



# STORM WATER UTILITY

2024 Annual Report



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## MESSAGE FROM DIRECTORS

The Storm Water Utility funds the complex system of a storm water infrastructure network, which starts from the collection ditches, storm ponds, and sewer infrastructure and ends at the South Saskatchewan River by discharge through the City's 91 active outfalls. The Storm Water Utility is responsible for the planning and design, management, storage, operation and maintenance, asset preservation programming, and system engineering, which is managed by the following departments:

- Saskatoon Water
- Water and Waste Operations
- Technical Services

The Storm Water Utility also funds the Drainage Inspector and manages the Bylaw and Compliance section in Community Standards and the oversight of the riverbank stability by the Geotechnical Specialist in Saskatoon Water.

Management and Staff from the responsible Departments are committed to providing exceptional storm water management and flood protection services, including operations and maintenance of assets in the most reliable and cost-efficient way for the citizens of Saskatoon. We are pleased to present our results in the Storm Water Utility 2024 Annual Report on behalf of our Departments.

The Report describes our contributions to achieving the City of Saskatoon's Strategic Plan. We take great pride in efficient storm water management and reducing the flood risk for the citizens of Saskatoon. Several initiatives have been completed, and more are underway to further enhance service to the citizens, increase efficiencies, reduce costs, and strengthen our environmental leadership.

Our financials show responsible stewardship of the resources that Saskatoon citizens have entrusted to us. We continue to provide excellent value to our citizens as we undertake capital and Continuous Improvement projects that ensure asset and financial sustainability. Our utility rates are designed to fund the needed capital, asset preservation, operation and maintenance costs for current and future storm water management, and flood protection considering climate change. The Departments have been focusing on customer service, storm water management for current and new neighbourhoods, flood protection for the most at-risk areas, and addressing aging infrastructure for storm water related services.

We are proud to work with a dedicated group of professionals who demonstrate an ongoing commitment to storm water management and flood protection, as well as ensuring the storm water infrastructure is sustainable. The work of the Storm Water Utility Departments is greatly appreciated.

**Russ Munro** – Director of Saskatoon Water  
**Brendan Lemke** – Director of Water and Waste Operations  
**Dan Willems** – Director of Technical Services

## EXECUTIVE SUMMARY

The Storm Water Utility funds storm water management and flood protection services, including ongoing operations and maintenance of assets with an estimated replacement value of \$3.0 billion. The Storm Water Utility also monitors and stabilizes the East Riverbank to protect strategic public infrastructure. In 2024, the Storm Water Utility had revenues of \$14.2 million, with \$13.9 million allocated to operating expenses, which included \$9.6 million transferred to Capital and Infrastructure Reserves.

In 2024, progress was made implementing the Storm Water Utility Business Plan, with the following highlights:

- Continued to progress the nine-project Flood Control Strategy that will reduce the flood risk for at least ten top flood prone locations within the city before 2028. The third project (Weaver Park Dry Storm Pond) was completed, while the fourth project (Brevoort Park South Underground Storage) reached substantial completion, with landscape construction scheduled to progress in 2025. The detailed design and public engagement for the fifth and sixth projects (Cumberland Park Dry Storm Pond and USask Dry Storm Pond, respectively) were completed. Additionally, the feasibility assessment and preliminary design began for the seventh and eighth projects (Cahill Park Dry Storm Pond and 24th Street Storm Trunk, respectively).
- Construction of Phase 2 of the Montgomery Place Drainage Improvement Project was completed. Detailed design of Phase 3 also progressed in 2024, with construction planned to occur in 2025 and 2026.
- Construction of ditch improvements and a new storm trunk to Cartwright Pond in the CN Industrial Neighbourhood Drainage Improvements was completed in 2024. Additional landscaping is planned to be constructed at the pond in 2025.
- Responded to 885 storm water and drainage inquiries through our Customer Care Centre. Bylaw and Compliance also responded to 221 drainage related complaints and the Storm Water Utility responded to 226 inquiries.
- Roadways, Fleet and Support completed the fall sweep, which included 106 km of streets and 2,024 tonnes of debris collected. Water and Waste Operations completed 521 catch basins inspections and completed 178 repairs or replacements based on the inspection findings. Operations also completed 430 manhole inspections and executed 60 manhole repairs.
- Continued asset management planning of infrastructure, including completion of the 2024 Storm Pond Visual Inspections and updating the Storm Water Asset Management Plan.
- Monitored sediment levels of storm ponds, including the bathymetric surveying of three wet storm ponds.
- Completed the annual Spring Reconnaissance comprising of a visual inspection of the slopes and monitoring of instrumentation of the East Riverbank to assess and rate specific sections. Monitoring programs were completed near 16th Street and 11th Street.
- Continued collaboration with the University of Saskatchewan, Meewasin Valley Authority, and others to monitor and research storm water quality and related concepts

of the storm water system and South Saskatchewan River. Highlights of this included the installation of 12 floating wetlands in Kensington 1 Pond.

- Collaborated with the University of Saskatchewan to begin a multi-year research project regarding storm pond sediment, with the results of the project anticipated to guide future storm water design standards at the City.
- Completed billing reassessments of 263 industrial, commercial, institutional, or multi-residential sites in the annual storm water utility billing process.

Saskatoon had an above average rainfall year with 337 mm of rainfall recorded. This accumulation was above the historical average of 263 mm, with it being the 22<sup>nd</sup> highest seasonal rainfall total since 1900. Measured rain events occurred on June 12, 2024 (2-to-5-year return period), June 27 to 28, 2024 (2-to-5-year return period), July 12, 2024 (2-to-5-year return period), and August 23 to 24, 2024 (5-to-25-year return period).

## 1.0 OVERVIEW

### 1.1 Introduction

The Saskatoon Storm Water Utility provides storm water management and flood protection through funding the storm water system's operations and maintenance, asset preservation, capacity enhancements, and drainage inspections. The Storm Water Utility also monitors and mitigates damage to strategic public infrastructure along the riverbank.

Storm water services are provided to residential and industrial, commercial, and institutional (ICI) properties. In 2024, storm water charges were applied to approximately 68,322 single-family residential properties, 1,124 multi-family residential, and 3,545 ICI properties including City-owned sites.

Saskatoon's storm water infrastructure includes over 21,522 manholes and catch basins; 927 km of linear infrastructure, such as storm sewer pipes and culverts; 47 storm ponds; and other drainage infrastructure with a replacement value of approximately \$3 billion.

A list of key definitions and abbreviations for the report is provided in Appendix 1.

### 1.2 Strategic Linkages

The City of Saskatoon's (City) [2022-2025 Strategic Plan](#) provided the direction that guided the activities of the Saskatoon Water Utilities. The following section outlines our Vision, Mission, linkages to the Corporate Strategic Goals, and Guiding Values.

#### **Our Vision**

The City of Saskatoon (City) is a leader in storm water design and asset management. We effectively collaborate with citizens and partners to utilize storm water as a resource and mitigate the risk of flooding.

#### **Our Mission**

The Storm Water Utility provides safe, efficient, and cost-effective storm water management to Saskatoon citizens through teamwork and innovation. We develop proactive strategies that ensure the effective long-term performance of our storm water systems, supported by sustainable, accountable, and responsive funding structures. Storm water management charges entrusted by citizens are used as effectively as possible to minimize storm water and snow melt impacts.

## Our Corporate Purpose

# Our Purpose

Our Purpose describes the reasons we come to work every day.

- › **We are making** Saskatoon a great place to live, work, learn and play every day.
- › **We are creating** a welcoming workplace where each of us are encouraged to realize our full potential.
- › **We are building** a sustainable future upon our predecessors' legacy and history of success.
- › **We are exceptional** in delivering public services.
- › **We are innovative** and unleash creative solutions and investments that contribute to a great city.
- › **We adopt and support** behaviours that reduce the environmental footprint of the city.



## Our Guiding Values



# Our Values

Our values are part of who we are, what we stand for and how we behave towards each other.

### PEOPLE MATTER

We work together as one team, seek input when it matters, support each other to grow and be our best selves, and foster a culture where we use our voices to drive change.

### RESPECT ONE ANOTHER

We value the diversity each of us brings, celebrate our successes - big or small, and take the time to listen, understand and appreciate each other.

### ACT AND COMMUNICATE WITH INTEGRITY

We are honest and take ownership of our actions, transparent in our decision-making, and question actions inconsistent with our values.

### SAFETY IN ALL WE DO

We never compromise on the safety, health and well-being of ourselves and those around us, we put safety at the forefront of all decisions, and take responsibility to act on unsafe or unhealthy behaviours.

### TRUST MAKES US STRONGER

We depend on each other and know we will do what we say, we assume the best of others, and support, inspire and empower each other every day.

### COURAGE TO MOVE FORWARD

We lead and embrace change, think outside the box, and ask the tough questions.



## Our Strategic Goals

The Strategic Goals are based on areas that the community, Administration, and City Council identified as important to realize the long-term vision of Saskatoon as *a great place to live, work, learn and play*.



### ASSET & FINANCIAL SUSTAINABILITY

Saskatoon invests in what matters.



### CULTURE OF CONTINUOUS IMPROVEMENT

Saskatoon is the best-managed city in Canada.



### ENVIRONMENTAL LEADERSHIP

Saskatoon grows in harmony with nature.



### MOVING AROUND

Saskatoon is a city on the move.



### QUALITY OF LIFE

Saskatoon is a warm and welcoming place for all.



### SUSTAINABLE GROWTH

Saskatoon is known for smart, sustainable growth.



### ECONOMIC DIVERSITY & PROSPERITY

Saskatoon thrives thanks to a diverse local economy.

**Quality of Life:** Provide citizens with cost effective, reliable, and high-quality storm water management services.

**Continuous Improvement:** Increase workplace efficiencies and improve services through implementing innovative approaches that maximize value.

**Asset and Financial Sustainability:** Implement capital preservation and expansion plans that provide the most cost-effective, storm water-related infrastructure for current and future citizens and businesses.

**Environmental Leadership:** Implement leading-edge innovations for environmentally responsible storm water-related infrastructure and services.

**Sustainable Growth:** Work closely with other departments to provide efficient and resilient designs for storm water infrastructure for new developments.

**Moving Around:** Collaborate with all stakeholders to minimize storm water-related transportation disruptions.

**Economic Diversity and Prosperity:** Provide competitively priced and reliable storm water related services, and cost-effective designs for new developments.

## 2.0 OUR STORM WATER UTILITY TEAM

The Storm Water Utility is part of Saskatoon Water Department in the Utilities and Environment Division. The Utility had three full-time employees and two engineering interns in 2024.

**Saskatoon Water’s Engineering and Planning:** Responsible for overseeing the Storm Water Utility and providing storm water engineering expertise. Saskatoon Water provides the following storm water management services:

- Flood Control Strategy (FCS) design and project management.
- Montgomery Place Drainage Improvement Project (MPDIP) design and project management.
- CN Industrial Drainage Improvement Project design and management.
- Montgomery Place driveway ditch crossing permitting.
- Rainfall monitoring and storm water quality monitoring.
- Assessing runoff factors of multi-residential and ICI properties for billing purposes.
- Analyzing and administering storm water billing credit applications.
- Engineering support for drainage projects.
- Community liaison for storm water issues.
- Modelling storm system capacity relative to rainfall volume and intensity.
- Planning and design of storm water infrastructure for new land development.
- Asset management of the City’s storm ponds and outfalls.
- Monitoring the stability and condition of the riverbank, and coordinating remediation of slope failures and/or erosion in the area.

The Utility also funds services provided by the following departments:

**Construction and Design:** Operates the “Connection Desk” and provides project management services, including survey work and inspection, for storm water infrastructure construction projects.

**Communications and Public Engagement:** Assists in initiatives to enhance citizen awareness and engagement to improve flood resiliency.

**Community Standards:** provides drainage inspections, drainage advice to residents and developers, [Drainage Bylaw](#) updates, and Drainage Bylaw enforcement.

**Corporate Revenue:** Provides storm water billing and collection services.

**Finance:** Provides accounting and administrative support.

**Parks:** Provides landscape design services for the FCS projects and provides ongoing day-to-day operations and maintenance of areas surrounding some storm ponds.

**Roadways, Fleet and Support (RFS):** Maintains above-ground drainage, including culverts, and completes a fall street sweep.

**Sustainability:** Provides leadership in activities that contribute to storm water practices that protect our watershed and natural resources.

**Technical Services:** Tracks the inventory, completes condition assessment, and oversees asset preservation for storm sewer infrastructure.

**Water and Waste Operations (WVO):** Provides the ongoing day-to-day operations and maintenance of storm water ponds, outfalls, and below-ground (sewer) storm water drainage infrastructure.

### 3.0 OUR INFRASTRUCTURE

Table 1 summarizes the City’s storm water infrastructure with a replacement value of \$3.0 billion.

The Storm Water Utility’s **minor system** consists of sewer pipes, manholes, catch basins, and outfall structures that convey runoff from more frequent, lower intensity storm events (up to a “1-in-2-year” storm). The system includes 927 km of linear infrastructure, such as storm sewer pipes and culverts, 8,099 manholes, 13,423 catch basins, 2,871 service connections, 91 functioning river outfalls, and minor ditches.

The **major system** consists of overland street drainage, 13 dry ponds, 34 wet ponds (including 10 naturalized wetlands) major ditches, swales, and any other land that is required to convey runoff from less frequent, higher intensity storms that produce runoff in excess of what the minor system typically handles.

**Table 1: Storm Water Inventory**

Asset	Type	2024 Inventory
Sewer Mains	Collectors	647 km
	Trunks	70 km
Manholes	-	8,099 ea.
Force mains	-	4 km
Service Connections	-	2,871 ea.
Catch Basins	-	13,423 ea.
Leads	-	155 km
Storm Ponds	Dry	13 ea.
	Wet	34 ea.
Culverts	-	11 km
Outfalls	-	91 ea.
	-	-
Sub-drainage	Roadways	38.7 km
	Riverbank	1.7 km
Oil & Grit Separators	-	1 ea.
Lift Stations	-	2 ea.
<b>Replacement Value</b>		<b>\$3.0 billion</b>



**Figure 1: Weaver Park Dry Pond**

## 4.0 OUR RESULTS

### 4.1 Climate and Precipitation

#### Annual Rainfall

Eleven rainfall gauges, within the City’s network, were regularly monitored between April 1, 2024, and September 30, 2024. A summary of Saskatoon’s 2024 rainfall season is provided in the [2024 Annual Rainfall Report](#). Overall, Saskatoon had an above-average rainfall year with 337 mm of rainfall accumulating. This was above the historical average of 263 mm, with it being the 22<sup>nd</sup> highest seasonal rainfall total in the last 125 years. Rainfall increased from 2023, when the city received 213 mm of rainfall.

Four rainfall events occurred throughout the year, three with a return period of 2 to 5 years, and one with a return period of 5 to 25 years. Table 2 provides the rain event details for all rain events recorded by eleven rain gauges.

**Table 2: Rain Events in 2024**

Date	Rain Event Statistics	Acadia Reservoir	Attridge Fire Hall	City Hall	Light and Power	Shaw Centre	Wastewater Treatment Plant	Woodlawn	Aden Bowman	Water Treatment Plant	Parks Ave P	Field House
June 12, 2024	Peak Intensity (mm/hr)	-	7	5	98	14	5	2	60	9	4	50
	Total Rainfall (mm)	-	2.8	2.6	19	2.6	1.0	0.8	10	3.0	1.8	11
	Return Period (yr.)	-	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
June 27 – 28, 2024	Peak Intensity (mm/hr)	-	12	12	9.6	9.6	12	9.6	9.6	9.6	12	9.6
	Total Rainfall (mm)	-	32	37	41	40	30	34	39	38	35	33
	Return Period (yr.)	-	< 2	2	2	2	< 2	2	2	2	2	2
July 12, 2024	Peak Intensity (mm/hr)	53	72	38	41	31	72	65	50	53	38	50
	Total Rainfall (mm)	14	18	12	8.2	8.0	21	16	13	9.0	11	13
	Return Period (yr.)	< 2	2	2	< 2	< 2	2	2	< 2	< 2	< 2	< 2
August 23 – 24, 2024	Peak Intensity (mm/hr)	18	41	72	50	79	130	62	65	86	70	65
	Total Rainfall (mm)	23	23	45	19	51	47	46	27	39	50	26
	Return Period (yr.)	2	< 2	5	2	5	5	< 2	2	5	5	2

The greatest rain event occurred between August 23 and August 24, 2024, where a total average of 36 mm of rainfall occurred, which represented approximately 11% of the total 2024 rainfall. During this rain event, the areas of the City that are west of the South Saskatchewan River, received the highest rainfall amount, with 46 mm of rain over the course of the rain event. The storm in these areas was classified as a “1-in-5 year” storm, as per the current City Intensity-Duration-Frequency curves.

## 4.2 Capital Programs

### Flood Control Strategy

The Flood Control Strategy (FCS) includes nine projects to reduce the flood risk for at least ten flood zones before 2028. The FCS construction is funded by the Storm Water Utility (60%) and the Government of Canada (GoC) Disaster Mitigation and Adaptation Fund (40%), up to a total project cost of \$54 million. Currently the estimated total project cost is \$56.2 million due to increased construction costs and inflation since the FCS was approved in 2018. Any cost overages would be funded through capital reserve allocations within the Storm Water Utility if required.

Final completion was reached for the dry pond and related storm sewer infrastructure at Weaver Park in October 2024. The dry pond was in service for storm water management to reduce flooding throughout 2024, though no large enough rain event occurred where storm water entered the pond.



**Figure 2: Weaver Park Dry Storm Pond**

Substantial completion was reached in November 2024 for the underground storm water storage and related storm sewer infrastructure at Brevoort Park South. The underground storm water storage is in service to reduce nearby flooding for the 2025 rainfall season. Landscaping construction planned to begin in Brevoort Park South in Summer 2025, with the work expected to be completed, and the park to be reopened to the public in 2026.



**Figure 3: Installation of Underground Storage in Brevoort Park South**

Public engagement and final detailed design plans were completed for the Cumberland Park dry pond project as well as the USask Dry Pond project. Construction for the two projects will begin in 2025 and will mitigate flooding for the Cumberland Avenue and Main Street and Cumberland Avenue and 14th Street intersections.



**Figure 4: Rendering of Cumberland Park Dry Pond**

The feasibility assessment and conceptual plans for the seventh and eighth projects within the FCS commenced in 2024 to mitigate flood risk at properties near the intersections of 21st Street and Avenue W South, and 24th Street and 3rd Avenue.

**Future Flood Mitigation Projects**

In 2023, the Storm Water Utility applied to the GoC’s Disaster Mitigation and Adaptation Fund for the construction of five storm water management facilities that would be constructed between 2028 and 2032. Although the funding application was ultimately unsuccessful, Saskatoon Water will continue to explore future funding opportunities to construct additional flood mitigation projects beyond the current Flood Control Strategy.

**Montgomery Place Drainage Improvement Project (MPDIP)**

Construction was completed for Phase 2 of the three-phase MPDIP in 2024, with some remaining outstanding deficiencies to be completed in 2025. This construction area included segments of Bader Crescent, Lancaster Crescent, and Mountbatten Street. The drainage improvement project is expected to cost \$8 million and is partially funded through the Investing in Canada Infrastructure Program where 40% is contributed by the GoC and 33.33% is contributed by the Government of Saskatchewan (GoS).

The detailed design of Phase 3, which will include drainage improvements along segments of Crerar Drive, Cassino Avenue, and Mountbatten Street, progressed in 2024 with construction tentatively scheduled for completion in 2025 and 2026. The drainage improvement phases will be completed in collaboration with roadway preservation work to achieve an efficient, cost-effective, and one-city approach for the neighbourhood.



**Figure 5: Completed Ditch Improvements in Montgomery Place**

## CN Industrial Neighbourhood Drainage Improvements

In collaboration with the Sustainability Department, Saskatoon Water was approved to receive up to \$4.1 million in GoC funding through the Natural Infrastructure Fund in 2021. The ditch/swale reconstruction and culvert replacements along Melville Street, Jasper Avenue, and Portage Avenue began in 2023 and were completed in 2024. The project also included a new outfall into Cartwright Pond, which was installed by micro-tunnelling under the CN rail tracks. Additionally, landscape enhancements for Cartwright Pond are scheduled to be completed in 2025. The drainage improvements for this neighbourhood are being coordinated with other capital projects that will include water-main upgrades, road preservation, and storm system expansion.



Figure 6: Constructed Storm Water Outfall into Cartwright Pond

## 4.3 Maintenance and Operations

### Citizen Inquiries

In 2024, the Customer Care Centre responded to 885 inquiries from citizens regarding culverts, drainage, storm sewer, and storm water flooding issues, which was down from 967 inquiries in 2023. The type of inquiries received are shown below in Table 3.

The Storm Water Utility group responded to 226 citizen inquiries in 2024, down from 327 in 2023. Of these inquiries, 49 inquiries were related to storm water billing, 24 were inquiries regarding the Flood Control Strategy projects, while seven required a site visit. Table 4 below summarizes the completed inquiries.

Note that complaints received by the Bylaw and Compliance group are not included in Table 3 and Table 4. This information is provided later in the report in Section 4.7.

**Table 3: 2023 and 2024 Customer Care Summary of Inquiries**

Description	2023	2024
CB Plugged/Clogged/Frozen	200	167
Street Drainage	25	35
Lane and/or Lot Drainage	1	3
CB Damaged	72	192
CB Lead Damaged	7	24
Manholes	88	115
Spring Drainage	502	275
Storm Sewer Blockage	6	31
Storm Ponds	39	19
Other	27	24
<b>Total</b>	<b>967</b>	<b>885</b>

**Table 4: 2023 and 2024 Storm Water Group Customer Inquiries**

Description	2023	2024
Alley Drainage	1	4
Surface Drainage	19	11
Sewer Drainage	7	9
Montgomery General	11	3
Montgomery Drainage Strategy	34	23
Montgomery Ditch Crossings	2	10
Flooding	5	0
Flood Control Strategy	50	24
Storm Water Utility Billing	69	49
General	75	23
Bylaw	2	5
Catch Basin Drainage	37	23
Councillor Requests	13	15
City of Saskatoon Internal <sup>1</sup>	-	13
Storm Ponds <sup>1</sup>	-	10
Storm Water Credit	2	4
<b>Total</b>	<b>327</b>	<b>226</b>

<sup>1</sup>Description added in 2024.

### Roadways, Fleet and Support Fall Sweep

The 2024 Fall Street Sweep Program utilized a tree density and flood risk approach similar to the methodology used in previous years. A total of 106 km of streets were swept or 98.5% of the program and approximately 1,550 meters of the program were excluded due to construction. The tonnage of debris removed was 2,024 tonnes, which is 964 tonnes more than what was collected in 2023, as shown in Figure 7. By designing the program based on higher tree density, increased debris captured during the sweep provides better flood protection per kilometer swept. The RFS team completes many of the overland drainage inquiries received by the Customer Care Centre.

## Fall Sweep Total Debris Tonnage Removed

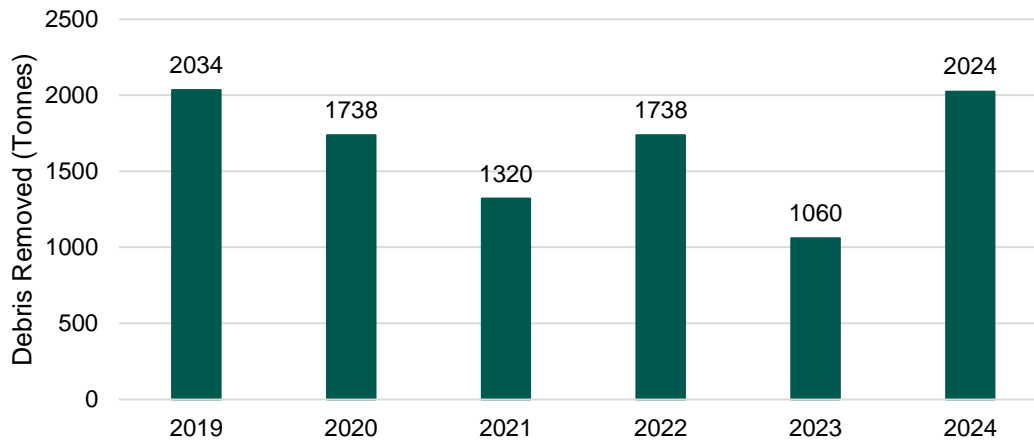


Figure 7: Fall Sweep Total Debris Tonnage Removed

### Water and Waste Operations Maintenance

WWO operates and maintains below ground storm water infrastructure including sewer mains, manholes, and catch basins. Table 5 below summarizes WWO’s 2024 storm water related maintenance activities including flushing and televising storm water sewers, and cleaning and inspecting infrastructure.

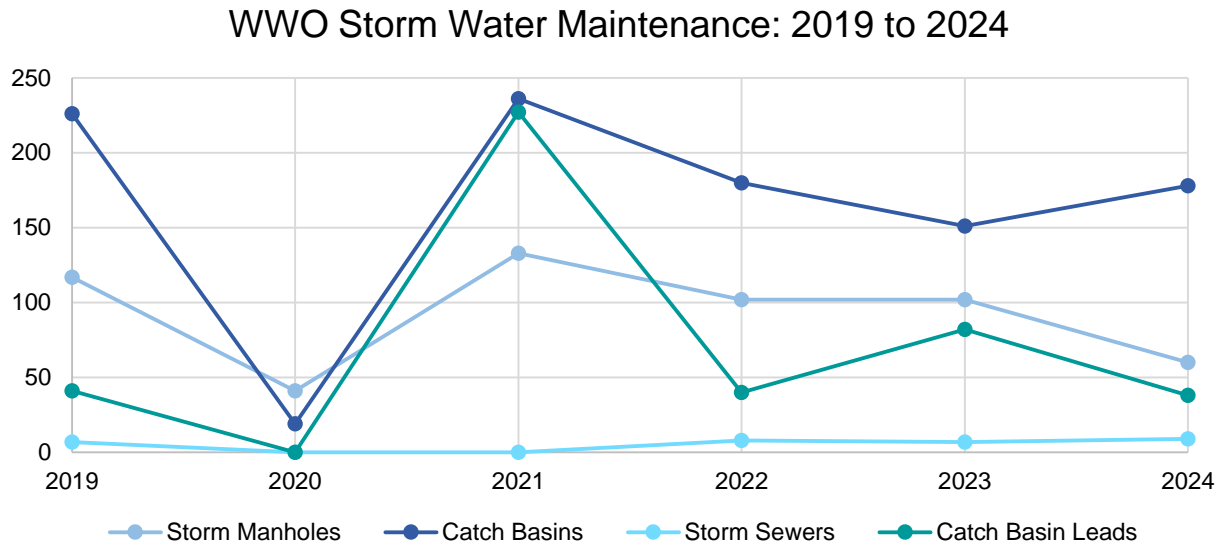
Table 5: WWO’s Storm Water Infrastructure Maintenance

Activity	2023	2024	Units
CCTV of Storm Mains	15,036	11,859	Meters
CCTV of CB Leads	3,417	1,297	Meters
Storm Sewer Meters	56,581	49,547	Meters
Catch Basin Leads	311	289	Each
Inspect Catch Basins	579	521	Each
Clean Catch Basins	16,174	11,101	Each
Repair Catch Basins	109 repaired, 42 replaced	163 repaired, 15 replaced	Each
Inspect Storm Manholes	319	430	Each
Repair Storm Manholes	102	60	Each
Grout MHs/CBs	15	33	Each
Outfalls	84	84	Each
Storm Ponds	57	114	Each

#### Table Definitions

- “Storm Sewer Meters” refers to the storm segment meters flushed.
- “Catch Basin Leads” is the number of leads flushed or cleaned.
- “Outfalls” is the number of total times outfalls inspected and/or cleaned.
- “Storm Ponds” is the number of trips made to maintain storm ponds.

A total of 163 catch basins, 60 manholes, six segments of catch basin leads, and seven segments of storm sewer were repaired, while 42 catch basins and 63 segments of catch basin leads were replaced in 2024. Additionally, 114 maintenance visits to storm ponds were completed in 2024. **Error! Reference source not found.** displays the 2024 WWO repairs and replacements of storm water infrastructure compared to the previous five years.



**Figure 8: WWO Storm Water Maintenance Repairs and Replacements: 2018 to 2024**

## 4.4 Asset Management

### Storm Sewer Inspection, Cleaning and Lining

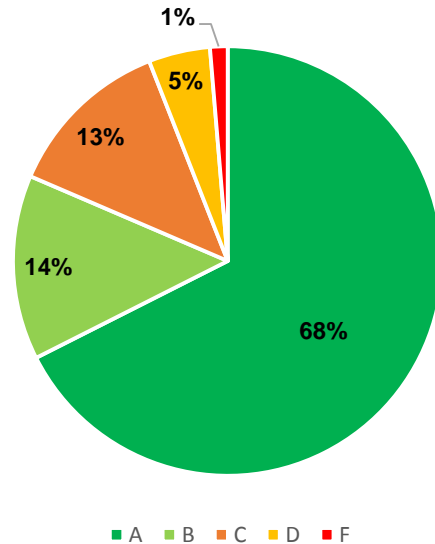
In 2024, the Storm Water Utility funded the cleaning and inspection of approximately 12 km of storm sewers. As of the end of 2024, over 207 km of storm pipes have been inspected (23% of linear storm sewer pipe system), and 152 km of these have been rated (21% of linear storm sewer pipe system). The inspected storm sewers were rated using a five-point scale:

- A: No structural problems evident.
- B: Some structural deficiencies noted.
- C: Sewer main showing deterioration.
- D: Physical condition is near failure.
- F: Physical condition has failed.

The rating for 152 km of inspected sewer mains is provided in Figure 10.



**Figure 10: Image of Sediment within Storm Sewer Pipe**



**Figure 9: Image of Storm Sewer Main & Trunk Ratings**

### Storm Water Asset Management Plan

The current inventory of storm water infrastructure has a replacement valuation of approximately \$3 billion. As of the end of 2024, approximately 21% of the storm infrastructure network (storm sewer, outfalls, manholes, catch basins, culverts, ponds, etc.) has been inspected. Future work will be to continue inspections of the storm water infrastructure network, so conditions are known for the entire system. Other priorities include documenting service expectations and accounting for climate change in future infrastructure projects.

### Storm Water Cleaning and CCTV Pilot Project

In response to the June 20, 2022, rain event, where upwards of 75 mm of rain was received in some areas of the City over the course of an hour, the City launched a targeted storm sewer infrastructure investigation in areas where flooding causing damage was reported. In October 2023, City Council approved a cleaning and CCTV inspection pilot project, which would focus on inspections and cleaning storm sewers at known high-risk flood locations.

CCTV inspections and storm sewer flushing were completed at all of the identified known high-risk locations in 2024, with a total of 5.1 km flushed and inspected via CCTV. Further analysis of the results of the project will continue into 2025. If the results are proven effective through the pilot project, changes to service levels will be documented, and be incorporated into the 2026-2027 business plan and budget process.

## 4.5 Storm Water Outfalls

### Outfall Inventory

The City currently has 91 owned and maintained storm water outfalls. The Storm Water Utility formally inspects the outfalls every three years as part of the Storm Water Asset Management Plan, with the next comprehensive inspection program scheduled for 2025. WWO also completes inspections at select outfall locations annually, as well as inspections on an emergency or inquiry basis.

## 4.6 Storm Water Ponds

### Storm Water Ponds Inventory

The City currently has 34 wet ponds and 13 dry ponds within the storm water management network. The Storm Water Utility formally inspects the storm water management ponds every three years, with new ponds inspected the year they are in service, as part of the Storm Water Asset Management Plan. A comprehensive inspection program was last completed in 2024. WWO also completes inspections at select pond locations annually, as well as inspections on an emergency or inquiry basis.

### 2024 Storm Pond Visual Inspections

In 2024, Saskatoon Water completed visual inspections of 45 ponds in the City's inventory. The visual inspections documented the condition of pond infrastructure (such as storm sewer pipes, slopes, shoreline, and water appearance), identifying deficiencies or areas requiring maintenance. The detailed report and recommendations are still being finalized at time of this reporting. Once finalized, the recommendations and action items are expected to be completed in coordination with Saskatoon Water, Parks, WWO and external projects.

### Storm Water Ponds and Recreational Use

The City permits use of storm water ponds for recreational use through *Policy C10-024*. A storm pond recreational use committee that meets quarterly includes members from Saskatoon Fire, Recreation and Community Development, Communications, WWO, Technical Services, and Saskatoon Water to discuss safety of the storm pond system. Saskatoon Fire completes ice thickness testing in the winter to permit recreational use of the storm ponds for the season. Additional seasonal testing is completed by Saskatoon Fire as required based on weather conditions. Only select storm ponds are permitted for recreational use based on infrastructure and site inspections.

### Storm Pond Bathymetric Survey Program

In 2024, Saskatoon Water continued its bathymetric survey program, identifying sediment infill volumes and determining if sediment is affecting the operation of the City's wet storm ponds. Three wet ponds were surveyed in 2024, which contained an average sediment build-up equivalent to over 33% of the pond's dead storage. Since 2017, 56% of the City's wet storm ponds have been surveyed, including 80% of ponds greater than 20 years of age. To monitor sediment levels, Saskatoon Water plans to continue annual surveys with the program to be incorporated into the Storm Water Asset Management Plan.

### **Floating Treatment Wetland Installation**

In 2024, the Saskatchewan Association of Watersheds, in partnership with the City of Saskatoon, Water Security Agency, Environment and Climate Change Canada, and the Meewasin Valley Authority, installed 12 floating treatment wetlands in the City's Kensington 1 Storm Pond. The wetlands are anticipated to provide a benefit to the natural ecosystem, including pond water quality improvements, as well as to wildlife and pollinators in the area. An image of the wetlands being installed is shown in Figure 11.



**Figure 11: Installation of Floating Wetlands at Kensington 1 Pond**

### **Goldfish Removal Project**

In 2024, the City of Saskatoon partnered with the Ministry of Environment to apply a natural fish toxicant, termed Rotenone, at three storm ponds known to contain goldfish: Dundonald Pond, George H Clare Pond, and Bev M Dyck Pond. The project aimed to eradicate goldfish from these pond locations, as goldfish are considered an invasive species which can have negative impacts on downstream waterways such as the South Saskatchewan River. In total, the project resulted in approximately 169 lbs of goldfish being collected and removed from the three pond locations.

## **4.7 Bylaws and Compliance**

The Storm Water Utility funds a dedicated drainage inspector position and partially funds three other positions in the Community Standards Bylaw Compliance section. The drainage inspector helps citizens and developers ensure compliance to Saskatoon's [Drainage Bylaw](#) through a model of education and enforcement. In 2024, Community Standard's Bylaw Enforcement Network software tracked 221 property drainage-related complaints, up from 152 in 2023. Table 6 displays the number of drainage-related complaints in 2024 compared to 2023.

**Table 6: Drainage Complaint Numbers**

Complaint Type	2023	2024
Lot Grading Advice & Education	32	32
Sump Pump Discharge	21	47
Sump Pump Winter Bypass	16	45
Lot Grading Plan Requests & Questions	12	3
Rear Property Line Drainage	9	11
Eaves Trough & Downspouts	36	44
ROW Closure Approvals	0	0
Side Yard Drainage Concerns	5	8
Commercial Property Development	5	6
Groundwater Issues	1	1
Infill Development	8	5
Multi-Family Development	1	7
Garage Pad Elevations	0	3
Water Retention Structure	4	3
Concrete Swale	2	2
Other	-	4
<b>Total</b>	<b>152</b>	<b>221</b>

## 4.8 Riverbank Slope Stability

The Storm Water Utility funds riverbank slope stability projects due to the impact of snow melt and rainfall on groundwater levels and erosion. The City's goal is to manage the riverbank slope stability more proactively for increased efficiency and lower long-term costs.

### East Riverbank Spring Reconnaissance

Since 2009, an annual Spring Reconnaissance has been completed on the East Riverbank for areas considered most susceptible to slope instability, between the North and South Railway Bridges. This reconnaissance comprises visual inspections of the slopes and monitoring of slope inclinometers and standpipe and vibrating wire piezometers. The reconnaissance aims to provide a yearly review of the riverbank status from a geotechnical and risk of slope instability perspective. In 2020 the inspection extents were expanded to the south to the east Raw Water Intake and Pumping Facility, and in 2021 to the north to Peturrson's Ravine.

In addition to the monitoring completed as part of the Spring Reconnaissance, Saskatoon Water staff visually monitored East Riverbank sites near 15th and 16th Streets and 11th Street, with monitoring being more frequent when risk of slope movement was higher.

### Nutana Slope Area

Geotechnical instrumentation in the Nutana Slope Area was monitored twice in 2024 by WSP (formerly Golder) with the results communicated to residents of the area. Visual

inspections were completed monthly between April and October and bi-monthly during the winter. Instrumentation monitoring was also completed by City staff in Spring, Summer and Fall.

### **Geotechnical Support**

In addition to managing the riverbank, the City Geotechnical Engineering Specialist is a resource for all City departments, and in 2024, was involved in several projects, providing geotechnical support. Some of these projects included the following:

- Brevoort Park Underground Storage Design
- Cumberland Park Dry Pond Design
- USask Dry Pond Design
- Trenchless CN track crossing for the CN Industrial Neighbourhood Drainage Improvements Project
- Cartwright Sanitary Sewer design
- Land Development Review

## **4.9 Community Awareness and Engagement**

### **Flood Control Strategy**

Communications and engagement for the FCS is a priority for the Storm Water Utility. The following communications were mailed to area residents and stakeholders regarding ongoing FCS projects in 2024:

#### *Brevoort Park South Underground Storage (4<sup>th</sup> FCS Project)*

- Engagement Summary Mailer (February 2024)
- Underground Storage Substantial Completion (December 2024)

#### *Cumberland Park Dry Pond (5<sup>th</sup> FCS Project)*

- Early notification of project planned for 2025 (February 2024)
- Notification of City Council meeting requesting project approval (April 2024)
- City Council approval of Project & Engage webpage (June 2024)
- Public Engagement Event Invitation and Video Presentation on Engage webpage (August 2024)

#### *USask Dry Pond (6<sup>th</sup> FCS Project)*

- Early notification of project planned for 2025 (March 2024)
- Notification of City Council meeting requesting project approval (May 2024)
- City Council approval of Project webpage (August 2024)

One FCS news release was completed in 2024 for the Brevoort Park South Underground Storage Project, which is shown in Appendix 2 and described below:

- May 21, 2024: City's latest Flood Control Strategy project getting underway in Brevoort Park neighbourhood.

Additionally, the social media post at the time of news release is shown in Figure 12.

Engage pages were created for each FCS project and can be found on [Saskatoon.ca/engage](https://saskatoon.ca/engage).

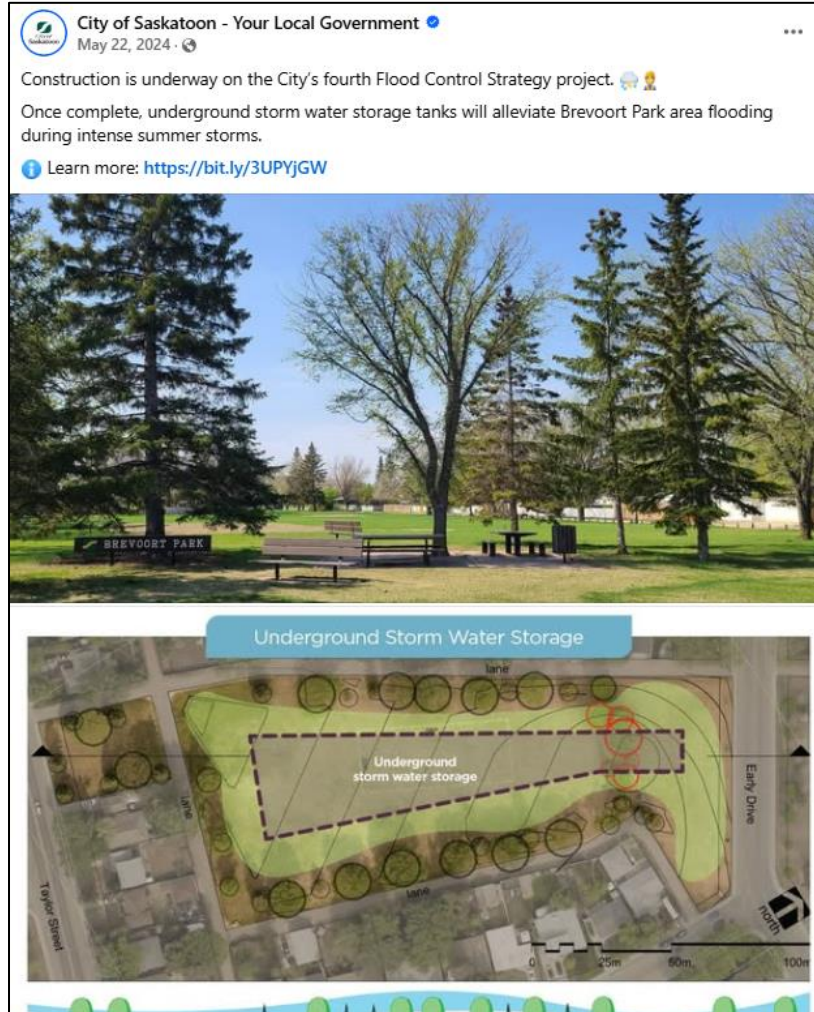


Figure 12: Social Media Post for Brevoort Park Flood Control Strategy Project

### **Montgomery Place Drainage**

The construction notices and updates for Phase 2 of the MPDIP were completed by the Construction Management Team of Construction and Design. The engage page for the MPDIP can be found at [Saskatoon.ca/engage](https://saskatoon.ca/engage).

### **CN Industrial**

The construction notices and updates for the CN Industrial Drainage Improvement Project were completed by the Construction Management Team of Construction and Design. The Engage page for this project can be found at [Saskatoon.ca/engage](https://saskatoon.ca/engage).

### **Nutana Slope**

Two flyers were distributed to residents in spring and fall near the Nutana Slope to inform them of instrumentation monitoring results. A “Notice to Residents” was also delivered in the spring to provide information on what to expect from the City and what citizens can do to reduce risk from slumping.

### **Yellow Fish Road™ Program**

The Storm Water Utility, in collaboration with Sustainability and WWO, supported the Meewasin Valley Authority in delivering the Yellow Fish Road™ Program to make students and citizens aware that water goes through the storm water system untreated to the South Saskatchewan River. In 2024, in-person presentations were offered to schools and other community groups in the city. Seventeen schools/groups and 490 students and teachers participated in the Yellow Fish Road™ Program. Yellow fish were painted on 131 storm drains in 11 neighbourhoods, and 703 door hangers were distributed.

### **Storm Water Charges**

Bill inserts were prepared to provide information to ICI property owners about the storm water management charges, including information about the Storm Water Management Credit Program.

### **Saskatoon.ca Website Updates**

The Storm Water website is reviewed as needed to ensure up-to-date information is provided to Saskatoon residents. In 2024, the following webpages were updated:

- Flood Control Strategy
- Storm Water Utility Charges
- Storm Water System
- Rainfall Reports
- Home Flood Protection
- USask Dry Storm Pond

## 4.10 Storm Water and the Environment

### Storm Water Quality Monitoring

Saskatoon Water monitors 16 major outfalls for storm water quality. These outfalls are sampled and tested for temperature, chlorine, E.coli, and total coliforms every alternate week.

The monitoring program also tracks changes in water quality and quantity for the Northeast Swale. The monitoring measures basic water quality parameters, and monthly water samples provide for more detailed analysis. Annual reporting includes trend analysis of samples and comparisons to guidelines and historical data.

### Natural Infrastructure

Pathways for an Integrated Green Network (approved in principle by City Council in 2022) is a ten-year implementation plan that outlines actions to enhance, grow, and conserve green space and natural infrastructure in Saskatoon. Work is underway on several initiatives to support storm water management using natural infrastructure, including bioswales, structural soil cells, storm pond enhancements, and park upgrades. A list of active projects can be found [here](#).

Natural infrastructure includes natural areas and planted features, such as parks, trees, gardens, storm ponds, and other green spaces. Natural infrastructure provides several benefits, such as storm water management and flood protection, and can be used in place of or in combination with grey infrastructure to enhance the resilience, performance, and/or lifespan of infrastructure.

### Outfall Debris Catchment Bags

In 2022, the City partnered with the University of Saskatchewan on a research project (which also received funding through the Natural Sciences and Engineering Research Council of Canada) that included the installation of trash trap nets on two of the City's storm water outfalls. The nets, one of which is shown in Figure 13 below, capture trash and other pollutants that would have otherwise reached the South Saskatchewan River through the storm water system. The nets were installed in Spring 2023, with data collection occurring in 2023 and 2024.

The findings of the research project are expected to be finalized in 2025. Additionally, in 2025 the City is planning to also pilot installation of the nets with only an "outer net" installed, which would capture larger trash and debris, but would require maintenance on a less frequent basis than the previous inner and outer net installation.



**Figure 13: Image of Outfall Net**

### **Storm Pond Sediment Research Project**

In 2024, the University of Saskatchewan began a four-to-five-year research project studying sedimentation in storm ponds, with the project receiving funding from the City of Saskatoon, Natural Sciences and Engineering Research Council of Canada, and Mitacs. The goal of the overall project, which is led by four graduate students at USask, will be to establish a scientific foundation to enhance sediment retention in wet ponds, improve sediment management, and reduce overall costs for the City.

Outcomes from the project will be used to make future revisions to the City’s pond design standards, the development of design standards for sediment forebays, increased efficiency in pond maintenance and budgeting, and improved safety management planning for pond winter recreation.

## **4.11 Utility Billing**

### **Equivalent Runoff Unit Assessment Updates**

In 2024, the Storm Water team reassessed a total of 263 ICI and multi-residential properties. Of these sites, 247 assessments were due to internal observations of recent construction, seven assessments were due to new sites being created, and nine assessments were due to customer inquiries.

### **Storm Water Management Credit Program**

The [Storm Water Management Credit Program](#) took effect January 1, 2019, providing the opportunity for a reduction in Storm Water Management Charges for ICI and multi-residential property owners who have implemented onsite storm water management measures. Properties are eligible for a credit in the three categories up to a maximum total combined credit of 50%. The details of the three categories are provided in Table 7.

**Table 7: Storm Water Management Credit Categories**

Category	Evaluation Criteria	Total Credit (50% Maximum)
Water Quality Improvements	Based on the percentage of storm water directed through a quality control infrastructure that meets the minimum standard of 80% total suspended solids removal for particles sizes 50 micron or larger.	Up to 20%
Peak Flow Reduction	Based on the proportion of storm water for a standard “1-in-2 year” rain event held onsite and released slowly to the City’s storm water system. The credit is equal to 0.4 multiplied by the peak flow reduction percentage up to 75%.	Up to 30%
Onsite Retention (Runoff Volume Reduction)	Based on 2% per millimeter of storm water up to 25 mm that is retained onsite and not released to the City’s storm water system.	Up to 50%

The Storm Water website includes Frequently Asked Questions, a fillable application form, a user-friendly credit calculation calculator, an inspection and maintenance template, and a comprehensive guidance manual. Information about the credit program was sent with all 2024 ICI Storm Water Utility bills. In 2024, the City approved two applications for the storm water credit program from property owners, and received one formal inquiry for another site. The Storm Water Utility will continue to explore options in the future to increase awareness of the credit program for ICI and Multi-residential property owners.

## 4.12 Continuous Improvement

The Storm Water Utility has undertaken a Continuous Improvement approach to increase service levels, improve efficiencies, and reduce costs in 2024:

- The FCS cost-shared with the GoC, to help the City adapt to the risk of more intense storms associated with climate change. Project 3 (Weaver Park Dry Pond) construction reached final completion, and Project 4 (Brevoort Park Underground Storage) is now in service to mitigate flooding, with landscape construction to progress in 2025. As of December 31, 2024, the GoC contributed approximately \$10.1 million as part of the Disaster Mitigation and Adaptation Fund agreement.
- The MPDIP cost-shared with the GoC and GoS, to help restore the drainage routes in the Montgomery Place neighbourhood through the Investing in Canada Infrastructure Program continued in 2024 with the completion of Phase 2 of the project. As of December 31, 2024, approximately \$4.1 million has been contributed by the GoC and GoS. Phase 3 will be completed before the end of 2026.
- The restoration of drainage routes in the CN Industrial Neighbourhood was cost-shared with the GoC, with construction of ditch improvements being completed in 2024. As of December 31, 2024, approximately \$2.6 million has been contributed by the GoC Natural Infrastructure Fund.
- Cost-effective research was leveraged through additional partnerships with the University of Saskatchewan for a new project regarding storm pond sedimentation.
- Storm sewer asset inventories were updated in 2024, including visual inspections of all storm ponds in the City's pond network (at time of reporting), with action items being identified for each location.
- Participation in the Canadian Infrastructure Benchmarking Initiative provided access to best practices and lessons learned from other Canadian municipalities regarding storm water management. Saskatoon Water presented information regarding the City's 2022 storm pond goldfish removal project at the annual conference.

## 5.0 OUR FINANCES

The Storm Water Utility is funded through a user-pay principle with charges proportional to storm water runoff generated according to property size and surface imperviousness (i.e., green space is charged less than buildings and pavement). A single-family residential dwelling is deemed to produce one Equivalent Runoff Unit (ERU) of storm water, which forms the unit for charging other property types. The Storm Water Management Charge for single residential properties in 2024 was \$8.90 per month (\$106.80 annually). In 2024, 68,322 single family dwellings were charged storm water management fees (one ERU each).

Commercial properties can generate significantly more storm water than single unit residential properties; therefore, they are charged multiple ERUs from a minimum of two annual ERUs (\$213.60) to a maximum of 100 ERUs (\$10,680) in 2024. In 2024, the Storm Water Utility billed 4,669 properties, including 3,545 ICI properties and 1,124 multi-residential properties.

## 5.1 Revenues

### Storm Water Utility 2024 Revenues \$14,155,185

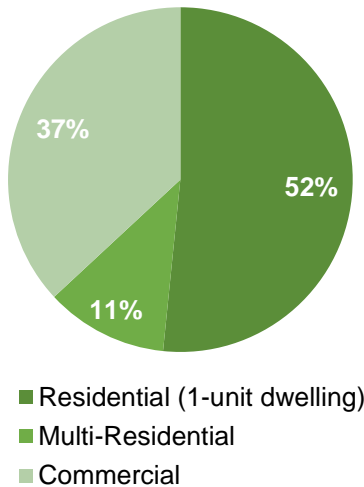


Figure 14: 2024 Revenues by Category

In 2024, total Storm Water Utility revenues were \$14.1 million, a decrease of 0.6% from 2023. Storm Water Management revenues based on ERUs included \$5.2 million from ICI properties (37% of total revenues and 5% of customers of the storm water management charge), and \$8.9 million from residential properties (63% of total revenues and 95% of customers of the storm water management charge). Figure 14 displays the revenues in percentage by category.

*Variances:* Actual total Storm Water Utility revenues were \$47,000 (0.3%) lower than budgeted in 2024 due to higher than anticipated sites being exempt from storm water fees.

## 5.2 Operating Expenditures

### Storm Water Utility 2024 Operating Expenses \$13,923,997

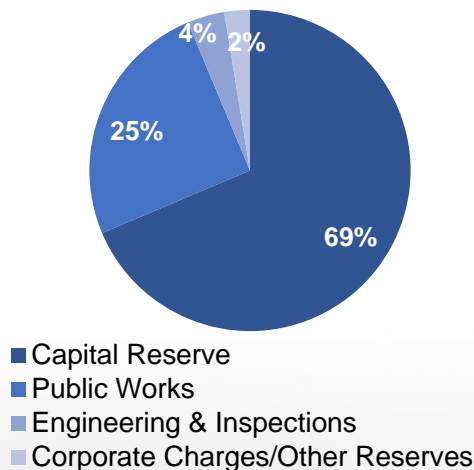


Figure 15: 2024 Operating Expenses by Category

The Storm Water Utility's 2024 operating expenditures were \$13.9 million, including \$9.6 million (69%) allocated to Capital reserves. Figure 15 displays operating expenses in percentage by category.

WVO and RFS (Public Works) expended \$3.5 million (25% of total operating expenses) to operate and maintain the storm water system, including handling citizen drainage inquiries, keeping storm drains clear, replacing and repairing infrastructure, and sweeping streets in the fall. Of the \$3.5 million, \$2.5 million was spent on sewer maintenance by WVO, while \$1.0 million was spent on drainage by RFS.

Administration costs (corporate charges) included billing services by Corporate Revenue, financial and administration services from Finance, and insurance. Engineering and inspections, including overall utility management, accounted for \$0.5 million.

*Variances:* Operating expenditures in 2024 were \$0.3 million (2.0%) under budget. Expenses also included an \$84,500 transfer to a capital reserve for the City’s enterprise resource program (Fusion).

Table 8 displays the actual 2024 Operating Revenues and Expenditures compared to the 2024 budgeted and 2023 actual amounts.

**Table 8: 2024 Storm Water Operating Revenues and Expenditures**

<b>Storm Water Utility</b>			
<b>Operating Revenues and Expenses</b>			
<b>(\$1000s)</b>			
	<b>2024 Actual</b>	<b>2024 Budget</b>	<b>2023 Actual</b>
<b>Revenues</b>			
Storm Water Charges	\$ 14,140	\$ 14,191	\$ 14,231
Late Charges	\$ 15	\$ 12	\$ 15
Ditch Crossing Permits	\$ -	\$ -	\$ 0
<b>Total Revenues</b>	<b>\$ 14,155</b>	<b>\$ 14,203</b>	<b>\$ 14,247</b>
<b>Expenses</b>			
Engineering & Inspections Operations	\$ 522	\$ 662	\$ 503
Maintenance (Public Works)	\$ 2,500	\$ 2,432	\$ 3,383
Drainage (Public Works)	\$ 987	\$ 1,148	\$ 859
Customer Billing	\$ 125	\$ 138	\$ 135
Corporate Services	\$ 82	\$ 93	\$ 59
Licenses & Insurance	\$ 95	\$ 131	\$ 129
Other Admin Expenses	\$ 11	\$ 20	\$ 5
Interest Expense/(Revenue)	\$ (29)	\$ (54)	\$ (29)
Provision to Capital Reserve	\$ 9,556	\$ 9,556	\$ 9,489
Provision to Other Reserves	\$ 85	\$ 78	\$ 107
<b>Total Operating Expenses</b>	<b>\$ 13,935</b>	<b>\$ 14,203</b>	<b>\$ 14,639</b>
<b>Revenues Less Expenses</b>	<b>\$ 220</b>	<b>\$ -</b>	<b>\$ (392)</b>

### 5.3 Storm Water Stabilization Reserve

The Storm Water Stabilization Reserve has been established to provide for normal fluctuations in storm water expenses because of differences in weather conditions, such as widespread severe rain events that impact requirements for storm water maintenance services. Changes in the stabilization reserve since 2022 are shown in Table 9. The reserve cap is 50% of the one-year operation budget of WWO and RFS. The stabilization reserve reached its cap in 2022 at \$1.7 million and at the end of 2024 has balance of \$1.5 million.

**Table 9: 2024 Change in Stabilization Reserve**

Change in Storm Water Stabilization Reserve (\$1000s)			
Description/Year	2024	2023	2022
Stabilization Reserve Beginning of Year	\$ 1,277	\$ 1,669	\$ 1,356
Balance From Year	\$ 220	\$ 392	\$ 657
Transfer Out to Capital Project	\$ -	\$ -	\$ (345)
<b>Storm Stabilization Reserve End of Year</b>	<b>\$ 1,497</b>	<b>\$ 1,277</b>	<b>\$ 1,669</b>

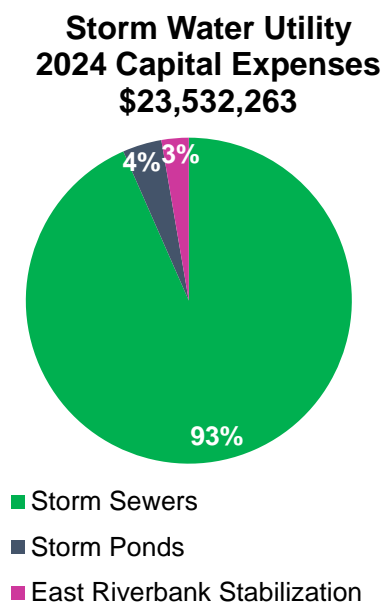
### 5.4 Capital Funding

In 2024, \$9.5 million was allocated to the Storm Water Capital Reserve. In addition to revenue allocated to capital from the Storm Water Operations, \$4.5 million from the GoC’s Disaster Mitigation and Adaptation Fund program was utilized for the FCS (Weaver Park Dry Pond and Brevoort Park South Underground Storage eligible expenditures), while \$2.1 million from the GoC’s and GoS’s Investing in Canada Infrastructure Program was utilized for the drainage improvement project in Montgomery Place. The GoC’s Natural Infrastructure Fund also contributed \$2.3 million for the drainage improvement project in the CN Industrial Neighbourhood.

## 5.5 Capital Expenditures

In 2024, Storm Water Utility capital expenditures were approximately \$23.5 million (Figure 16). Approximately 98% of capital expenditures were for storm sewer network management, asset preservation, and capacity improvements (\$23.0 million). Total capital expenditures increased by approximately 190% compared to 2023 due to additional (planned) spending for capacity improvement projects.

East Riverbank Stabilization expenditures were \$217,000 including the internal Geotechnical Engineer salary, slope instrumentation monitoring, and other riverbank monitoring costs.



**Figure 16: 2024 Capital Expenditures by Category**

Storm pond preservation expenditures were \$360,000 and included inspections, monitoring, asset management, and minor capital repair costs. Significant capital expenditures are expected for storm pond maintenance in the future.

*Variances:* Table 10 displays the actual 2024 Storm Water Capital Expenditures compared to the 2024 budget and 2023 actuals. The amounts shown in Table 10 does not factor in reimbursement from the Disaster Mitigation and Adaptation Fund, Investing in Canada Infrastructure Program, and Natural Infrastructure Fund contribution agreements. These reimbursements factor in the 'Storm Trunk and Collection Sewer' capital expenditures. Total net capital expenditures are reduced from \$23.5 million to \$14.6 million, factoring the external funding.

2024 actual expenditures were higher than budgeted due to the addition of the CN Industrial Neighbourhood Drainage Improvements, which was added after initial time of budgeting due to the City's successful application through the GoC's NIF program.

At the end of 2024, ongoing capital projects with durations exceeding one year had unspent capital balances of \$40.5 million. This includes the capital reserve balance of \$2.0 million and does not include funding allocated from external sources (Government of Canada and Government of Saskatchewan) for funding agreements.

**Table 10: Storm Water Capital Expenditures from Capital Reserve Fund**

<b>Storm Water Capital Expenditures (\$1000s)</b>			
	<b>2024 Actual</b>	<b>2024 Budget</b>	<b>2023 Actual</b>
Storm Trunk and Collection Sewers	\$ 22,955	\$ 17,550	\$ 7,499
Storm Sewer Pond Preservation	\$ 360	\$ 743	\$ 312
East Riverbank Stabilization	\$ 217	\$ 243	\$ 217
Watershed Mgmt and Assessment Program	\$ -	\$ -	\$ -
<b>Total Capital Expenditures</b>	<b>\$ 23,532</b>	<b>\$ 18,536</b>	<b>\$ 8,027</b>

## 5.6 Storm Water Capital Reserves

The Storm Water Capital Reserve provides funding for future large-scale capital projects. The capital reserve at the end of 2024 was \$2.0 million. Table 11 displays the comparison of the 2024 Capital Reserves of this year to those of 2023 and 2022.

**Table 11: 2024 Change in Storm Water Capital Reserve**

<b>Change in Storm Water Capital Reserve (\$1000s)</b>			
<b>Description/Year</b>	<b>2024</b>	<b>2023</b>	<b>2022</b>
Capital Reserve Beginning of Year	\$ 4,650	\$ 5,550	\$ 4,638
Provision to Capital Reserve	\$ 9,556	\$ 9,489	\$ 7,465
Capital Budget	\$ (12,241)	\$ (10,389)	\$ (8,990)
Redevelopment Levy Adjustment	\$ -	\$ -	\$ 2,036
Transfer in from Stabilization	\$ -	\$ -	\$ 345
Closures and Adjustments Returned to Capital Reserve	\$ 37	\$ -	\$ 57
<b>Capital Reserve End of Year</b>	<b>\$ 2,001</b>	<b>\$ 4,650</b>	<b>\$ 5,550</b>

At the conclusion of 2024, the total balance of the three storm water related reserves (Stabilization Reserve, Capital Reserve, and Infrastructure Reserve) was \$3.6 million, which is shown in Table 12.

**Table 12: 2024 Year End Balance of Storm Water Reserves**

<b>All End of Year Storm Water Reserves (\$1000s)</b>			
<b>Description/Year</b>	<b>2024</b>	<b>2023</b>	<b>2022</b>
Storm Stabilization Reserve	\$ 1,497	\$ 1,277	\$ 1,669
Capital Reserve	\$ 2,001	\$ 4,650	\$ 5,550
Infrastructure Reserve	\$ 57	\$ 57	\$ 57
<b>Total Storm Water Reserves End of Year</b>	<b>\$ 3,555</b>	<b>\$ 5,983</b>	<b>\$ 7,275</b>

## 5.7 Storm Water Utility Benchmarking

In 2024, the Storm Water Utility compared its utility rates to 12 other cities with utilities across Canada using publicly available information on the cities' websites. For single residential properties, Saskatoon's overall charge was \$106.80. This fee is the fourth lowest compared to the 12 other comparison cities, and the second lowest among the seven comparison cities located in the prairies. An image of the comparison to prairie cities is shown in Figure 17.

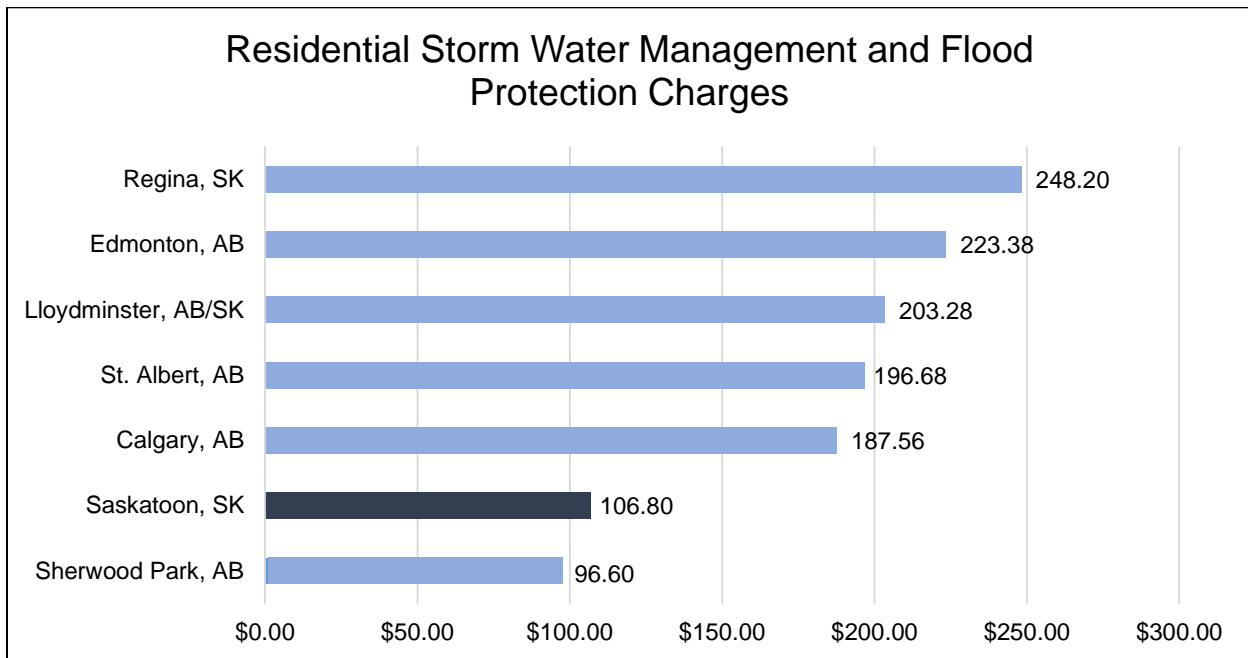


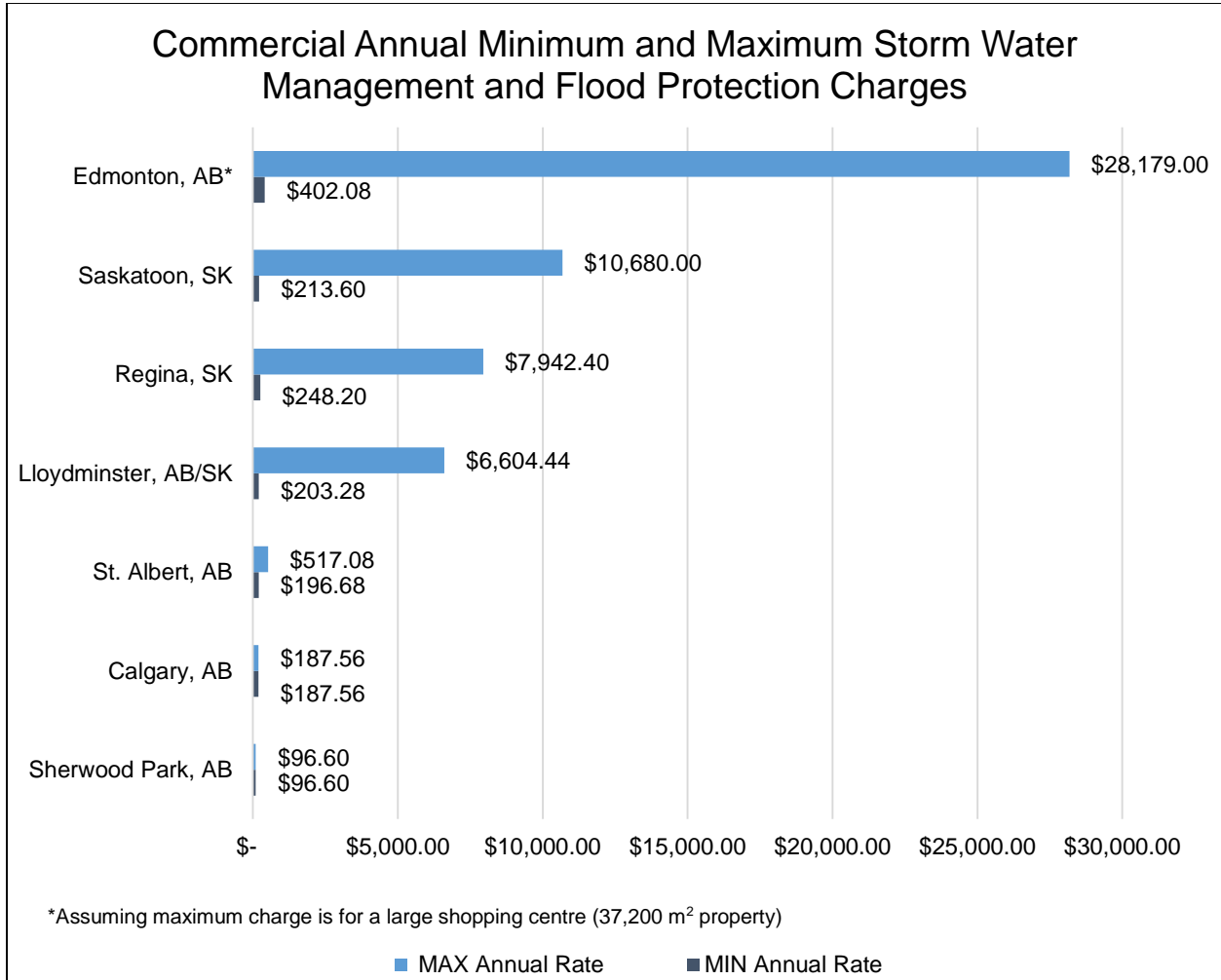
Figure 17: 2024 Residential Storm Water Management and Flood Protection Charges<sup>1</sup>

Non-residential properties are more difficult to compare, as storm water utility programs ranged from flat rates for all customers to charges based on area size and imperviousness.

- For a typical restaurant (4,515 m<sup>2</sup>) that is all hard surface, municipality storm water charges range nationally from \$96.60 (Sherwood Park) to \$3,420.12 (Edmonton). Saskatoon has the fourth highest annual rate, charging \$1,602.00.
- For a large shopping centre (37,200 m<sup>2</sup>) that is all hard surface, municipality storm water charges range nationally from \$96.60 (Sherwood Park) to \$28,179.00 (Edmonton). Saskatoon has the third highest annual rate, charging \$10,860.00.

<sup>1</sup> Sources: Rates from websites of cities of Calgary, Lloydminster, Regina, Sherwood Park, St. Albert, and EPCOR.

Saskatoon’s maximum annual storm water charge was \$10,860.00 in 2024 for non-residential properties, which was the second highest maximum charge out of the seven prairie cities surveyed. A comparison between the maximum and minimum commercial fees of the seven prairie cities is shown in Figure 18.



**Figure 18: 2024 Commercial Annual Minimum and Maximum Storm Water Charges**

## 6.0 OUR CHALLENGES

Storm water management has continuing and expected future challenges that are summarized below:

***Citizen Expectations:*** Citizens have high expectations for storm water drainage that minimizes ponding on their streets and on properties. Flooding happens relatively rarely, but when it does happen, it can impact many properties at once. Citizens expect quick reactions by the City to their areas.

***Climate Change:*** Climate change adds to the potential of more frequent, higher intensity rain events, and increased demands on the storm water infrastructure.

***Condition of Existing Infrastructure:*** Water infrastructure has a limited life expectancy. Over time, the pipes, culverts, and other infrastructure must be repaired or replaced. Some of Saskatoon's storm water infrastructure dates back to the early 1900s.

***Costs for Businesses:*** Storm water charges for some businesses have increased over the past ten years, which may generate negative feedback. Actions that businesses can take to reduce their storm water run-off (storm water credits) generally have high capital costs relative to the annual reduction in storm water management charges.

***Drainage Bylaw Enforcement:*** Neighbourhood storm water drainage is negatively impacted by properties developed contrary to approved design standards or drainage paths that are not maintained. When development occurs, inspections are necessary to minimize future problems.

***Fluctuating Groundwater Levels:*** Higher groundwater levels have changed drainage patterns as water is unable to seep into the ground. The groundwater levels impact neighbourhood drainage and contribute to East Riverbank slumping and slope failure. As groundwater levels decrease during times of drought, the impact of high groundwater can be forgotten by non-technical staff and residents alike, resulting in lower implementation of groundwater management practices.

***Historical Design Standards:*** Limited standards for storm water infrastructure were in place when Saskatoon neighbourhoods began to develop. In 1989, new storm water standards for new neighbourhoods were established to handle "1-in-100 year" storms. Surface flooding during high intensity storms continues to be an issue for many low-lying areas in older parts of the city.

***Infill Development:*** Cumulative impacts of infill development are placing higher demands on our storm water-related infrastructure. Infill reduces greenspace and increases surface runoff.

***Inflow & Infiltration to the Sanitary Sewer:*** Extraneous inflow and infiltration of snowmelt and rainfall to the sanitary system increases risk of sanitary sewer back-up

during rain events and creates unnecessary costs for treatment and capacity upgrades for the Wastewater Treatment Plant.

## 7.0 CONCLUSION

Several initiatives the Storm Water Utility progressed in 2024 will be further developed in 2025 and beyond, including the following:

- Flood Control Strategy
- Montgomery Place Drainage Improvement Project
- CN Industrial Drainage Improvement
- Asset Management
- Storm Pond Inspections
- Outfall Inspections
- Storm Water Management Charge Billing
- Storm Pond Sediment Research
- Canadian Infrastructure Benchmarking Initiative

The Storm Water Utility is committed to working collaboratively with other departments making Saskatoon a more flood resilient City.

## 8.0 APPENDICES

### Appendix 1: Definitions and Abbreviations

#### *Definitions*

**Catch Basins:** Used to convey storm water from the ground surface, usually on a street or parking lot, to the storm water collection system. Collector catch basins are located on collector mains and trunk catch basins are located on trunk mains.

**Culverts:** Used to channel water under roads, railways, or embankments. Culverts have open inlets and outlets, usually transporting water from one ditch to another.

**Equivalent Runoff Unit (ERU):** A measurement unit for runoff that is used for storm water management fees. One ERU is based on an average single-family residential property's areas and types of surfaces (i.e. amount of grass, hard surface, etc.).

**Force Mains:** Pressurized mains from 100 mm to 900 mm in diameter which connect storm water pumping stations and lift stations to the gravity collection system.

**Leads:** Pipes connecting catch basins to the storm collection system which range in diameter from 100 mm to 900 mm. Collector leads are located on collector storm mains. Trunk leads are located on trunk storm mains.

**Lift Stations:** Move storm water from lower to higher elevations, particularly where the elevation of the source is not sufficient for gravity flow and/or when the use of gravity conveyance will result in excessive excavation depths and high sewer construction costs.

**Lining:** A layer of material installed in a sewer main to improve performance and extend the lifespan.

**Manholes:** Chambers used to access sewer mains for maintenance and inspection purposes.

**Oil and Grit Separators (OGS):** A variation of the traditional settling tanks designed to capture sediments and trapped hydrocarbons (oils) in storm water runoff. OGS replace conventional manholes.

**Outfalls:** Are the discharge point of the storm sewer system to the river, and include the following three categories:

- Local – Expel water from relatively smaller local areas than the collector or trunk outfalls.
- Collector – Connect to the storm sewer system through collector mains.
- Trunk – Connect to the storm sewer system through trunk mains.

**Piezometers:** Devices used to measure pressure or depth of groundwater at a specific location.

**Return Period:** The estimated average time between equivalent rain events based on rainfall intensity and duration. A rain event with a two-year return period has a 50% probability of occurring in any year. A rain event with a 100-year return period has a 1% probability of occurring in any year.

**Runoff:** Rain and snowmelt draining from land, buildings, or other surfaces.

**Service Connections:** Connect drainage systems from customer properties to storm mains in the street.

**Sewer Mains:** Principal pipes in a system that distribute water or collect storm water and waste water, and include the following two categories:

- Collector – Sewer mains that are less than 1350 mm in diameter.
- Trunk – Sewer mains that are more than 1350 mm in diameter.

**Slope Inclinometer:** Geotechnical instruments used to measure horizontal displacements along various points on a borehole to detect slope movement.

**Storm Water Ponds:** Manmade basins that control excess storm water during and after heavy rainfall events and provide water quality improvements for runoff.

- Dry Ponds – normally do not store water. They detain runoff during intense rain events and then gradually release the water back into the storm sewer system.
- Wet ponds – permanently retain water throughout the year.

**Sub-Drainage:** Perforated pipes located in the slope along the riverbank used to collect ground water and remove it from the slope. This decreases the groundwater level in the slope and helps to stabilize the area.

**Sump Pumps:** Remove water that has accumulated in a water-collecting sump basin, commonly found in the basements of homes.

**Vibrating Wire Piezometers:** Used to provide accurate pore-water pressure readings in soils to measure groundwater levels.

## **Abbreviations**

<b>CN Industrial</b>	Canadian National Industrial
<b>City</b>	City of Saskatoon
<b>ERU</b>	Equivalent Runoff Unit
<b>FCS</b>	Flood Control Strategy
<b>GoC</b>	Government of Canada
<b>GoS</b>	Government of Saskatchewan
<b>ICI</b>	Industrial, Commercial, Institutional
<b>MPDIP</b>	Montgomery Place Drainage Improvement Project
<b>NIF</b>	Natural Infrastructure Fund
<b>RFS</b>	Roadways, Fleet and Support
<b>WWO</b>	Water and Waste Operations

## Appendix 2: Communications

### FCS Engagement Summary – Brevoort Park South

# Brevoort Park South Flood Mitigation Project

## BACKGROUND

The City of Saskatoon (City) is upgrading the storm water system to reduce the flood risk for properties near the intersection of Early Drive and Tucker Crescent.

Underground storm water storage is the preferred project, however, if costs come in higher than originally estimated, the City will proceed with a combination of underground and above ground storage (a dry storm pond) in Brevoort Park South. Residents will be notified on the final plan.

## SCHEDULE

Site excavation will begin in spring 2024 (dates to be determined). The project, which will also include storm sewer pipe installations, water main replacements, road paving and landscaping, will take place between May and November.

## PROJECT FUNDING

The Brevoort Park South Flood Mitigation Project will be the fourth of nine projects aimed at addressing flooding in Saskatoon's most flood-prone areas through the nine-year \$54-million Flood Control Strategy. The Government of Canada is contributing 40% of eligible construction costs (up to a maximum of \$21.6 million).

## ENGAGEMENT & COMMUNICATIONS

Learn more about the Brevoort Park South Flood Mitigation Project at [saskatoon.ca/engage](https://saskatoon.ca/engage). Nearby properties will receive a Construction Notice prior to excavation beginning in the park. In the meantime, please sign up to receive project updates by e-mailing your name and e-mail address to [constructionupdates@saskatoon.ca](mailto:constructionupdates@saskatoon.ca). In the subject line, put "Brevoort Park".

## DESIGN

### Public Feedback

Feedback from the online survey and information session was incorporated into the design of the dry storm pond:

- Most trees along the perimeter of the park will remain in place. Any removed trees will be replaced as per the City Council Policy for Trees on Public Property (C09-011). Efforts will be made to prioritize the health of existing trees, ensuring that excavation will be outside of tree drip lines when possible.
- The underground storage facility will have capacity to store storm water volume for a 1-in-10-year rain event.
- The recreation field will be restored after construction. It will be above the underground storm water storage facility.
- Existing picnic tables and benches will be removed during construction. They will be reinstalled afterward.
- Brevoort Park North will remain open and unaffected during construction.



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*City's latest Flood Control Strategy project getting underway in Brevoort Park neighbourhood*



## News Release

### **City's latest Flood Control Strategy project getting underway in Brevoort Park neighbourhood**

For immediate release: May 21, 2024, 10:00 am  
UE24-5076

Construction is getting underway on the City of Saskatoon's (City) fourth Flood Control Strategy (FCS) project. Once operational in 2025, flooding during intense summer storms will be mitigated around Early Drive and Tucker Crescent in the Brevoort Park neighbourhood.

"This project will include new storm sewer pipes and under-ground storm water storage," says Russ Munro, Director of Saskatoon Water. "Rainwater that typically pools and floods properties in the neighbourhood during intense summer storms, will now flow into under-ground storage tanks that will be installed in Brevoort Park South."

The storage tanks will temporarily hold the water which will slowly drain through the storm sewer system to the South Saskatchewan River. The project will also include new landscaping once the tanks are installed. Most of Brevoort Park South is fenced off and will remain closed for several months following construction to give the new sod and trees adequate time to establish.

The FCS was approved by City Council in 2018. The Government of Canada is contributing 40% of the eligible construction costs up to a maximum of \$21.6 million toward all nine FCS projects. The City is funding the remaining construction costs through the Storm Water Utility Capital Program and revenue generated from Storm Water Utility charges.

FCS projects to date include the W.W. Ashley District dry storm pond, which opened in 2022, and the Churchill Park dry storm pond completed in 2023. Five more FCS projects will be built in Saskatoon's most flood-prone neighbourhoods over the next three years.

For more information about the FCS and future project locations, visit [saskatoon.ca/floodplan](https://saskatoon.ca/floodplan).