SERVICE LINE
WEST DES MOINES WATER WORKS
NEWS FROM THE WEST DES MOINES WATER WORKS

Spring 2014 VOLUME 19 ISSUE 1

Smart Meters Boost Efficiency and Customer Convenience

Time was when meter reading required a fair amount of shoe leather. The meter reader walked from home to home collecting data from registers, and depending on your vintage, he may have even had to descend the cellar stairs to read a mysterious clock-like fixture and write numbers on a ledger.

Well, progress waits for no man—not even the one who reads the water meter. The big clunky analog meter and paper ledger long ago went the way of rotary dial phones, electric typewriters and Palm Pilots.

The TouchPad reader shown in the foreground will be covered with the SmartPoint meter reading device.

West Des Moines Water Works is revamping and upgrading its meter reading process with a new system that will cut down on shoe wear and enhance customer service for water users. The five-year project will include the installation of radio signal technology that among other things allows for meters to be read via walk-by, drive-by or from a fixed base radio tower system known as FlexNet.

The system upgrade has already begun with the installation of "SmartPoint" reading devices on the city's more than 23,300 water meters in use.

"We are always looking at ways to gain efficiency and enhance our customer service. We looked at several systems before deciding to use the Sensus system," says **Bill Garrett,** assistant general manager.

To contain conversion costs, Water Works is implementing the new system in stages and utilizing its own personnel. Garrett estimates the installation savings alone will be approximately $1 million.

The conversion is starting with the eastern portion of the city. Approximately 95 percent of WDMWW customers have a TouchPad device on the exterior of

"Meters" continued on Page 2

WDMWW: 'What You Should Know about Water Hardness'

What does hard water look like? To the naked eye, it looks practically the same as softened water, but salient differences do exist between the two, and understanding those distinctions will help you make more informed decisions about your home and health.

Hardness is defined by the level of minerals—primarily calcium and magnesium—present in the water. According to the U.S. Geological Survey, Iowa in general has harder water than states in New England, the South-Atlantic Gulf and the Pacific Northwest. The reasons have to do with topography and rock formations. The most prevalent rock formation in Iowa is limestone, and as water passes over and through it, significant levels of calcium and magnesium are dissolved.

West Des Moines Water Works treats water from a combination of three deep wells (2,500 feet deep) and 19 shallow wells (50 feet deep). This groundwater is surrounded by limestone, and when first collected, the untreated water contains 370 milligrams of calcium carbonate per liter, which is considered very hard according to the definitions established by the United States Environmental Protection Agency in 1986.

"The consumption of hard water presents no health risks to people and animals," explains **Diana Wilson,** WDMWW general manager. "Depending on the level of hardness, however, hard water can affect appliances and even result in a build-up of minerals."

West Des Moines Water Works dedicates an important step of the treatment process to softening. Water travels through solid contact units, where lime and soda ash are added to the water. This raises the pH of water, which in turn assists in softening. The calcium and magnesium settle out with the aid of ferric chloride, and the resulting solids, known as lime residuals, are pumped out to a water recovery facility where any remaining water is extracted and recycled.

Water Hardness Scale[1]

Milligrams/Liter	Water Hardness
0 -17.1	Soft
17.2 - 60	Slightly Hard
61 - 120	Moderately Hard
121 - 180	Hard
181 and higher	Very Hard

Source: U.S. Environmental Protection Agency

WDMWW TREATMENT REDUCES HARDNESS

"Through our treatment process, we soften our water and reduce hardness by 60 percent, making it comparable to other treated drinking water in the metro area and across the state," Wilson adds.

After softening, WDMWW's water hardness drops to 150 milligrams per liter, which is considered to be

"Water" continued on Page 2

Smart Meters and Readers Assist in Leak Detection

"Meters" continued from Page 1

their homes that connects electronically to their meters inside. The SmartPoint readers are designed to fit on top of the TouchPad devices.

"We have installed 500 of the new readers between First and Fifth streets, and we plan to get 5,000 installed by the end of the year," Garrett says. Fastening the cream-colored SmartPoint device (pictured above) takes between five and 10 minutes.

ENHANCES CUSTOMER SERVICE, LEAK DETECTION

The customer benefits of SmartPoint culminate when the reader is paired with a smart meter. All new and replacement water meters are smart meters, which measure water usage to 1/32 of a gallon per minute. Using the new system, meters can be read several times a day.

"Customers will be able to go online to their water accounts and see how much water they're using," Garrett explained. "The real value of this convenience and precision is realized in leak detection. We will be able to isolate when the leak occurred and at what interval. Then, we can notify the customer about a potential problem, and all of this happens real time."

Eventually, Garrett says, meter readers won't need to leave the office as the city's water meters will be read by a grid of transceivers positioned on top of WDMWW water towers. Implementation of the FlexNet system should be completed by 2019.

"This new smart system allows us to deliver a much higher level of detail, efficiency and service to our customers that we believe will pay dividends well into the future," Garrett concludes.

Mabuce Tapped for Engineering Project Manager Post at WDMWW

West Des Moines Water Works has hired William Mabuce, P.E., as the utility's engineering project manager. He fills the position formerly held by General Manager Diana Wilson and will be responsible for planning, directing and coordinating infrastructure and construction projects.

Mabuce, a licensed professional engineer in Iowa and Minnesota, has 10 years of engineering experience working on a variety of municipal engineering projects. Most recently, Mabuce was a project manager for MSA Professional Services.

Mabuce earned a bachelor's degree in civil engineering from the University of Minnesota, a bachelor's degree in physics from Luther College, and an MBA from the University of Iowa.

"We feel very fortunate to have Bill join our staff," Wilson said. "He adds a diverse set of skills and extensive project management experience to the WDMWW team."

Too Much Softening Can Make Water Aggressive

"Water" continued from Page 1

in the mid-range for "hard" as the EPA chart for hardness shows. While the EPA provides definitions and parameters for water hardness, there are no set standards for hardness required of water treatment utilities.

Many of the questions West Des Moines Water Works receives about water hardness concern water heaters. More than any other appliance water heaters can show wear from excessively hard water. The reason is that when water is heated, the minerals in hard water become insoluble and the resulting solids can accumulate inside the tank. Most residential softeners use sodium to remove minerals from water, so the softer the water the more sodium present in the water. Higher sodium levels can affect certain medications and health conditions.

"We neither recommend nor discourage our customers from installing residential softeners," Wilson adds. "It is completely a matter of personal preference. We do recommend that if you choose to soften your water that you refrain from over-softening, which can have an adverse effect on appliances as well as personal health."

Mitch Pinkerton, WDMWW water production manager, recommends setting water softeners to maintain 1 to 2 grains per gallon of hardness. Grains per gallon is the measurement of hardness used by water softener manufacturers; 150 milligrams per liter translates into 8.8 grains per gallon.

"Setting the softener at '0' hardness makes the water aggressive, and it can become corrosive to pipes and appliances," he warns.

DID YOU KNOW?

The probability of drinking a glass of water that contains a molecule of water that also passed through a dinosaur is almost 100%.

The earth is a *closed system*. The same amount of water has been moving around in what is called the *water cycle* since the birth of the earth.

Source: U.S. EPA

WEST DES MOINES WATER WORKS 4200 Mills Civic Parkway 515-222-3460 fax 515-222-3378 www.wdmww.com
WATER TREATMENT AND DISTRIBUTION 1505 Railroad Avenue 515-222-3465 fax 515-222-3469 TDD 515-222-3334

WEST DES MOINES WATER WORKS E-PAY: WDMWW.COM
PRINTED WITH SOY INK
PRINTED ON RECYCLED PAPER