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the Pipeline

The Digital Age Has Come to Your Water Utility

No one needs to be reminded that the world is changing—the digital revolution has penetrated almost every area of our lives. Most of these innovations have been designed to make our lives easier by performing some repetitive task or to quickly provide important information we need.

Recently, there have been many technological advances that affect water utilities. Powdersville Water (PW) approaches each of these by asking these three questions: Will this help PW in its mission to *"provide a safe and dependable supply of drinking water to the community"*? Will we be able to use this new technology to maintain or improve the level of water service to our customers? Will it be worth the cost? The purpose of this newsletter edition is to inform you of some of the technology innovations we have implemented in recent years that meet these criteria.

Advanced Metering Infrastructure (AMI)

This project began in 2014 and required nearly three years to become fully operational. AMI is the industry name given to a metering system that uses elevated antennas to read customers' meters several times a day without rolling a vehicle. This system has been fully in place since January 2017.

How does AMI work?

The AMI system obtains readings six times per day from a transmitter attached to each customer's meter. These readings are then uploaded to a server where they are managed by PW for monthly billing, as well as daily monitoring for leaks, reverse flow, stopped meters, excessive readings, illegal connections and area-wide system leakage.

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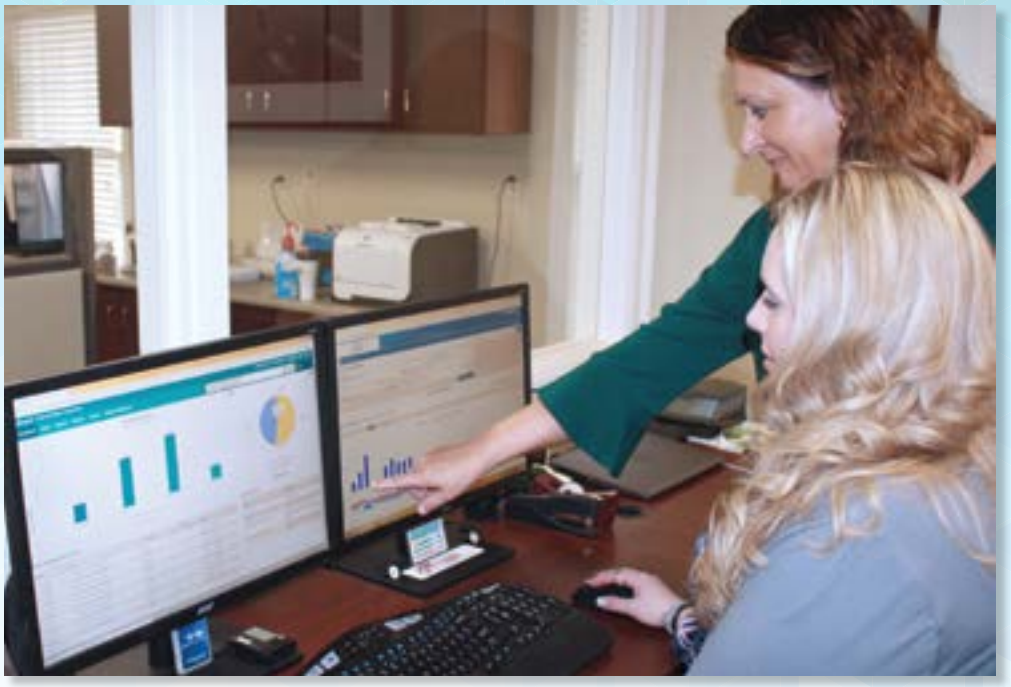
INSIDE

POWDERSVILLE WATER
Quality on Tap

Benefits from AMI

The AMI system provides real-time data that is used in a variety of ways that touch nearly every facet of PW's stated mission.



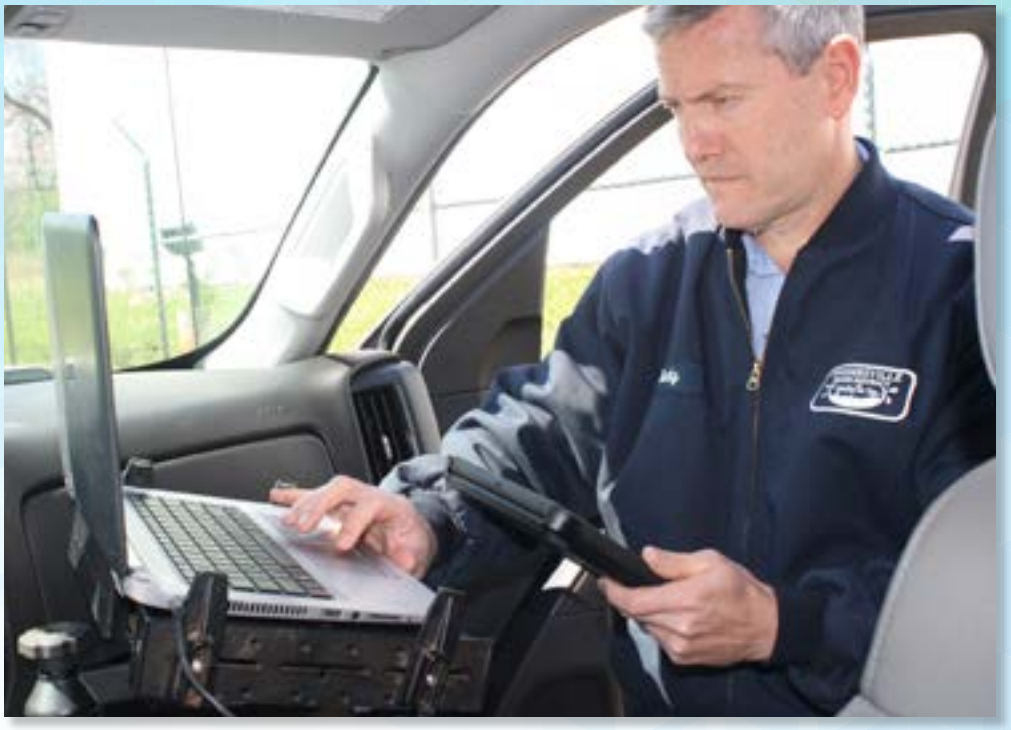
- Increased monitoring of usage lowers costs to customers by detecting customer leaks sooner. Prior to implementation of AMI, hidden leaks (such as a leaking toilet) on the customer side of the meter were not revealed until the customer's bill was issued. Under AMI, these leaks are detected within hours and the customer is usually notified within 24 hours, avoiding a high bill and an unnecessary waste of drinking water.
- More detailed records of a customer's daily usage has also assisted both PW and the customer in determining the cause of a high bill. For example, a continuous flow through the meter during the wee hours of the morning could indicate a running toilet.
- Free access to PW's customer portal (Aquahawk) allows customers to register their water accounts and monitor their water usage in real time. This interactive tool allows customers to set customized thresholds. When the threshold is exceeded, in gallons or dollars, an alert can be sent to their smart phone via a call, text, or email informing them of the excessive water usage. To sign up for this free service, go to *www.powdersvillewater.org* and follow the link to Aquahawk.
- Incidences of water flowing through an inactive account are quickly detected, alerting PW to possible illegal water use.
- Meter malfunction alerts are reported by AMI on a daily basis, which allows PW to keep meters functioning as designed and also assists in leveling out the meter maintenance work load for the meter technicians.
- AMI has resulted in less miles being driven by PW technicians, thus yielding three important results: increased safety for PW employees, a greener impact on the environment, and increased routing efficiencies.
- AMI gives PW the ability to monitor larger sections of the service area to combat largescale system leakage. AMI will allow PW to isolate the area where water losses are indicated in the distribution system and investigate as warranted.
- Real time peak and average demands will be easier to determine so as to optimize daily water distribution operations and also plan for future system infrastructure.

- This tool (especially the customer portal) should encourage PW customers to be more efficient in their water usage. With the growth Powdersville is experiencing, any reduction in unnecessary water usage will work to postpone expensive water system upgrades, thus reducing the need for excessive rate increases.

In summary, PW is striving to use this technology to swing customer service 180 degrees from where it was. We intend to continue to shift the power of control to the customer. We encourage all customers in the service area to visit *www.powdsc.aquahawk.us* in order to actively participate in PW's effort to conserve this valuable resource. A link to Aquahawk can also be found on the front page of the PW website at *www.powdersvillewater.org*.

Mobile Systems for Field Services

The goal of PW's management is to provide every employee adequate tools to do their job more efficiently.



This applies particularly to the field services staff. The following tools are used by field employees on a daily basis.

- **Mobile work order system.** This valuable tool is loaded on each field employee's laptop and is used to assign work orders for different tasks. It overlays PW's GIS maps that contain customer data as well as the "as-built" drawings of PW's pipes, valves, tanks, fire hydrants, etc. This allows the field service employees to quickly access PW system infrastructure information without having to consult bulky paper maps. Each user also has the ability to manually "red-line" the offical record drawing when the drawing does not reflect the actual conditions (e.g., a valve off by a few feet), thus improving the accuracy of PW's maps.
- **GPS tracking on vehicles.** This tool allows supervisors to know where all field technicians are so as to efficiently assign work orders and service orders throughout the service area.
- **Mobile service order system.** This system is used by meter technicians and is connected in real time to PW's customer utility billing system. Meter techs receive up-to-date service requests while in the field. Their supervisor may review their position in the PW water system (using the GPS tracking) and assign the service orders efficiently.

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Supervisory Control and Data Acquisition System (SCADA)

This tool is used to monitor and control the operation of PW's water distribution system, including source water meters, tank levels, pumps and control valves. It also alerts the field staff when a system component is outside the normal operating range (For example, rapidly dropping tank levels could indicate a serious main break). This system has been in place for 20 years, but PW recently hired an outside firm to upgrade its SCADA to conform with more recent advancements.

Who We Are

Powdersville Water is a special purpose district operated by an accomplished team of professionals. We are dedicated to serving our customers in the most efficient manner.

Mission Statement

The mission of Powdersville Water is to *"provide a safe and dependable supply of drinking water to the community and to all customers within our service area."* In providing this service, we seek to provide abundant and affordable drinking water in a manner that promotes efficient and reliable service.

MESSAGE FROM THE MANAGER

Now or Later? That's the question.

As the Powdersville area continues to grow by leaps and bounds, your water utility has to plan accordingly. With this in mind, we commissioned a well-known engineering firm to produce a Water Resources Master Plan that attempts to predict the needs of our distribution system for the next 25 years. Thus the question: When will the Plan's larger infrastructure recommendations be built—now or later? Personally, I would prefer the answer to be "later" so that we can spread the costs over many years. One way to accomplish this is to create a new culture among our water users, a culture of conservation and efficiency. In other words, plan for continued growth in our area, but teach our customers how to become *"H2O-efficient"*. If each customer in the system learns to use water wisely, then our per capita use goes down as we continue to add taps to the system, thus postponing the need for much larger infrastructure.

In this newsletter, you will read about some new technologies we have employed at Powdersville Water to make us more efficient. I especially want to draw your attention to the AMI system and the related customer portal powered by Aquhawk. Aquahawk provides you with an unprecedented opportunity to monitor your own water use using your computer or even your smart phone! We can now become even better stewards of our water resources. Don't take this wrong, we have an ample supply of water for the future. But if we can prolong the building of larger pipes for several years, I say let's do it! Please consider signing up for AquaHawk and please water wisely this summer.

Thank you,
Dyke Spencer,
Executive Director