



Town of Carthage AMI Project - Frequently Asked Questions

1. Why is the Town upgrading my water meter?

The Town approved the upgrade of its existing manual-read system to a near real-time cellular based reading network, referred to as Advanced Metering Infrastructure (AMI), following years of consideration, analysis, and planning. In the initial phase, a portion of the Town's meters will be replaced, and the Town's utility billing software will be integrated with the new AMI Meter Data Management System (MDMS), so the entire process from the meter to the bill will be tested and verified prior to Town-wide installation. The Town will be installing meters and equipment manufactured by Badger Meter and manage the data through the Badger Beacon comprehensive MDMS, thereby expanding the benefits of its existing metering equipment.

2. Why is the Town changing the way it reads the meters?

The enhancement of existing equipment will provide 720 reads during each monthly billing cycle rather than 1 read every 30 days as is currently designed. This detailed usage data will enable the Town to enhance customer service through proactive lead identification and notification, reduce leaks to promote resource conservation, and improve utility operational efficiencies by automating its meter reading process and providing remote system monitoring and troubleshooting capabilities.

3. How does the new system work?

The Advanced Metering Infrastructure (AMI) system is made up of several advanced or more commonly referred to as "smart" components that communicate using cellular based technology. Inside the meter box, a small radio is connected to the water meter that records and transmits a reading on hourly intervals to the Town's existing cellular network towers. These data transmissions are encrypted, last only several milliseconds, and are securely transmitted up to four times per day.

4. What is the technology that reads my meter and sends it to the Town? Is it safe?

The new meters use wireless radio signals, similar to wireless Internet and cable TV, to send and receive information from the Town's Utility and Billing Staff. The meters and communication system are regulated to meet all Federal Communications Commission (FCC), safety standards and codes. There is no personal identifying information captured or transmitted by the meter radio.

5. Do I have to pay for my new meter?

No, the Town pays for the costs of the meters and their installation. The Town has prepared for the cost of this project as part of its annual capital improvement planning process. This project does not have any impacts to the existing water and sewer rates.

6. Have the new meters been tested for accuracy?

Yes, all new meters have been tested and guaranteed accurate by the manufacturer, Badger Meter, in compliance with American Water Works Association (AWWA) accuracy standards. Additionally, the design of the installation process includes a testing phase, which allows a sub-set of the meters to be installed and the utility billing software to be integrated to the MDMS, so the entire process from the meter to the bill will be tested and verified for accuracy prior to Town-wide installation.



Will my water bill increase?

The new meters are highly accurate and will measure customer usage on hourly intervals as compared to once every month. Your upgraded meter measures the amount of water used during the billing period by measuring how much water passes through the meter, which is the same measurement process as your old water meter. New meters may register lower flows that your older meter might not have been able to capture, which means that although your bill may increase, your meter is now accurately recording your water usage. The benefits of improved and more accurate usage information to the Utility and customers will reduce wasted water through the enhanced system capability to send alerts and notifications such as stopped meter and customer leak detection.

8. Could I have a leak that is causing extra water usage?

If you have an unexplained spike in your water usage or show continuous water flow, it may be an indication of a leak. Utility staff will be able to identify a leak based on your consumption profile and leak alarms from the advanced meter that will immediately notify staff and you if a leak is identified.

9. Is the AMI system secure?

The AMI system and data utilizes best practices for security and safeguarding customer data. No customer identifying information is transmitted. The data and system is ISO 27001-certified and SOC 2-compliant. Utility staff access to the system is password protected and is also encrypted.

About the Installation Project

10. Who is doing the work for the project?

The project is being managed for the Town by MeterSYS, a Raleigh-based advanced metering consulting firm, specializing in advanced metering technology services. MeterSYS will be responsible for overall management of the project along with the prime meter manufacturer, Badger Meter. Field personnel working on the project will be properly trained, carry proper identification, and have successfully completed a background check. At no time will field personnel need to enter a residence.

11. How long will I be without water during installation?

While replacement times will vary, replacing a meter should take no longer than 15 minutes for residential meters, during which the water will be shut-off for a portion of that time. The installation crew will make every effort to keep the interruption to your service to a minimum. Commercial and industrial customers will be contacted in advance to schedule the installation to minimize the disruption to their business. After the new meter has been installed, a door tag will be placed on the front door notifying customers the work has been completed.

12. Who do I contact with questions relating to my meter replacement?

You can contact the Town's installation contractor, G2 Utilities, by their toll-free customer contact line that is staffed 24/7. Please call them at 252-399-9125 with questions or concerns regarding your meter replacement or to schedule the replacement of your meter.



About Radio Frequencies

13. What is Radio Frequency? How is it measured?

Electromagnetic fields, radio waves, microwaves and wireless signals are collectively referred to as Radio Frequency (RF) energy. RF energy is all around us. It's used in various electronics and appliances, including radio and television broadcasting, cellular telephones, satellite communications, microwave ovens, and radars to name a few.

Comparison of RF Power Density in the Everyday Environment

Device Relative Power Density in microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$)

Low	FM radio or TV broadcast station signal	0.005
	SmartMeter™ device at 10 feet	0.1
	Cyber cafe (Wi-Fi)	10-20
	Laptop computer	10-20
High	Cell phone held up to head	30-10,000
	Walkie-Talkie at head	500-42,000
	Microwave oven, two inches from door	5,000

Source: Richard Tell Associates, Inc.³

Source: Bender, Klaus, PE. "No Health Threat from Smart Meters." Utilities Telecom Council. 2010. <https://www.nema.org/Technical/Documents/SmartMeter-NoHealthThreat.pdf>

14. Is there a health hazard associated with radio frequency?

According to several reputable organizations, including the [World Health Organization](#), there is no demonstrated cause and effect relationship between low levels of RF exposure and adverse human health effects.

15. How is RF regulated? Are there any safety limits on human exposure to wireless and RF fields?

Since 1996, the Federal Communications Commission ([FCC](#)) has required all wireless communications devices sold in the United States meet minimum guidelines for safe human exposure to radio frequency energy. The limits established in the guidelines are designed to protect the public health with a very large margin of safety. The radio transmitters are tested to the worst case scenario and conditions against the maximum permissible exposure limit set by the FCC. When an advanced meter is transmitting, the exposure to radio frequency energy is more than 16 times lower than the exposure limit set by the FCC. For information and additional resources on the County's AMI network and RF safety, view the data sheet [here](#).

Since March 27, 2013, the FCC has taken additional strides to periodically review existing rules and RF exposure guidelines as a good government practice and provide the opportunity for open dialogue between qualified expert agencies and organizations, as well as the general public to keep or modify current rules and policies on RF exposure. To learn more about the FCC's policy on human exposure and RF safety, visit its FAQ page [here](#). Together with the FCC are other governmental agencies that consistently monitor and regulate RF safety. These federal health and safety agencies include the [FDA](#), National Institute of Environmental Health Sciences ([NIEHS](#)) and the Occupational Safety and Health Administration ([OSHA](#)).