



Request for Qualifications

Town of Federalsburg, MD
Water Meter System Replacement Project

Submission Deadline: November 10, by 2:00pm (EST)

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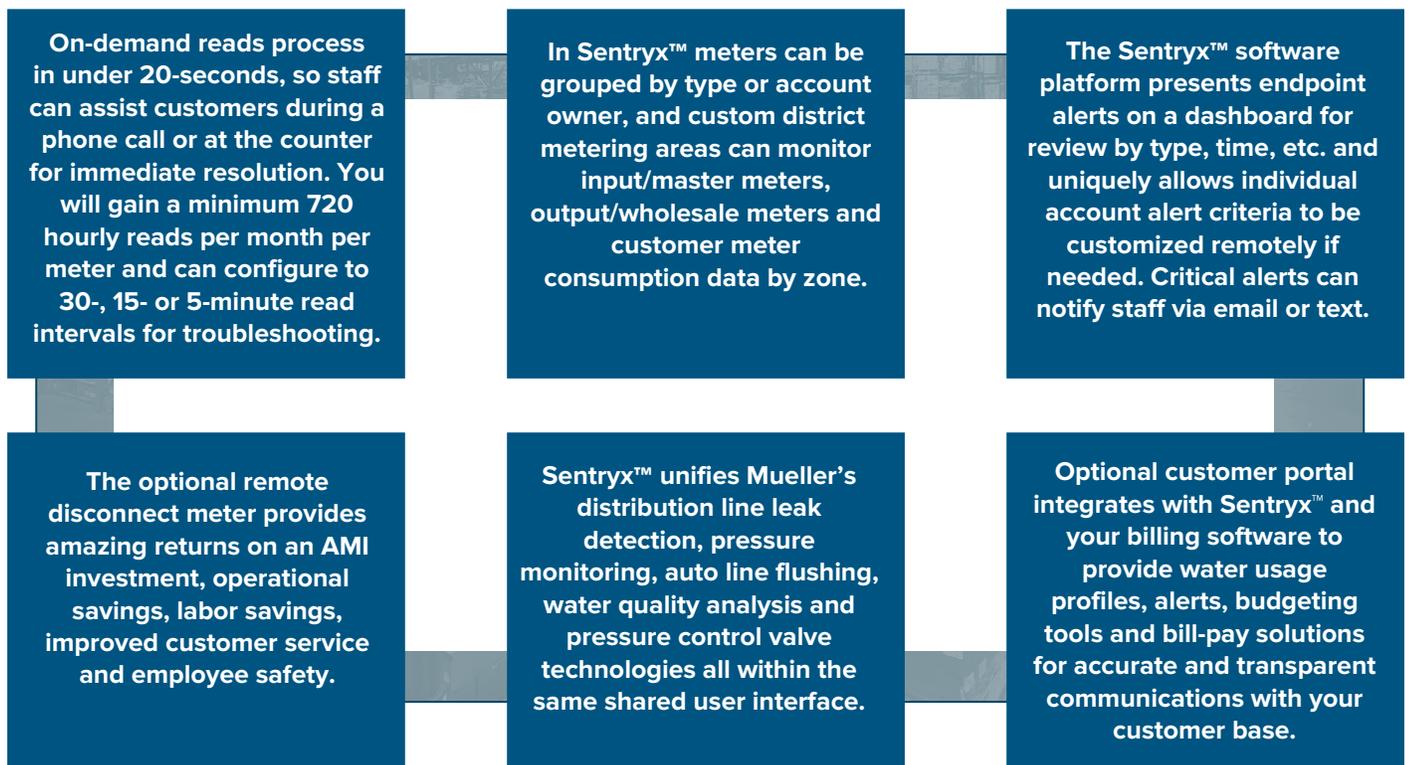
SECTION 1 - INTRODUCTION

The following statement of qualifications for the design, delivery and maintenance of an Advanced Metering Infrastructure (AMI) System lays the foundation for a valued partnership with the Town of Federalsburg. Ferguson Waterworks has carefully constructed our response to clearly address the town’s requirements for the project through our system overview, technical specification compliance, project approach and support over a fifteen-year term, credible references, and overall AMI experience. Ferguson also acknowledges receipt of Addendum 1 to this RFQ.

Ferguson will proudly take full accountability for building a powerful scope of work, establishing clear lines of communication, and delivering a high-performing AMI system that can grow in functionality as the town demands. For your project, our Ferguson meter & automation team, along with meter vendor Mueller Systems (Mueller), will manage the initial deployment and provide technical assistance and maintenance support for your system to keep it operating at optimal performance levels for years to come.

Our proposed AMI system is called Mi.Net®, with hardware and software produced by Mueller, and it runs on Mueller’s powerful Sentryx™ cloud-based server and user interface software platform.

HOW OUR AMI SOLUTION CAN MEET YOUR NEEDS



FERGUSON WATERWORKS sincerely appreciates the opportunity to submit the following statement of qualifications and we look forward to presenting our unique advantages in greater detail with the Town of Federalsburg project stakeholders.

SECTION 2 - SUBMITTER HISTORY & FINANCIAL STABILITY

DISTRIBUTOR AND PRIME – FERGUSON WATERWORKS

Established in 1953 and headquartered in Newport News, Virginia, Ferguson opened with several locations dedicated to servicing smaller plumbing contractors. From this modest start, we raised the bar for industry standards as the top-rated and largest wholesale supplier of commercial and residential plumbing supplies in the U.S. However, our expertise goes beyond plumbing. We are a diverse distributor that spans multiple businesses including HVAC/R, waterworks and industrial. For nearly 70 years, we have grown from a local plumbing distributor to a **\$22.8 Billion company with more than 1,600 locations and over 29,000 associates nationwide**. We pride ourselves on delivering world-class service to our customers, and they know that “Consider it done.” is more than just a tagline. It is a cultural belief that is demonstrated every day through exceptional customer service, product selection and industry knowledge. On the Waterworks side, your servicing branch in **Salisbury, MD represents just one of roughly 300 Ferguson Waterworks locations** across the nation.

For added expertise around water meters and AMR/AMI technologies, Ferguson has made a significant investment in creating the Meter and Automation Group. This substantial investment of human and capital resources with a focus specifically on AMR/AMI has allowed us to partner with four of the top five-meter manufacturers in the country. As the authorized distributor for Mueller in Maryland, Ferguson can leverage its branch network and municipal sales focus to bring unprecedented support. With almost 70 years of industry experience, Ferguson Waterworks is one of the largest suppliers of water, sewer and storm management products and services to multiple segments of the waterworks sector. Our exclusive partnership with Mueller allows us to have the staff, tools, and other resources available for a remarkable partnership We serve public and private water and sewer authorities, residential / commercial utility contractors, and treatment plant contractors.



Ferguson’s new corporate campus in Newport News, VA.

FERGUSON OFFICE LOCATIONS and KEY PERSONNEL

- **Local Servicing Office:** 28596 Naylor Mill Rd, Salisbury, MD 21801
- **Headquarters’ Office for Management:** 12500 Jefferson Ave. Newport News, VA 23602

AMI PROJECT MANAGER

Bruce Kelly – IT Integration Project Manager
 Email: Bruce.Kelly@Ferguson.com | Mobile: (813) 503-3842

INDUSTRY EXPERIENCE

The team of **Ferguson and Mueller have over 100 years** of combined company experience in manufacturing, delivering, and installing water meters for the U.S. water market. Since inception of the Meter & Automation group, Ferguson has been awarded and has deployed over 1,200 metering systems encompassing approximately 2.5 million endpoints. With phenomenal growth over the last eleven years, Ferguson's Meter & Automation group is now supported by 120+ dedicated Waterworks associates and has distribution partnerships with four of the top five (by market share, stability, and quality) meter manufacturing lines in the country.

Ferguson's partnership with Mueller began approximately 8 years ago and has experienced substantial organic growth in twelve states currently. Mueller is a leading innovator and provider of Advanced Metering Infrastructure (AMI) systems and water meters for the U.S. water market. Their product offerings include water meters, data acquisition, systems integration, software, analytics, and other future capabilities that support the rapidly growing Internet of Things. Since 2005, Mueller is approaching 3 million total smart water endpoints deployed across the U.S. at water utilities for use in either AMR or AMI platforms. For AMI installations, Mueller's Atlanta-based Network Operations Center (NOC) is currently monitoring well over 1.3 million AMI endpoints installed at 215 customer sites across the US.

MUELLER SYSTEMS' HISTORY (MANUFACTURER)

 Mueller is a leading innovator and provider of Advanced Metering Infrastructure (AMI) systems and water meters for the U.S. water market. Their product offerings include water meters, data acquisition, systems integration, software, analytics, and other future capabilities that support the rapidly growing Internet of Things. Mueller's metrology division was originally founded in 1859, as Hawes and Hersey Company, a manufacturer of rotary pumps, bolts, and general machinery. In 1885, Hersey received a patent on the rotary displacement meter and began manufacturing water meters under the name Hersey Meter Company, offering its first rotary and disc meters for sale in 1886. By 1889, meters were being sold across the United States and Canada. Hersey sold its one-millionth water meter back in 1924.

In 1959, Hersey Meters merged with Sparling Meter Company and began operating as Hersey-Sparling Meter Company. Hersey operated under this name until it was acquired by Tyco in 1986. In 1988 Hersey was placed under the Mueller Water Products subsidiary, Mueller Co., and re-assumed the name Hersey Meters. In 2009, Mueller Water Products acquired the AMI technology company, Arkion Systems, and combined the business with Hersey Meters to create Mueller Systems, LLC to reflect the broader range of utility management products offered by the combined entity. Mueller has deployed nearly 3 million of their smart metering endpoints in over 800 water utilities across the United States since 2006.

MUELLER'S NETWORK OPERATIONS CENTER (NOC)

Mueller's staff of dedicated network analysts continuously and remotely monitor all Mi.Net AMI Networks nationwide from Mueller's Network Operations Center (NOC) in Atlanta, GA. The Mueller NOC is a state-of-the-art support center created to provide the highest level of system support in the industry throughout the life of every Mi.Net System.

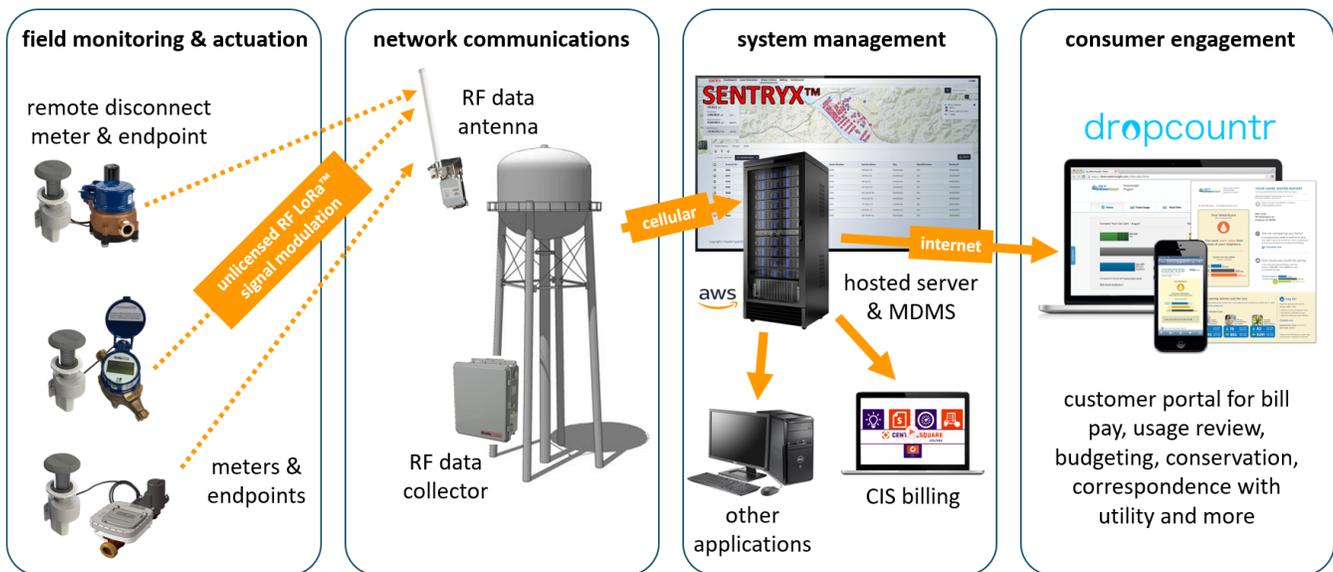
SECTION 3 – FULL-SERVICE PROGRAM CAPABILITIES

PROPOSED TECHNOLOGY SOLUTION

SOLUTION OVERVIEW

The Mi.Net® AMI system operates in the 902-928 MHz unlicensed frequency band and uses several radio frequency techniques like chirp spread spectrum through LoRa® signal modulation to greatly reduce interference and expand bandwidth for remarkable overall performance. The network is a “star” or “spoke and hub” design where the radio transmitter communicates directly with a data collector. However, there is flexibility built in for a transmitter to route its communications through another transmitter if necessary.

Mi.Net® provides true two-way communication to every meter with minimal latency. An on-demand read can be obtained in under twenty (20) seconds – fastest data in the industry. No FCC license is required for our AMI network, and thus no licensing costs are involved. But if the utility were to step towards the Internet of Things environment for future functionality, our radio endpoint is a compliant LoRaWAN® device as it is designed to operate with the two-way functionality of a Class B communication format.



Mi.Net® AMI Architecture

SYSTEM COMPONENTS AND METERS

DATA COLLECTORS

The data collector is modular, wall or pole-mounted, rugged, and powered by a 120V AC power supply. It contains a backup battery if electrical power is interrupted. As with any RF network, maximizing the install height of infrastructure antennas ensures a good balance of transmission range and data path redundancy. For this reason, our conservative network designs utilize water tanks, communication towers, utility buildings, and similar vertical assets.

The collector communicates with the Sentryx™ server through a cellular backhaul or Ethernet connection. Meter data captured from the collector is processed immediately, then stored and archived on a scheduled basis on the server.



Inside the data collector enclosure



Antenna and amplifier/filter are mounted at the highest point and connected to the collector via coax cable.

RADIO ENDPOINTS (TRANSMITTERS)

The Mi.Node radio endpoint (transmitter) is connected to the meter register via a Nicor® connection and mounts upright and as high as possible for optimum signal transmission. It uses a patented “wake-on-demand” technology that preserves battery life while allowing two-way communication with a data collector. The radio endpoint operates on a full watt of power, maximum allowed by the FCC and is a Class B LoRaWAN compatible radio, optimal for future use on LoRaWAN. The Mueller Mi.Node endpoint logs and stores up to 511 days of hourly data, has a true 2-way communication ability to allow for command-and-control functionality and will utilize a through-the-lid mount by a hanger or antenna in an AMI environment for optimum range. The design allows this Mi.Node radio to accomplish:

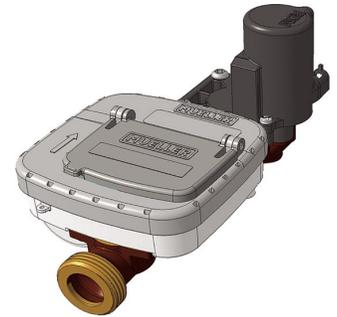
- On Demand reads within **20-seconds**
- Remote disconnect/reconnect in **under 20-seconds** (if remote disconnect meter is installed)
- Firmware upgrades remotely as they are pushed out across the network
- Configuration of alert settings remotely for one meter or groups of meters
- Immediate communication for high-priority alerts



Mi.Node Radio Endpoint

AQUAIENT™ ULTRASONIC METER and OPTIONAL REMOTE DISCONNECT

Ferguson is proposing the Mueller Aquaient solid state ultrasonic meter and optional Aquaient meter with control valve for remote disconnect functionality. The 5/8" x 3/4" size meter is designed with no moving mechanical parts inside the meter measuring tube to maintain a high degree of accuracy. The meter provides up to 10 digits of granular data for visual and encoded electronic format and utilizes a bronze low lead body. In addition, the meter includes a polymer processor enclosure is filled with a waterproof potting material protecting the internal electronics against moisture intrusion. The meter incorporates a large polymer lid which covers the liquid crystal display that is powered by a 3.6 volt lithium battery. Deployment of these meters can be strategic, such as targeting accounts that are notorious for nonpayment/late payment, accounts with high move-in/move-out rates, or in instances where it is difficult to gain access to meters. The benefits are endless with the addition of a remote functionality of the RDM for your town's staff.



*5/8" X 3/4" Aquaient™
Meter with control valve*

SOLID STATE ULTRASONIC METER (SSM)

Ferguson is proposing the Mueller's Solid-State Meter (SSM) for 1" through 2" sizes and utilizes an internal Solid State Encoder Register. The SSM meter operates through an ultrasonic measurement technology to provide outstanding accuracy across a broad flow range with extremely low-pressure loss. The static meter design means there are no moving parts inside the meter so it will not degrade in accuracy over the life of the meter due to mechanical wear, providing exceptional revenue for years to come. The SSM meter provides eight (8) digits of granular data in encoded electronic format for use in Mueller Mi.Net AMI applications. Furthermore, the Mueller ultrasonic meter 1" utilizes a copper-alloy measuring tube with male threads which contain no lead. The 1-1/2" and 2" ultrasonic meter feature a stainless-steel measuring tube with two bolt oval flanges.



2" Solid State meter

HbMAG COMMERCIAL & INDUSTRIAL METER

The HbMAG meter is an electromagnetic flow meter offered in sizes 3" through 20" (larger sizes available upon request). The 3" offering HbMAG is 7.9" length optimal for the town's commercial use. The HbMAG utilizes a solid-state register that can be configured as an integral unit to the flow tube or as a remote register for better access in flooded vaults. It displays eight (8) digits for visual meter reading information. The HbMAG meter is designed for use in the measurement of potable water in applications where a high degree of accuracy is required over a wide range of flow rates and conditions. Maximum continuous flow rates may be exceeded by as much as 50% for intermittent periods with virtually no pressure loss; permitting full pipe capacity measurement without damage to the meter.



HbMAG

SENTRYX™ WATER INTELLIGENCE PLATFORM – MDMS PLATFORM

Sentryx™ is the future of intelligent water management. It is a single solution for end-to-end water management. Sentryx™ measures, monitors, and will empower the city staff to act on insights from across your water distribution system. With the Sentryx™ Water Intelligence Platform, both the Meter Data Management (MDMS) and AMI Head End systems are merged into a single powerful platform bringing you the robust features you expect from standalone systems. It significantly reduces technical project risk because it eliminates the need to integrate the AMI software with a separate software package, thereby reducing the possibility of subsequent delays in the implementation of the project.



More than that, Sentryx™ also unifies other sensors and controls from across your distribution system, enabling you to manage Echologics fixed acoustic leak detection, pressure monitoring, flushing, and water quality analysis from HydroGuard, and Singer control valves, all from the same shared user interface. It is optimized for fast refresh of data, runs on a powerful Amazon Web Server (AWS) and takes advantage of the network transmission speed inherent in LoRa-modulated communication to deliver fast on-demand reads and remote valve actuation - typically in less than twenty seconds.

FULLY HOSTED SOLUTION

AWS hosts the sever back-end servers for the AMI network. That means, the utility has nothing to install, no licenses to manage, no upgrades to schedule and deploy, and no need to maintain costly servers. Users can access Sentryx™ from any desktop or laptop computer running Windows 7, Windows 10, or Apple IOS along with a current browser such as Chrome, FireFox, Safari, Internet Explorer, or Microsoft Edge.

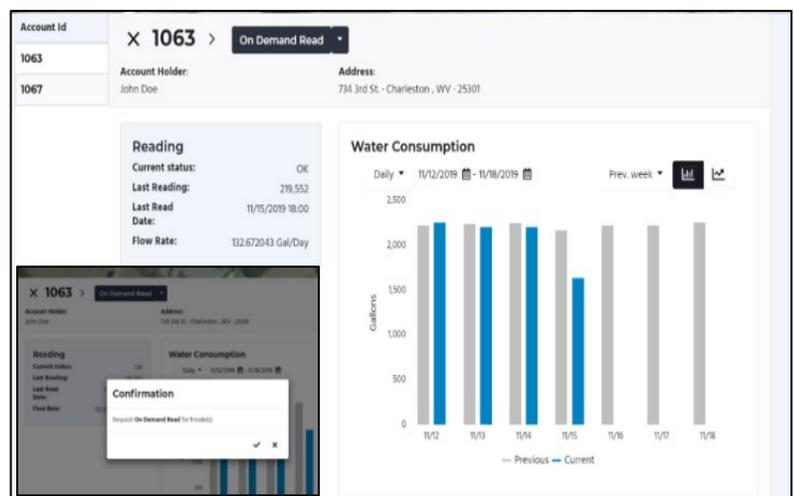
CUSTOMIZABLE USER DASHBOARD

Our proposed HES/MDMS is a customizable user experience allowing utility administrators to manage the roles, access levels, and functions available to each user. Sentryx™ also enables each user to individually customize their views and layouts to match the dashboard tools, visualizations, alert priority, table filters, and map settings to best align to their own preferences and support their unique roles and responsibilities.

ON DEMAND REPORTS

All on-demand reads typically process in under 20-seconds so utility staff can compare meter data with end-users efficiently while they are on the phone. A customer service representative can utilize this information to help resolve customer complaints by initiating an on-demand read which provides a real-time reading of the customer’s meter and brings the answer back in seconds.

The ability to read meters on-demand also supports more-accurate final reads for billing,



On-Demand Reports

move-in/move-out processes, and conservation and environmental efforts. By default, meter registers are interrogated by the endpoint once per hour, or on a 60-minute read interval. When meter rightsizing, troubleshooting questionable consumption patterns or similar activities are required, utility staff can change the read intervals remotely for individual meters or groups of meters. Read intervals can be changed in the HES/MDMS Sentryx™ using a simple drop-down menu to configure down to 30-minute, 15-minute or even 5-minute intervals.

WATER METER TAB

Working from the “Water Meters” tab, a Customer Service Representative (CRS) can easily search for an account based one or multiple criteria, such as account ID, customer name, billing or service address, or any other field imported from CIS. Simply click in the filter box to find the account.

Account ID	Service Address	Last Read	Last Read Date	Socket ID	NodeID	Meter Size	Alerts	Meter Status
-999-20748	-999-20748			-999-20748	0		N	Unknown
-999-20753	-999-20753			-999-20753	0		N	Unknown
-999-471	-999-471			-999-471	0		N	Unknown
-999-577	-999-577			-999-577	0		N	Unknown
-999-864	-999-864			-999-864	0		N	Unknown
-999-890	-999-890			-999-890	0		N	Unknown
1000	1000			1000	0		N	Unknown
1016	4101 Elm St.	1,813,320	7/15/2021 19:00	100001	4100001	5/8"	N	OK
1017	301 Pine St.	1,880,527	7/15/2021 19:00	100002	4100002	5/8"	N	OK
1018	38 Oak St.	1,945,732	7/15/2021 19:00	100003	4100003	5/8"	Y	OK

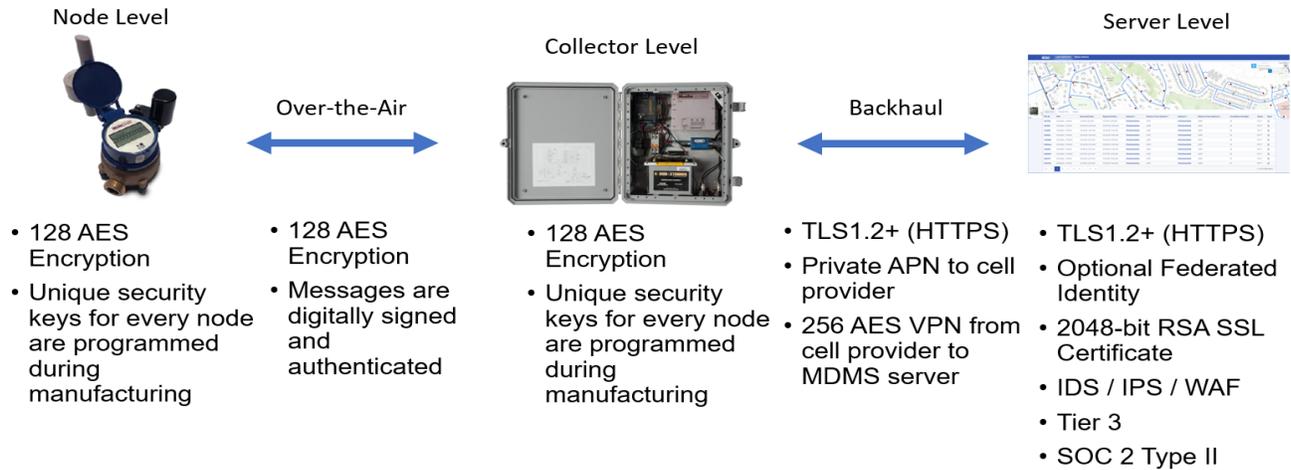
Water Meters Tab

ALERTS TAB

Account ID	Alerts Details	Start Date Time	Acknowledged	Last Read	Device ID	Last Read Date	Socket ID	Service Address
1018	No Flow Detected	7/15/2021 20:00	N	1,945,732	41000300	7/15/2021 19:00	100003	38 Oak St.
1046	Unable to Read Device	7/15/2021 20:00	N	1,910,118	41000300	7/15/2021 19:00	100030	4582 Packard St.
1081	Provisioned Consumption Threshold	7/15/2021 20:00	N	1,943,243	410006500	7/15/2021 19:00	100065	561 Bellevue St.
1100	Device Read Failure	7/15/2021 20:00	N	2,004,152	410008400	7/15/2021 19:00	100084	7311 Port St.
1113	High Flow Rate Detected	7/15/2021 20:00	N	1,892,829	410009700	7/15/2021 19:00	100097	1871 Deerfield St.
1121	Wheel Location Error	7/15/2021 20:00	N	2,002,361	410010500	7/15/2021 19:00	100105	1118 Shepard St.
Water-5	High Flow Rate Detected	5/27/2021 11:00	N	10.1	440928600	7/15/2021 00:00	Water-5	Water-5
2103	Register Removed	4/28/2020 19:57	N	1,454,111	20002300	7/15/2021 19:00	200023	36 Middleboro St. - SSR Register Removed
2101	Battery Warning	4/28/2020 19:57	N	1,923,104	20002100	7/15/2021 19:00	200021	15 Middleboro St. - SSR Battery
2102	Back Flow (register)	4/28/2020 19:57	N	1,935,548	20002200	7/15/2021 19:00	200022	24 Middleboro St. - SSR Backflow

Viewing priority and nonpriority alerts in the Alerts Tab

SYSTEM COMMUNICATIONS AND SECURITY



SECURITY AND PRIVACY

Quarterly Internal Testing, Security, and Vulnerability Reviews keep you informed of responses to changes in the security landscape, both within the water industry and beyond. Yearly, third-party penetration testing (software, hardware, devices, network, and infrastructure) ensures the system remains safe and strong. Mueller's Product Security Incident Response Team (PSIRT) is always ready to help our customers respond to any threat or incident that does occur using encrypted communications for added security. Mueller leads the industry for network security and more specifically, remote disconnect security including:

COMMUNICATIONS AND NETWORK SECURITY

Access to data within Sentryx™ is securely controlled through rights/privileges, from single account viewing to full administrative rights. Endpoint data packets are encrypted with AES 128-bit security before transmission and is maintained over-the-air from the MIU to the collector. The collector then passes the encrypted data packets onto a private AES-256 VPN backhaul for delivery to the Head End System. Data integrity is verified with every data message sent. From the DCU to the Head End Software, various IP protocols can serve as two-way communication backbones.

Amazon Web Services (AWS) maintains Web Application Firewalls, Intrusion Prevention Systems, and Intrusion Detection Systems, and other technology to constantly monitor for Denial of Service (DoS) attacks and other potentially malicious activity, and alerts Mueller of any potential threats. Mueller can proactively protect against DoS through traffic filtering before the traffic reaches the Sentryx™ applications and data. Sentryx™ database servers are fully backed up weekly, with incremental backups every other day. The database logs are backed up every 30 minutes, allowing a database to restore to occur for a time granularity of 30 minutes.

NETWORK AND SOFTWARE SECURITY

Traffic between network collectors, the network provider server, and the Sentryx® application server all utilize HTTPS to guarantee security, and message delivery (at the TCP level.) Messages that fail transmission are cached or stored at the appropriate level and delivered later when communication has been restored. If there

is a persistent communication error between the collector and network server, or network server and the application server, the data can be retrieved later.

To optimize communications, stability, and security, Mueller uses AWS data centers that employ AWS patented Internet route optimization technology, Managed Internet Route Optimizer™ (MIRO). MIRO is a route optimization appliance that probes 12 major Internet backbones and optimizes all communication routing every 90 seconds to continuously identify and route application traffic over the best-performing network path more than 99% of the time.

Software and Network Security Including:

- **Web Portal**
 - 2048 bit RSA SSL Certificate
 - TLS 1.2
- **LoRaWAN Encryption**
 - Advanced Encryption Standard (AES) 128 bit keys
 - Unique keys per individual node
 - All messages encrypted and signed bi-directionally
- **Collector to Server Communication**
 - Private APN over 3G
 - Not accessible over the internet
 - Private VPN to Mueller Systems servers – AES 256-bit key
- **Server Network Infrastructure**
 - IDS / IPS / WAF
 - Tier 3
 - SOC 2 Type II

OPTIONAL CUSTOMER PORTAL – Dropcountr®

Dropcountr HOME is intuitive, powerful, and provides timely information to empower the utility customer. Similarly, Dropcountr HOME allows staff to engage with customers, deliver targeted personalized messages about water use, water efficiency, rebate programs, potential leaks, or high bills. HOME features an integrated survey that gathers important information, including occupancy, appliances, landscape, and other useful data driven metrics. Dropcountr HOME helps customers manage personal consumption, understand price tiers/bills, avoid leaks and water damage, participate in utility rebates and programs, and resolve customer service issues.

Dropcountr CLEAR is an intuitive data analytics program that supports customer engagement and analysis for staff of any technical aptitude on all browsers. Dropcountr CLEAR is a channel for engaging your customers, capturing their attention, and delivering a message directly to their device. The content is up to you, and certainly not limited to water efficiency messaging or leak alerts. Dropcountr CLEAR helps



Water Tab

utility staff communicate with customers, improve customer satisfaction, reduce communication costs, and automate routine tasks and reports.

PROPAGATION STUDY

Ferguson & Mueller will complete a propagation study to determine RF network requirements. We will request the following information from the town for our propagation modeling:

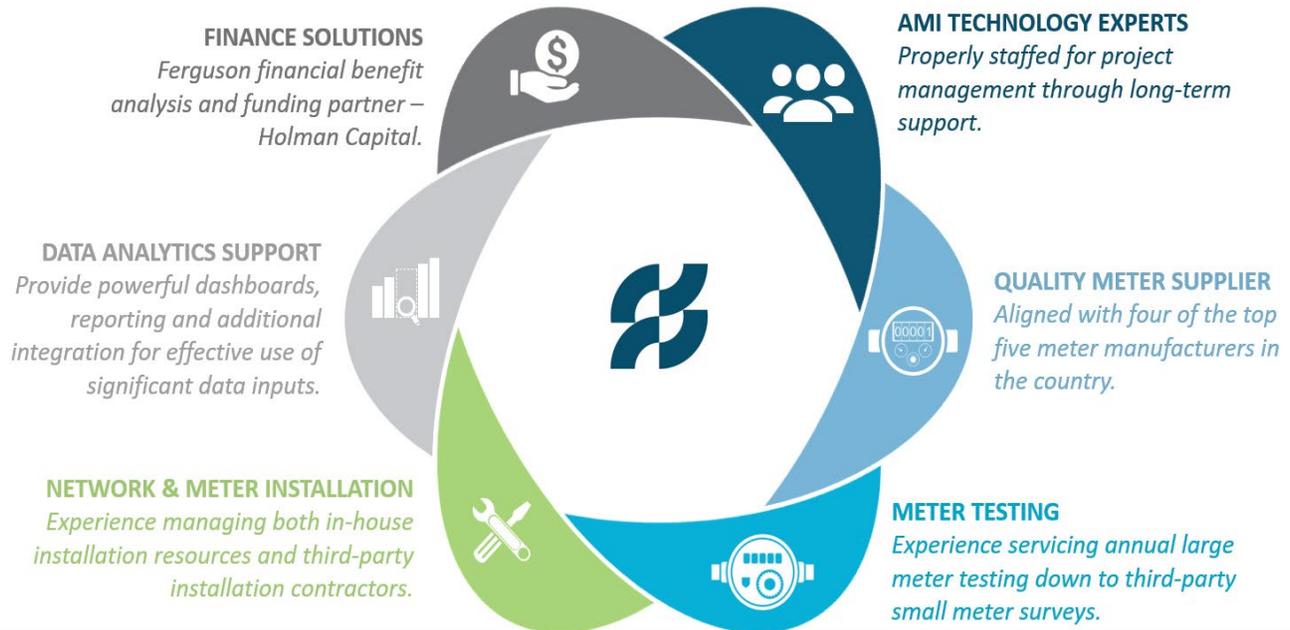
- All meter locations to be included in and covered by the network design (acceptable formats include a KMZ file, shape file, or an Excel® spreadsheet containing either GPS latitude and longitude coordinates or 911 service addresses)
- Meter quantity breakdown by size. How many 5/8" x 3/4", 1", 1-1/2", 2", 3" ... in the system?
- Type of meter pit lid material — plastic, metal, polymer concrete — and the quantity or percentage of each type. For basement meter sets, there is an assumption that the radio endpoints will be installed on an outside wall.
- Locations of all tanks, towers, lift stations and other assets available to the utility for installing AMI network infrastructure such as fire stations, ball field lighting, buildings etc. Helpful information includes a brief description of each asset, GPS coordinates or 911 service address of each asset, height of each asset for optimum antenna position and any other notes related to maximum height restrictions, permit requirements or other similar considerations.

FINANCIAL BENEFIT ANALYSIS

Ferguson's Finance Department has years of experience performing return on investment studies for our AMI deployments and we have developed the Ferguson Financial Benefit Analysis (FBA) Tool to drive efficiency and accuracy of this process. We are prepared to conduct an FBA for Federalsburg once we have the proper information to do so. The preliminary questionnaire is attached in the appendix and represents some of the key data we will capture for the analysis. Detailed project deployment costs will also be used to run the Financial Benefit Analysis.

ADDITIONAL SERVICES

Our partnership with Mueller allows us to provide our customers with AMI Technology Experts, Meter Testing, System Installation, 3rd Party Data Analytics, Finance Solutions, and backed by a qualified Meter Supplier. Likewise, our Meter & Automation Group (MAG) work alongside the local Ferguson Waterworks team to offer substantial project resources for our customers such as immediate meter inventories, phone and on-site support, meter testing, project management, RMA assistance and more. It is the combination of MAG experts and processes combined with local Waterworks support and product availability that has led to our notable growth.



REPORTS

In addition to the reporting and analytics within Sentryx™, Mueller also offers managed reporting as a service. These reports distill data from across the system and provide actionable data without having to dedicate resources to execute or interpret your data. Key reporting services include:

- **Network Performance Report:** Health and performance information of the Sentryx™ network.
- **Meter Consumption or Reading Report:** Detailed information in tabular or graph format for any meter or for a group of meters.
- **Aborted Meter Report:** Displays meters that have not been installed and provides detailed information for the reason the installer decided to skip or abort them.
- **Manual Reading Report:** Shows any meters that have not reported on time and might need to be visited.
- **Task Report:** Ability to run multiple reports related to tasks; for example, how many on-demand reads were sent during a specific time.
- **Routing Report:** Provides information regarding the network's routes.
- **Routing Configuration Report:** 13 reports showing different network configurations.
- **Pending Message Report:** Information about specific sections of the network.
- **Audit and Validation Report:** 10 reports providing information for operational configuration and data validation.
- **Cell Health Reports:** Multiple reports showing each endpoint configuration and performance.

FERGUSON/ MUELLER AMI DEPLOYMENTS

Customer Name	Total # of Meters	AMI Technology (Network & MIU)	Meter (Vendor)	Project Start Date	% Complete
City of Liberty Hill, TX	4,500	V4 Mi.Net System	Mueller	Oct. 2018	100 %
City of Spring Valley, TX	2,305	V4 Mi.Net System	Mueller	Feb. 2019	100 %
Laguna Madre Water District, TX	7,200	V4 Mi.Net System	Mueller	June 2018	100 %
City of Stratmoor Hills, CO	3,000	V4 Mi.Net System	Mueller	Mar. 2020	80 %
City of Winslow, AZ	3,161	V4 Mi.Net System	Mueller	Oct. 2017	100 %
City of Douglas, AZ	6,238	V4 Mi.Net System	Mueller	Nov. 2018	100 %
City of Florence, AZ	3,269	LoRaWAN	Mueller	June 2019	100 %
Town of Gilbert, AZ	93,000	V4 Mi.Net System	Mueller	Aug. 2019	20 %
Lee County, FL	86,884	V4 Mi.Net System	Mueller	Oct. 2016	100 %
Riviera Beach, FL	12,896	V4 Mi.Net System	Mueller	Feb. 2019	100 %
Davie, FL	9,938	V4 Mi.Net System	Mueller	July 2018	100 %
Valparaiso, FL	2,000	V4 Mi.Net System	Mueller	Nov. 2017	100 %
Pace Water System, FL	18,050	V4 Mi.Net System	Mueller	Mar. 2016	100 %
Cooper City, FL	11,000	V4 Mi.Net System	Mueller	Mar. 2016	90 %
Waycross, GA	6,423	V4 Mi.Net System	Mueller	Apr. 2018	100 %
Colonial Beach, VA	2,300	V4 Mi.Net System	Mueller	Sep. 2019	100 %
Spotsylvania County, VA	32,849	V4 Mi.Net System	Mueller	Feb. 2018	100 %
Emporia, VA	2,614	V4 Mi.Net System	Mueller	Nov. 2020	100 %
Newport News, VA	130,000 +	V4 Mi.Net System	Mueller	Mar. 2021	20 %
Halifax County, VA	4,200	V4 Mi.Net System	Mueller	Feb. 2021	95%
Galena, MD	320	V4 Mi.Net System	Mueller	Oct. 2019	100%

SECTION 4 – PROJECT APPROACH

PROJECT OVERVIEW

The Project includes the complete AMI system deployment for the Town of Federalsburg (town) including an AMI network consisting of collectors, water meters with electronic registers, AMI Endpoint communication devices, software and all related professional service and field support required for complete, end-to-end implementation. This document will describe agreed-upon (upon award and notice to proceed) scope of services and materials to be provided including the deliverables, timeline, milestones, reports that will result in the successful deployment of an Advanced Meter Infrastructure (AMI) System, within the town service territory.

The outcomes from this project are related to helping your town achieve the following business goals that are important to the utility and the community at large.

- **Labor Cost Savings** - Reduce manual meter reading costs and reduce the need to review and/or perform field visits to re-read meters in support of billing. Reduction of field visits
- **Operational Savings** – Reduction in truck rolls and associated equipment costs associated with reading and dunning.
- **Revenue Protection** – Accurate meter registration through meter replacement
- **Increased Billing Accuracy** – Improved meter reading accuracy in support of billing and a reduction in the need for estimated bills.
- **Improved Customer Service** – Timelier and more granular data available to address customer’s questions and help customers better understand, monitor, and manage their water usage.
- **Improved High Usage Detection** – Timely and more granular data to help customers investigate high usage and address them sooner, increasing customer safety and minimizing leakage costs.

PROJECT PHASING

Implementation Approach: The project will use a two-stage deployment process to ensure system acceptance and organizational readiness. The first phase will include the implementation of the Integration Plan as well as the full deployment of the Infrastructure Equipment. The second phase, “full deployment” will consist of Water Meters & Mi.Node™ Endpoints being installed throughout the service area.

PHASE 1 – INTEGRATION & INFRASTRUCTURE DEPLOYMENT

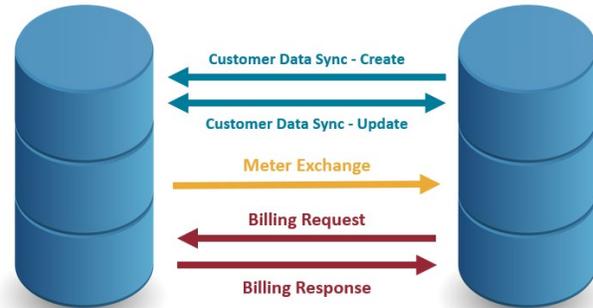
Phase 1 will include both the File Integration Plan as well as the Infrastructure Plan (Propagation Study). During this phase, the initial training on the system will begin that will enable the Federalsburg team to view and build their questions for further training in Phase 2. Evaluation & Testing will include but not be limited to:

- CIS Download and Meter Swap File data testing and approval
- Billing Request and Response File data testing and approval
- Infrastructure readiness and range testing and approval
- Validation of functionality of AMI communications network performance
- Preparation for meter installation

- Initial Training with utility team
- Handheld testing and preparation

FILE INTEGRATION (CIS DATA, SWAP FILE, BILLING INTEGRATION)

When implementing Sentryx™, Mueller will integrate with the town’s existing billing system. This begins with a download of the CIS data to Sentryx™ and is followed by the data swap file where installed meter data will be transferred back from Sentryx™ to the town’s billing system. This will eliminate the need to manually enter all the swap file data. The Billing interfaces then serve to provide a file of required locations where reads are needed for billing (Billing Request) and those subsequent reads sent back to the town’s billing system (Billing Response). This process can be automated or can be executed via the Sentryx™ user interface. The town’s Customer Service Representatives (CSR) can access the existing billing for billing issues, exceptions, or questions. If examination of the detailed meter data is required to respond to customer inquiries or solve billing investigations, the CSR can access Sentryx™ via a web browser, then drill down to retrieve this information. Sentryx™ can be integrated with an asset management and work order management systems currently being used by the town for an additional integration cost. Mueller can support open architecture communications through a multitude of formats such as flat file, FTP, GP, XML, API and others. Mueller is certified in industry standard integration languages such as MultiSpeak and can write custom interfaces.



Testing and Acceptance - The integration plan will be started immediately upon completion of the contract acceptance. This process will involve the town’s billing company and Mueller’s integration team. They will set up the formats for the above listed files and will then present the plan back to the town for approval. Upon approval, development will take place (usually 60-90 days) during which the files will be tested periodically for accuracy. The billing request and response files will be built and after a sample of meters have been installed and tested per the town’s installers. During this time, the integration team will speak to progress during the weekly calls and monthly meetings. Once the files have been tested, and town’s billing department is satisfied that the file transfer process is in place, the Integration will be considered complete.

INFRASTRUCTURE

The initial start of the infrastructure piece begins with a download of all meter locations as well as a list of existing utility owned assets (if any). This enables Mueller’s Engineering team to put together a Propagation Study (enclosed in our response). Once the study is created, Ferguson’s Project Team will come on-site and visit each of the proposed locations to determine viability. If anything needs to be moved or adjusted, this will go back to Mueller’s engineering team for a final review. Locations are then solidified, and an official Site Survey will be created including pictures of each location and a description of expectations for both parties (town and Ferguson) with a signature page needed from the town. Once complete, the material is ordered and locations are marked for utility locates. When locates are completed, utility poles

(if necessary) can be placed, and electrical work completed. Once electric is completed, the install company can be brought in to do the physical installs of infrastructure.

PHASE 2 – FULL DEPLOYMENT & TRAINING

At this point, the Installation Contractor will be instructed to install meters. Prior to the actual installations, a full day of training for the installers and Federalsburg field team to go over the following:

- Sentryx™ training – How to create a cell for installation.
- Handheld training – How to commission a meter.

INSTALLATION PROJECT MANAGER RESPONSIBILITIES

Installation Project Manager (PM) responsibilities include managing the day-to-day endpoint deployment process including safety management, quality control, personnel management, inventory management, schedule management, and scope of work (SOW) adherence. The installation sub-contractor PM will work on premise at the Federalsburg during the entire endpoint deployment phase. The chosen installation sub-contractor PM will be tasked with ensuring that installation services are carried out in a safe and professional manner that complies with the scope of work generated by Ferguson and Federalsburg staff, the manufacturer’s recommended installation specifications, and all other applicable local, state, and federal regulations.

INVENTORY MANAGEMENT

The chosen installation sub-contractor will establish its inventory control system in anticipation of receiving, managing, and reconciling allotments of meters and installation materials. Ferguson or Federalsburg, depending on agreed arrangements, shall accept delivery of the inventory and make it accessible to our approved Installation Partner. Then they will then pick, stage, and distribute meters and installation materials to the installation technicians. Inventory will be managed by Ferguson on behalf of Federalsburg and reconciled by way of completed work orders or documented inventory transfers.

TRAINING

Training will be conducted in phases throughout the implementation of your AMI system. Our project training is to ensure that we can provide the highest level of onsite support and assistance. Ferguson will provide training to key stakeholders involved in the deployment and operation of the System. This service provides training that builds upon knowledge transferred from Ferguson Project Team. Initially, the trainer will work with key town project member to ensure new processes and procedures are implemented as efficiently as possible.

As part of our training approach, Ferguson will provide both direct classroom training and “Train the Trainer” training on the following: System administrator training, best practices, infrastructure equipment, and general user training sessions. Training is also available utilizing modularized WebEx (Internet) training sessions covering foundation topics plus any new system enhancements. In addition, all materials are subjected to

manufacturer’s warranty. Ferguson will help service the warranty process through RMA’s and coordinating with the manufacturer.

Expectations are that the training plan would address the following:

- **Network Deployment Training:** This training will be conducted after receipt of network equipment and in conjunction with field services installation.
- **Meter/Endpoint Testing Training:** This training is scheduled based on the planned shipment of meters.
- **Sentryx™ Application Training:** This training is scheduled based on planned meter deployment.

In addition to the above training, during the initial stages of system deployment Ferguson will provide the training targeting a “Train the Trainer” concept with direct “on-site” classroom training and “in-field” hands on training. This portion of the proposed training program includes a post training assessment with the utility to identify learning gaps normally associated with the following:

- Network Deployment Training
- Collector Installation
- Collector components
- Collector installation & mounting
- Configuring the backhaul
- Testing battery and power configuration
- Security Considerations
- Configuring collector in Sentryx™
- Managing collector in Sentryx™
- Installation best practices on all network devices
- Endpoint Diagnostics & Troubleshooting

PROJECT COMPLETION/CLOSING

Once the Deliverables of the Project and the installation of all meters is completed by the town, we will schedule a Closeout Meeting. Immediately prior to the close-out, Ferguson will conduct a full day of training for all town associates that need training. This will conclude the training portion of the project. The following day, a Close-Out meeting will be conducted to cover all aspects of the project, discuss any lessons learned and move system from a “Deployment” stage to a “Support” stage. The Close-Out document will be reviewed and at the end of the meeting, will be delivered to the town for signatures.

SYSTEM MAINTENANCE

Although annual Sentryx™ hosting fees will cover software maintenance, radio endpoint firmware updates, cellular backhaul data fees, and provide dedicated system monitoring and optimization from Mueller’s Network Operations Center, the town may determine that ongoing maintenance support for network hardware be needed to alleviate any concerns regarding limited local resources, expertise, and the uncertainty of device replacement costs. Ferguson has experience customizing network maintenance agreements to meet the specific needs of a utility and will build a separate maintenance agreement document for review and collaboration. A sample maintenance agreement has been attached in the appendix.

SECTION 5 – REFERENCES

City of Emporia, VA

1921 Sunnyside Road Emporia, VA 23847

Contact: Melvin Prince, Director of Public Works

Phone: (434) 594-4067

Email: mprince@ci.emporia.va.us

Number of endpoints: 3,200 Endpoints, SSM, AMI

Description: The City of Emporia, VA chose Ferguson as its vendor for their AMI Project in early 2020. Ferguson managed the deployment of this system over a 12-month period with their installation partners. The City is extremely satisfied with its experience working with Ferguson as well as the Mueller AMI system that it now operates. Emporia also chose to deploy a customer portal along-side the AMI system which they are seeing great results in participation from their end-users. The meter they chose was the Solid-State Meter (SSM) for all sizes 5/8-2.”

Town of Galena, MD

101 S Main St, Galena, MD

Contact: Kathleen Billmire, Town Facilities

Phone: (410) 648-5151 x305

Email: kbillmire@townofgalena.com

Number of endpoints: 330 End Points, SSM, AMI

Contract Dates: 2/8/2019-6/30/2020

Description: Galena, MD deployed the Mueller AMI system in 2020. They chose Ferguson as their vendor for this project and went with the Solid-State Meters. They are smaller in size than our average AMI customer, totaling around only 300 endpoints. This goes to show the flexibility of the Mueller AMI system with projects as small as 300 endpoints or as big as 130,000 endpoints to date. Galena runs at 100% read rate daily and are very happy with their decision to go with this AMI system.

Pace Water System (FL), Inc.

4401 Woodbine Road, Pace, FL 32571

Contact: Randy Hunsucker, AMI Specialist

Phone: (850) 377-4032

Email: rhunsucker@pacewater.org

Contact: Damon Boutwell, P.E. General Manager

Phone: (850) 529-5137

Email: dboutwell@pacewater.org

Number of endpoints: 18,800 endpoints, AMI

Description: The Mi.Net infrastructure has been installed, tested and system acceptance was completed the summer of 2015. Pace water has currently self-installed 18,050 endpoints deployed throughout their system and is headed towards 25,000 for their system.

APPENDIX



Service Level Agreement for Town of Federalsburg, MD AMI Network Maintenance Agreement

Overview

Summary of the service level commitment provided by Ferguson to Federalsburg is as follows:

- 100% of the commissioned infrastructure devices will be reporting to the data server
- Acknowledgement and response regarding all service requests within 2 hours
- Local troubleshooting with 48 hours, if required
- Problem resolution of most requests within 5 to 10 business days
- This agreement covers labor only to service utility-owned network infrastructure devices

Assumptions

Single Point of Contact (SPOC): Utility will provide Ferguson and Mueller with a single point of contact for notification and communications relating to the assets covered by this plan. The SPOC will be responsible for the coordination of activities and responsibilities assigned to the utility.

Access: Where and when required, utility will arrange for timely access to all assets covered under this plan, i.e. locked gates or ladder cages, secure buildings serving as sources of electrical power, etc. The utility will coordinate access to any assets installed on third party sites, and ensure access to locked gates, buildings, or any area that a network asset is installed which may require special considerations to service. If requested by Ferguson, the Utility will make attempts to arrange for safe access to assets through local law enforcement, etc.

Covered Assets: Covered assets are defined as data collectors, antennas, filters/amplifiers, required cables and fittings, DC-powered signal repeaters and AC-powered signal repeaters that are installed as a component of this project and listed in the final network design document developed by Mueller.

Stock: Ferguson will carry spare stock for efficient repair and/or replacement of network devices.

AMI tasks included in the annual fee:

- Troubleshooting, repair and/or replacement of existing data collectors and signal repeaters
- Removal and/or decommissioning of a data collector or repeater
- Backup battery replacement for all data collectors at operational years seven (7) and fourteen (14)

- Quarterly reporting of maintenance activities and monitoring – format to be mutually agreed upon
- Traffic control, if required, during maintenance activities

AMI equipment tasks not included in annual fee, but price quotation provided following agreed-upon scope and site survey:

- Physical relocation of a collector or repeater after the final network design is finalized and approved.

Infrastructure Troubleshooting Steps: Hosted Environment

Ferguson will respond to all utility-generated service requests within two (2) hours or will communicate the status and corrective action plan of a known alert to the utility in the same timeframe. If local troubleshooting is required, Ferguson personnel will be onsite within forty-eight (48) business hours. Ferguson will attempt to resolve all service requests within 3 to 5 business days, and if such service request cannot be so resolved, Ferguson will provide the utility with daily updates and action plans until the service request is resolved. Work above sixty (60) feet may take longer than five (5) business days.

Step 1: Notification of Outage

Ferguson and/or the Mueller Network Operations Center (NOC) will notify the SPOC of the potential outage condition. A ticket will be opened with the Mueller NOC for tracking the incident and the ticket number will be provided to the utility's SPOC for tracking.

In the event the Utility would need to alert Ferguson of a potential outage (i.e. physical damage, vandalism, etc.); reporting will be initiated through the Mueller NOC. Mueller Systems will open a ticket for the incident, and future communications on the issue will be directed through the SPOC.

Step 2: Remote Troubleshooting

In reaction to suspected outage, Ferguson and the Mueller NOC will perform corrective actions to attempt to recover the outage. This will include:

- (1) Troubleshooting and restoration attempts on the cellular backhaul connection (which will include working directly with third party provider AT&T)
- (2) Remote Reboot (if the collector is responsive on the cellular backhaul)
- (3) Additional troubleshooting steps as required attempting to determine root cause of the outage.

In the event remote troubleshooting does not remedy the outage, the SPOC may be contacted to check for power to the device. If there is no power present at the electrical connection to the collector, Ferguson will refer the outage back to the utility so that power can be restored by the

local electric provider. The incident investigation will be suspended until power is restored and the Ferguson is able to determine status and proceed.

If local troubleshooting reveals no outright issues with the collector or repeater, AC power is present, then escalation is required by Ferguson for a service technician to come onsite. All actions taken will be logged in the Ferguson/Mueller troubleshooting ticket and included in a final incident report.

Step 3: Technician Dispatch for On-Site Troubleshooting or Replacement

Ferguson/Mueller, or its trained subcontractor, will be dispatched to the site for any outage that cannot be remedied through previous troubleshooting. Ferguson/Mueller will coordinate with the SPOC for work during normal business hours Monday through Friday 8am to 5pm. The onsite technician is trained in advanced troubleshooting and will act to remedy the outage. As-found photos will be taken to document the site before any work is done, and As-Built photos will be taken as the technician leaves the site. If replacement of the network device is required, the technician will use a new device from Ferguson's stock. A summary of all work will be returned to the utility and logged in the case file that tracks the issue resolution through completion for archival purposes.

Warranties and Fees

In consideration of the annual fee, this plan covers all labor for the servicing of network assets and managing infrastructure during the year such fee was received by Ferguson.

This service agreement does not alter, change or affect the standard manufacturer warranty related to the equipment and hosted software purchased by the utility.

If the utility maintains annual extended warranties, starting in year two (2), on all data collectors and signal repeaters, then the failed components, provided they meet warranty requirements, will be repaired or replaced through Mueller's Return Merchandise Authorization (RMA) process at no charge to the utility. Ferguson will be responsible for processing RMA's.

Warranty Note: If any component failure is due to acts beyond the control of Ferguson or Mueller, e.g. acts of God, or third party intentional or willful misconduct, upon notification by the utility and acceptance by Ferguson/Mueller of such failure, Ferguson and Mueller will use commercially reasonable efforts to address such failure at the then-current component pricing or a contracted price with the utility. These costs shall be in addition to any previously paid annual maintenance fee. See Mueller's End User's License Agreement (EULA) for more detail on warranty coverages for infrastructure components.

Financial Benefit Analysis Questionnaire

Customer Name: _____

Current Metering System

Meter Technology Deployed: Touch/Manual, AMR, AMI	
Number of Meters in System	
Average Age of Meters	
Number of Staff Required to Read and Bill	
Average Staff Pay (Including Overhead and Benefits)	
Number of Vehicles Related to Meter Reading	
Annual Cost to Own and Operate (1) Service Vehicle	
*Annual Fixed Water/Sewer Revenues (See Definition Below)	
**Annual Variable Water/Sewer Revenues (See Definition Below)	
Annual Operating Expenses	

Estimated Cost Reductions with Automation (AMI)

Estimated Staff (Reading and Billing) Available to Re-deploy	
Estimated Number of Vehicles Available to Re-deploy	

Definitions:

* **Fixed Revenue:** revenues collected from customers based off the flat fee established per meter size

** **Variable Revenue:** revenues collected once customers use more water than established flat rate

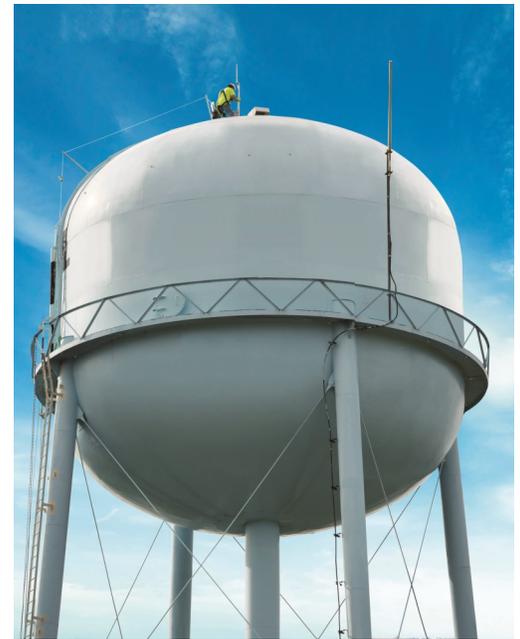
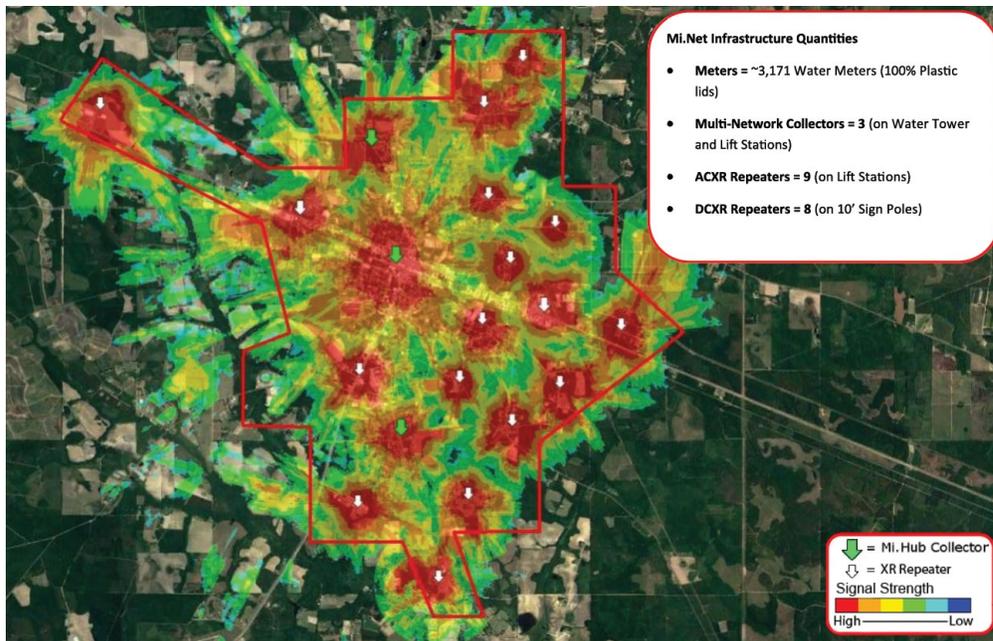
Meter & Automation

TECHNICAL BULLETIN

Input Requirements for an AMI Network RF Propagation Study

High-performing and cost-effective AMI network designs depend upon accurate inputs for the computer modeling. And although the software used by network providers accounts for weather, topography, foliage density and other ground clutter variables related to each AMI service area, the most-important inputs are supplied by the utility. These input requirements include:

- **All meter locations to be included in and covered by the network design** (acceptable formats include a KMZ file, shape file, or an Excel® spreadsheet containing either GPS latitude and longitude coordinates or 911 service addresses)
- **Meter quantity breakdown by size.** How many 5/8" x 3/4", 1", 1-1/2", 2", 3"... in the system?
- **Type of meter pit lid material** — plastic, metal, polymer concrete — and the quantity or percentage of each type. For basement meter sets, there is an assumption that the radio endpoints will be installed on an outside wall.
- **Locations of all tanks, towers, lift stations and other assets** available to the utility for installing AMI network infrastructure such as fire stations, ball field lighting, buildings etc. Helpful information includes a brief description of each asset, GPS coordinates or 911 service address of each asset, height of each asset for optimum antenna position and any other notes related to maximum height restrictions, permit requirements or other similar considerations.





ADDITIONAL REMARKS SCHEDULE

AGENCY Willis Towers Watson Northeast, Inc.		NAMED INSURED Ferguson Enterprises, LLC and Subsidiaries (See Attached Named Insured Schedule)	
POLICY NUMBER See Page 1		12500 Jefferson Avenue Newport News, VA 23602	
CARRIER See Page 1	NAIC CODE See Page 1	EFFECTIVE DATE: See Page 1	

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: 25 **FORM TITLE:** Certificate of Liability Insurance

INSURER AFFORDING COVERAGE: ACE Fire Underwriters Insurance Company **NAIC#:** 20702
POLICY NUMBER: RWC C67807029 **EFF DATE:** 05/01/2021 **EXP DATE:** 05/01/2022

TYPE OF INSURANCE:	LIMIT DESCRIPTION:	LIMIT AMOUNT:
Workers' Compensation & Employers Liability - WI Per Statute	E.L. Each Accident	\$2,000,000
	E.L. Disease -Pol Lmt	\$2,000,000
	E.L. Disease-Each Emp	\$2,000,000

FERGUSON ENTERPRISES, LLC
ACTIVE DBA SUBSIDIARY LIST

<u>Entity Name</u>	<u>Entity Name</u>
AC Wholesalers	Ferguson HVAC – EastWest Air
ACF Environmental (effective 11/16/2020)	Ferguson HVAC – Lyon Conklin
Action Automation, a Wolseley Industrial Group company (eff 8/20/2018)	Ferguson Integrated Services
Action Plumbing Supply (effective 7/15/2019)	Ferguson International
ADL (effective 7/16/2018)	Ferguson Panama, S.A.
Alaska Pipe & Supply	Ferguson Parts & Packaging
Amerock, LLC (effective 1/11/2021)	Ferguson Valve & Automation
Amerock Holdings, Inc. (effective 1/11/2021)	Ferguson Waterworks
Andrews Lighting & Hardware Gallery	Ferguson Waterworks - Municipal Pipe
The Ar-Jay Center	Ferguson Waterworks - Red Hed
Atlantic American Fire Equipment Company	Ferguson Waterworks EPPCO
Avallon Global	Ferguson Waterworks International
BAC Appliance Center	Galleria Bath & Kitchen Showplace
Bath + Beyond	Grand Junction Pipe (effective 9/24/2018)
Bayport Partners, LLC	HM Wallace, Inc.
Blackman Plumbing Supply, LLC (effective 12/11/2018)	H. P. Products Corporation
Brock-McVey (effective 7/30/2018)	HP Logistic, Inc.
Bruce-Rogers Company	Improvement Brands Holdings, Inc.
Build.com, Inc. (fka Improvement Direct, Inc.)	Industrial Hub of the Carolinas
Cal-Steam	Innovative Soil Solutions LLC (effective 7/29/2019)
Capital Distributing (effective 10/29/2018)	James Martin Signature Vanities, LLC (effective 1/28/2019)
City Lights Design Showroom	J&G Products
CFP	Jones Stephens Corp. (effective 8/13/2018)
Clawfoot Supply, LLC	Jones Stephens Global Sourcing (Wuxi) Ltd. (effective 8/13/2018)
Cline Contract Sales	J.D. Daddario Company
Columbia Pipe & Supply LLC (eff 3/13/2020)	Joseph G. Pollard Co.
Custom Lighting & Hardware	JWIT Hydrotherapy Bath Solutions (effective 3/16/2020)
Davies Water	Karl's Appliances
DBS Holdings, Inc.	Kitchen Art (effective 2/4/2019)
Dealernet	Lakeland Plumbing Supply, LLC
Duhig Stainless (effective 3/12/2018)	Lighting Design Center
Energy & Process Corporation	Lighting Unlimited
Equarius Waterworks, Meter & Automation Group	Lincoln Products
Factory Direct Appliance	Linwood Pipe and Supply
Ferguson Bath & Kitchen Gallery	Living Direct, Inc.
Ferguson Bath, Kitchen & Lighting Gallery	Louisiana Utilities Supply Company
Ferguson.com	LUSCO
Ferguson CESCO, Inc.	Mahwah Realty, LLC
Ferguson Direct	Maskir Properties Inc.
Ferguson CeSCO, Inc.	Matera Paper Company, Inc.
Ferguson Enterprises, Inc.	Max Industries, Ltd. (effective 1/28/2019)
Ferguson Enterprises, LLC	McFarland Supply
Ferguson Enterprises of Virginia, LLC	MFP Design (effective 3/25/2020)
Ferguson Facilities Supply (FEI)	Michigan Meter
Ferguson Facilities Supply (for Matera Paper -TX only)	Millennium Lighting, Inc. (effective 8/27/2018)
Ferguson Facilities Supply, Dogwood Building Supply Division (eff 10/22/18)	Mission Valley Pipe (effective 6/3/2019)
Ferguson Fire & Fabrication, Inc.	Mississippi Utility Supply Co. (MUSCO)
Ferguson Fire & Fabrication International	Myers HVAC Supply
Ferguson Heating & Cooling	National Fire Products
Ferguson Hospitality Sales	New Jersey Plumbing Group, LLC
Ferguson HVAC – Air Cold	New York Plumbing Designs, LLC

FERGUSON ENTERPRISES, LLC
ACTIVE DBA SUBSIDIARY LIST

PAGE 2 - DBA & SUBSIDIARY LIST	
<u>Entity Name</u>	<u>Entity Name</u>
	Wolseley de Puerto Rico, Inc.
North Point Plumbing Supply, LLC	Wolseley Financial Services
Orange County Plumbing Group, LLC	Wolseley Industrial Group
Palm Designs LLC	Wolseley Integrated de Mexico S.A. de C.V.
PCS Industries	Wolseley Investments North America, Inc.
PL Sourcing	Wolseley Investments, Inc.
Plumb Source	Wolseley NA Construction Services, LLC
Plumbing Décor	Wolseley NA Finance, Inc.
Plumbing Holdings Corp.	Wolseley Staffing de Mexico S.A. de C.V.
Pollardwater	WPCC Forwarding
Powell Pipe & Supply Co.	Wright Plumbing Supply
Power Equipment Direct Inc.	
Process Instruments & Controls, LLC (effective 9/9/2019)	
Professional's Bath Source	
PV Sullivan Supply	
Ramapo Wholesalers	
RB Huntington Realty, LLC	
Rencor Controls (effective 3/16/2020)	
Robertson Supply (effective 11/19/2018)	
Rocky Hollow Realty, LLC	
Renwes Sales	
Redlon & Johnson	
Reese Kitchen, Bath & Lighting Gallery	
S.W. Anderson Sales Corporation (effective 11/11/2019)	
Safe Step Walk in Tub, LLC (effective 7/31/2018)	
SG Supply Co.	
Ship-Pac	
Signature Hardware	
SimplyPlumbing, LLC	
SOS Sales	
Southampton Realty Corp.	
Stock Loan Services, LLC	
Supply.com	
Tarpon Wholesale Supplies	
The Davidson Group	
The Plumbing Source	
The Stock Market	
Tinkar Realty, LLC	
TotalFab, LLC	
TPW Kitchen & Bath	
Wallwork (effective 12/10/2018)	
Wanlyn Realty Corp.	
Waterworks Industries	
Webb Distributors	
Western Air Supply	
Westfield Lighting	
Wholesale Group	
Wholesale Group Operations, Inc.	
Wolseley (Barbados) Ltd	