

# WATER METER REPLACEMENT PROGRAM DETAILS

The City of Ames Water Meter Division is dedicated to keeping the City's water meters as accurate as possible. Water meters are the "cash registers" for the water and wastewater utility, so their accuracy is of vital importance to the utility and its customers. Revenues generated from the meters support the Water & Pollution Control Department's operations and projects. These revenues also fund maintenance of the City's water distribution and sewer collection systems, as well as meter-reading and billing activities.

The City's lost-water rate has been between four and eight percent for many years, while the national average is at or above 15%. Ames' lower lost-water rate is accomplished through accurate metering, as well as maintenance and upgrading of the water distribution system. At the current water and sewer rates, each percent of water loss represents approx. \$222,000 of lost water and sewer revenues annually.

Water and sewer rates can be found at [www.CityOfAmes.org/Doing-Business/Utility-Rates](http://www.CityOfAmes.org/Doing-Business/Utility-Rates) or by contacting Utility Customer Service at 515.239.5120.

# WATER METER INSTALLATION AND REPAIR EXPERTS

The Water Meter Division has trained Water Meter Technicians who may come to your residence to provide you service.



**Ben Ingham**  
Employee  
Since 2014



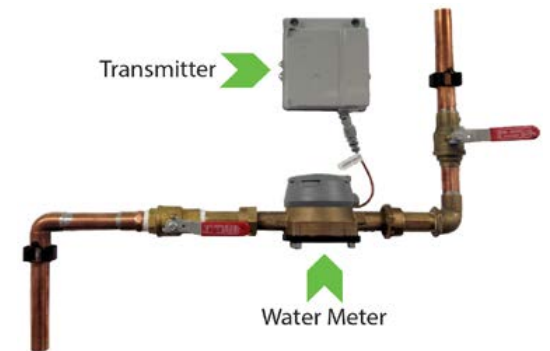
**John Sanderson**  
Employee  
Since 2011



**Josh De Vos**  
Employee  
Since 2014

**Water Meter Division**  
300 E. 5th Street, Building 2  
Ames, Iowa 50010  
515.239.5151  
[www.CityOfAmes.org](http://www.CityOfAmes.org)

# AUTOMATIC METER READING INSTALLATION PROGRAM CUSTOMER GUIDE



# AUTOMATIC METER READING

## UPGRADE

The City of Ames Water and Pollution Control Department is in the ninth year of a project to install an Automatic Meter Reading (AMR) system for all water meters in the city. A benefit of this system allows the meters that are converted to AMR to be read by the Meter Readers carrying a hand-held device to capture the meter readings. The readings are captured automatically which increases the overall accuracy of the readings. Four full-time Meter Readers read approximately 20,000 water and 27,500 electric meters each month. As needed, the Electric Services Department is also installing electric meters equipped with the same AMR system. The purchase of this system was the recommendation of a process improvement team that was formed in 2013.

Once all water and electric meters are converted to the AMR system, an evaluation will be made to determine the efficiency of the AMR system, and if the City should consider moving to an Automated Metering Infrastructure (AMI) system. The infrastructure of meters, meter registers and radio units currently being installed will have the ability to move to an AMI system in the future. One benefit of an AMI system will include the ability to read water and electric meters through the AMI system from a centralized location. This would be extremely helpful with the large number of account changes that occur every year in July and August. An AMI system has the ability to notify the utility of a possible leak if the meter is running constantly. An AMI system also has the ability to allow the utility to set a usage threshold for each customer. If the usage increases or decreases from this threshold, the account is flagged for investigation.

The cost for the AMR system is approximately \$190 per meter which is paid from water and sewer revenues. Currently there are approximately 20,000 water meters in service that equates to a project cost of approximately \$3.8 million. The AMR project is being conducted in-house by Water Meter Division staff. It is estimated by completing the project in-house there will be a savings of approximately \$100,000 versus having this project completed by an outside contractor. The City of Ames Water Meter Division is continually looking for ways to meter more accurately in order to keep rate increases as low as possible and to keep tap water the best value for Ames water utility customers.

## TECHNOLOGY



Pictured left: The Itron FC300 handheld computer combines a powerful integrated SRead radio and fast mobile processor. Utility personnel can utilize the FC300 to program, service, and read water meters efficiently in the field with this unit.



Pictured left: The Badger Meter Recordall Disc Series Meters are accurate and offer a cost-effective metering solution. These positive displacement meters offer a simple, but efficient design for measuring a wide range of flow rates.



Pictured left: The Itron 100W+ R ERT end point offers advanced two-way communication that allows for easy data capture. Meter readings are time-synchronized and stored in the ERT to be retrieved by the Meter Readers.

These readings provide the utility hourly, interval usage data that promotes advanced leak detection. In order to connect to your property's water meter radio ERT, the Meter Reader must be within 100 feet of the radio ERT. Once in range, the handheld device sends out a signal that asks the ERT to transmit its serial number. When the handheld device confirms that it has the correct ERT and water meter serial number, it then asks the ERT to transmit the current meter reading. No personally identifiable information (such as your name or address) is transmitted by the ERT. The signal transmission strength is approximately 800 times less than that from a typical cell phone.

*Photos and descriptions above, courtesy of Itron and Badger Meter.*

## FAQS

### FREQUENTLY ASKED QUESTIONS

**Why don't meters last longer?** Water meters don't just stop working all at once; they tend to slow down over a period of time. Our meter replacement program is designed to greatly reduce the amount of revenue lost from stopped or slow meters because our meters are replaced before they stop working. This practice has been found to be cost-effective and allows the utility to have smaller, less frequent increases in both water and sewer rates.

**What is the service life of a water meter?** The data collected shows that a typical residential meter can remain in service for up to 15 years before there is a significant loss of accuracy. With the AMR project, the utility is working geographical areas of the city, so some meters may remain in service longer and some may be replaced sooner. With new technologies available, large commercial meters do not need to be replaced as often as their former mechanical counter parts were. These meters will be tested and/or replaced based on the volume of water that has passed through the meter.

**Why are water meters not located outside like the gas and electric meters?** Due to Iowa's winter climate, water meters must be located in a heated area to keep them from freezing. In a residential setting, a typical place to locate the water meter is in the basement or utility room of a home. In more temperate climates, water meters are located in shallow meter boxes (or pits) in the yard. In Iowa, the meter boxes (pits) need to be a minimum of five feet deep to keep the pipes and the meters from freezing.