Describe how potential leaks, high consumption, misuse, and water theft are identified by the software from the data, and what analysis reports are generated, including:

   i. Identification of possible low flow rate leaks (e.g., extended periods when interval reads are always above zero or above user defined thresholds; "interpolated" leaks when several but not all interval reads are non-zero) by account.

   ii. Identification of possible continuous high consumption events at individual customers' premises.

   iii. Monitoring "usage on inactive" (registered reads above configurable thresholds without an active customer account).

   iv. Water theft analysis, use after shut off, and reverse flow.

   v. Identification of intermittent backflow situations.

   vi. Identification of any meter with little or no change in registration (zero or low consumption) for a configurable number of days.

vii. Identification of accounts where usage violates temporary restrictions (e.g., apparent outdoor irrigation usage during non-allowed times or days).

viii. Consumption profiles by season and day type (weekday, weekend, month, holiday, etc.) and by rate class, customer type, and/or any user-specified collection of meters.

ix. Combining consumption from two registers of a compound meter, including handling the scaling of different registers.

x. Consumption histograms to help right size meters.

b. Indicate which of these conditions can trigger automatically generated alerts and notifications

c. Describe (if available) consumption projection analysis.

d. Describe how reports can utilize information from external data sources, such as weather data.

## 13.7 Analytic Capabilities

a. Describe any capabilities of the software to provide customer, consumption and meter analytics, such as: meter underperformance, unauthorized consumption, non-revenue water analysis, etc.

## 13.8 Grouping of Meters

- *The system should enable the comparison of consumption between an individual meter and a group of meters, or between two or more groups of meters*.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.8 | | a. The software shall be capable of generating consumption profiles for groups of meters (“virtual meter”), such as all meters in a consumption class. |
| | | b. The system shall enable the comparison of consumption from all of the meters within a demand management area and the master meter(s). |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe the options for obtaining and synchronizing the appropriate master meter data.

d. Describe the process for setting up groups. Indicate by what parameters or data fields meters may be grouped for this purpose.

e. Describe the procedure for assigning meters in the MDMS to district metered areas (DMAs).

f. Describe the options for reporting this data, including graphical and tabular, and maps.

## 13.9 System Event Reporting and Tamper Management

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.9 | | a. The MDMS shall enable the users to set start and end date report filters for the above. |
| | | b. The system shall provide a list of accounts with one or more of the above conditions. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe how the MDMS can be used to track and report on potential system status issues, including:
   i. A normal meter change-out or installation, authorized by a work order (including a meter with higher resolution than the meter it is replacing).
   ii. Identification of a meter that has been changed or installed without a work order.
   iii. Missing reads. Show how the system can triage or prioritize recommended work orders based on number of missing reads, proximity to billing read dates, severity of the problem, etc.

d. Describe how the proposed system analyzes meter or MIU tampering flags and automatically generates alerts and notifications, including: logging event messages and changes, and reporting status of logged event messages (i.e., ignored, fixed, etc.); storing all collected event and alarm data; and performing trending analytics and correlating failures with a variety of attributes and time frames.

e. Provide sample reports for these cases. Indicate how information may be pushed to or requested by CSRs.

f. Describe how events/alarms identified in MDMS can be interfaced to GMWSS Work Order Management System to field action to avoid manual data entry in GMWSS WOMS. Include example of where this has been implemented successfully in the past.

g. Describe how the MDMS can support users setting start and end date report filters.

## 13.10 Reporting

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.10 | | a. User shall be able to be set up or change reports without modifying source program code and without any proprietary language skills. |
| | | b. The database shall be directly accessible by GMWSS (read-only, replication or placement in a data warehouse). |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe other standard reports and trend analyses provided by the proposed system not included in response to the above three sections.

d. Describe how reports are to be generated on demand.

e. Describe how reports are to be generated based on a schedule.

f. Describe how system generated reports are sent to predetermined email addresses and storage file locations.

g. Describe end user report customization capability with ability to save as reporting templates.

h. Describe how reports can be exported to standard file formats (ex: .csv, .xls, .mdb, .html, pdf, etc.).

i. List all supported reporting tools (i.e., Hyperion, Crystal, Cognos, Obvient, etc.).

## 13.11 Customer Service Representative Interface

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 13.11 | | a. A GMWSS Customer Service Representative (CSR) or other employee shall be able to access an account by at least the following fields: account number, name, address, location ID number, meter body ID |

| | | |
|---|---|---|
| | | number, register ID number, MIU ID number. Indicate available customer search parameters. |
| | | b. A GMWSS CSR or other employee shall be able to view latest or current reading (with time of read), consumption history over a selectable date range, meter information, usage statistics (e.g., max flow rate, usage by day of week, etc.), historical events (tampers, alerts, etc.). |
| | | c. The employee shall be able to view consumption with selectable granularity (e.g., hourly, daily), compare usage to same period last year, or to comparable meters, and display data both in bar graph and table form. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Describe the process by which a GMWSS employee will view or generate a file of this information. DO NOT duplicate descriptions here with responses below.

e. Use the table below to answer following questions with a Y or N.

| | | |
|---|---|---|
| | i. | Can the MDMS display consumption data minimum hourly flows in each 24-hour period? |
| | ii. | Can the MDMS display consumption data in conjunction with external data such as temperature? |
| | iii. | Can the CSR see through the MDMS a screen identical to what a customer sees through the customer portal? |
| | iv. | Can the software associate more than one account number or meter number with an individual customer? |

f. Describe any other features available to a GMWSS CSR or other employee.

## 13.12 Validation, Editing and Estimation

- *The process should provide an audit history of any data modified or added as a result of the process.*

a. Describe the system's capability, if available, for handling gaps, overlaps, or implausible reads, estimating missing reads, and backfilling missing or estimated reads with valid reads that are obtained later.

b. Indicate procedures for correcting misinterpreted or mis-assigned data.

## 13.13 Data Validation and Exception Handling

a. Describe detection and prevention of logical data errors when the data is input by users.

b. Indicate the error codes and descriptions which can be used to help facilitate debugging end user problems. Error codes must reference the specific exception.

c. Describe provisions for detection, prevention and reporting of logical data errors when data files are imported from other systems.

## 13.14 Notification Support and Administration

a. Describe capabilities of the software to provide data files to generate field service order requests based on configurable settings, and the ability to send service orders to other work order management systems.

b. ***DO NOT ANSWER HERE IF CAPABILITY IS PROVIDED BY CUSTOMER PORTAL.*** Describe capabilities of the software to provide data files to CIS and/or outbound dialing IVR with messages concerning possible leaks, high consumption, unauthorized irrigation, etc. Describe capabilities to generate letters, emails or text messages for customers. Indicate data required from CIS to provide this capability. Describe ability to provide flags to account records in CIS of conditions or messages created.

c. ***DO NOT ANSWER HERE IF CAPABILITY IS PROVIDED BY CUSTOMER PORTAL.*** Describe capabilities to keep track of notifications (e.g., about continuous flow) that have been sent and whether they have been received, and to schedule subsequent notifications if the condition still persists.

## 13.15 Meter, Meter Register and Meter Interface Unit Asset Management

a. Describe meter configuration data and the process for changing it. Describe how an MIU is assigned to a location ID, customer ID, meter body ID, register ID, and geographic location.

b. Show how the software maintains asset data, including installation date, model number, etc.

c. Describe how total consumption is tracked including meter rollover.

## 13.16 AMI Installation Support

a. Describe any functionality of the MDMS for specifically managing installations of meters, meter register retrofits, and MIU-only installations.

## 13.17 MIU/Meter Changeout

a. Answer the following questions with Y or N.

| | | |
|---|---|---|
| | i. | Can the software associate old MIU and new ID numbers with a service address, customer account and unique location ID to maintain account continuity? |
| | ii. | Can the software associate old meter body ID, old register ID, old meter final reading, and new meter ID and reading from a meter exchange process with a service address, customer account or unique location ID for continuous consumption profiling. |

b. Describe the process for inputting a meter or MIU change in the MDMS, maintaining the continuous consumption history for an account while keeping track of the point of change-out.

## 13.18 Database

a. Describe responsibilities of a GMWSS database administrator (DBA) if required to maintain database.

b. Describe backups, either incremental or full, without stopping any operational processes.

c. Describe automated data archiving, purging, and restoration.

## 13.19 User Environment

a. Answer the following questions with Y or N.

| | | |
|---|---|---|
| | i. | Will software support a session logout that will terminate the user session with a configurable session timeout value? |
| | ii. | Will software support a session kill on both browser-away and browser-close? |

b. What are the web browser options for proposed systems?

c. Describe context sensitive online help.

## 13.20 System Configurability

a. Describe the types of configuration changes that would require a system restart.

b. Describe functionality to allow GMWSS to set up and change data validation and estimation rules, without modifying source program code and without any proprietary language skills.

c. Describe functionality and process to make changes to alarm/event notifications.

d. Describe functionality and tools to change format, content or functionality of user screens and online help contents.

### 13.21 Information Protection and Encryption

a. Describe the system's data encryption capabilities.

b. For presentation to external end users (e.g., the online presentment application), describe how the proposed System will support masking and/or encryption of sensitive data as identified by GMWSS.

### 13.22 Support and Maintenance

a. Describe Proposer Help Desk availability (e.g., hours, time zone, etc.) and escalation procedure.

b. Describe upgrade frequency and notification process.

c. Can upgrades be implemented by GMWSS staff or is Proposer assistance required?

d. Describe any plans for sun-setting the proposed system.

e. Describe prior version support.

## 14 CUSTOMER WEB PORTAL

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 14 | | a. The proposed solution shall include a web portal for GMWSS's customers to access detailed data from their meters. The data must be presented in simple graphs that are easily understood by most users. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Describe and show (with screen shots) how the software provides the following capabilities.

If the capabilities requested below are covered in the MDMS section, do not repeat here.

## 14.1 Log in and Passwords

- *The platform should have a configurable interface that can be presented as a seamless extension of GMWSS's own web site.*
- *Account initiation should be completed using an emailed or texted authorization code.*
- *The software should provide support for GMWSS account file import and account and password authentication, or two-step authentication.*
- *The software should provide for password support to GMWSS CSRs to manage forgotten usernames and passwords.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 14.1 | | a. The software shall be accessible to customers using web browsers from major manufacturers. |
| | | b. The software shall allow the customer to initialize an account for access using address and account number. |
| | | c. Initializing a customer account shall require no involvement of GMWSS staff. |
| | | d. The software shall allow the customer to retrieve or re-set a forgotten password via the previously established email. |
| **Any Proposed Alternative Specification or Language:** | | |

e. Describe password requirements.

f. Can the customer portal be accessed by a customer from GMWSS's website or e-billing page? **Y / N**

   i. If YES, can the customer portal support single sign-on and if it is SAML compliant?

## 14.2 Customer Display

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 14.2 | | a. The software's main customer display screen shall have GMWSS's logo and branding on it. |

| | | |
|---|---|---|
| | | b. The display shall provide all account, address, and meter information relating to that particular customer. |
| | | c. The software shall display the customer consumption history in a graph that can be configured to a customer-specified start and end date. The default period should be the customer's latest complete billing period. |
| | | d. The software shall be able to display daily and hourly usage up to the most recent data available in the MDMS. |
| | | e. The graph shall allow the customer to compare consumption history for different time periods on a single graph (e.g., consumption by month this year versus last year). |
| | | f. The customer shall be able to select the resolution of the consumption interval displayed (hourly, daily, monthly, and yearly). Indicate the amount of data that can be displayed for each interval (e.g., 6 months, 31 days, 24 hours). |
| | | g. The customer web portal should use adaptive web design or include a mobile application for ease of use with mobile devices. |
| **Any Proposed Alternative Specification or Language:** | | |

h. Describe the ability of the software to clean up data errors and alarms on customer display.
    i. Indicate what options GMWSS has to only show validated usage data, or a manual estimation done by a CSR to customer, and to show or suppress register or MIU errors and other alerts.

i. Describe capacity to overlay data streams (e.g., temperature, rainfall, occupancy, etc.) from other sources.
    i. Provide examples.

j. Describe the capability to show cost data for individual consumption profiles based on the customer's rates, tiers, wastewater charges, or total estimated cost and consumption for the current billing period.

k. Describe the capability to provide a graph of the customer's consumption history against the average consumption of similar customers.

l. Describe the capability to provide recommended or GMWSS-supplied water budgets based on number of occupants, weather, landscape area, special features, customer type, etc.

m. Can a GMWSS CSR see a screen identical to what a customer sees through the customer portal? **Y/N**

## 14.3 Multiple Meters and Accounts

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 14.3 | | a. The software shall allow customers to access and view all meters or accounts they are responsible for in a single logged on session. |
| | | b. Where a meter has more than one register, the software shall be able to aggregate the consumption into a single view with proper multipliers applied. |
| **Any Proposed Alternative Specification or Language:** | | |

## 14.4 Alerts

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 14.4 | | a. The software should be able to inform a customer of a violation of certain GMWSS-defined usage restrictions (such as excessive flow rates or volumes indicative of outdoor water use on certain days or at certain times). |
| | | b. The consumer must be able to set thresholds for these alarms. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe from where (HES for alarms, MDMS for consumption profiles, etc.) and how (e.g., FTP interface) the customer portal gets its information.

d. Indicate the alarms that can be provided to the customer through outbound notification, such as persistent or intermittent consumption indicative of a leak, excessive consumption, excessive charges, or usage over a threshold for a specific period of time (e.g., when the premises are vacant).

e. Describe the provisions for the consumer to designate emails, cellphone numbers (for text messages), or other communications for various alarms. Indicate if the consumer can enable multiple contact emails or phone numbers, or contact emails or phone numbers for different conditions. Indicate if the CIS can be updated from contact information submitted by the customer to the web portal.

f. Indicate if the software has provisions to allow consumers to opt in or opt out of notifications.

g. Describe capabilities of the software to provide data files to CIS and/or outbound dialing IVR with messages concerning possible leaks, unauthorized irrigation, etc. Describe capabilities to generate letters, emails or text messages for customers. Indicate data required from CIS to provide this capability. Describe ability to provide flags to account records in CIS of conditions or messages created.

h. Describe capabilities to keep track of notifications (e.g., about continuous flow) that have been sent and whether they have been received, and to schedule subsequent notifications if the condition still persists.

i. Describe capabilities to provide data files to CIS including information regarding contact made with customers via alerts so that CIS can log that information on the specific account.

j. Describe the portal's capabilities to provide GMWSS defined special messaging.

k. Describe the portal's ability to have links to other on-line resources (e.g., conservation web sites).

l. Briefly describe the portal's online help screens and tutorials.

## 14.5 Reporting

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 14.5 | | a. The software shall allow the customer to download both graphical and chart-based reports of their consumption. The downloaded reports shall be available in PDF and Excel. |
| | | b. The Proposer shall be responsible for developing up to five custom reports at GMWSS's direction that the customer will be able to view and download. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe how missing data points are managed and displayed.

# 15 SOFTWARE AND INTEGRATION TESTING AND ACCEPTANCE

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 15 | | a. HES acceptance testing shall include testing functionality of features described in the proposal, testing of all interfaces to and from GMWSS's IT systems developed by Proposer in conjunction with GMWSS, testing capacity of systems to perform when processing large quantities of data and transactions, and testing capacity of the system to detect and reject |

| | | |
|---|---|---|
| | | input data that would fail reasonableness checks (i.e., reading dates in the future, or non-numeric meter readings). |
| | | b. Acceptance testing shall be conducted in stages as follows:<br>i. HES and network management hardware and software, which will capture meter readings and other data from MIUs installed at customers' meters as well as provide reports on the performance of the network components, redundancy, MIU battery life, etc.<br>ii. Network communications (i.e., point-to-point from MIU through network to HES).<br>iii. MDMS and customer portal software.<br>iv. Interfaces to GMWSS's CIS and other information systems specified in the RFP or proposed by the Proposer, which will enable the system to make accessible or deliver readings to and synchronize data with these systems for work orders, asset management, etc.<br>v. Software used to control and manage the Proposer's MIU installations to ensure that all installation data is captured correctly. This includes integration to any handheld devices used in the installation.<br>vi. Final testing stage, User Acceptance Testing (UAT), which encompasses testing all interface components of the System in the Proposer's and GMWSS's production environment. Up to twenty-five (25) meters and MTUs shall be installed on customer properties to accomplish the UAT. The UAT must be completed and accepted by GMWSS prior to beginning any meter and MTU installations beyond the initial twenty-five (25). |
| | | c. Prior to any work being performed, the Proposer shall submit to GMWSS for approval a system testing plan covering functional requirements of each software component; integration between network components, AMI software and hardware, the MDMS and customer portal, the installation control system, and GMWSS's CIS; and end-to-end performance. |
| | | d. Proposer shall detail the testing approach, testing schedule, test data, test cycles, test scripts, and failover/repair/restore process for functional tests, integration tests and end-to-end tests. |
| | | e. Proposer's representatives together with GMWSS representatives shall perform the acceptance testing. Acceptance testing shall be performed at GMWSS's facilities unless the parties agree otherwise. |

| | | |
|---|---|---|
| | | f. GMWSS will provide Proposer written notice of acceptance upon successful completion of each test. Progress payments will be tied to successful testing at each stage. |
| | | g. Software and integration acceptance testing shall take place prior to the acceptance by GMWSS of any network components. |
| | | h. For individual failed tests that require fixing, GMWSS may require retesting the entire component if it reasonably expects that the fix could compromise other functions. |
| | | i. GMWSS may reasonably require repeating any tests for which it determines the test results are unclear. |
| | | j. The testing protocol shall be followed regardless of whether GMWSS opts to operate and maintain the network itself or have the network managed by the Proposer. |
| **Any Proposed Alternative Specification or Language:** | | |

## 16 SYSTEM DOCUMENTATION

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 16 | | a. All system documentation and manuals shall be provided prior to the commencement of training of GMWSS employees. |
| | | b. Proposer shall provide in electronic portable media (CD/DVD, etc.) all standard manuals and additional customized (for GMWSS) written procedures sufficient for complete operation and maintenance – including:<br>i. MIU Installation<br>ii. Data collection unit and repeater installation (if the network is dedicated)<br>iii. System administrative operation, performance monitoring, diagnostics and maintenance<br>iv. Backup and recovery procedures<br>v. MIU field diagnostics and repair<br>vi. Network component diagnostics and repair |
| | | c. The electronic versions shall be indexed, searchable, and printable. Proposer shall make standard manuals available online to GMWSS employees. |
| **Any Proposed Alternative Specification or Language:** | | |

## 16.1 Third-party Software Manuals

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 16.1 | | Manuals for any third-party software components incorporated into the system shall be available online or on CD/DVD in searchable and printable format. |
| **Any Proposed Alternative Specification or Language:** | | |

## 16.2 Updates and Revisions

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 16.2 | | a. Proposer shall promptly update online documents whenever there are any revisions or additions to the manuals. Describe notification and update procedure. |
| | | b. Proposer shall provide a method to track and monitor all changes to software, hardware, operation, and maintenance procedures. |
| **Any Proposed Alternative Specification or Language:** | | |

# 17 TRAINING

## 17.1 Training Requirement Details

| Comply? Y/N | Requirement |
|---|---|
| **Prerequisite to Installation** | |
| | a. Proposer must provide proper training to designated GMWSS staff prior to the commencement of installations. |
| | **Any Proposed Alternative Specification or Language:** |
| **Training Location and Equipment** | |
| | b. All training shall be performed at GMWSS's offices and facilities, or in the field in GMWSS's service territory. |
| | c. Proposer shall provide all additional training on GMWSS's AMI system equipment (including the HES and database) after it is installed, tested, and accepted by GMWSS. |
| | d. Training should use real data from GMWSS's own system. |

| | |
|---|---|
| | e. Proposer shall restore, repair, or replace any GMWSS equipment damaged in training, and restore any hardware or software modified in training. |
| | f. At its discretion, GMWSS may videotape and/or record all on-site training |
| | **Any Proposed Alternative Specification or Language:** |
| **Instructors** | |
| | g. Proposer shall provide trained and experienced instructor(s) and ensure that they do not perform other duties during the training period that will interrupt instruction. |
| | h. Instructor will provide a checklist to trainees to evaluate presentation of course materials for effective feedback from GMWSS. |
| | **Any Proposed Alternative Specification or Language:** |
| **Training Objectives and Outline** | |
| | i. Proposer shall provide a detailed outline of each training session's objectives and content at least 2 weeks prior to the training session to GMWSS for review and approval. |
| | **Any Proposed Alternative Specification or Language:** |
| **Training Aids** | |
| | a. Proposer shall provide trainees' workbooks, training aids (including software and video), and system technical manuals prior to or during the training session at no additional cost. |
| | b. Proposer shall provide copies of workbooks for the number of employees trained for each type of training plus three (3) extra copies. |
| | c. If training aids include the technical manuals, then Proposer shall provide the appropriate manual for each trainee in the training class that the manual covers. |
| | **Any Proposed Alternative Specification or Language:** |
| **Testing/Evaluation** | |
| | d. Proposer's training shall include an evaluation of trainees to ensure that they have learned the course content and can perform all necessary functions on the system. Evaluation criteria and testing shall be approved in advance by GMWSS. Proposer shall notify GMWSS of any employees who fail this evaluation and provide them additional training as required. Proposer shall repeat a training session at no additional cost to GMWSS if a majority of the trainees in a particular subject have not attained the skills from the training session or fail the evaluation at the end of the training. |
| | **Any Proposed Alternative Specification or Language:** |
| **Supplemental Training** | |
| | e. Proposer shall provide a schedule of costs for additional training beyond the initial training proposed. List each training type and provide the cost for each. |
| | **Any Proposed Alternative Specification or Language:** |

| Training Curriculum | |
|---|---|
| | f. Proposer shall provide thorough training of GMWSS employees in all areas required to install, operate and maintain the system and obtain and use data from it. |
| | **Any Proposed Alternative Specification or Language:** |

## 17.2 Training Areas and Methods

a. Using the following table, specify the teaching method and duration for each of these training sessions, which shall include but not be limited to the following areas for the designated number of people.

| Training Areas | Teaching Method |
|---|---|
| i. All aspects of the AMI system's operation, including obtaining reads and consumption data from the system, transferring reads and other information between the AMI system and the CIS; creating, analyzing, and customizing system performance reports, diagnosing potential problems with system components, and changing or adding customer accounts/MIUs/ meters to the system, for a minimum of 10 GMWSS employees or agents. | |
| ii. Meter reading database management for a minimum of 10 GMWSS employees or agents. | |
| iii. Use of the MDMS and customer portal for a minimum of 10 GMWSS employees or agents. | |
| iv. Use of the Proposer's installation management and project control software in association with proposer's handheld programming devices for a minimum of 10 GMWSS employees or agents. | |
| v. Field installation of MIUs, as well as MIU field diagnostics and maintenance, for a minimum of 10 GMWSS employees or agents. | |
| vi. AMI system maintenance, including the use of system management and diagnostic software, and HES, as well as guidance on staff skills and resources needed for these maintenance functions, for a minimum of 10 GMWSS employees or agents. | |
| vii. Network component (including data collection units and repeaters, if used) installation and field | |

| | |
|---|---|
| maintenance, for a minimum of 10 GMWSS employees or agents. | |

# 18 SUPPORT

## 18.1 Support Periods

| Comply? Y/N | Requirement |
|---|---|
| **Support Periods** | |
| | a. Proposer shall provide onsite support commencing when AMI SaaS software applications are available to GMWSS and continuing through GMWSS's issuance of a Notice of Completion following Final System Acceptance. The charge for this support shall be included in Proposer's Pricing Proposal |
| | b. Support shall be provided during any warranty periods for the equipment covered by the support service and during active maintenance agreements. |
| | **Any Proposed Alternative Specification or Language:** |
| **Support Severity Levels** | |
| | c. During normal business hours (Monday through Friday 08:00 – 17:00 Eastern Time), response time to Level 1 or 2 problems shall be within one hour of GMWSS reporting an inability to use the system. Outside of normal business hours, response time shall be within four hours of GMWSS reporting an inability to use the system. |
| | d. For a Level 3 problem, these response times shall be 2 hours if reported during normal business hours and 1 business day if reported outside of normal business hours. |
| | e. Response to Level 1 and 2 problems that cause the software or system to be unavailable shall be provided on a 24/7 basis until the problem is cured. |
| | f. Should Proposer fail to respond within these times, GMWSS shall have right to impose liquidated damages of $100 per hour, credited against amounts payable to Proposer for license and maintenance fees. |
| | g. Reponses shall consist of telephone support, remote access to address system problems, and on-site service, depending on the severity of the problem. |
| | h. Proposer shall provide in its Pricing Proposal a schedule of any incremental increase in license, maintenance and support fees charged to GMWSS if GMWSS increases the number of installed MIUs. |
| | **Any Proposed Alternative Specification or Language:** |
| **Remote Access Monitoring and Support** | |

| | |
|---|---|
| | i. Proposer shall be able to remote connect to all the AMI software applications to monitor performance, diagnose problems, load patches and upgrades, etc., subject to GMWSS's firewall provisions, if applicable. |
| | **Any Proposed Alternative Specification or Language:** |
| **Supplemental Onsite Support** | |
| | j. Proposer shall provide onsite assistance at the request of GMWSS. Onsite support should be rendered within two (2) business days of receiving a request for support. Proposer shall provide a schedule of minimum response times for onsite support, and a schedule of costs. |
| | **Any Proposed Alternative Specification or Language:** |

## 18.2 Telephone Support

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 18.2 | | k. Proposer shall provide trained persons to answer technical questions and guide GMWSS employees through the use or diagnosis of the system through a toll-free number. |
| | | l. Telephone support shall be available at a minimum from 7:00 a.m. through 6:00 p.m. Eastern Time Monday through Friday and at any time for Level 1 and Level 2 problems. Indicate telephone support hours proposed. Response time to a GMWSS telephone query shall be within 30 minutes. |
| **Any Proposed Alternative Specification or Language:** | | |

n. Describe Proposer's current support operations (number of persons, location, hours, etc.).

## 18.3 Support Groups

a. Describe any user groups, users' conferences or any other collaborative communities of the Proposer's users.

# 19 INFORMATION TECHNOLOGY SECURITY

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 19 | | a. The AMI software shall provide automated methods of preventing cross-site scripting (XSS) attacks or SQL injection attacks from compromising the databases or software functions. |

| | | |
|---|---|---|
| | | **b.** The AMI system software, including HES, MDMS and customer portal, shall authenticate and authorize users of the system through user login names and encrypted and masked passwords, configurable role and function-based controls to limit access to data, limit access to software functions and features of the system, and provide traceability and thorough user audit logging. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe the process for establishing user access privileges.

d. Describe support for secure access and authentication, role-based security and permission-based functionality for internal and external users and Application Programming Interfaces (APIs), and the level to which security is granted (e.g., function, user, data element).

e. Describe control of administrative or super user access over the Internet.

f. Provide an overview of Proposer's processes to identify, quantify, and prioritize its AMI system IT and Infrastructure risks against defined risk acceptance levels and objectives.

g. Proposers shall include network diagrams showing data flow and security with proposal.

h. Proposer shall include any security standard certifications they have (SOC2, NERC-CIP, etc.).

i. Proposer shall include redacted penetration test results.

j. Describe Proposer organization's IT Risk Governance, IT Risk Life Cycle, and Information Security Policy, including how and how often the policy set is reviewed and maintained.

k. How does the Proposer verify IT security and risk management of its suppliers and subcontractors?

l. Describe Proposer's data center physical controls and environmental controls; operational security controls, including logging and monitoring system and network activity; intrusion detection methodology; data backup and restoration process; Proposer's change control process; and its access control policy and rights administration.

m. Describe Proposer's policies and program to protect the privacy of GMWSS and customer data through its life cycle of collection, storage, usage, sharing, transferring, securing, retention and

destruction. Describe how and by whom the program is administered, and how it ensures compliance by all subcontractors and third parties.

n. Indicate the development lifecycle for each of the software components of the AMI system, including the frequency of application and system security review, and its application and system patching strategy.

o. Describe Proposer's incident management program and business continuity plans for the AMI system software, and how often the plan is tested.

p. Describe AMI system software design considerations and compensating controls for threats caused by malicious or negligent administrators or authorized users of the system operating maliciously or negligently, threats involving AMI audit logs, cyberattacks, eavesdropping threats, threats that arise due to an incorrect or insecure implementation, and threats transmitted by other information systems to the AMI system interfaces.

## 20 FIELD INSTALLATION

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20 | | a. The following provisions will apply to work performed by either Proposer's own staff or installation subcontractor(s).<br>i. Proposer shall manage installation of AMI equipment. The Proposer shall:<br>ii. Specify the installation methods<br>iii. Train the installation service providers<br>iv. Manage the installation performance<br>v. Be responsible for the quality control and quality assurance of the AMI network and MIU installations<br>vi. Be responsible for the overall performance of the completed AMI system |
| | | b. In the case of a dedicated network, a number of collectors sufficient to verify corresponding field installations shall be installed, tested and operational prior to starting MIU deployment. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe the proposed approach to managing the network, meter and MIU installations.

## 20.1 GMWSS Project Manager

- *GMWSS will designate an employee, agent, or team of employees/agents who will manage the project on behalf of GMWSS, coordinate with the Proposer and ensure 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 all plans and specifications.*

## 20.2 Proposer Staff

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.2 | | a. Proposer will designate 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 AMI system manufacturer, GMWSS, and all other applicable local, state, and federal regulations. |
| | | b. The Installation Manager<br>i. Should be onsite continuously throughout the duration of the project, except for holidays and vacations, during which the Proposer shall provide a qualified substitute.<br>ii. Shall be experienced in supervising water meter installation contracts, and familiar with applicable regulations and safe and proper installation procedures. |
| | | c. GMWSS shall approve the Installation Manager or a change in the Installation Manager. |
| | | d. Successful Proposer shall submit résumé and references of candidate(s) for Installation Manager. |
| | | e. All of the Proposer's employees or subcontractors shall be fully trained<br>i. by the Proposer in the removal of existing meters and the installation of new meters and MIUs.<br>ii. in retrofitting newer meters as requested by GMWSS with AMI-compatible registers and MIUs, regardless of size. |
| | | f. Proposer's employees or subcontractors are not permitted to engage any GMWSS customer in an argumentative way. Should those conditions evolve, Proposer's employee shall immediately call a GMWSS Field Representative to handle the situation. |

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| | | g. GMWSS reserves the right to require Proposer to retrain, reassign, or remove from the project any employee or subcontractor who fails to perform in a workmanlike manner. |
| | | h. Proposer shall engage by employment or subcontract at least one person at all times who shall maintain a valid and current Kentucky journeyman Plumber's License. Any repair work which occurs inside a customer's residence shall be completed by the person who maintains the Plumber's License. |
| | | i. More than one licensed plumber shall be provided by the Proposer if the work volume warrants it. |
| | | j. This/these person(s) shall be responsible for correcting any problems or damage to plumbing occasioned by the changing of meters or registers or the installation of the AMI equipment under this contract. Proposer shall provide references for each such person. |
| | | k. GMWSS reserves the right to approve licensed plumbers for work on this project. |
| **Any Proposed Alternative Specification or Language:** | | |

n. Provide a proposed organization chart for the project. Include Project Manager & Contract Manager identified in Section 1.4

## 20.3 Installation Procedures Approval and Testing

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.3 | | a. Proposer shall submit detailed scheduling and installation procedures to GMWSS for review and approval within 30 days after Notice to Proceed. |
| | | b. The procedures should be designed to optimize the work of the Installers, GMWSS and Jacobs field inspectors, and all other staff working on the project. |
| | | c. Prior to the commencement of full-scale installation of all MIUs, but after the Proposer has installed the AMI system HES, the MDMS and customer portal, the installation control software and a sufficient quantity of data collection units, and all of these components have been tested and accepted by GMWSS and Jacobs through the UAT process, the Proposer's installation subcontractor shall install meters and MIUs on approximately 200 accounts per week following the agreed-to procedures. |
| | | d. GMWSS will determine which accounts will be included in this Phased Start. |

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| | | e. During this test and a period not shorter than fifteen (15) working days (Monday through Friday) following it's starting, GMWSS, Jacobs, and Proposer shall evaluate the procedures for public notification, scheduling installations, meter and MIU installation, inspections and inspection reporting, exception processing, data transfer by the installers to GMWSS's billing system, meter reading over the system, installation data management and project control, and problem resolution, to ensure they are working and effective. |
| | | f. Proposer shall not increase pace beyond 200 installations per week during this evaluation period. |
| | | g. Proposer and GMWSS shall develop a test and acceptance plan covering these procedures. GMWSS may require the Proposer to modify any procedures that it deems are deficient or ineffective or otherwise unacceptable to GMWSS. Full-scale installation of meters and MIUs shall not begin until project control procedures and systems are determined to be performing accurately, and the procedures have been approved by GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.4 Installation Sequence

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.4 | | a. Proposer shall conduct installations by Route Release, defined as a group of meter reading routes, zip code, or other group based on geographic proximity and logistics, to be determined by GMWSS in discussion with the Proposer. GMWSS will retain the right to prioritize other groups, or to reorganize priorities, both before the project begins and during the project. |
| | | b. No more than two Route Releases at one time shall be available to the Proposer for installations. |
| | | c. Unless approved in writing by GMWSS, Proposer shall meet the following requirements in one of the two available Route Releases before a new Route Release can be provided to the Proposer:<br>i. The Proposer shall complete at least 90% of the installations in the Route Release. The remaining 10% of installations in the Route Release shall be completed within 30 days of reaching 90% completion in that Route Release. Exceptions to completion may be granted by GMWSS; for example, if a property is vacant or abandoned, has fragile or deteriorated plumbing, has inoperable control valves or curb stops, the |

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| | | Proposer has been denied access after following the agreed-to contact procedures, or other factors as determined by GMWSS.<br>ii. The network performance for the installed meters within the Route Release shall be no less than the System performance metrics defined in Section 2.4 Read Success Rate.<br>iii. Prior to any new Route Release installations commencing, the Proposer shall install all network infrastructure as per the Proposer's network design approved by GMWSS to ensure adequate network coverage. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.5 Customer Notification

- *GMWSS acknowledges that Commercial Customers will likely be contacted in various methods based on the size, location, and style of business of that customer.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.5 | | a. Between 4 and 5 weeks prior to the commencement of installations for a particular group of customers, Proposer shall send GMWSS-approved initial notification letters informing customers of the project. |
| | | b. At least 3 weeks prior to the commencement of installations for a particular group of customers, Proposer shall provide a second GMWSS-approved notice to those customers indicating the time period when installations will occur.<br>i. This second notification will either be a postcard or a door hanger. Provide pricing for both in the Pricing Proposal.<br>ii. If this second notification is a door hanger, the Proposer will be responsible for placing the hangers on the door to meet the required time frame of notification.<br>iii. If this second notification is a post card, it will be mailed in time to meet the required time frame of notification.<br>iv. If the meter to be replaced is inside the building or if the customer has special needs regarding the brief disruption of water service, this second notification will state that the customer is requested to call the Proposer to schedule an appointment |
| | | c. After each installation attempt, the Proposer shall place a GMWSS-approved door hanger (third notification) on the customer's property indicating the successful or unsuccessful change of the meter. |
| | | d. All draft customer notifications must be submitted to the GMWSS Communications Director within 30 days of issuance of NTP. |

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| | | e. The text of these notification letters, postcards, door hangers, and any other printed communications with customers will be submitted by GMWSS Project Manager to the Proposer at least 2 weeks prior to use. |
| | | f. These Printed Notification materials and any applicable postage and envelopes shall be in full color and double-sided. |
| | | g. The weight of paper for door hangers shall be a minimum of 300 gsm. |
| | | h. The size of door hangers shall be 4.25” x 11”. |
| | | i. The size of any postcards shall be 8.5” x 5.5”. |
| | | j. Pricing for all Printed Notification materials and any applicable postage and envelopes shall be included in the Pricing Proposal. |
| | | k. Printing of all Printed Notifications shall be done in batches, not all at once. There shall be a minimum of four (4) batches for each Printed Notification. |
| | | l. Proposer shall also develop and submit to the GMWSS Communications Director the scripts for any telephone or in-person conversations with customers for approval by GMWSS’s Project Manager at least 1 week prior to use. |
| | | m. All customer notifications, including scripts, must be approved by GMWSS in advance of distribution to customers. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.6 Installation Schedule

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.6 | | a. GMWSS and the Proposer shall establish an overall schedule for installation of the entire project. |
| | | b. On the first workday of each week, the Proposer shall provide GMWSS an updated schedule of where work is planned for the next 3 weeks. |
| | | c. By 7:30 AM Eastern Time on the first business day of each week, Proposer shall provide GMWSS a schedule of where work is planned for that day and each subsequent day of that week, to enable coordination and communication between GMWSS and Proposer for the work. If the schedule changes for whatever reason, an updated daily schedule shall be forwarded to GMWSS within 24 hours. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.7 Work Hours

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.7 | | a. Installers must be available for evening (until at least 8:00 PM) and Saturday installations, as well as for installations that must be conducted at other times because of special needs. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Indicate normal installation work hours for field installations, which must be approved by GMWSS.

c. Indicate the number of installers proposed for all installation periods, including those that will be allocated to evenings and weekend times.

## 20.8 Account Data File

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.8 | | a. Prior to the start of the installations, GMWSS will provide the Proposer with an electronic file containing the information necessary to create work orders for meter/AMI installation. |
| | | b. GMWSS will provide the Proposer with periodic updates to this file for routes where the AMI system has not yet been installed. |
| | | c. For each meter, the data file will indicate the meter size, make and serial number, whether or not the meter shall be replaced, the meter location, access notes to the meter, and the name and phone number that may be listed on the account. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.9 Work Order Processing

- *GMWSS desires read-only access to the Proposer's database and reserves the right to audit the Proposer's database.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.9 | | a. Proposer shall be responsible for ensuring that all data transfers to and from GMWSS's information systems are properly working before commencing any installations. |

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| | | b. Each Proposer's work order issued to an installer will include, at a minimum, the customer's address, service address, location identification number, meter location, MIU or remote location, designation of whether meter is to be replaced, existing meter number, existing register number, meter make, model and size, and most recent meter reading. |
| | | c. All work orders shall be provided electronically. |
| | | d. Should the installer find any discrepancies in the information provided in the work order and what is observable at the installation site (e.g., different meter or MIU number, location or other characteristic), the installer or Installation Manager shall immediately contact GMWSS Project Manager or designated representative and shall not attempt the installation until the site is inspected by or shown to (e.g., using cellphone camera) a GMWSS representative and given authorization. |
| | | e. GMWSS may request that the installer collect and include in the returned work order reasonable additional field data, such as premises type (residential, commercial, or industrial). |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.10 Notification of Owners

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.10 | | a. Proposer must notify the owner of a building of its intent to install the AMI system at a particular customer's premises if inside access is required. |
| | | b. The owner may authorize the Proposer to make an appointment with an adult (age 18 or over) tenant or the owner's adult (age 18 or over) representative. Proposer shall document such authorization. |
| | | c. Customers who have multiple meters shall be given the opportunity to schedule the installation of MIUs on all of those meters in a short period of time, provided those meters are located near each other. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.11 Appointment Scheduling

- GMWSS desires that installation appointments be made with 2-hour precision.

| Section | Comply? Y/N | Requirement |
|---|---|---|

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| 20.11 | | a. While customer notification is required for all installations, installation appointments will only be necessary if the meter is not readily accessible or service is to *critical* residential customers or when interruption of service is anticipated. |
| | | b. Proposer shall be responsible for scheduling and handling all installation appointments. |
| | | c. Whenever possible, Proposer shall notify customers of any changes in schedule at least 1 day in advance of the original appointment. |
| | | d. Proposer will be responsible for installation if GMWSS secures an appointment or access to the meter within 30 days of receiving written or electronic notice of removal from scope from Proposer. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.12 Items to Be Supplied by Proposer

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.12 | | a. Proposer shall 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. Proposer shall furnish all supplies, materials, tools, and equipment necessary for the successful and timely completion of all meter and AMI installations as specified herein.<br>i. This includes but is not limited to wiring and waterproof connectors between the meter and MIU in situations where the meter and/or wiring has to be replaced, and meter seal wires and seals where the meter has to be replaced. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.13 Local Office, Warehousing and Materials Management

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.13 | | a. Proposer shall be responsible for securing and maintaining an insured, staffed office and warehouse within GMWSS's service territory. |
| | | b. Should the installation contractor receive shipments materials for the project, shipments shall remain intact until GMWSS has had a reasonable opportunity to inspect them. |

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| | | c. Proposer shall at all times maintain security and control of inventory of equipment in its possession, regardless of whether GMWSS or Proposer owns equipment.<br>i. Equipment paid for by GMWSS prior to installation may be subject to a bailment agreement with GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Describe procedures for cross-docking of materials and inventory control and audit, including frequency of inventory counting and reporting.

## 20.14 Call Center

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.14 | | a. Proposer shall provide a call center, web site, and a toll-free number that customers can call to ask questions concerning the project, to schedule installation appointments, or to report problems concerning installations. |
| | | b. The call center should incorporate an automatic call distribution (ACD) system capable of receiving and queuing calls; routing calls to waiting agents; and collecting and reporting data on call volumes, waiting times, abandoned rates, and durations. |
| | | c. Proposer must answer at least 85 percent of all calls within one minute. |
| | | d. The call center should be staffed at least between the hours of 7:00 a.m. and 8:00 p.m. Eastern Time, Monday through Saturday. |
| | | e. GMWSS prefers a call center physically located within the United States of America. |
| **Any Proposed Alternative Specification or Language:** | | |

f. Indicate proposed call center hours and availability of web access for scheduling appointments.

g. Indicate the location of the call center and the approximate number of staff available to answer customer calls concerning this project.

## 20.15 Twenty-Four (24) Hour Customer Access

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.15 | | a. For 5 days after the installation has been accepted by GMWSS and GMWSS has been notified of a given installation, Proposer must respond on a 24 hour-per-day basis to calls from the customer associated with that installation or from GMWSS, concerning leaks, loss of service, low pressure, and other problems associated with installation. |

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| | | b. Should the Proposer receive a call or complaint from a customer or GMWSS regarding installation, the Proposer/Installer shall immediately log the call, including caller's name, address, account number if available, date and time of call, nature of problem, the action taken and the resolution. |
| | | c. Copies of all call logs shall be forwarded to a designated GMWSS Customer Service Manager not less than once per day using e-mail or another mutually acceptable electronic means. |
| | | d. Proposer must respond within one (1) hour of receiving the call and arrive at customer's premises ready to correct any problems within three (3) hours of receiving the call, unless otherwise directed by GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

e. Describe the procedures for response to customer problems.

## 20.16 No Solicitation

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.16 | | a. No contractor, or its employees or agents, may solicit business from GMWSS's customers while engaged on any contract associated with this project. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.17 Training and Inspection of Employees

a. Describe training and inspection procedures, and probation provisions for new employees.

b. Provide a training checklist of what each new installer will be trained to complete as part of the installation process.

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.17 | | c. Proposer shall comply with all relevant safety standards and regulations, including but not limited to GMWSS' safety and health manual, included as Attachment 4 – GMWSS Safety and Health Manual. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.18 Bonding, Background Checks

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.18 | | a. All Licensed Plumbers shall be bonded. Proposer shall subject all employees to a criminal offense background check and drug and alcohol testing as directed by GMWSS at the cost of the Proposer. |
| | | b. Proposer shall not employ as an Installer any person who fails to meet the requirements of GMWSS. |
| | | c. GMWSS shall be entitled to review the background check before the prospective employee is engaged and prevent any person who fails to meet requirements from working on GMWSS projects. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Describe Proposer's ongoing random testing programs for drugs and alcohol.

## 20.19 Uniforms and Identification

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.19 | | a. Proposer's field personnel shall wear easily recognizable uniforms containing the Proposer's name, as well as prominently displayed picture identification badges containing Proposer's name, employee name, title and signature, employee picture, and employee I.D. number at all times when performing contract work. |
| | | b. Proposer's employees who are no longer employed by the Proposer shall be required to return their uniforms and identification cards immediately upon termination of employment, and the Proposer shall immediately notify GMWSS of all such terminations and if identification cards were received from terminated employee. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Provide sample images of uniforms for Proposer's field personnel.

## 20.20 Vehicles

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.20 | | a. Proposer shall be responsible for all vehicles it uses on the project. |

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| | | b. Proposer should provide service vehicles onsite stocked with common fittings and supplies needed for normal service restoration and/or replacement. |
| | | c. Proposer's vehicles shall be uniform and professional in appearance and shall have the company logo prominently displayed on both sides of the vehicle. |
| | | d. Proposer's vehicles shall be a model appropriate for the work, be properly maintained, and any mechanical damage to vehicles shall be reasonably repaired prior to returning to field-use. |
| | | e. Temporary signs must be adhesive, not magnetic. |
| | | f. 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 GMWSS's insurance requirements. |
| **Any Proposed Alternative Specification or Language:** | | |

g. Provide sample images of Proposer's vehicles.

## 20.21 Parking

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.21 | | a. GMWSS requires that Proposer deploy vehicles to minimize parking problems and avoid blocking any streets. |
| | | b. Proposer is required to follow all parking laws. |
| | | c. Proposer shall be responsible for all parking violations. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.22 Field Communications

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.22 | | GMWSS requires that all of 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 or GMWSS's Project Manager can be contacted immediately, if needed. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.23 Automated Project Control Process

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.23 | | a. The system should use electronic tags, bar coding, or similar means to capture equipment identification numbers. |
| | | b. The system shall have a redundant backup process, so that all information is preserved in the event of a breakdown in the primary system (such as the loss of a handheld device). |
| | | c. The system should enable the correction of any incorrect information pertaining to meter or service size, meter type, meter location, address, etc. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Describe in detail the installation control process.

## 20.24 Meter Replacement

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.24 | | a. Installer shall ensure he/she is at the correct location and meter and check for running water prior to commencing meter changeout. |
| | | b. Installer must turn off the water to the building after following GMWSS-approved notification procedures. |
| | | c. Installer shall then replace the meter, using new gaskets or washers. |
| | | d. Installer shall put plastic caps on the inlet and outlet of the old meter and handle the meter with care in order to facilitate post-removal testing by GMWSS. |
| | | e. All meter adapters, bushings, or other hardware necessary to install the new water meter in the consumer's existing meter setup must be pre-approved by GMWSS and furnished by the Proposer at no cost to GMWSS. GMWSS does not accept A.Y. McDonald parts of any kind. |
| | | f. Proposer is required to install standard connections (GMWSS-approved meter couplings) for all 5/8” through 1” meters if none exist currently. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.25 Site Conditions, Exceptions and Anomalies

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.25 | | a. If the meter is to be changed, before or at the time of installation, Proposer's installer shall inspect the existing water meter setting, including piping and control valves. |
| | | b. In the case of any meter or plumbing irregularities, such as rotten plumbing, evidence of tampering (including but not limited to existing meters installed backwards, meters removed and replaced with connecting pipes; registers disconnected from meters; illegal connections before a meter; unmetered connections of a customer's plumbing to a service lateral, fire pipe, or water main), unsafe conditions, etc., the installer or installation supervisor shall not proceed with the installation until GMWSS's inspector has been notified and authorizes the installation. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.26 Old Meter Reading

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.26 | | a. Proposer shall apply procedures to ensure that any meter being replaced is read properly. |
| | | b. If the meter is to be changed, Proposer shall provide clearly readable digital photographs of the reading on the old meter register. |
| | | c. Proposer shall take pictures of the old equipment while it is still installed when this is practical, but must include alternative procedures, as needed, to ensure that pictures legibly show the meter reading and are appropriately labeled with date, time, and premises information. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.27 Verifying Service Working

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.27 | | a. Proposer shall flush water line from the customer's outside spigot if reasonably accessible after installing a new meter to ensure the meter is registering properly and verify service restoration to the entire premises. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.28 Existing Meter Reading Equipment; Wiring and Connections

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.28 | | a. If the existing meter is not scheduled for replacement, and is connected to a remote read-out device, touchpad or older MIU using a three-wire cable, the installer shall inspect the cable for integrity. |
| | | b. If the meter is designated for replacement, or the existing cable is compromised, Proposer shall also replace the existing wire cable from the meter to the MIU with three-conductor vinyl shielded cable with not less than 22-gauge solid copper wires of colors red, green and black. |
| | | c. Connectors used outside the premises must comply with UL-486D and IP68. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.29 Digital Photographs

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.29 | | a. GMWSS requires that digital photographs be taken before and after installation to provide documentation of pre-existing site conditions. |
| | | b. Enough photographs shall be taken to clearly identify the condition of the existing meter and associated piping (if applicable), and obstructions to the work. |
| | | c. The photographs should have accurate date and time stamps, and the file name of the photo shall include the applicable address or location ID. |
| | | d. Digital photographs shall be made available to GMWSS in a database searchable by address, location identification number, meter number, or account number. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.30 Service Line Material Identification

| Section | Comply? Y/N | Requirement |
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| 20.30 | | a. Installer shall be responsible for identifying service line pipe material for both GMWSS side and customer side piping within the meter box as part of the field installation. |
| | | b. The data shall be captured electronically on the handheld device. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.31 GPS Coordinate Capture

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.31 | | a. Installer shall be responsible for collecting commercial grade GPS coordinates for each completed installation. This is expected to be within 5 meters. |
| | | b. The data shall be captured electronically and interface to GMWSS's GIS and/or CIS to house the data. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.32 Completed Work Orders

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.32 | | a. Completed work orders that involve meter change-outs or register replacements shall include: meter size and meter type, verification or correction of existing meter and account information, GPS coordinates, old meter serial number, final reading on old meter, new meter number (if applicable), new meter register number, new meter or register initial reading, location identification number, MIU ID number, date and time of installation, name of installer, composition of water service line, inspection sign-offs and notice of any problems encountered or repairs made. |
| | | b. Completed work orders that involve only MIU installation shall include verification or correction of existing meter and account information, GPS coordinates, location identification number, MIU ID number, reading from meter, date and time of installation, name of installer, inspection sign-offs and notice of any problems encountered or repairs made. |
| | | c. Completed work orders must be accompanied by required photographs. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.33 Dirt or Water Around Meter

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.33 | | a. For meters in outside boxes, Proposer shall be responsible for removing any dirt needed to access the meter.<br>i. Dirt shall be removed such that there is a minimum of 2" clearance below the valves at the meter. |
| | | b. Proposer shall attempt to expose connection to the service line and any piping between the service line connection and the meter to ensure that they are in a condition that will not be damaged by changing the meter. |
| | | c. If a water meter box or vault is flooded so that the meter is fully or partially submerged, the Installer must pump it out before changing the meter. Installer must ensure that the water service is not in any way contaminated, even intermittently, by standing water in the meter vault. |
| | | d. All waste resulting from cleaning the meter box or vault must be disposed of properly by the Proposer. |
| | | e. The existing lid and ring, if replaced, shall be disposed of by the Proposer. |
| | | f. If grass or shrubbery is expected to impact the installation or may be damaged by the installation process, the Installer must notify GMWSS inspector. |
| | | g. The Installer must return the property to the original condition to the satisfaction of the customer by replanting, re-sodding, reseeding or compensating customer. |
| | | h. GMWSS reserves the right to inspect any installation and cleanup work within 7 days before payment is made to the Proposer. |
| | | i. GMWSS reserves the right to inspect any installation and cleanup work within 30 days after installation in response to customer complaints of damage. |
| | | j. Proposer shall be responsible for claims resulting from damage caused by installation. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.34 Meter Box Lids

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.34 | | a. The AMI system should be configured to obtain the maximum signal strength from MIUs installed in meter boxes or vaults. |

| | | |
|---|---|---|
| | | b. Proposer shall replace or retrofit (e.g., by installing brackets or drilling) any non-conforming meter box lids. All lid configurations must be submitted to and approved by GMWSS before installation. Approximately 98% of lids are cast iron and will need to be replaced. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.35 Inaccessible Meter and/or MIU

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.35 | | a. In the event a meter is obstructed or is not accessible, the Proposer will make at least three different types of attempts at any reasonable time within 30 days of encountering the inaccessible meter to notify the customer to remove the obstruction or provide access to the meter. |
| | | b. These attempts must be documented on the work order. |
| | | c. After three documented attempts to make the installation, the Installation Manager may request GMWSS Project Manager schedule the meter change-out. |
| | | d. The Proposer shall only be paid for completed installations and is expected to provide all reasonable support in resolving difficult installation situations. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.36 Repairs

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.36 | | a. At its option, GMWSS may authorize the Proposer to make any valve or service line repairs necessary to install a meter to service lines or piping, order the customer to make such repairs, or undertake such repairs itself. Proposer will be compensated at the rates set forth in the Pricing Proposal. |
| | | b. Old piping per se shall not be grounds for the failure of the Installer to replace a meter designated for replacement.<br>i. Only when old piping is leaking or deteriorated to a point that damage to it could reasonably be expected by changing the meter shall poor piping be accepted as a reason for not replacing the meter.<br>ii. Unless GMWSS's Project Manager remands the particular installation to GMWSS for further action, the Proposer is still |

| | | |
|---|---|---|
| | | required to install the meter and AMI equipment after the piping has been repaired or replaced at any time during the Installation Period. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.37 Valves

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.37 | | a. If the Proposer cannot shut off water using the street-side control valve (details must be documented on a work order), they shall call GMWSS Project Manager to arrange curb valve shut-off. |
| | | b. If shutoff valves cannot be reopened, the Proposer shall replace such valves following GMWSS rules, regulations and specifications, upon being authorized by GMWSS. |
| | | c. Valves provided by the Proposer must conform to GMWSS's specifications and approved materials list. Proposer shall provide in its Pricing Proposal fixed unit pricing for valve replacement by size. |
| | | d. Proposer should use a water meter base spreader tool to change ¾"–1" water meters not on a meter yoke, horn or setter. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.38 Service Line Damage

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.38 | | a. Proposer shall be responsible for repairing any water 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 GMWSS's inspector or Project Manager and has been authorized to proceed with the work. |
| | | b. Proposer shall be responsible for repairing up to 2 feet of damaged service line from either side of the meter. |
| | | c. In the event a service line fails during or after the authorized installation, Proposer's licensed plumber shall oversee the repair work required to restore the water service line to working order. |
| | | d. Proposer shall include in its Pricing Proposal a schedule of compensation for service line repairs by foot of service line and size. The cost of this |

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|---|---|---|
| | | work will be reimbursed to the Proposer at the price set out in the schedule. |
| | | e. This price will include site preparation, all labor, material, and permits as required. All work must comply with GMWSS's standards for service repairs or replacement. |
| | | f. All plumbing work other than the replacement of a water meter must be authorized by GMWSS and inspected by a GMWSS field inspector and payment will be subject to GMWSS approval. |
| | | g. 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. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.39 Confined Space

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.39 | | a. Confined space shall be defined in accordance with OSHA's *Confined Spaces in Construction; Final Rule* definition as being a space that<br>1) is large enough and so configured that an employee can bodily enter it;<br>2) has limited or restricted means for entry and exit;<br>3) is not designed for continuous employee occupancy. |
| | | b. Any vault requiring entry to complete an installation that meets these criteria shall be designated and documented as confined space. |
| | | c. Proposer shall provide pricing in Pricing Proposal for completing meter exchanges and retrofits in confined space. |
| | | d. Documentation of the completed installation meeting criteria for confined space shall be provided to GMWSS in order for any additional confined space charge to be invoiced. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.40 Meter Salvage

| Section | Comply? Y/N | Requirement |
|---|---|---|

| | | |
|---|---|---|
| 20.40 | | a. Proposer shall scrap all replaced meters and meter box lids and credit GMWSS for salvage value based on unit values submitted in the Pricing Proposal. |
| | | b. Proposer must provide auditable documentation of quantities scrapped. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.41 Disposal of Existing MIUs

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.41 | | a. Proposer shall retain some removed MIUs to provide back to GMWSS for repurposing as needed. |
| | | b. Proposer shall collect and arrange for the proper disposal of all removed MIUs. Include unit cost for this in the Pricing Proposal. |
| | | c. Proposer must provide auditable documentation of quantities scrapped. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.42 Quality Control

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.42 | | a. Proposer shall be responsible for replacing any meter, MIU, or appurtenances improperly set by its installer at no additional cost to GMWSS. |
| | | b. Proposer shall correct any damage to couplings, threads, unions, or meters by use of improper tools or cross threading by an installer. |
| | | c. Proposer shall be responsible for correcting any leaks at the valves, couplings, or service lines that could reasonably be attributed to the meter installation if reported by GMWSS or customers within 30 days of installation at no additional cost to GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Describe the procedures and protocol for inspecting installations, including installation by new employees, recording and reporting inspection findings, and remediating any issues discovered through inspections.

## 20.43 Installation Data Control and Audit Procedures

a. Describe in detail the proposed system for ensuring that all data pertaining to installation are correctly recorded during installation, and that all data transferred to GMWSS Customer Information System (CIS) are accurate.

b. Describe procedures for eliminating any opportunities for a meter or MIU to be associated in the HES, MDMS or the CIS with the wrong address or account number.

## 20.44 MIU Installation Acceptance

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.44 | | a. Each installation will be accepted by GMWSS conditioned upon:<br>i. Electronic submission of a list of completed installations containing for that installation the location identification number, address, meter serial number, old and new meter readings, MIU serial number, MIU and meter GPS coordinates or location description, installer's name, Proposer's inspector's name, and all other information relevant to the installation;<br>ii. Receipt or access to required digital photographs taken before and after installation;<br>iii. Satisfactory inspection by Proposer and GMWSS in the case of anomalies or if part of inspection sample;<br>iv. Confirmation that MIU ID numbers, meter register numbers, and other information have been correctly captured in the AMI HES and/or GMWSS's project management database for each customer's premises; and,<br>v. Successful communication of the MIU for at least 3 consecutive days. The readings shall be gathered by GMWSS operating the AMI system in a normal way.<br>vi. However, if GMWSS finds discrepancies in the conditions of acceptance for 12 months after the date it was notified of installation, GMWSS shall notify the Proposer for corrective work which shall be completed by the Proposer at no cost to GMWSS. |
| | | b. Payment for installation services shall be based on accepted installations. |
| | | c. Proposer shall provide documentation to GMWSS including the list of individual jobs completed, the unit price for each job, a date and time stamp showing MIU communication & readings, overall route network coverage, and other details to be specified. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.45 DCU Installation Acceptance

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.45 | | a. Within 15 business days of being notified of the installation of a network device and after said network device has successfully collected readings for at least 5 consecutive days, GMWSS will<br>i. physically inspect the installation site for proper installation;<br>ii. attempt to obtain confirming readings from MIUs through the Network device; and<br>iii. confirm that the correct information for the installation has been captured in the AMI network control system database and/or GMWSS's project management database. |
| | | b. GMWSS will accept each network device based on the criteria in 20.45.a. Payment for DCU installation services shall be based on accepted installations. |
| | | c. Should GMWSS fail to inspect the network device within 15 business days of being notified of its installation, GMWSS will conditionally accept and pay for the device. However, such conditional acceptance shall not relieve the Proposer of any responsibilities for curing defects in the installation or performance of the device during the warranty period. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.46 Overall System Acceptance

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.46 | | a. GMWSS and Proposer will conduct a Final System Acceptance Test when all MIU installation work orders provided to Proposer are completed and MIUs accepted by GMWSS. Final System Acceptance criteria shall include:<br>i. Register Read Performance - The system shall on the day of system acceptance testing provide meter register readings not more than 3 days old from at least 98.5% of the MIUs determined to be **available** on that day.<br>ii. Interval Data Performance - The system shall on the day of system acceptance testing provide not less than 95% of all the |

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| | | hourly interval readings from all of the MIUs determined to be **available** on that day. |
| | | b. An MIU shall be deemed **available** if it has been:<br>1) installed;<br>2) not damaged or vandalized by a third party;<br>3) mounted according to agreed-upon installation procedures;<br>4) not subject to a pending investigation or maintenance work order, and<br>5) its signal is not subject to unanticipated blocking (e.g., permanent or temporary structure installed after MIU installation and acceptance, vehicle parked over MIU, etc.). |
| | | c. Proposer should be responsible for preparing a report evaluating system acceptance parameters for review by GMWSS. |
| | | d. Except for the redundancy criteria above, final system acceptance may be by zones or groups of routes, to be agreed upon by GMWSS. |
| | | e. This performance shall be sustained for 30 days. Performance measures shall be averaged over this 30-day period.<br>f. Overall system performance measurement for System Acceptance shall commence upon notification from the Proposer and will be concluded the first time the average performance measures over any consecutive 30 days meets or exceeds the performance measures.<br>g. Should Final System Acceptance fail, Proposer shall fix all defects and reinitiate Final System Acceptance Test. |
| **Any Proposed Alternative Specification or Language:** | | |

## 20.47 Payments

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 20.47 | | a. Proposer shall provide to GMWSS electronically on a monthly basis its list of newly completed installations and any authorized additional work in an itemized format. |
| | | b. This list shall be attached to an electronic draft invoice. |
| | | c. GMWSS shall notify the Proposer of any listed items that do not meet the conditions of this section above, so that the Proposer may resolve any discrepancies. |
| | | d. GMWSS may at its discretion reject the entirety of any list on which there are discrepancies in more than 10 percent of the entries. |

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|---|---|---|
| | | e. GMWSS shall process all other items as acceptable and arrange payment for these. |
| | | f. Payments will be based on the price schedules submitted by the Proposer. |
| **Any Proposed Alternative Specification or Language:** | | |

# 21 PROJECT MANAGEMENT

## 21.1 Reports

a. Provide sample layouts of all anticipated reports for managing the project pertaining to schedule, budget, and performance requirements.

## 21.2 Project Goals and Milestones

a. Indicate proposed detailed Project schedule, including goals and milestones for deliveries or accomplishments.

## 21.3 Project Management Meetings

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.3 | | a. Proposer's Project Manager and other personnel, as requested by GMWSS, shall meet with GMWSS's Project Management staff not less than bi-weekly from the time of Notice to Proceed through the project closeout. If installation and implementation progress in an efficient and problem-free manner, GMWSS may reduce the amount of progress meetings to 1 meeting per month. GMWSS reserves the right to increase the number of progress meetings if installation and implementation do not progress in an efficient and productive manner. |
| | | b. Contract Manager shall meet with GMWSS personnel periodically and not less than monthly to update them on progress against the project schedule. |
| **Any Proposed Alternative Specification or Language:** | | |

c. Describe the proposed meeting plan including reporting requirements, expected participants, and expected topics of meetings.

## 21.4 Project Personnel

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.4 | | a. In the event of any change in the Proposer's project personnel during the Project, Proposer shall notify GMWSS of removal of such project personnel. |
| | | b. Proposer shall replace resource(s) within ten (10) business days. |
| | | c. The replacement resource must have the same or higher level of experience compared to the project personnel they are replacing. |
| | | d. GMWSS shall approve any replacements to project personnel. |
| **Any Proposed Alternative Specification or Language:** | | |

## 21.5 Installation Management Meetings

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.5 | | a. Proposer Installation Manager and other personnel, as requested by GMWSS, shall meet with GMWSS's Project Management staff not less than weekly from one month prior to the start of the procedural pilot through the Installation Period. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Describe the proposed meeting plan including reporting requirements, expected participants, and expected topics of meetings.

## 21.6 Meter Reading of Non-Communicating MIUs

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.6 | | In the event that a completed Route Release has not met network performance requirements defined in Section 2.4 Read Success Rate, the Proposer shall obtain billing reads of the non-communicating MIUs within that Route Release until that Route Release meets the required network performance. |
| **Any Proposed Alternative Specification or Language:** | | |

## 21.7 General Nonperformance or Excessive Failures

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.7 | | a. An "Excessive Failure" means the failure of two percent (2%) or more installed meters or MIUs within any rolling twelve (12) month period. An Excessive Failure shall not include any meters that are outside the applicable warranty period at the time of failure. In the event of an Excessive Failure, GMWSS shall promptly notify Proposer. Upon receipt of such notice, Proposer will develop a plan to eliminate the problem in all continuing production and to correct the problem in all affected meters that are covered by warranty. Proposer shall provide an initial plan of action and reporting to GMWSS within 30 days of the written notice from GMWSS with periodic status reports, on a mutually agreed upon schedule, until a final resolution plan is determined. |
| | | b. If the plan requires that the affected meters be de-installed for repair or replacement, then Proposer will, at its expense, either<br>a. provide qualified field labor to de-install defective and accessible meters or MIUs that are exhibiting failure in excess of the Excessive Failure threshold and install conforming replacements, or<br>b. reimburse GMWSS's actual, documented and necessary costs of performing such work using its own resources in the form of a credit against amounts due by GMWSS. |
| | | c. Component failure means the inability to reliably complete the task for which the component was designed. This definition shall apply to all components including but not limited to MIUs, connectors, collectors, repeaters, AMI HES, and MDMS systems. These failures may include but are not limited to:<br>a. Failure to reliably and accurately communicate with meters and other devices for which it was designed.<br>b. Failure to accurately read, store, and transmit data such as meter reads, alarm codes, and other data for which it was designed to read.<br>c. Failure to maintain battery voltages adequate for normal operation.<br>d. Failure to accept software and firmware upgrades and settings<br>e. Failure to maintain physical integrity under the conditions it was designed to withstand.<br>f. Failure to be immune to expected radio interference.<br>g. Failure to maintain system security. |
| **Any Proposed Alternative Specification or Language:** | | |

## 21.8 Advanced Shipment Notifications

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.8 | | a. Proposer shall provide Advanced Shipment Notification (ASN) document with each delivery of equipment (meters, MIUs, etc.) which contains at a minimum:<br>a. Pallet identifiers<br>b. Box/carton identifiers<br>c. Quantity of the materials and their respective serial numbers.<br>d. The hierarchical relationship between pallets, boxes/cartons, and the material serial numbers.<br>e. Purchase Order number and Purchase Order line numbers. |
| **Any Proposed Alternative Specification or Language:** | | |

## 21.9 Return Material Authorization

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 21.9 | | a. On a quarterly basis Proposer shall provide a failure analysis report for any and all product returned by GMWSS to Proposer. For failure of 25 units or more in any quarter, the report should include a diagnosis of the root cause(s) of any failures such as software error, communication error, excessive retries, failed component, or water intrusion. The report shall include an analysis of similar failures that have occurred on other projects, the cause of such failures, the actions that Proposer is taking to minimize such failures, and an assessment regarding the likelihood of continued failure. |
| **Any Proposed Alternative Specification or Language:** | | |

# 22 SOFTWARE AS A SERVICE (SaaS)

- *In lieu of acquiring, deploying, operating and maintaining AMI-related hardware and software at its own facilities, GMWSS shall procure SaaS covering the AMI HES hardware and software; Meter Data Management System, including interfaces to its CIS and other key IT systems (GIS, work order); and Customer Portal.*

## 22.1 Term

- *SaaS fees would commence following the acceptance of the Pilot and continue for a minimum of five years from the date of System acceptance.*
- *GMWSS may at its sole option extend the contract annually for up to 15 additional years based on the price schedule provided in response to this Request for Proposal for these services.*

## 22.2 Data Centers and Communications

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.2 | | a. All data centers used to support GMWSS's AMI system and data, including any disaster recovery data centers, shall be located in the United States. |
| | | b. Any third-party data centers used to support GMWSS's system must comply with all of the requirements of this section. |
| | | c. No third-party data centers shall be used without prior written permission of GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Proposer shall describe the proposed method of communications between GMWSS workstations and Proposer's servers, including redundancy and security of those communications.

## 22.3 Design Documents

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.3 | | a. Prior to the start of hosting service, Proposer shall submit interface and system design draft documents, as well as procedures for revising documents, in conformance with the requirements herein, for approval by GMWSS. |
| | | b. Documents shall cover access by GMWSS and its customers, as well as proposed technical architecture, including servers, peripherals, communications devices, and the system that run on each, indicating which components would be dedicated to GMWSS's project. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.4 Proposer Responsibility

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.4 | | Proposer shall:<br>i. Provide access by GMWSS and its customers to GMWSS's AMI generated data, system features and related applications.<br>ii. Configure and make available to GMWSS production and test environments in Proposer's SaaS environment.<br>iii. Monitor and maintain the computing hardware required to run the applications.<br>iv. Acquire all licenses for third party products required to maintain the applications and ensure hardware and third-party software compatibility.<br>v. Provide and maintain a secure file transfer (SFTP) site, which will be used to post system files and reports.<br>vi. Create or assist GMWSS in creating customized reports, and application programming interfaces.<br>vii. Maintain version control for third party products. Maintain third party software on supported versions. Implement upgrades and patches as required in accordance with vendor recommended schedule.<br>viii. Monitor and ensure the integrity of the interfaces between the applications and GMWSS's CIS. Provide GMWSS with a draft test plan upon notification by GMWSS of intended patches or upgrades to the CIS. Test all functionality when this software is patched or upgraded.<br>ix. Monitor access to SaaS applications by GMWSS and its customers and respond to and troubleshoot throughput and access issues identified by the system or user interface software, and by GMWSS or its customers.<br>x. Maintain data and data center security.<br>xi. Backup and archive GMWSS system data and restore the system and data in the event of a system crash or failure by using system backups or a disaster recovery program.<br>xii. Monitor and report Key Performance Indicators (KPIs) as defined herein.<br>xiii. Provide application development services, including creating or assisting GMWSS in creating customized reports and application programming interfaces.<br>xiv. Provide support as defined herein to transition the System to a GMWSS defined location in the event GMWSS opts to cancel the SaaS agreement. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.5 Interfaces and File Transfer

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.5 | | a. In response to a "From CIS" file requesting readings for billing, the MDMS shall generate a "To CIS" file containing the meter readings and other information as specified in the technical architecture and interface documents. |
| | | b. In response to a CSV, XML or comparable configuration document generated daily by GMWSS's CIS, the HES, MDMS and/or Customer Portal will synchronize MIU and customer data and generate a confirmation report. |
| | | c. Proposer will deliver alert and tamper reports on a real-time continuous basis to a GMWSS designated user. |
| | | d. Should Proposer's software be used to accept or manage field work orders related to MIU and/or installation, |
| | | e. Proposer shall generate a daily file of work order information to be uploaded to GMWSS's CIS and asset management systems, as defined in the technical architecture and interface documents. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.6 Database Maintenance

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.6 | | a. Proposer shall:<br>i. Run routine diagnostics for data corruption and abnormalities, rebuild indexes, and remove duplicate records.<br>ii. Run routine checks for security flaws and other issues that could compromise database integrity.<br>iii. Run compacting and defragmentation procedures and keep database statistics up to date.<br>iv. Monitor data and log file size to minimize response time to queries and file requests.<br>v. Run these procedures on a schedule designed to minimize interference with user access. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.7 System Availability

<table>
<tr><th>Section</th><th>Comply?<br>Y/N</th><th>Requirement</th></tr>
<tr><td rowspan="8">22.7</td><td></td><td>a. The HES, MDMS, and customer portal shall be available not less than 99.5% of the time, measured over any month, except for scheduled upgrades and preventative maintenance.</td></tr>
<tr><td></td><td>b. Any downtime required to fix problems with the Proposer's SaaS environment or data center and devices shall not be considered to be scheduled maintenance and shall count as downtime.</td></tr>
<tr><td></td><td>c. Any planned maintenance of the AMI SaaS applications shall occur after the utilities normal working hours "Available" shall mean that all of GMWSS's users can gain access to and use all of the SaaS modules and applications they are authorized to use.</td></tr>
<tr><td></td><td>d. The cost of providing this level of service shall be incorporated in the Pricing Proposal.</td></tr>
<tr><td></td><td>e. Proposer may at its option provide additional prices reflecting other levels of availability.</td></tr>
<tr><td></td><td>f. Monthly System Availability Percentage is the total number of maximum available minutes less availability downtime divided by maximum availability minutes for a measurement month. Monthly System Availability Percentage shall be calculated by the following formula:<br><br>Monthly System Availability Percentage = (Maximum Available Minutes - Available Downtime) / Maximum Available Minutes X 100</td></tr>
<tr><td></td><td>g. In the event that there is downtime in excess of the allowed downtime, Proposer shall provide a credit to GMWSS as per the following table:
<table>
<tr><th>Monthly System Availability Performance</th><th>Credit (% of Monthly SaaS Fee)</th></tr>
<tr><td>≥ 98.0% and < 99.5%</td><td>5%</td></tr>
<tr><td>≥ 95.0% and < 98.0%</td><td>15%</td></tr>
<tr><td>≥ 90.0% and < 95.0%</td><td>30%</td></tr>
<tr><td>< 90%</td><td>50%</td></tr>
</table>
h.</td></tr>
<tr><td></td><td>i. Credits shall be applied against the next invoice.</td></tr>
</table>

| | | |
|---|---|---|
| | | j. In the event a service level default occurs after a party has given notice of termination, or GMWSS has made final payment to Proposer for the SaaS and no further invoices shall issue as a result, Proposer shall refund to GMWSS the amount of the appropriate service level credit due for the period of Default. |
| | | k. These credits shall be considered to be liquidated damages and not a penalty. Proposer shall acknowledge that in the event of downtime in breach of the warranty, GMWSS will incur damages that, while significant, may be difficult to prove with particularly. |
| | | l. Proposer acknowledges that the liquidated damages set forth above have been negotiated at arms' length and reflect the parties' reasonable expectation of damages that GMWSS will likely incur given the circumstances known to the parties at the time this agreement was executed. |
| | | m. Should system availability fall below 90% over a 90-consecutive day rolling period, or below 75% over a 30-day rolling period, Proposer will, if requested, provide GMWSS support as needed to transition the System to a GMWSS defined location at no cost to GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.8 Security

a. Describe the data center physical security provisions.

b. Describe the firewall and application-level security proposed.

c. Proposer shall supply with its proposal its current Statement on Standards for Attestation Engagements (SSAE) No. 16 or the equivalent included as **APPENDIX B: Attestation Regarding Disputes**

## 22.9 Response Times

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.9 | | a. During normal business hours (defined as Monday through Friday 08:00 am – 5:00 pm Eastern Time), response time shall be within one hour of GMWSS reporting an inability to use the system. |

| | | |
|---|---|---|
| | | b. Outside of normal business hours, response time shall be within four hours of GMWSS reporting an inability to use the system. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.10 Problem Analysis and Resolution

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.10 | | a. Proposer shall propose procedures to report on and deal with problem analysis and resolution based on extent and criticality of the problem using a systematic problem diagnosis and decision-making model or procedure, including root cause analysis. |
| | | b. Problem resolution shall include immediate corrective measures and where appropriate, root cause analysis and long-term preventive measures to prevent reoccurrence. |
| | | c. An interruption in services will be the highest priority. |
| | | d. GMWSS will provide reasonable resources to assist Proposer in problem analysis. |
| | | e. Initial problem will be reported to GMWSS's designated AMI system manager. Findings will be shared with GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.11 Scale

- *The system should support simultaneous access by a minimum of 30 GMWSS users.*

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.11 | | Initially, the system shall support 16,500 metered accounts and shall be scalable to at least 30,000. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.12 Backup and Disaster Recovery

- *GMWSS desires that Proposer maintain dual data centers so that one center shall provide secure backup for the other.*

| Section | Comply? | Requirement |
|---|---|---|

| | Y/N | |
|---|---|---|
| 22.12 | | a. The recovery time requirement in the event of a system or database failures shall be 4 hours. |
| | | b. Proposer will schedule and perform a disaster recovery test not less than annually to ensure continuity of the disaster recovery process and report the results to GMWSS. |
| **Any Proposed Alternative Specification or Language:** | | |

c. What is the frequency at which GMWSS data will be synchronized to a disaster recovery database?

## 22.13 Reports

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.13 | | Proposer shall generate reports of any software patches or upgrades or updated anti-virus releases. |
| | | Proposer shall provide email notification to a list of staff provided by GMWSS when reports are posted to the site. |
| **Any Proposed Alternative Specification or Language:** | | |

## 22.14 Key Performance Indicators

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 22.14 | | a. Proposer will provide a monthly report of the following key performance indicators for each of the software components:<br>i. System availability as percentage of uptime<br>ii. System uptime as well as software component uptime |
| **Any Proposed Alternative Specification or Language:** | | |

# 23 Optional Network and System Monitoring and Management Services

- *In the case of a GMWSS-dedicated network, GMWSS may choose to procure AMI network monitoring and management services.*

- *IF the above applies, Proposer would monitor read success rates and overall MIU performance, monitor and maintain the network, including devices and communications backhaul, and deliver event, alarm and performance reports.*

- *If Proposer is offering this maintenance program, please respond to the following sub-sections.*

## 23.1 Term

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.1 | | a. Network and system monitoring and management services, if elected, would commence following the acceptance of the Phased Start and continue for a minimum of two years following the date of System Acceptance. |
| | | b. GMWSS may at its sole option extend the contract annually for up to 18 additional years based on the price schedule provided as part of the Pricing Proposal |
| **Any Proposed Alternative Specification or Language:** | | |

## 23.2 Proposer Responsibility

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.2 | | Proposer shall: |
| | | a. Monitor network devices (data collectors and repeaters) and backhaul communications (in terms both of contractual and operational performance), as well as monitor for interference or poor signal to noise ratios on any licensed frequencies involved in AMI system communications, on a 24 hour x 365 day basis. |
| | | b. For a GMWSS-dedicated network, manage the contract with the backhaul communications provider(s) to secure the lowest possible backhaul cost while meeting the system performance requirements. |
| | | c. Investigate any unplanned network or communications outages, anomalies or performance problems, including office-based troubleshooting and investigations of suspect components, and create work requests for field repairs. |
| | | d. Proposer shall coordinate directly with backhaul communications supplier to resolve communications and performance problems. |

| | | |
|---|---|---|
| | | e. Proposer shall initiate trouble tickets with the responsible service provider and monitor the status until resolution. |
| | | f. Share with GMWSS reports on any problems, including analyses, findings and resolution |
| | | g. Provide preventive and corrective maintenance for all network devices, including hardware and software. |
| | | h. Deliver event and alarm reports to the appropriate GMWSS department or resource. |
| | | i. Monitor overall MIU performance communication success rates. |
| | | j. Monitor, manage and recommend changes as necessary for data collector communications schedules to ensure optimal system performance. |
| | | k. Maintain an adequate quantity of spare network components in close proximity to GMWSS's system to ensure rapid response to network problems or outages. |
| | | l. Plan for and modify the network (such as adding data collectors) to maintain the system performance requirements, following change management procedures to ensure that modifications to the network are authorized, tested, and approved by GMWSS, properly implemented and documented. |
| **Any Proposed Alternative Specification or Language:** | | |

## 23.3 Staffing

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.3 | | a. GMWSS-dedicated network infrastructure on-site maintenance shall be provided by Proposer's local technicians or authorized subcontractors that will be dispatched by Proposer. |
| **Any Proposed Alternative Specification or Language:** | | |

b. Provide an organization chart or listing of the staff that will support the managed services, and a brief description of their roles.
    i. These should include, but not be limited to, services manager, system engineers, and support technicians.

**[ Insert ] Support Staff Org Chart**

## 23.4 Network Component Firmware and Software Updates

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.4 | | a. Proposer shall notify GMWSS prior to and following any updates. |
| | | b. Proposer shall be responsible for applying network component firmware and software updates to the equipment in GMWSS's system. |
| **Any Proposed Alternative Specification or Language:** | | |

## 23.5 Response Times

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.5 | | a. During normal business hours, response time shall be within one hour of GMWSS reporting an inability to use the system. |
| | | b. Outside of normal business hours, response time shall be within four hours of GMWSS reporting an inability to use the system. |
| | | c. Exceptions to off hours support will be when conditions warrant a safety concern, or a data collector or other network component site is not physically accessible. |
| **Any Proposed Alternative Specification or Language:** | | |

d. Propose a severity level scheme for issue resolution.

## 23.6 Key Performance Indicators

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.6 | | a. Proposer will provide a monthly report of the following key performance indicators the network as a whole, network devices, and MIUs: |

| | | |
|---|---|---|
| | | i. System uptime<br>ii. Collector Availability as percentage of Uptime<br>iii. Backhaul communications performance, including speeds, modem resets, etc.<br>iv. Billing read (72 hour), daily read, and hourly interval read performance reports<br>v. Redundancy report: the number of MIU transmissions received by 1, 2, 3 or more data collection devices |
| **Any Proposed Alternative Specification or Language:** | | |

## 23.7 Opt-Out Provisions

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 23.7 | | a. In the case of a GMWSS-dedicated network, should GMWSS decide to terminate the monitoring and management services, Proposer shall develop a scope of work that includes the activities to support the opt-out transition ("Opt-Out for Convenience"). |
| | | b. In the event of such opt-out transition, the Proposer shall:<br>i. Assign a Project Manager, a Business Consultant and a Technical Consultant for one month as outlined in the project plan at normal professional service rates assigned to those persons.<br>ii. Modify system design documents and processes and procedures documents, including test plans, to reflect the architectural and dataflow changes and include server hardware and third-party software requirements.<br>iii. Train a minimum of three (3) GMWSS employees or agents in network component and MIU monitoring functions, including office-based measures to correct problems. |
| | | c. In the event of an opt-out transition, GMWSS will be responsible to secure all server hardware and third party software required to manage and monitor the network at a GMWSS-defined location. |
| **Any Proposed Alternative Specification or Language:** | | |

## APPENDIX A: RESUMES

- This Appendix should include the following:
- Resumes for Proposer's Key Personnel including, at a minimum:
    - Project Manager
    - Contract Manager
- Resumes for Primary Subcontractor's Key Personnel

## APPENDIX B: Attestation Regarding Disputes

This should include information from Section 1.6, 1.7, and Section 22.8

## APPENDIX C: Exceptions to Technical & Performance Requirements

Copy / Paste / Drop Here tables from any sections that note exceptions to technical and performance requirements.

For Example:

| Section | Comply? Y/N | Requirement |
|---|---|---|
| 2.5 | N | a. The data collection network shall be designed to provide 100% coverage of GMWSS's existing customer meters. |
| **Any Proposed Alternative Specification or Language:**<br>Explanation details | | |

## APPENDIX D: Financial Data

This should include any applicable information from Section 1.6

**-- End of Scope of Work Description and Technical Requirements & Applicable APPENDICES --**

## RFP RESPONSE PRICING COVER PAGE

**RFP title**

**Name of the proposer**

**Managing office address**

**Telephone number**

**Name and email address of contact person**

**Date of submission**

# Pricing Tables Instructions

## 1 General

Proposer shall supply unit prices and related annotations that will enable GMWSS to reasonably determine the total life cycle cost of owning, operating, using and maintaining Proposer's system over a 20-year period from the date of Notice to Proceed. Proposer shall indicate explicitly if any of the recurring prices (e.g., for annual license fees or maintenance costs) shall be subject to an inflator, and if so, what that inflator will be.[2] Tables referenced below have been provided in Excel format in the RFP package as Attachment 1 – RFP Pricing Tables. Information required includes:

- Cost to supply and install necessary meters, MIUs, and ancillary components of the AMI system and dispose of existing equipment.
- For a GMWSS-dedicated network, cost to supply and install AMI network components as well as cost of annual licensing and maintenance contracts.
- If Proposer proposes network management options, they shall also be included.
- Cost to provide supplemental services during installation involving configuration, repair or upgrades to meter boxes, lids and appurtenances.
- Component failure rate and replacement cost information.

Prices shall include all material, labor, shipping, tools, equipment, hardware and software, taxes, supervision, bonds, insurance, material, rental, parking, permitting, engineering certificates, indirect costs and profits to perform any unit of work. The price tables must be completed in their entirety, in accordance with the instructions below.

Proposer shall provide pricing information in Excel files in a digital format within its Pricing Proposal.

Proposer must respond to each line item listed. Indicate "NA" (Not Applicable) if the particular equipment described is not incorporated in Proposer's system. Proposer must include any additional equipment and services not listed in the tables below, that are required to provide a complete and working system in accordance with the technical and performance requirements of this RFP; Proposer shall augment the Excel tables by adding rows or columns to accommodate additional system components or unit costs but may not delete any row or column from the provided tables.

GMWSS reserves the option of accepting or rejecting individual components of each proposal as needed to best serve the needs of GMWSS.

## 2 Meters, Registers, MIUs, Lids – Supply and Installation

Proposer shall provide pricing for meters and MIUs for all meters in the pricing tables even if the indicated quantity is zero so that the price will be known in case a decision is made at a later time to replace or retrofit one of these meters.

Installation prices indicated shall be for normal installations, exclusive of repairs to, modification or replacement of service lines, meter boxes (other than the replacement or modification of lids), valves or customers' plumbing.

Retrofit Newer Meters with new MIUs, Including Labor to Replace or Modify Lids

[2] In its life cycle cost evaluation, GMWSS will discount future costs at 4.5% per annum.

Proposer's price should include installation of a new MIU while retaining the existing meter and register and connection of the cable coming from the meter to the new MIU using a waterproof, dust-proof and corrosion resistant connection. Proposer shall specify connector proposed.

Replace Old Meters, Including Labor to Replace or Modify Lids

Proposer's price shall include removing the existing meter and meter reading device, if any, and connecting the cable to the MIU using waterproof, dust-proof and corrosion resistant connection.

Disposal of Existing MIUs

Proposer's price shall include costs for properly disposing of all removed meter reading devices such as old MIUs. If the old devices contain lithium-ion batteries, Proposer shall propose the cost per unit of disposing of such devices properly.

Replacement Lids

There are significant quantities of standard size meter box lids present. Proposer shall provide pricing to replace non-composite lids with composite lids conforming to the Technical Specifications and to modify non-composite lids by drilling them (provided they are not located in areas where vehicles could travel over or park on top of them). Proposer shall indicate whether it intends to modify or replace meter boxes and vault lids. The cost of labor to replace or drill lids shall be included in the unit installation prices.

Metal lids removed will be scrapped by Proposer and a credit provided to GMWSS.

Warranty Information

Proposer shall include warranty information for MIUs and all meter sizes and types incorporated into its proposal.

# 3 Network, Software and Other Equipment and Services – Purchase Option

In the case of a GMWSS-dedicated network, Proposer shall list and provide pricing for all other equipment and services required for a complete and working AMI system throughout GMWSS's entire service territory in accordance with the technical and performance requirements outlined in this RFP. In the case of a non-dedicated network provided as a service, Proposer shall indicate network usage cost per MIU per year.

Proposer shall include estimates of site preparation and installation costs, including a "not to exceed value," in its Pricing Proposal.

Annual costs for SaaS shall also be entered as applicable. Annual costs shall include software licensing and maintenance fees, proposed annual equipment maintenance agreement costs and any other expected costs associated with normal system maintenance. Proposer shall include expected annual costs for rental of fixed DCU and repeater sites, if required, and expected power and backhaul communication costs. Proposer shall detail each cost item (adding additional rows to the table if necessary), rather than presenting a summary in the cell in the table. Indicate if these costs are to begin at a time other than after the first year of GMWSS ownership or control. If Proposer is proposing costs that change from one year to the next because of inflation or other factors, Proposer shall explicitly state the annual adjustment factor as a percentage to be applied.

Include in this section a schedule of costs for additional training beyond the initial training required by the RFP.

Proposer shall indicate the number of spare parts of each system component GMWSS should acquire and maintain on-hand.

## 4 Network, Software and Other Equipment and Services – Hosting/Managed Services

Proposers should submit pricing for a Managed Services/Software-as-a-Service option for the network devices and software applications using Optional Bid Tab #4. Proposer shall include the cost of data collectors and other network components, hardware and software, and professional services that must still be purchased by GMWSS under a managed services scenario in the Required Bid Tab. Proposer should augment this table on Optional Bid Tab #4 to include a list of any services not included in its hosted and managed services and network monitoring pricing, including optional services, and specific prices for each item not included for which it intends to levy a separate charge.

## 5 Professional Services

Proposer shall submit pricing for Project Management, SaaS Configuration, Interface setup, training, warehousing, printed notifications to customers, and all call center services.

## 6 Bonding

Proposer shall submit pricing for Payment and Performance Bonds.

## 7 Additional Services

GMWSS may request the Proposer perform additional services. Proposer shall provide pricing for each optional service listed in the Pricing Tables and identify any conditions that may impact the price quoted on the Optional Bid Tab items listed below:

1. Optional Bid Tab #1: Installation or replacement of as-needed services if the installation requires.
2. Optional Bid Tab #2: Box replacements equipment and labor.
3. Optional Bid Tab #3: Customer Information Portal, including setup, training, and annual license fees.
4. Optional Bid Tab #4: Network Maintenance
5. Optional Bid Tab #5: Additional Features – Remote Shut-Off, Sensors, etc. including initial capital costs and SaaS.
6. Optional Bid Tab #6: Meter Salvage & MIU Disposal.

## 8 Failure Rates

For the purposes of this RFP, component failure means the inability to reliably complete the task for which the component was designed. This definition will apply to all components including but not limited to MIUs, connectors, collectors, repeaters, AMI HES, and MDMS systems. These failures may include but are not limited to:

- Failure to reliably and accurately communicate with meters and other devices for which it was designed.
- Failure to accurately read, store, and transmit data such as meter reads, alarm codes, and other data for which it was designed to read.

- Failure to maintain adequate battery voltages adequate for normal operation.
- Failure to accept software firmware upgrades and settings.
- Failure to maintain physical integrity under the conditions it was designed to withstand.
- Failure to be immune to expected radio interference.
- Failure to maintain system security.

Proposer shall provide expected failure rates for various system components, and their associated warranty and repair costs, in the Pricing Tables. Proposer shall also provide (1) repair prices for MIUs, and (2) for a GMWSS-dedicated network, expected maintenance and repair costs for DCUs and repeaters in the case that GMWSS does not avail itself of annual maintenance agreements for these components, that will give GMWSS a true representation of expected operating and maintenance costs. Indicate battery change costs in the table. Specify whether the battery change cost estimate includes labor. These costs shall be included in GMWSS's evaluation of total system costs.

Proposer shall indicate the expected life in service of the system components if other than 20 years. Proposer shall provide explanation of any underlying assumptions necessary to explain these numbers.

If any proposed costs refer to a "list" price, or "retail" price, Proposer shall explicitly state the current "list" or "retail" price.

# CONTRACT PROVISIONS

## General Terms and Conditions

*Standard language and provisions required by GMWSS in a contract should be presented in the RFP. The list includes:*

a. Regulatory Compliance
b. Insurance Requirements
c. Performance and Payment Bonds
d. Inspection & Audit
e. Indemnification
f. Limitations on Liability
g. State and Other Taxes
h. Governing Law
i. Conditional on Funding Appropriation
j. Defaults and Termination for Cause
k. Termination without Cause
l. Assignment
m. Compliance with Law
n. No Conflicts of Interest
o. Dispute Resolution
p. Force Majeure
q. Patent Indemnity
r. Intellectual Property
s. Escrow of Hardware and Software Design
t. No Third-Party Rights
u. Non-Endorsement
v. Severability

# 1 Specific Terms and Conditions

*Terms and conditions specific to the AMI project should be included here. A few are included below.*

## 1.1 Project Milestones

Goals and milestones for deliveries or accomplishments shall be incorporated within the Project Schedule. Should Contractor fail to meet a key milestone within a reasonable period of time, GMWSS shall provide notice of Default and shall be entitled to collect liquidated damages in the amount of $2,000 per day until the milestone is met.

## 1.2 Network Device Acceptance

Within 15 business days of being notified of the installation of a network device, GMWSS will physically inspect the installation site for proper installation; will attempt to obtain confirming readings from MIUs through the Network device; and will confirm that the correct information for the installation has been captured in the AMI network control system database and/or GMWSS's project management database.

Should GMWSS fail to inspect the network device within 15 business days of being notified of its installation, GMWSS will conditionally accept and pay for the device. However, such conditional

acceptance shall not relieve the Proposer of any responsibilities for curing defects in the installation or performance of the device during the warranty period.

### 1.3 Meter and MIU Installation Acceptance

If installed by a subcontractor, meters and MIUs will be accepted and the installation paid for as they are installed and confirmed to be operational, in accordance with the Technical Requirements, or if Proposer prefers, by meter reading route or other geographic area, provided the successful installations meet or exceed the route saturation criteria.

## 2 Warranties

GMWSS shall have sole discretion to choose the applicable warranty should there be a conflict between warranties.

### 2.1 MIUs/Endpoints

All MIUs supplied in connection with this proposal shall be guaranteed to be free from defects in workmanship for a period of at least 10 years from the date of installation acceptance [or 10 years plus 3 months from the date of shipment]. Any MIU that fails during this period shall be repaired or replaced at manufacturer's sole cost and expense. MIUs shall be guaranteed against failure for an additional 10 years such that a failed component will be replaced on a pro-rated cost basis. Proposer shall provide a schedule of the pro-rata costs in its pricing tables. Pro rata costs to GMWSS shall be based on the original purchase price adjusted for inflation, or the then currently available purchase price, whichever is less. These costs shall be submitted in the Pricing Proposal.

### 2.2 Fixed Data Collection Units and Repeaters

Mobile data collection units shall be guaranteed to be free from defects in workmanship for a minimum of twelve (12) months from date of delivery. Fixed data collection units and repeaters shall be guaranteed for a minimum of twelve (12) months from date of installation acceptance.

### 2.3 Handheld Meter Reading Equipment

The handheld units, data cradles or data transfer devices (including memory cards and memory card readers), and all accessories (including batteries, straps, cables and cases) shall be guaranteed for a minimum of twelve (12) months from date of delivery. Any handheld device or accessory found to be defective upon delivery must be exchanged for new and shall not be repaired or exchanged for a remanufactured device.

### 2.4 Meters

Proposer shall include warranty information for all meter sizes and types incorporated into its proposal.

### 2.5 Other System Components

All other system components not specifically noted above shall be guaranteed for one (1) year from the date of installation acceptance, including parts and labor.

## 2.6 Maintenance Agreements

Proposer shall provide GMWSS with equipment maintenance agreements, which may be renewed annually by GMWSS for at least fifteen (15) years.

Should handheld unit firmware updates require sending the devices to the factory or authorized repair center, Proposer shall provide a loaner device for each device being upgraded so that meter reading activities can continue.

For each piece of hardware or software, state any required or optional maintenance programs beyond the warranty period. Include program features and any additional charges such as hourly rate for on-site and/or remote support. State the location of and procedures for obtaining such support.

## 2.7 Installation

All installation work, including materials used in the installation performed under this contract, shall be guaranteed against defects in workmanship for a period of one (1) year from the date of installation acceptance.

## 2.8 Repair Turnaround

Repairs to handheld units or data collectors shall be accomplished either locally, at GMWSS facilities, or at the manufacturer's factory or authorized repair center, within ten (10) working days. Shipments from GMWSS for out of warranty repairs will be at GMWSS's cost and the return shipments will be at Proposer's cost. For repairs not completed and returned within ten (10) working days, Proposer shall provide a loaner HMRU or MDCU until GMWSS's unit is returned in working condition.

## 2.9 Failure Analysis

Describe the failure analysis process that is used when product is returned.

On a quarterly basis Proposer will provide a failure analysis report for any and all product returned by GMWSS to Proposer. For failures of 25 units or more in any quarter, the report should include a diagnosis of the root causes of any failures such as software error, communication error, excessive retries, failed component, water intrusion, etc. The report will include an analysis of similar failures that have occurred on other projects, the cause of such failures, the actions that Proposer is taking to minimize such failures, and an assessment regarding the likelihood of continued failure.

## 2.10 Software, Firmware

Proposer shall provide a written guarantee that no changes in the software, firmware, or hardware design of components of its MIUs, DCUs or Repeaters that it provides to GMWSS for twenty (20) years from the Commencement Date will be made without prior testing and verification that such changes will result in no loss of functionality for the meters incorporated in GMWSS's AMI system. In the event of such incompatibility or loss of full functionality, Proposer shall be responsible for repairing or replacing all of its equipment that is not working, including labor. Firmware updates for handheld devices shall be provided by Proposer at no additional cost to GMWSS for twenty (20) years from the date of delivery of the unit.

Proposer warrants that any and all software provided as part of its system to GMWSS does not contain any program code, virus, worm, trap door, back door, timer, or clock that would erase data or programming or otherwise cause the software to become inoperable, inaccessible, or incapable of being

used in accordance with its user manuals, either automatically, upon the occurrence of Proposer-selected conditions, or manually on the command of Proposer, or upon occurrence of user-selected conditions.

## EXCEPTIONS TO CONTRACT

Please note any exceptions to any contract provisions.

For Example:

| Section | Comply? Y/N | Requirement |
|---|---|---|
| ADD | N | ADD A CONTRACT PROVISION |
| **Any Proposed Alternative Specification or Language:**<br>Explanation details | | |