



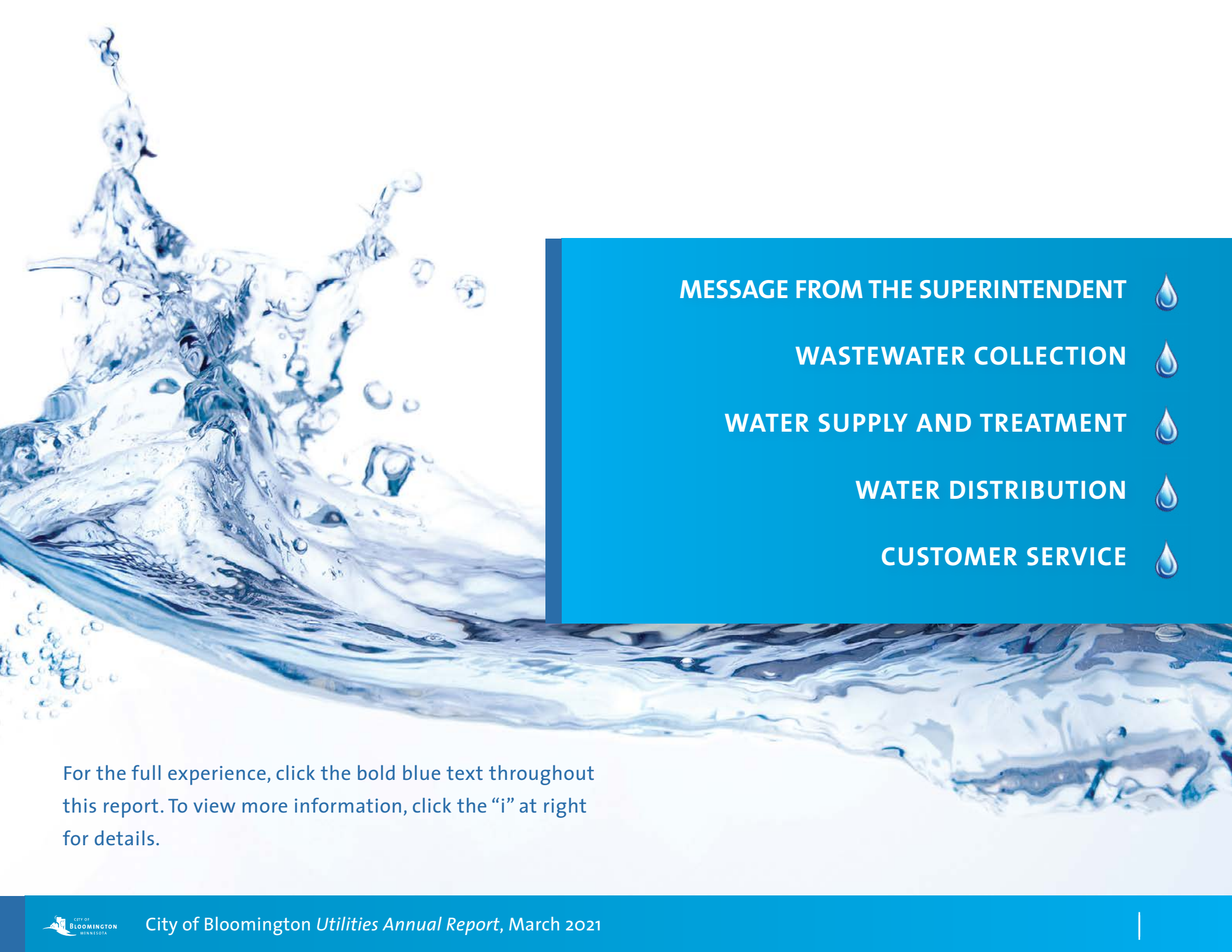
# UTILITIES ANNUAL REPORT

FOR BLOOMINGTON, MINNESOTA 2020 YEAR END



## A YEAR LIKE NO OTHER

stories of hope, challenges and resilience



**MESSAGE FROM THE SUPERINTENDENT**



**WASTEWATER COLLECTION**



**WATER SUPPLY AND TREATMENT**



**WATER DISTRIBUTION**



**CUSTOMER SERVICE**



For the full experience, click the bold blue text throughout this report. To view more information, click the “i” at right for details.



# MESSAGE FROM THE SUPERINTENDENT

2020 was a year like no other for just about everyone and certainly created challenges for the water and wastewater utilities, employees and our customers.

The number one goal for the Utilities Division for 2020 remained the same – to continue to provide high-quality, uninterrupted drinking water and waste water collection services to the residents and businesses of Bloomington. The difference this year, of course, was a major pandemic that affected our workforce, workplace and resource availability and really changed many of the ways we typically deliver services.

As soon as the pandemic became a working reality for Public Works, the Utilities Division took immediate steps to safely maintain services and protect employees. Closure of public buildings, enhanced personal protective equipment and practices and schedule alterations were just a few of the steps taken to protect our workforce and the public. These steps provided additional protections and flexibility needed to help ensure we maintained the capacity to perform the services relied upon by our customers. Water main break repairs still needed to be done quickly and safely, fire hydrant maintenance continued to ensure proper operation and availability in the event of an emergency, sanitary sewer maintenance was on-going to safely collect and convey wastewater, and water production, treatment, and testing continued to maintain high quality, consistent water for all.

Hopefully going forward in 2021 will find us returning to a more normal environment. Many of the practices implemented in 2020 will likely be around for some time. I would like to thank the entire Utilities Division for their commitment, dedication, and resourcefulness demonstrated over the last year as well as thank the community for their continued support.

## CONGRATULATIONS

Gregg Randahl, Assistant Utilities Superintendent, was awarded the 2020 Minnesota American Water Works Association's Meritorious Operator Award. The Meritorious Operator Award is presented annually by the Minnesota Section AWWA to a Water System Operator who has brought a higher degree of excellence, learning, initiative, and resourcefulness to bear in the operation of a public water supply system. Gregg has been

employed by the City for over 30 years. He started as a Utility Inspector performing such tasks as water and sewer inspections. Gregg quickly advanced his role in project management and became the Utilities Division's go-to person for elevated tower painting projects, storage tank rehabilitation, and utility construction oversight. Gregg manages many of the City's largest water system construction and rehabilitation projects including water tower and storage tank rehabilitation, large valve replacement and large transmission main maintenance. Gifted with a very sharp memory, when there is discussion around the Utility about how something was done or why it was constructed a certain way, someone will ultimately say "Let's ask Gregg!" Thank you, Gregg!



The Utilities Division employed more than 50 people, with a budget of more than \$31 million.

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## ALSO IN 2020

- 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.

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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## UPDATE: MCES LIFT STATION L55A – (BLOOMINGTON LS10)

From the Met Council Web Site and Brian Hansen:

The Metropolitan Council Environmental Services (MCES), operator of the metro-area wastewater collection and treatment system, is replacing an aged and undersized lift station with a new lift station to accommodate future flows from the cities of Bloomington and Edina. Construction is anticipated to occur in several stages beginning in June 2019 through July 2021:

- Stage 1: Construct new Lift Station L55A at the intersection of 82nd Street West and American Boulevard West
- Stage 2: Construct water and wastewater force mains under 82nd Street West
- Stages 3, 4, and 5: Construct gravity sewer under American Boulevard West
- Stage 6: Remove existing Lift Station L55, commission new Lift Station

L55A, and restore all surface improvements

The work will require road closures and lane closures, and other typical construction impacts such as noise, dust, vibrations, and 24-hour pumps for the aboveground temporary wastewater conveyance lines. The MCES has completed all utility infrastructure

installation for 2020 and the roadways have been reconstructed and are now open to all traffic and normal access has been restored to all adjacent properties. Construction on the lift station will continue through the winter. In the spring 2021 a final excavation will be needed to disconnect the existing lift station and bring the new lift station online. This work will require some temporary lane closures in the vicinity of American Boulevard West and the Normandale Service Road.



Almost **8 million** gallons of wastewater flow out of the City each day. The City's **28** pumping stations are used to move more than **2 million** gallons of that flow.

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** in 2020 – our goal continues to be zero stoppages. The Division used routine operational and maintenance activities, such as **SEWER JETTING AND RODDING**, and **CLOSED CIRCUIT TELEVISIONING** to keep the sewage flowing in 2020.

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## SKYWATER SANITARY SEWER PROJECT (2020-503)

In 2019 Skywater Technologies (located at 2401 E 86th St) informed the City that they would be expanding their building and that sewer flows would be increasing significantly. The City's 2018 Comprehensive Sanitary Sewer Plan had already identified the mains downstream of Skywater as a watch area where capacity upgrades would be needed if upstream development increased. In addition the existing downstream mains included pipes running in an easement between several homes and a segment where twin 6" pipes ran under a 72" Storm sewer pipe as siphons. There has been a history of maintenance difficulties with the siphons as that configuration traps sewage in the middle portion of pipe running under the Storm pipe. Utilities and Engineering staff worked together on a project design that would eliminate the siphons and increase the size and capacity of the mains. The project included the upsizing of an existing sanitary sewer pipe that runs in an existing drainage and utility easement between River Ridge Road and Old Shakopee Road. These improvements were coordinated with the adjacent property owners and were completed using a combination of innovative trenchless and open trench installation techniques. Besides being careful not to damage the homes in close proximity of the work, one of the most challenging tasks (pictured below) was to replace the twin 6" siphons with a new 12" Zinc Coated DIP run through the middle of the storm sewer pipe. This was accomplished by strategically core drilling through two sides of the 72" Storm pipe and the outside of an existing sanitary MH. All three holes were perfectly aligned, drilled, and the new pipe was threaded into place at a grade that eliminated the siphons. The improvements were funded by a 50/50 split between Skywater Technologies and the City Utility Sanitary Sewer Fund. A special thanks to Steve Ketchmark (Bloomington Engineering) and Minger Construction for their expertise in managing these types of projects that require out of the ordinary installation and thinking.

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## THE HARD TRUTH ABOUT WATER SOFTENERS!

**T**he decision to soften water is a personal choice that can affect your home and the environment. Hard water contains calcium and magnesium ions, which are considered alkaline earth metals. These ions

become evident on our faucet fixtures, shower heads and certainly make it difficult to make soap lather. The calcium ions leave behind residue that insist on making our cleaning habits a nightmare. Though these aesthetic problems exist, it is important in knowing the truth about hard/soft water so you can sift through all the

misconceptions and make sound decisions before employing a water softener. Since water is already considered the “universal solvent” and capable of dissolving a variety of different substances, it becomes troublesome when there are no minerals that it can focus on. For water to be called ‘soft’, it must be devoid of those pesky hardness ions. When water is orphaned by calcium and magnesium ions, the water becomes determined to grab onto other metals that it comes into contact with, which is usually (copper/lead) pipes. The soft water will pull metals as it travels through the pipe system, causing the copper and lead to contaminate your drinking water. Signs that soft water is causing leaching of metals may include bluish-green stains, metallic taste and small leaks in piping. Believe it or not, it can even produce green hair in platinum blonds.

Softeners utilize resin beads that swap hardness ions and exchange them for sodium or potassium ions. When the resin beads become flooded with hardness ions, the softener will regenerate to keep the resin functioning properly. When this process occurs, the backwash that drains to the sanitary sewer is inundated with sodium. The sodium travels to the wastewater treatment plant where it is essentially incapable of being removed by the traditional wastewater treatment process of settling or biologically decomposed, because once it is dissolved in water it becomes almost impossible to remove and therefore gets discharged into the environment, mainly lakes and rivers. The high chloride eventually destroys aquatic life. If wastewater treatment plants determine that chlorides need to be removed, the plant process will need to be upgraded with advanced salinization processes and this will increase sewer fees for the public, produce higher greenhouse gases and emissions and utilize more energy.

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 2020, water usage fell short of the [PROJECTED DEMAND](#).

Between October 14 and November 4, 2020, **12,445 tons of Agricultural Liming Material** were transported and spread over **1,443 acres of farm fields**.

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## WATER DISTRIBUTION-COVID IMPACTS

The COVID pandemic had a significant impact to the water distribution with reduced consumption of numerous hotels, restaurants, businesses, and retail outlets, including the Mall of America sharply curtailed water consumption due to COVID restrictions. These buildings may suffer consequences of stagnant water. The Utility provides information on the City website to

keep building owners and managers updated with guidance from the Minnesota Department of Health, CDC, and other agencies on maintaining unused and under-used water systems to avoid water quality problems. Staff visited several hotels during the shut-downs to

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

investigate odors that may have occurred due to dry sewer traps. Water quality sampling from various locations around the water distribution system shows continued compliance with water quality standards.

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 22 **MAIN BREAKS REPAIRED** in 2020.

The **10-YEAR AVERAGE** for main breaks is 24 per year.

## WATER DISTRIBUTION

In 2020, the Utilities Division continued improving and restoring critical parts of the water distribution system. The 42" Knox supply line from Minneapolis was reinstated as part of an on-going multi-year tunnel project under I-494 for the Orange Line Bus Rapid Transit (BRT). C.S. McCrossan's crews and subcontractors realigned 900 feet of the large water main starting December 2019 and finished in spring 2020. American Pipe supplied the 100-year design life, zinc-coated ductile iron pipe and special corrosion inhibiting bio-enhanced poly-wrap. Specialty restrained joints and valve vaults were part of the design to resist movement of the new pipe that was bored 25 feet below I-494. Putting large water mains back into service after six months is a little more complicated than just opening valves, so again with the assistance of Minneapolis, a specialized chlorination crew was brought in to disinfect and flush the 15,000 feet of 42" watermain. A concentrated chlorine "slug" was pushed through the pipe, and retreated back to normal before releasing to the environment, in all using about one million gallons of water! The valve/meter vault at 60th & Knox was also rehabilitated with assistance from City of Minneapolis Water Works in fall 2019. The BRT project also required relocation of about 1500 feet of 8" and 12" water mains around Lucky's 13 with the elimination of Southtown Dr. (frontage road). The water model and Water Master Plan identified high velocities in the normal pressure pipes just east of the Water Treatment Plant. A new 8" watermain was constructed during the PMP project on Poplar Bridge Rd., 900 feet to the east of the Water Treatment Plant to Fawnridge Circle that allowed an underutilized 16" main to be changed to the normal pressure system. This maintained a neighborhood on the high pressure zone and improved velocities and reduced head-loss in the normal pressure zone. The PMP projects also repaired 16 gate valves with new stainless steel bolts and valve boxes. Renovation plans are being finalized for the 10-million gallon round reservoir that will restore the interior concrete, metal piping, ladders, and venting, bringing the 55-year-old structure up to MDH standards.

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## ORANGE LINE PROJECT

If you have driven along Highway 494 near 35W, it has been hard to miss the construction taking place along this interchange. The construction is part of the 17-mile long bus rapid transit line, or Orange Line, which is operated by Metro Transit and is a joint effort between MnDot, the City of Bloomington, and the City of Richfield. As part of the project to connect Minneapolis, Richfield, Bloomington, and Burnsville along I-35W, construction crews are building a new tunnel under 494 which will allow the buses to use as a faster route to cross 494.

What you might not have noticed was that in order to construct the large

diameter tunnel, a 42"-diameter watermain that carries drinking water supplied to Bloomington from the City of Minneapolis had to be relocated. The 42" watermain is just one of two supply lines that extend from the City of Minneapolis to the City of Bloomington; the other is

Customer Service processes more than **135,000** meter readings per year and manages approximately **27,000** accounts

a 36" watermain. Both are used to supplement the water supply for the City of Bloomington. As a side note, the City of Bloomington also has its own water treatment plant that produces high quality and award winning water for the residents and consumers of Bloomington.

As part of the scope of work with the relocation of the 42" watermain, there have been numerous challenges along the way, some of which include keeping the project moving forward during the winter months and the sheer size of the 42" pipe where each foot of pipe weighs 200 pounds. In comparison, a normal watermain in a typical residential neighborhood is 8" diameter. In order for this relocation work to be successful, it required extensive planning and coordination between the City of Bloomington, Metro Transit, MnDot, City of Richfield, and



Construction crew installing the new 42" looking north from the south side of 494.

the contractors completing the construction efforts.

The 42" watermain is made of ductile iron and a poly wrap is installed over the pipe to protect it from future corrosion. Each piece of pipe was specifically made to length and assigned a number to be installed in a designated order. A portion of the 42" line that crosses under the highway is installed in a steel casing which is placed first, then the pipe is pushed into the casing.

As is standard, all watermains installed in Bloomington go through various testing which includes the new pipe being pressure tested for leaks and then water samples were taken to ensure the pipe was safe from contamination. Utility crews also took advantage of the line being shut down to perform maintenance on other portions of the line at the same time. A portion of the existing pipe, installed in 1967, was carefully removed and found to be in excellent shape.

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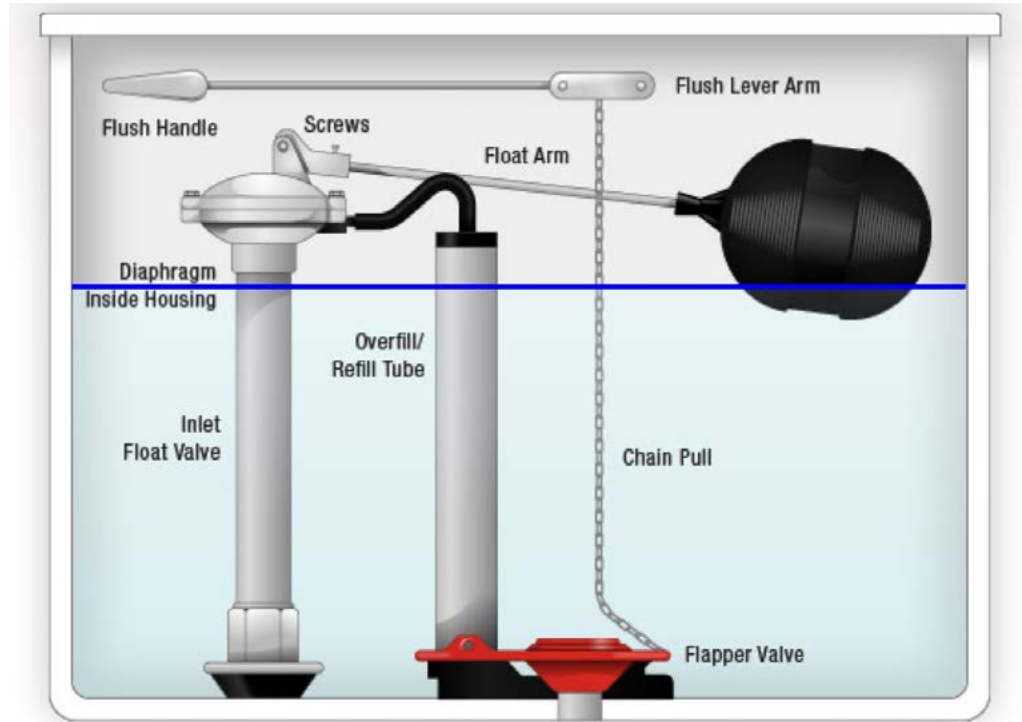


## SAVE WATER BY REDUCING INDOOR WATER LEAKS

The smallest leak can waste a significant amount of water over time. Common types of leaks in residential and commercial settings can be found in worn out toilet flappers. These types of leaks are often easy to fix for the DIYer and only require a few tools and hardware that, when fixed, can pay for themselves in water savings alone. Use the guideline below to make sure that your toilets are working properly and that you are not wasting water.

It's not always easy to tell if your toilet is leaking. Toilets can either leak at the flapper valve or waste water through the overflow/refill tube. To check for a slow leak, remove the toilet tank lid, and drop in a dye tablet or a couple drops of food coloring in the tank, and wait 10-15 minutes. When you return, look in the toilet tank bowl, and if you see colored water, you then know you have a leaking flapper valve. You will then want to replace the flapper valve.

- **STEP 1:** Start by removing the toilet tank lid and check the float arm. Reach in and lift it up. If the water stops running, you have found the issue. If not, adjust the screws or bolts to the inlet float until the water stops running.
- **STEP 2:** If the toilet is still leaking, you may have a problem with the fill valve. If this is the case, a steady trickle of water will continuously run, flowing into the overflow tube in the toilet tank itself. If this is the case; unless you look at the water level in the tank, this type of leak will go undetected until you receive your water bill. Try and adjust the float level so that the water stops filling before it reaches the overflow level. After adjusting, flush the toilet a couple times to ensure that everything is working properly and that the water level in the tank is slightly below the top of the overflow tube line.
- **STEP 3:** If all else fails and you still feel you have a leak, shut the water off and replace all of the toilet parts that are located within the upper tank portion of the toilet.



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 read more than 133,000 readings in 2020.

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