

UTILITIES ANNUAL REPORT

FOR BLOOMINGTON, MINNESOTA • 2014 YEAR END

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MESSAGE FROM THE SUPERINTENDENT



Does anyone remember the old adage, “out with the old, in with the new”? Well, in 2014, the City of Bloomington, along

with some of our corporate citizens and private utility providers, practiced a modified version of that adage. You will note that on page UAR2 of this report in an article that highlights the long-awaited expansion of the Mall of America. In conjunction with this phase of the mall expansion, there were some significant alterations and improvements required by both the mall and the City. This expansion also created an opportunity for the City to replace some of its 50-year-old water mains that needed to be relocated to accommodate the mall expansion, along with enhancing the water distribution network in the vicinity.

The winter of 2013-14 was long and bitterly cold, as we remember all too well. With these conditions, the City’s

water system was unusually stressed, due in great part to the extreme depths (7’-8’) that the frost was driven down into the ground. Homeowners’ water services also felt the sting of the cold, as discussed in the article found on page UAR4 regarding the record number of frozen water services experienced that winter.

Also highlighted in this report is an article on page UAR5 that describes the extensive gas main replacement project undertaken by CenterPoint Energy as part of their ongoing asset replacement and renewal efforts. The 24” steel gas main that is being replaced was originally installed in 1947, and this project is just the beginning of a multi-year effort by CenterPoint to systematically replace much of their aging infrastructure located in the City of Bloomington.

Also in 2014, the City began the process to replace its aging geographic information system (GIS). The City currently uses an enterprise version of

the GIS software from Smallworld, and is now converting to the GIS industry leader, ESRI software. As described on page UAR5, this City-wide software system is critical to the Utility, as it is the electronic repository for all of the asbuilt data that pertains to our buried infrastructure which includes such items as water mains, sewer mains, hydrants, manholes, gate valves, curb stops, service wyes, etc.

This year’s report also contains a couple of general interest pieces such as the article on page UAR2 entitled “Don’t Flush ‘Flushable Wipes,’” and the story on page UAR3 entitled, “The Secret’s in the Water – Craft Brewing.” These articles describe some of the impacts and outcomes the services and product we provide to the public have on our water and sewer systems.

The Utilities Division employed more than 50 people, with a budget of more than \$21 million.

Also in 2014

- The **UTILITIES DIVISION** employed more than 50 people. Professionalism is a highly touted value within the Division. All operations staff are encouraged to continue to ascend their **STATE LICENSES**.
- Utilities continued its **TOTAL ASSET MANAGEMENT** plan with the global goal of institutionalizing the program.
- Both the *Water and Wastewater System Master Plans* were updated and integrated into the City’s *Comprehensive Plan*.

The Administrative Section of Utilities is committed to providing a comprehensive water and wastewater utility services package at a rate that is less than the average cost of other cities providing a similar level of service. Each year, the Utilities Division is benchmarked in our **ANNUAL RATE SURVEY** against similar utilities. Rates are ultimately driven by the **WATER AND WASTEWATER FUNDS’ EXPENSES**.

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DON'T FLUSH "FLUSHABLE WIPES"

Repeated headlines about horrifying septic system disasters indicate that "flushable" disposable wipes are in fact not flushable. For example, the 15-ton "fatberg" dislodged from a London sewer was "caked in grease and fortified with wet wipes."

Companies advertise their disposable wipes as "flushable" or "safe for sewer and septic systems," but independent tests have found otherwise. A 2012 report by California's Orange County Sanitation District noted that "field observations have found [flushable wipes] to be a cause of back-ups within the sewer system leading to sanitary sewer overflows, clogs at lift stations, and disruption within the treatment plant." The report also summarized the results of the district's flushability test: "After 24 hours, the wipe remained intact and recognizable."

Because the wipes do not

disintegrate easily or quickly, they can cause sewer back-ups and sometimes home septic systems as well. The National Association of Clean Water Agencies has reported the high costs associated with flushed wipes along with photographic evidence of wipe clogs.

In response to complaints about the wipes, Kimberly-Clark, the company behind brands like Cottonelle and Huggies, posted a video that purports to show how flushable wipes break down once flushed. Even in their own testing lab, which does not appear to simulate the grime and obstructions found in real-world sewage systems, the wipes began to disintegrate only after 35 minutes of constant agitation. Since the term "flushable" is not legally defined or regulated by the Federal Trade Commission, companies can still label these disposable wipes as such. While "flushable" wipes can technically be

tossed into the toilet and flushed down, the "flushable" label as it is currently used fails to address the issues that arise once the wipe goes down the pipes. Both flushable and non-flushable wipes contribute to "fatberg"-like clogs.

Avoid flushing any type of wipe, "flushable" or otherwise, down the toilet. This will prevent costly clogs and environmentally damaging overflows in your city wastewater collection system. In fact, it would be best to avoid disposable wipes completely since they produce waste that should end up in a landfill, and more sustainable alternatives (such as your normal dissolves-quickly-in-water toilet paper made of unbleached recycled paper) exist. Make sure your wipes are properly disposed of — in the trash.

Each day,
the City's
28 pumping
stations
move more
than 10.5
million
gallons of
wastewater
out of the
city.

MALL OF AMERICA PHASE 1C

The Mall of America, one of the largest shopping malls in the United States, began expansion in January 2014 to meet the demands of a highly competitive retail destination market. Called Phase 1C, the \$300 million expansion is located on the north side of the mall and will expand out over the existing mall entrance and parking lot to create three new levels of retail, expanded food courts and new dining establishments. Anchored by the J.W. Marriott luxury hotel on the NE side and a 10-story office building on the NW side, this project includes a two-level underground parking ramp. For a successful expansion, Lindau Lane was lowered and the project includes the relocating and upsizing of various utility infrastructure to accommodate the demand for this expansion and future build out to 2020 and beyond.

Wastewater Collection strives to provide the continuous conveyance of wastewater into the regional treatment system. One benchmark used to evaluate Utilities' performance is the number of **POSITIVE SEWER STOPPAGES** — our goal continues to be zero stoppages. The Division used routine operational and maintenance activities, such as **SEWER JETTING AND RODDING**, and **CLOSED CIRCUIT TELEVISION** to keep the sewage flowing in 2014.

THE SECRET'S IN THE WATER – CRAFT BREWING

It's not something many of us think about, the relationship between water quality and beer brewing. Since the beginning of civilization, archeologists believe humans learned to make beer. Centuries ago, beer was sometimes a safer alternative to water, especially if you didn't know the source of your water; since heating during the brewing process would kill off most pathogens due to pollution. You can't use that as an excuse to drink beer today; however, I suppose some might speculate? With the implementation of the Clean Water Act in 1972, which erected the basic

structure for regulation of pollutants into US waters and quality standards for surface waters, we can stand strong and say that beer cannot be prescribed as a safer alternative to drinking water to sustain life. Today, modern brewers are taking advantage of their quality drinking water and setting up shop in the kitchens of their homes, the most famous brewer being President Obama himself, who brought the White House Honey Brown Ale to life. With the President as their wing-man, craft brewers around the nation have created a symbiotic relationship with the CWA and learned the importance

of good quality water in the brewing process while understanding just how crucial it is to public health as well. Brewers have declared support for strengthening clean water protection by joining the National Resources Defense Council to protect lakes, streams and rivers from pollution. This relationship just makes sense since 75% of our nation's drinking water is from source water and 90% of beer is water obtained from these sources. The relationship makes sense; without quality water at the tap, we would not have flavorful beer on tap.

Between October 22 and November 1, 2014, 23,132 tons of ALM were transported and spread over 2,190 acres of farm fields.

EFFICIENCY IMPROVEMENTS AT THE WATER PLANT

Operations at the Water Treatment Plant are continually being monitored and evaluated to maintain the delivery of high quality water. This includes the replacement and/or upgrade of system components, both as preventative maintenance and for replacement of equipment that ceases to function adequately.

In late fall of 2014, the soft starter device for one of the high service pumps at the water plant failed. Options for the repair were either purchasing another soft starter, or installing a Variable Frequency Drive (VFD). A VFD is a type of motor controller that drives an electric motor by varying the frequency and voltage supplied to the electric motor. This can serve the same function as a soft starter, but also can provide additional operational benefits and opportunities for efficiency improvements.

In the past, the VFD option has been too expensive to consider. However, with the costs of VFD's coming down and rebates offered by Xcel Energy for VFD's and other energy saving technologies, the implementation of a VFD in this situation became feasible. This, combined with the potential long-term energy savings associated with use of the VFD will save the City enough energy in one year to pay for the installation.

Water Supply and Treatment strives to provide a sustainable supply of water that meets or exceeds all federal and state standards. A benchmark of this endeavor is the results reported in the federally mandated **WATER QUALITY REPORT**. In 2014, water usage fell short of the **PROJECTED DEMAND**.

The water distribution system's 4,600 hydrants and 6,900 valves require constant vigilance.

FROZEN WATER SERVICES

The winter of 2013-2014 was no doubt a challenge for all of us coping with bitter cold and snow, but for operators of municipal water systems, it was record breaking. Our Bloomington Water Utility surpassed a record of 163 frozen services restored in 1977, by eclipsing that number to 188 by April, 2014. The calls began right after Christmas, 2013, and thawing activities continued well into April with “snow birds” arriving home after wintering elsewhere to find no water service. Bloomington’s water utility operators continued a tradition of customer service by working up to 14-hour days and weekends, running three crews at times through February and March exclusively on thawing activities. Thawing and restoring water service to occupants of single family

residences was provided free of charge, and customers were not charged for water left running to prevent a second freeze-up. This was not the case in surrounding metropolitan communities and others statewide. Homeowners elsewhere were forced to pay large fees in cash for thawing services, with no guarantee of success.

When a “no water” call came in, a work order was started, researched to see if that address had frozen before by looking in historical records from past years, and then prioritized on a first come, first served basis. Sixty-seven percent of the services frozen in 2014 had no history of freezing, and 90% of those frozen had the water main on the far side of the street. That extra length of service piping under the pavement, exposed to frost penetration of up



to eight feet, was the cause of most problems. The most important thing to impress upon homeowners once thawing was complete was to keep the water running to prevent re-freezing until notified by Utility personnel at a later date. The last two frozen services were restored on April 21, 2014, for residents lucky enough to be away for the long, cold winter we endured.

Also in 2014

- After serving the Utilities Division faithfully since 1963, Utilities retired the handheld gate valve exerciser. Parts for this piece of equipment had become obsolete, so a new exerciser was necessary. An electric Wachs handheld gate valve operator was purchased. This new tool helps the crews more efficiently maintain gate valves throughout the city.

Routine maintenance

- The water distribution system’s approximately 4,600 hydrants and 6,900 valves require constant vigilance. A **PAINTING PROGRAM** blankets the city on a revolving basis. Small valves are exercised on a biennial basis; larger valves are operated yearly.

Water Distribution strives to provide an uninterrupted flow of high quality potable water for both domestic and firefighting purposes. The largest potential disruption to service occurs as a result of main breaks. There were **29 MAIN BREAKS REPAIRED** in 2014.

The **10-YEAR AVERAGE** for main breaks is 21 per year.

NEW GEOGRAPHIC INFORMATION MAPPING SYSTEM

In 2014, the City of Bloomington began the process of preparing for a new geographic information mapping system (GIS). The GIS program is a system designed to capture, store, manipulate, analyze and present spatial data. This system is utilized throughout all City departments.

The migration of water and sewer data from the previous GIS system to the new GIS system began mid-2014. The anticipated “go-live” date of the system is mid-2015.

The migration of the GIS data to the new platform provided the Utilities Division

with an opportunity to conduct a thorough review of the water and sewer data. Data that was no longer maintained or deemed essential was eliminated. Some new data features were also added to make the data more useable and useful.

The new ArcGIS provided an opportunity to integrate the geographic data with the work order/asset management system. The work order system tracks maintenance activities associated with the water and sanitary sewer pipes, hydrants, valves, pumps, etc. The integration

eliminated the need to maintain both systems separately.

Several other benefits were realized through the new GIS system. These benefits included access to GIS information through the City’s website and a variety of professionally-designed maps displaying water and sewer infrastructure. The new system is compatible with a variety of mobile devices which provides field staff and inspectors with information at the job site.

Customer Service processes more than 170,000 bills per year and manages more than 27,000 accounts.

GAS MAIN REPLACEMENT IMPACTS TO WATER AND SEWER INFRASTRUCTURE

During the summer of 2014, CenterPoint Energy started Phase 1 of the transmission pipeline replacement. The project started at Nicollet Ave. S. from W. 107th St. to 200’ south of W. 98th St. This project consisted of removing and replacing 6,164’ of 20” gas main that was installed in 1947. The replacement pipe is 24” steel pipe. Approximately 25 water services were crossed and insulated with 4” of Styrofoam to safeguard against potential freezing during the winter season. The removed pipe contained small amounts of asbestos in the coating; therefore, each segment of pipe was wrapped in plastic to ensure proper disposal safeguards were adhered to. Due to improvements in steel quality, pipe coatings and technology, this transmission pipe is expected to last between 100 to 300 years. Phase 2, the Lyndale Avenue area transmission pipeline replacement, will begin in 2015 (see attached map for locations).

APRIL 2015 MARKS THE 8TH NATIONAL SAFE DIGGING MONTH

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If you submitted one of the 700,000+ locate requests by MN homeowners, landscapers, farmers, and professional excavators who clicked or called GSOC last year before you dug in your yard or started an excavation project, you took the right step to keep yourself, your family and co-workers safe. And, you helped to protect the miles of underground facilities throughout the state. It’s also the law.

Click or call GSOC at least 48 business hours, excluding weekends and holidays, before you start your excavation project. GSOC will then notify the facility operators that have underground lines located near your project. Questions? Visit www.gopherstateonecall.org/contract-locators-directory.

Check that the marks in your yard or project area are those of the underground facility operators who were notified to mark your project location. Go to www.gsocsearch.org to check your ticket positive response. For questions about your underground facility markings, call the appropriate facility owner by using the phone numbers listed on the positive response.

Customer Service continually strives to meet or exceed our customers’ expectations. In addition to the permitting duties, staff is charged with mandated **ONE-CALL UTILITY LOCATING**. Customer Service also oversees the water meter maintenance program, and has read over 135,000 residential readings and 41,000 commercial/multi-family readings in 2014.

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