# STILES CO
SMART WATER SOLUTIONS

EXECUTIVE SUMMARY, SCOPE OF SERVICES & EXPERIENCE

PROJECT GOALS

- ❖ Enhance utility operations
- ❖ Automatically collect timely meter readings and reduce billing errors
- ❖ Address UAW (Unaccounted-for-water)
- ❖ Provide an effective solution to help with high water bill complaints
- ❖ Provide the utility with comprehensive, but easy to understand analytics regarding meter data and management of the total water distribution system.
- ❖ Implement a software suite that offers actionable information via historical consumption graphs, brings alerts and alarms from the meters to the forefront and provides other valuable information to help operational efficiency.
- ❖ Provide a Customer Portal via a website and smartphone application that will offer the end user a secure and easy way for them to monitor their water usage data and set up custom leak alerts.
- ❖ Security – the desired solution must provide a secure and safe method of outputting meter data and hosting said data, without compromising the private information of the MBTS residents.

THE BEACON AMA SOLUTION

The proposed Beacon AMA Solution is composed of the BEACON AMA Software as a Service and the ORION Network as a Service, in which each water meter is paired with an endpoint with a cellular modem. The endpoints then use the existing cellular machine-to-machine network to communicate, making proprietary fixed network data collectors and repeaters unnecessary. Our solution eliminates the need to purchase, erect, maintain or replace any infrastructure, data collectors, repeaters, gateways, etc. and provides **all of the benefits of a fixed network system and near real-time notifications without the hassle!** The town will **not** have to install or maintain their own proprietary network**.**
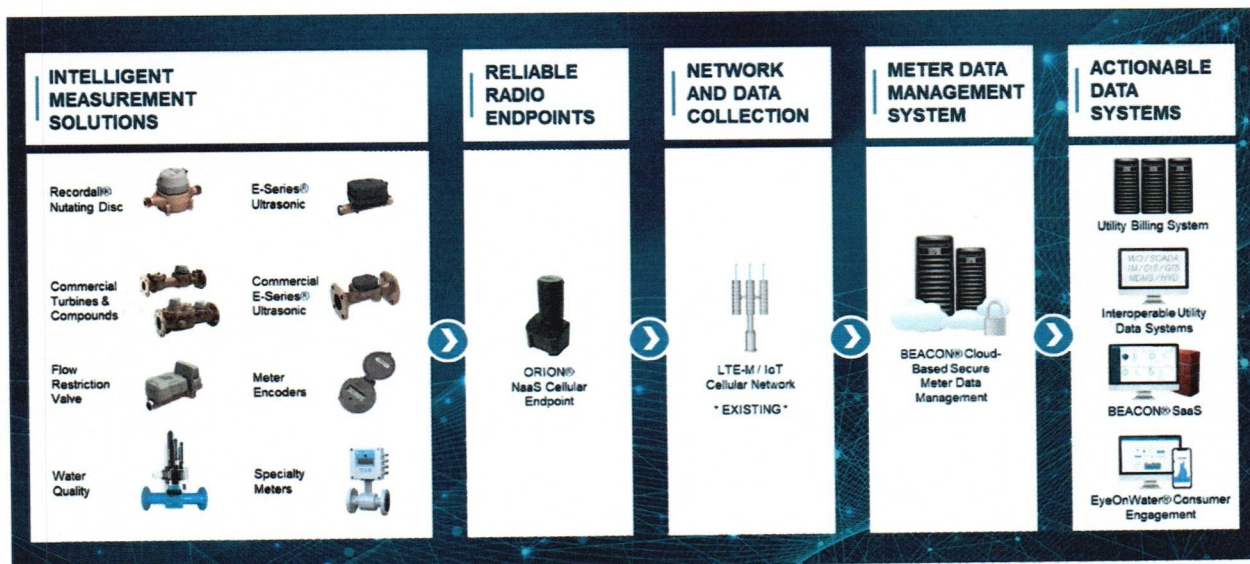
BADGER ULTRASONIC E-SERIES METERS

In 2009, Badger Meter was the first meter manufacturer to introduce the residential size ultrasonic meter in North America.
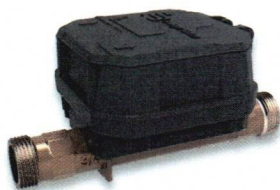
- Field Proven – introduced in 2009. Today we have a full line up to 8" and there are over 70 utilities in New England utilizing the ultrasonic meter in some capacity
- No moving parts = no wear and tear
- Long-term sustained accuracy at +/- 1.5%
- Extended Low Flow Accuracy within =/- 3%
- Greater turn-down ratio for extended flow ranges and increased revenue
- The ultrasonic meters come with the following alerts: Leak, Reverse Flow, Exceeding Max Flow, Low Temperate (ambient), Encoder error, Tamper, and optional Pressure Sensors and Water Temperature Sensors.
- 20-year full warrant on accuracy

METER DATA, ALERTS/ALARMS ARE REMOTELY TRANSMITTED TO THE OFFICE WITHOUT NEEDING TO GO COLLECT THEM. HERE ARE THE ALERTS THAT WILL BE AVAILABLE:

- Potential Leak
- Exceeding Max Flow (helps with meter-rightsizing)
- Low Temperature (catch a freeze up before it happens!)
- Low Battery
- Tamper
- Reverse Flow
- Pressure (from meters with pressure sensors)
- Water Temperature (from meters with water temperature sensors)
- Empty Pipe (meter removal)
- Encoder Error

CUSTOMER PORTAL

Our solution comes standard with a built-in consumer portal. The EyeOnWater Consumer Portal provides a secure, easy way for end users to monitor their water usage data and set up custom leak alerts.

- Notifications - The portal provides a notification system for the utility to broadcast messages to their customers through the portal (similar to reverse 911).
- The customer portal comes standard with our proposed solution and is developed, supported, and owned by Badger Meter – it is not a third-party offering.
- The portal is available to the end users via a secure website or smartphone application.

BEACON AMA SOFTWARE SUITE

- Cloud based software that can be accessed anywhere internet is available
- Unlimited users (no seat-licenses)
- Developed, owned and managed by Badger Meter
- Introduced and available since 2014!
- Provides 15-minute interval data that can be easily accessed and viewed in 15-minute increments, hourly, daily, weekly, monthly and annually (available in graphs, excel, etc.).
- Provides customizable dashboard to delivery information in an easy-to-understand format matched to each user's needs.
- Includes unique alert conditions to define and monitor exceptions
- Offers Consumer engagement tools including online access and smartphone apps to enable access to individual customer information
- Provides a Secure, hosted platform with API feature to easily share data across utility applications
- Includes Automatic software updates
- Integrates with the towns existing CUSI utility billing software

NETWORK

The proposed Beacon AMA Solution is a Cellular AMI system. This means that the town will not have to purchase, erect, maintain or replace their own proprietary network. Benefits of Cellular AMI Include:

- It eliminates the need to purchase, install, maintain, and replace data collectors, gateways, repeaters, etc. MBTS is a small town without ideal locations to mount data-collectors or the personnel to maintain a network.
- The Cellular AMI System provides a true Network-as-a-Service Solution - The network is monitored, managed, and maintained by Badger Meter, and provides network uptime of 99.5%. MBTS is a coastal community which introduces concerns of inclement weather and mother nature events.
- Security - network communication occurs over a private network, specifically a MPLS (Multi-Protocol Label Switching)-based VPN (Virtual Private Network) service and the data never touches the public internet.
- **Future-Proof:** The Cellular AMI Solution removes the concern of technology obsolescence for the town and provides a true 20-year system. Most major meter manufacturers are focusing their attention on developing IoT driven networks (like M2M Cellular) and there is concern that the traditional fixed network systems of today will not be supported for the suspected life of a system.
- Cellular Endpoints offer the ability to read the system via mobile AMR as well as a back-up (redundancy)

SECURITY

The ORION Cellular endpoints securely transmit metering data in an encrypted format. What's more is that network communication occurs over a private network, specifically a MPLS (Multi-Protocol Label Switching)-based VPN (Virtual Private Network) service. Hence, your important metering data is safe and **never touches the public internet**.

The BEACON AMA software platform is ISO 27001 certified and SOC 2 examined against the Security, Availability, and Confidentiality Trust Services principles. Badger Meter's data-hosting provider's IT infrastructure is designed and managed in alignment with best security practices and a variety of IT security standards, including:

- SOC 1/SSAE 16/ISAE 3402 (formerly SAS 70 Type II).
- SOC 2.
- FISMA, DIACAP and FedRAMP.
- PCI DSS Level 1.
- ISO 27001.
- ITAR.
- FIPS 140-2

PROPAGATION STUDY

Our network engineers have performed a full cellular coverage strength analysis for all supplied addresses utilizing the machine to machine (M2M) cellular network. Test results confirm excellent conditions for a successful ORION Cellular deployment and it was **determined that there is 100% LTE-M coverage available.**

Multi-Carrier Approach: Badger Meter employs a multi-carrier strategy, partnering with the leading carriers in the US. This enables us to offer the best possible coverage and performance to support a system wide deployment without the need for a secondary reading method. The initial Coverage Analysis results indicate there is 88% coverage with the Verizon Machine Network and 12% coverage with the AT&T Machine Network.

EQUIPMENT BEING PROVIDED

The only equipment necessary for this project are the following:

- Badger Meter Ultrasonic Water Meters
- Orion Cellular Endpoints
- IR Communication Device (Activation Tool)
- Windows Tablet and IR Cable (for troubleshooting and activating endpoints)

ENDPOINT ACTIVATION

Orion Cellular endpoints **do not require any field programming**. The Orion Cellular endpoints feature Smart Activation : the endpoint begins broadcasting data when the encoder senses the first uses of water. With that said, we do recommend using an Activation Device, which will confirm encoder connection and network communication – this typically takes between 30 seconds and 1 minute. The tool will allow the installer to confirm that the radio is connected

properly to the meter and that it connects successfully to the cellular network, before they leave the appointment.

BEACON® AMA users can check the activation status of ORION Cellular endpoints with the ORION Endpoint Status tool. A few seconds after activation, the tool displays ORION Cellular endpoints assigned to you. The browser-based tool can be viewed on a computer or mobile device. An Internet connection is required. https://orionstatus.beaconama.net.

UAW ASSISTANCE
Beacon AMA Solution – Features to Reduce Non-revenue Water
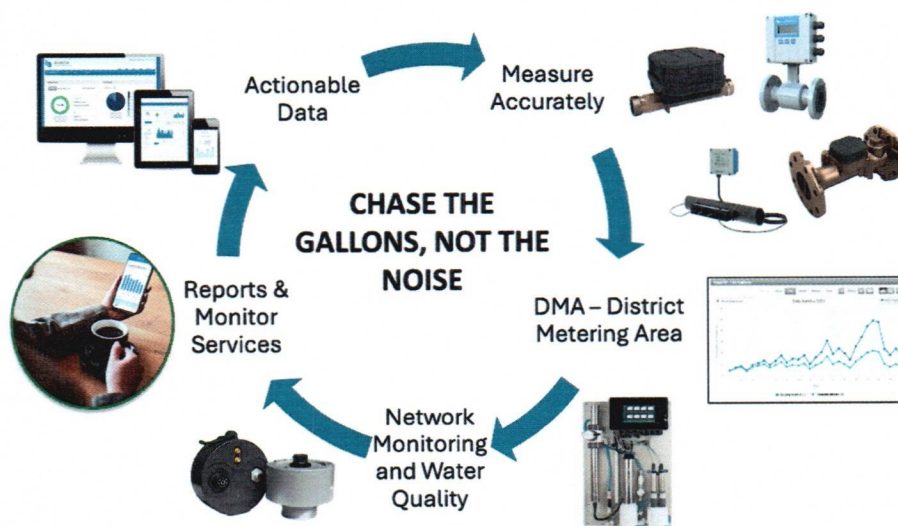
1. **Meter Upgrade Project** – by doing a complete meter upgrade project, this enables the opportunity to right-size meters, make sure all services are metered, confirm that the meters are accurate, etc.

2. **District Metering Area (DMA)**
   a. Beacon AMA software will calculate unaccounted for water by continuous monitoring of water produced vs. water distributed.
   b. The Beacon Software will provide a dashboard to view DMA info and an easy-to-understand line-graph that displays water being produced and water being used through every meter.

3. **Badger Meter Remote Network Monitoring Solutions – Badger Meter offers various sensors that can be added into the distribution system to provide:**
   a. Acoustic Leak Detection
   b. Burst Detection & Locating
   c. Pressure Monitoring
   d. Water Quality Monitoring

4. **Leak Alarms included in every meter**
   a. Flags an account for continuous usage, notifies the utility and the end user via the customer portal of potential leaks after the meter

5. **Built-in Pressure Sensors at the meter**
   a. Measures pressure at the meter and alerts the system of drop or increase in pressure

6. **Reverse Flow Alerts**
   a. The meters provide a reverse flow alarm that is transmitted back to the software. This could be a simple indicator of a service line leak or leak in the main in that area.

Experience, Financial Strength, and Stability

BADGER METER, INC.

- Badger Meter Inc. was founded in 1905 in Milwaukee, WI and is the top water meter manufacturer in the United States
- Badger Meter's core competency is the municipal water industry.
  - 76% Utility Water Market & 24% Industrial Market
- Dependable/accurate meters – mechanical and ultrasonic
- Reliable AMR/AMI Endpoints: less than ½ of 1% failure rate
- Integrated technology company providing a comprehensive suite of flow measurement, water quality, distribution pressure monitoring and distribution leak detection with software / analytics solutions
- NYSE Listed (BMI) - $3.5B market capitalization
- 9 Global Manufacturing Sites and **5 Global R&D Centers**
- Over 2,000 Employees

Market Share

U.S. Water Meter Market — 25% to 30%

U.S. Water AMI/AMR Market — 24% to 28%
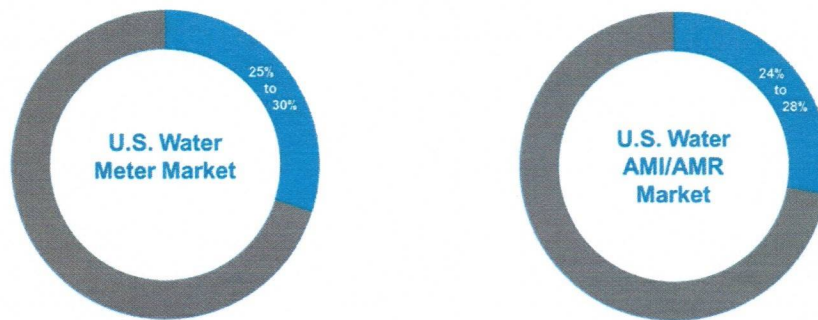
Badger Meter is a publicly traded company that has been in business for over 119 years. Please find an annual report by following this link: investors.badgermeter.com/financials.

Badger Meter | ATi *A Badger Meter® Brand* | s::can *A Badger Meter® Brand* | Syrinix *A Badger Meter® Brand* | telog *A Badger Meter® Brand*

STILES CO.

- Stiles Co was founded in Norwood MA in 1983 and is the premier provider of water meters and meter reading systems in New England.

- Stiles Co. has been the authorized Badger Meter distributor in New England for over 42 years.

- Stiles Co's primary focus is in water meters and meter reading systems and servicing our meter customers – we are not a typical waterworks supply house

- Stiles Co provides in-house technical support and training services, along with loaner equipment, and field support.

- Stiles provides a fully stocked warehouse with daily delivery services

- Regan Supply and Testing – Stiles Co is the parent company of Regan Supply and Testing, which is the premier water meter testing company in New England enabling us to support our meter customers with superior service.

Please find a statement from our bank below. Stiles Co. is a privately held company and additional financial documents can be provided at the time of award.