

St. Louis Park: Beneath the surface

December 2022

About this publication

In May and June 2022, 54 properties in the Oak Hill Park and Texa-Tonka neighborhoods were affected by two watermain breaks on Minnetonka Boulevard between Texas and Sumter avenues south. At that time, a 12-inch watermain ruptured and flowed underground through the sanitary sewer, emerging in the basements of nearby homes. See page 4 for information about this incident and follow-up actions.

Following the watermain breaks, residents who were not directly affected understandably had many questions about the condition of the city's infrastructure, primarily watermain and sanitary sewer pipes. From July to August of this year, the city's engineering and public works staff held discussions with the city council on city infrastructure.

This publication summarizes many of the points highlighted in those discussions.


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Infrastructure benefits all of us

The city's infrastructure includes sidewalks, bikeways, streets, alleys and underground utilities. Infrastructure is directly linked to the economic development and growth of the city. It provides people with connections to basic needs such as emergency response, health care, education, food resources, transportation, safety, job opportunities and more. We all rely on high-quality infrastructure – whether we're pedestrians, bicyclists, transit riders or in personal vehicles.

Planning for the future

Communities across the nation and in Minnesota are faced with the challenges of addressing aging infrastructure. St. Louis Park's building boom, like many other suburbs, followed World War II. From 1940 to 1960, the population grew from 7,737 to 43,310. Sixty percent of homes were built in a single burst of construction from the late 1940s to the early 1950s. As a result, most of the infrastructure in St. Louis Park was constructed before 1960.

Proactively planning for the replacement of infrastructure is essential for the city to thrive and grow successfully. As part of the planning process, the city has developed a Capital Improvement Plan (CIP) that describes the capital improvements and expenditures planned in St. Louis Park over the next 10 years. It's a statement of the city's policies and financial ability to manage infrastructure investment in the community.

The city's engineering and public works departments work together to identify the work included in the CIP. Engineering staff oversees the annual CIP construction projects for public infrastructure, including roads, bridges, sanitary sewer, storm sewer, watermain, sidewalks and bikeways. To plan for the future and coordinate work with other government jurisdictions, the city identifies the years when improvements will be done as well as funding sources.



Minnesota's infrastructure report card

In its 2022 Minnesota Infrastructure Report Card, the American Society for Civil Engineers (ASCE) reports that "much of Minnesota's infrastructure is aging and reaching the end of its expected lifespan. The majority of systems were built in the late 20th century, before much of today's modern technology was developed.

Our infrastructure systems of decades ago need upgrading to better meet and prepare for current and future climate trends, increased use of renewable fuels, a changing population and an evolving economy."

infrastructurereportcard.org/state-item/minnesota



Pavement management program

In 2004, to ensure city streets were being proactively maintained, the city council approved the pavement management program. Levels of maintenance and project type are determined by pavement condition. Each project type takes place in one of eight areas of the city on an eight-year cycle. This cycle helps minimize disruption to residents, while making construction more efficient and cost-effective.

Pavement rehabilitation

- Every year, 4 miles of street with an Overall Condition Index (OCI) rating of less than 45 are selected for rehabilitation, which includes full pavement replacement. See article at the bottom of this page for more information about OCI ratings.
- Curb is inspected for damage and proper drainage. Damaged or settled sections are replaced.
- Sidewalk, watermain, sanitary sewer and storm sewer are replaced or upgraded if condition warrants it.
- About 2 miles of watermain are replaced with this type of project.

Concrete repairs

- The year after a pavement rehabilitation project, concrete repairs take place in the same area – but not on the same street segments that underwent pavement rehabilitation.
- This includes repairs to concrete curb and gutter, as well as sidewalk, identified through inspection.

Mill and overlay

- Two years after a pavement rehabilitation project, mill and overlay work takes place in the same area – but not on the same street segments that underwent pavement rehabilitation.
- This includes removing and replacing the top 1.5 inches of pavement, extending the life of the street and delaying the need for full rehabilitation by 15 to 20 years.
- Mill and overlay doesn't include curb and gutter, sidewalk or utilities work.
- Street segments selected for mill and overlay have pavement with an OCI rating of 45 to 65 and don't contain watermain or other public utilities that have been identified for replacement.

Once the city completes each of these three project types in an area, it doesn't return to the area again for six years. At that time, the eight-year cycle starts again with identification of segments of streets in the area in need of pavement rehabilitation.

How it's funded

St. Louis Park does not assess individual property owners for the cost of street rehabilitation projects. Instead, franchise fees charged through CenterPoint Energy and Xcel Energy are passed on to the city to fund pavement and sidewalk replacement. While many communities assess adjacent property owners for street rehabilitation projects, St. Louis Park believes in the value of collectively contributing to the city's infrastructure.

How does the city measure pavement condition?

An Overall Condition Index (OCI) methodology is used to evaluate and rate the pavement quality and condition of street segments on a range of 100 (newly surfaced pavement) to zero (failed pavement). When the pavement management program was developed, the St. Louis Park City Council established a goal of maintaining a street network with an average OCI of 70 or more, which is consistent with many other jurisdictions. This goal then drives the capital planning and revenue needs identified in the city's Capital Improvement Plan (CIP). The city's current average OCI is 61.2.

Managing public infrastructure

Much of the infrastructure the city is responsible for is underground. Since repair and replacement of underground infrastructure usually requires digging up the street, the most cost-effective time to replace underground utilities is during pavement rehabilitation projects.

This is also true for the new construction and replacement of aboveground improvements, such as sidewalks and bikeways. Completing the construction of new infrastructure and the replacement of existing infrastructure at the same time the street is replaced provides greater flexibility in design, reduces the overall inconvenience to the public and allows the city to stretch its construction dollars.

As a result, when possible, the city's infrastructure planning is driven by pavement condition. This allows the city to maximize its investment by not digging up streets until they have reached the end of their useful life.

The city uses the following methods to identify what underground utilities are scheduled for replacement in the Capital Improvement Plan (CIP):

Sanitary sewer: Manholes* are used to routinely televise and clean underground pipes. When a problem is found with an underground pipe or manhole, it's scheduled for repair. Urgent repairs that would impact flow are repaired by city public works staff when they are found. Other repairs take place at the same time as a pavement rehabilitation project or as part of a sewer lining project.

Storm sewer: Manholes and catch basins are routinely inspected. When a problem is found with a pipe, catch basin or manhole, it's scheduled for repair. Urgent repairs that would impact flow are repaired when found. Other repairs are completed at the same time as a pavement rehabilitation project or as a standalone project. Stormwater features, including retention ponds and underground structures that provide stormwater treatment and flood storage, are inspected annually and maintenance is scheduled in the CIP as needed.

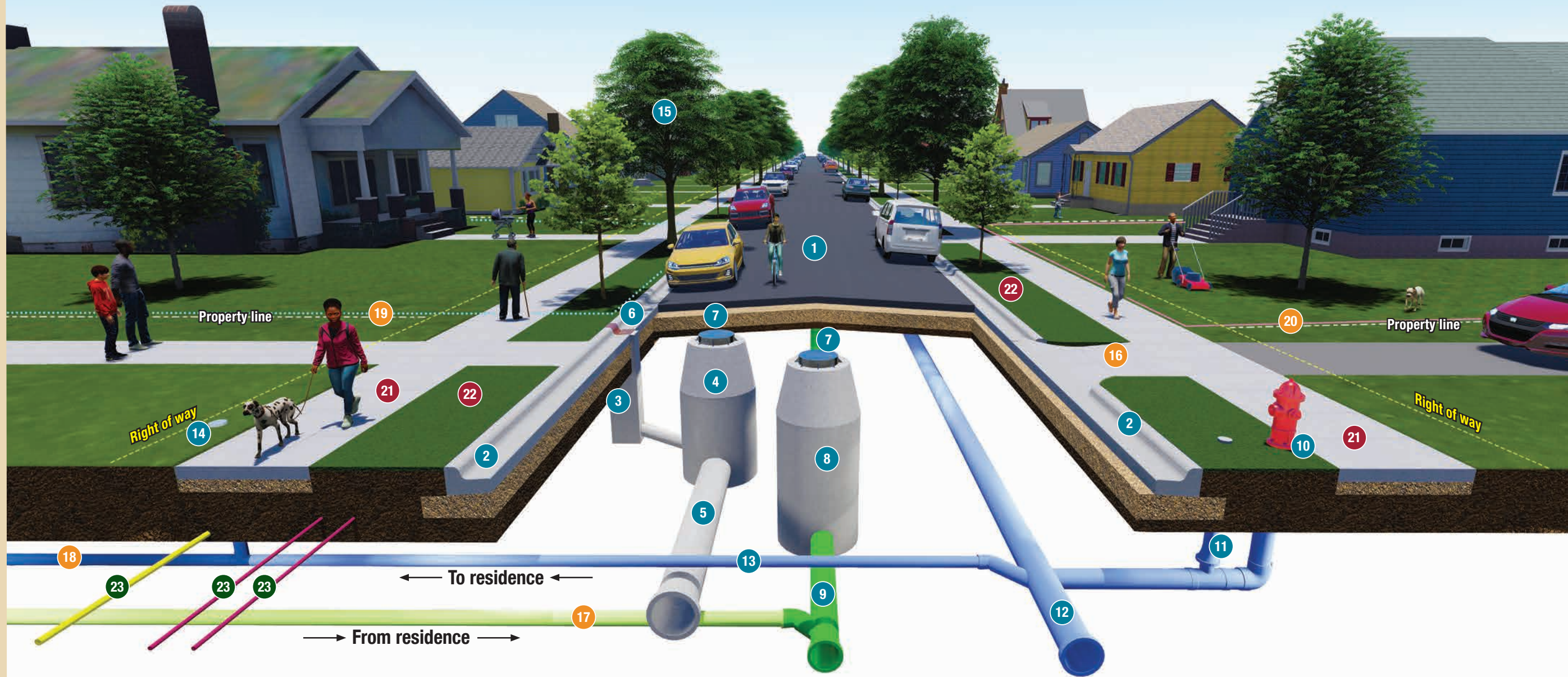
Watermain: This pressurized system can't be accessed from the surface, which prevents routine evaluation of the inside of the pipe. Due to this, industry standard for watermain replacement planning depends on a review of the pipe's age, pipe material, existing soil types around the watermain and history of breaks on each street segment scheduled for pavement rehabilitation. The city also conducts annual leak detection. Leaks that are detected are repaired when they are found.

How it's funded

Utility replacement, repair and maintenance are paid for using the city's sanitary sewer, storm sewer and water utility enterprise funds, which are funded through utility fees paid by property owners.

**The city acknowledges that "manhole" is not a gender-neutral term. It's used in this publication as a commonly understood term and as the current industry standard to describe these structures. The city will continue to track the use of this term and will modify it as industry standards and usage change.*

What's under my street?



Responsibility

- City
- Resident
- Joint responsibility: city owned/resident maintained
- Private utility company

- | | | | |
|--|--|--|---|
| 1 Street | 7 Manhole cover | 13 Water service | 19 Irrigation |
| 2 Concrete curb and gutter | 8 Sanitary sewer manhole | 14 Water service shut-off | 20 Pet containment system |
| 3 Storm sewer catch basin | 9 Sanitary sewer main pipe | 15 Boulevard tree | 21 Sidewalk |
| 4 Storm sewer manhole | 10 Fire hydrant | 16 Concrete driveway apron | 22 Boulevard |
| 5 Storm sewer pipe | 11 Hydrant valve | 17 Sanitary sewer service | 23 Private utilities (gas, electric, internet) |
| 6 Storm sewer inlet | 12 Watermain pipe | 18 Water service to house | |



Understanding right of way

All roads and alleys are located on land that is referred to as right of way. The right of way is intended for public purposes, including public streets, bikeways, alleys and public utilities. It generally extends beyond the pavement and can also include sidewalks, utility poles, private underground utilities, signs and streetlights. In addition, the city uses the area for snow storage in the winter.

If utility or other work is within 16 feet of the street or within 2 feet of the edges of the alley, it's likely taking place within public right of way. This right of way exists whether you have a public sidewalk or not in front of your property. Construction in, on, under or above the right of way requires review by the city, and if it's allowed, a permit is issued by the city. Private utilities are allowed by state law to work in the right of way if they meet permit requirements. The city can't deny a permit as long as the work is allowable.

Examples of private improvements allowed within the right of way are sprinkler systems, pet containment, landscaping and driveways. Construction of retaining walls, steps, lighting or a fence are generally not allowed in the right of way. Private improvements in the right of way may be damaged when construction takes place. If there is construction work in the right of way, repairs and relocation of underground private improvements are the responsibility of the property owner.

How can I find out where right of way ends and my property starts?

In most instances, the street or alley runs down the middle of the right of way. The width of the right of way can vary. Typically, the right of way for residential streets is 60 feet wide. For public alleys, it's 15 feet wide. Wider streets have wider right of way. Sometimes the center of the road does not match the center of the right of way.

If you would like to install landscaping, sprinklers, pet containment, fences or other private improvements adjacent to a street or alley, we recommend you hire a surveyor who can find your property corners. This will help you determine if the improvement you are installing is on your property or in the right of way. Visit www.mnsurveyor.com for a list of registered land surveyors.

Work within the right of way requires a permit from the engineering department. For information about permits, visit bit.ly/ROWpermit or call the engineering department at 952.924.2656.

City seeks federal funding

In November 2021, President Biden signed the Infrastructure and Investment Jobs Act (IIJA) bill into law. Among other items, the five-year bill includes higher funding levels and new grant programs that will expand the definition of transportation infrastructure and address health and community-driven outcomes.

The city is monitoring these funding opportunities and is applying for grants that will support infrastructure projects and advance the city's strategic priority to provide a variety of options for people to make their way around the city comfortably, safely and reliably.

What does construction cost?

These figures below are approximate costs, per mile, for various infrastructure replacement projects.

- | | | |
|--|---|---|
| Local streets: | Commercial streets: | Watermain construction: |
| • Mill and overlay: \$250,000 | • Mill and overlay: \$1.4 million | \$2 – 4 million, depending on pipe diameter |
| • Reconstruction: \$900,000 | • Reconstruction: \$3 million | Sidewalk construction: \$650,000 |
| Sewer construction: \$1.8 million | Sanitary sewer lining: \$350,000 | Trail construction: \$1.2 million |

Infrastructure, by the numbers

150 miles of streets

160 miles of watermain

- Most watermain is made of cast iron, which can last more than 100 years, depending on soils, installation and other site conditions
- More than 75% of watermain pipes were installed before 1970
- 1,508 fire hydrants

121 miles of sidewalk

140 miles of sanitary sewer

- Majority of system installed before 1970
- Made of clay, which can last as long as 150 years, depending on soils, installation and other site conditions
- 3,085 manholes

100 miles of storm sewer

- Majority of system was installed in the 1960s and 1970s
- Made of concrete, which can last 100 – 150 years if maintained properly
- 2,537 manholes
- 4,139 catch basins
- 437 discharge points
- 250 features, including retention ponds and underground structures, that provide stormwater treatment and flood storage



About the May and June 2022 Minnetonka Boulevard watermain breaks

In May 2022, 54 properties in the Oak Hill Park and Texa-Tonka neighborhoods were affected by a watermain break on Minnetonka Boulevard between Texas and Sumter avenues south. A 12-inch watermain ruptured and flowed underground through the sanitary sewer, emerging in the basements of nearby homes. Two weeks later, in early June, the same watermain ruptured, affecting a portion of the homes that had been affected by the first break.

Watermain breaks are not uncommon occurrences in St. Louis Park or across the nation. In most cases, they are quickly fixed and cause little or no damage to properties. What made the May and June watermain breaks unique was the way the water traveled. Most watermain breaks result in water flowing to the surface and overland and are quickly spotted and fixed. In this case, the water flowed underground, then broke into the sanitary sewer main. This allowed the escaping water to travel through sanitary sewer pipes and into homes, eventually emerging through basement drains.

Regardless of the level of damage, this was a devastating and disruptive event for affected residents. The city continues to work with affected homeowners as they file claims with their homeowners insurance and with the city's insurer, the League of Minnesota Cities Insurance Trust (LMCIT). Once LMCIT closes a claim, homeowners affected by these two breaks can apply for the city's reimbursement program for eligible expenses that exceed what's received from homeowners and LMCIT insurance coverages. The deadline to submit applications for the city's reimbursement program is Dec. 31, 2022. Learn more about the watermain breaks at bit.ly/22SLPWMB.

Sewer line rehabilitation completed



City staff and the city council had extensive discussions about infrastructure at study sessions in June, July and August 2022. One result of these discussions was to move ahead with sewer line rehabilitation in the areas affected by the watermain breaks. This work was completed in September 2022.

The sewer line rehabilitation included lining the sanitary sewer pipes and manholes in the areas adjacent to the May and June 2022 watermain breaks. Sewer pipes were lined using a process known as cured-in-place pipe relining, which allows cleaning, repair and reinforcement of the pipeline without digging up the street and installing new lines. It extends the lifespan of the pipe by as much as 50 years. Visit bit.ly/3UnEnd7 to watch a video of this process.



Pilot project set to evaluate pipe wall thickness

The city is working on a pilot project to assess pipe wall thickness using a new tool called SeeSnake®, a 12-foot device deployed inside the watermain. The device uses magnetic waves to determine the amount of wall thickness remaining in the pipe and to provide a 360-degree view of the pipe. By evaluating the wall thickness, watermain that is at a higher probability of failure can be found before it leaks. The information gathered through SeeSnake® will help the city plan for future pipe replacements or repairs in areas with higher risk of failure.

This pilot project will be used to assess 12-inch watermain under the pavement on Minnetonka Boulevard from approximately Highway 169 to Highway 100 (2.6 miles of watermain), on Cedar Lake Road from Highway 169 to Kentucky Avenue (1.6 miles of watermain) and on Louisiana Avenue from I-394 to the railroad tracks (0.9 miles of watermain). While these segments have no history of breaks, it makes financial sense to conduct a pilot project on segments already identified for construction.

The total cost for the pilot project is estimated to be nearly \$400,000, which is being paid for from funds diverted from the 2023 pavement management project and watermain funds already allocated to the Cedar Lake Road and Louisiana Avenue projects. This evaluation will require excavation of the streets to access the underground pipes to insert the device. Work is planned for spring 2023.

Visit bit.ly/RedoCedarLou for information about the Cedar Lake Road and Louisiana Avenue projects.

Glossary

Capital Improvement Plan (CIP) – the city's 10-year plan to proactively plan for and fund large projects and equipment purchases

Infrastructure – includes sidewalks, bikeways, streets, alleys and underground utilities

Mill and overlay – street maintenance process that consists of two major steps, milling the street and laying the new asphalt (overlay). Heavy equipment is used to mill the street and remove the top 1.5 inches. This process can extend the life of the street by 15 – 20 years.

Overall Condition Index (OCI) – methodology used to evaluate and rate the pavement quality and condition of street segments on a range of 100 (newly surfaced pavement) to zero (failed pavement)

Right of way – land intended for public purposes, including public streets, bikeways, alleys and public utilities. The right of way generally extends beyond the pavement and can also include sidewalks, utility poles, underground utilities, signs and streetlights.

Sanitary sewer – underground pipe system for transporting sewage from homes and other buildings to a sewage treatment plant for disposal

Storm sewer – a sewer system built to carry away excess water, including rainwater or melted snow; a storm drain. The runoff is carried in underground pipes and discharged into streams, lakes and rivers.

Watermain – an underground pressurized pipe used as the main line in a water supply system that transports consumable water to homes and other buildings

Resources

- Capital Improvement Plan (CIP) projects map: bit.ly/3FfuR73
- Minnetonka Boulevard watermain breaks: bit.ly/22SLPWMB
- Raise Our Grade Minnesota: raiseourgrademn.org
- 2021 Report Card for America's Infrastructure: infrastructurereportcard.org