



STORM WATER UTILITY

2022 Annual Report



TABLE OF CONTENTS

- List of Figures..... 3
- List of Tables..... 3
- Message from Directors 4
- Executive Summary 5
- 1.0 Overview 7
 - 1.1 Introduction 7
 - 1.2 Strategic Linkages 7
- 2.0 Our Storm Water Utility Team 10
- 3.0 Our Infrastructure 12
- 4.0 Our Results 13
 - 4.1 Climate and Precipitation 13
 - 4.2 Capital Programs 14
 - 4.3 Maintenance and Operations 17
 - 4.4 Asset Management 20
 - 4.5 Storm Water Outfalls..... 22
 - 4.6 Storm Water Ponds..... 22
 - 4.7 Bylaws and Compliance..... 24
 - 4.8 Riverbank Slope Stability 25
 - 4.9 Community Awareness and Engagement..... 27
 - 4.10 Storm Water and the Environment..... 29
 - 4.11 Utility Billing..... 30
 - 4.12 Continuous Improvement..... 31
- 5.0 Our Finances..... 32
 - 5.1 Revenues..... 33
 - 5.2 Operating Expenditures 33
 - 5.3 Storm Water Stabilization Reserve 35
 - 5.4 Capital Funding..... 35
 - 5.6 Storm Water Capital Reserves..... 37
 - 5.7 Storm Water Utility Benchmarking 38
- 6.0 Our Challenges 40
- 7.0 Conclusion 41
- 8.0 Appendices 42

Appendix 1: Definitions and Abbreviations.....	42
Appendix 2: Communications	45

LIST OF FIGURES

Figure 1: Storm Water Outfall Structure Along the South Saskatchewan River	12
Figure 2: W.W. Ashley Park Dry Storm Pond.....	14
Figure 3: Churchill Park Dry Storm Pond	15
Figure 4: Rendering of Weaver Park Dry Storm Pond.....	15
Figure 5: Completed Ditch Improvements in Montgomery Place	16
Figure 6: Hydrovac Work for the CN Industrial Drainage Improvement Project	17
Figure 7: Fall Sweep Total Debris Tonnage Removed.....	19
Figure 8: WWO Storm Water Maintenance Repairs and Replacements: 2017 to 2022	20
Figure 9: Image of Sediment Within Storm Sewer Pipe	21
Figure 10: Storm Sewer Main & Trunk Ratings	21
Figure 11: Outfall Grade Summary	22
Figure 12: New Welcome Sign Installed at RCAF Pond.....	23
Figure 13: October 2022 Opening Event at W.W. Ashley Park Dry Storm Pond.....	27
Figure 14: Image of Outfall Net	30
Figure 15: 2022 Revenues by Category.....	33
Figure 16: 2022 Operating Expenses by Category	33
Figure 17: 2022 Capital Expenditures by Category.....	36
Figure 18: 2022 Residential Storm Water Management and Flood Protection Charges	38
Figure 19: 2022 Commercial Annual Minimum and Maximum Storm Water Charges ..	39

LIST OF TABLES

Table 1: Storm Water Inventory	12
Table 2: Rain Events in 2022	13
Table 3: Customer Care Summary of Inquiries	18
Table 4: 2022 Storm Water Group Customer Inquiries	18
Table 5: WWO's Storm Water Infrastructure Maintenance.....	19
Table 6: Drainage Complaint Numbers	24
Table 7: Storm Water Management Credit Categories.....	30
Table 8: 2022 Storm Water Operating Revenues and Expenditures.....	34
Table 9: 2022 Change in Stabilization Reserve	35
Table 10: Storm Water Capital Expenditures from Capital Reserve Fund.....	37
Table 11: 2022 Change in Storm Water Capital Reserve.....	37
Table 12: 2022 Year End Balance of Storm Water Reserves	38

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 90 active outfalls. The Storm 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 management of 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 2022 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 Utility also monitors and stabilizes the East Riverbank to protect strategic public infrastructure. In 2022, the Storm Water Utility had revenues of \$14.1 million, with \$13.5 million for operating expenses, which includes \$9.5 million transferred to Capital and Infrastructures Reserves. Approximately \$0.3 million was transferred to the Storm Water Stabilization Reserve, which is available for future operating expenses.

In 2022, 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 first project (W.W. Ashley District Park Dry Storm Pond) was completed, and the second project (Churchill Neighbourhood Park Dry Storm Pond) reached substantial completion. The detailed design, public engagement, and tendering phases for the third project (Weaver Park Dry Pond) were completed. Additionally, the feasibility assessment and preliminary design was started for the fourth project (Early Drive and Tucker Crescent location).
- Construction of Phase 1 and detailed design of Phase 2 of the Montgomery Place Drainage Improvement Project were completed. Construction of Phase 2 is planned to be completed between 2023 and 2024. Phase 3 is planned for 2025 and 2026.
- Applied for \$3.9 million in funding through the Natural Infrastructure Fund Program from the Government of Canada. This application will restore the overland green network drainage system in the CN Industrial Neighbourhood and was conditionally approved in 2022.
- Responded to 1,510 storm water and drainage inquiries through our Customer Care Team. Bylaw and Compliance also responded to 168 drainage related complaints and the Storm Water team responded to 325 inquiries.
- Roadways, Fleet and Support completed the fall sweep, which included 104 km of streets and 1,738 tonnes of debris collected. Water and Waste Operations completed 591 catch basins inspections and completed 180 repair or replacements based on the inspection findings. Operations also completed 292 manhole inspections and executed 102 manhole repairs.
- Launched a targeted storm sewer inspection project in response to the June 2022 rain event. Inspection results will be incorporated into future repairs and asset management programs.
- Continued asset management planning of infrastructure, including updating the Storm Water Asset Management Plan.
- Completed visual assessment of 90 outfalls along the South Saskatchewan River in the City's inventory, identifying 143 action items to be completed in coordination with Saskatoon Water, Water and Waste Operations, and external projects.

- Installed 14 new welcome signs near storm ponds that provide improved messaging regarding safety and permitted recreational use of storm ponds.
- Monitored sediment levels of storm ponds, including the bathymetric surveying of five storm wet 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, and others to monitor and research storm water quality and related concepts of the storm water system and South Saskatchewan River.
- Ordered two outfall trash collection bags in collaboration with the University of Saskatchewan in a successful Natural Sciences and Engineering Research Council of Canada Alliance grant application. The nets are planned to be installed in spring 2023.
- Completed billing reassessments of 527 industrial, commercial, institutional, or multi-residential sites in the annual storm water utility billing process.

Saskatoon had a below average rainfall year with 203 mm of rainfall recorded. This accumulation is below the historical average of 263 mm and the 25th lowest seasonal rainfall since 1900. Measured rain events did occur on June 20, 2022, (5-100-year return period) and August 2, 2022 (5-25-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 2022, storm water charges were applied to approximately 66,977 single-family residential properties, 1,115 multi-family residential, and 3,733 ICI properties including City-owned properties.

Saskatoon's storm water infrastructure includes over 23,241 manholes and catch basins; 973 km of linear infrastructure, such as storm sewer pipes and culverts; 42 storm ponds; and other drainage infrastructure with a replacement value of approximately \$3.0 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

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 2022.

Saskatoon Water's Engineering and Planning section is 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.
- 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 973 km of linear infrastructure, such as storm sewer pipes and culverts, 9,344 manholes, 13,897 catch basins, 2,879 service connections, 90 functioning river outfalls, and minor ditches.

The **major system** consists of overland street drainage, 10 dry ponds, 32 wet ponds (including 9 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	2022 Inventory
Sewer Mains	Collectors	682 km
	Trunks	73 km
Manholes	-	9,344 ea.
Force mains	-	4 km
Service Connections	-	2,879 ea.
Catch Basins	-	13,897 ea.
Leads	-	160 km
Storm Ponds	Dry	10 ea.
	Wet	32 ea.
Culverts	-	9 km
Outfalls	-	90 ea.
Sub-drainage	Roadways	43.4 km
	Riverbank	1.7 km
Oil & Grit Separators	-	1 ea.
Lift Stations	-	2 ea.
Replacement value		\$3.0 billion



Figure 1: Storm Water Outfall Structure Along the South Saskatchewan River

4.0 OUR RESULTS

4.1 Climate and Precipitation

Annual Rainfall

Eight rainfall gauges were regularly monitored between April 1, 2022, and September 30, 2022, with a summary of Saskatoon’s 2022 rainfall season provided in the [2022 Annual Rainfall Report](#). Overall, Saskatoon had a below-average rainfall year with 203 mm of rainfall accumulating. This was below the historical average of 263 mm, with it being the 25th lowest seasonal rainfall total in the last 123 years. Rainfall increased from 2021, when the city received 146 mm of rainfall.

Despite the low seasonal rainfall, two rainfall events occurred throughout the year. One event had a return period of 25 to 100 years, while the other had a return period of 5 to 25 years. Table 2 provides the rain event details for both rain events recorded by eight rain gauges.

Table 2: Rain Events in 2022

Date	Rain Event Statistics	Acadia	Aden Bowman	Attridge Fire Hall	City Hall	Light and Power	Shaw Centre	Wastewater Treatment Plant	Woodlawn
June 20, 2022	Peak Intensity (mm/hr)	96.0	50.4	45.6	88.8	134.4	7.2	91.2	31.2
	Total Rainfall (mm)	56.0	65.4	28.2	59.6	69.2	3.0	44.4	27.0
	Return Period (yr.)	5 - 25	25 - 100	2 - 5	5 - 25	25 - 100	< 2	5 - 25	2 - 5
August 2, 2022	Peak Intensity (mm/hr)	120.0	103.2	84.0	115.2	96.0	60.0	72.0	96.0
	Total Rainfall (mm)	22.8	23.4	16.2	18.2	24.8	15.4	15.0	15.8
	Return Period (yr.)	5	5	2	2	5	2	2	2

The greatest rain event occurred on June 20, 2022, where a total average of 36 mm of rainfall occurred, which represented approximately 18% of the total 2022 rainfall. During this rain event, the south area of the city near Stonebridge received the highest rainfall amount, with 69 mm of rain over the course of the rain event. For short durations of up to about 30 minutes, the storm intensity was a “1 in 25-year” storm; however, it became closer to a “1 in 100-year” storm for periods exceeding 75 minutes duration, as per the current City Intensity-Duration-Frequency curves. Conversely, the areas around the west side of the city near the Shaw Centre received only 3 mm of rain in the same time period, equating to less than a “1-in-2-year” storm.

The June 20, 2022, rain event resulted in several flooded streets and intersections, causing segments of Circle Drive, 8th Street East, and other local roadways to be impassible during the storm. Additionally, the rain event caused flooding of private and civic property, with Saskatoon being designated as an area eligible for assistance under the Provincial Disaster Assistance Program for the rain event.

4.2 Capital Programs

Flood Control Strategy

The \$54 million 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%).

Final completion was reached for the dry pond and related storm sewer infrastructure at W.W. Ashley Park in October 2022. The dry pond was in service for storm water management to reduce flooding throughout 2022. Storm water entered the dry pond twice in 2022 (June 20, 2022, and August 2, 2022), preventing nearby flooding.

“Our basement often floods when any heavy rain comes down. I was expecting the worst when it started raining on June 20, 2022. I was thrilled to see that there was no water even near our house or on the street. All of the water was in the storm pond, it was doing its job. Fantastic Work! I can’t even imagine the impact it had on other houses in the community.”

Resident near W.W. Ashley Park



Figure 2: W.W. Ashley Park Dry Storm Pond

Substantial completion was reached in October 2022 for the dry pond and related storm sewer infrastructure at Churchill Park. The dry pond is ready to reduce nearby flooding for the 2023 rainfall season.

"I can't believe how hard working the workers are at the Churchill Park site. And so well organized! Wow! Love to see this!"

Resident near Churchill Park



Figure 3: Churchill Park Dry Storm Pond

Public engagement and final detailed design plans were completed for the dry pond to be constructed at Weaver Park. City Council approved the feasibility assessment for this project in April 2022. Construction for this project will start in 2023 and will mitigate flooding for the Cascade-Dufferin and Bute-Dufferin intersections.

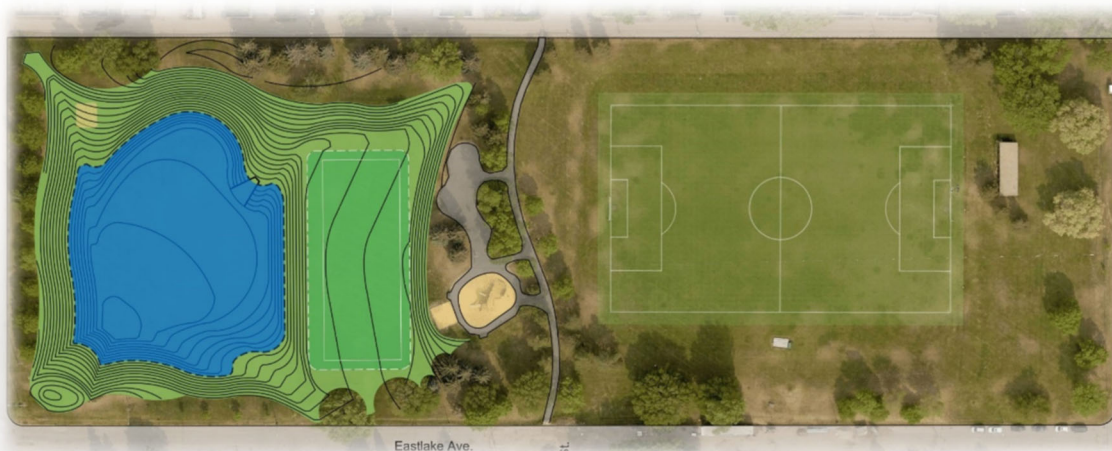


Figure 4: Rendering of Weaver Park Dry Storm Pond

The feasibility assessment and conceptual plans for the fourth project within the FCS began in 2022 to mitigate the flood risk at properties near the intersection of Early Drive and Tucker Crescent. The feasibility assessment will be presented to City Council in 2023.

Montgomery Place Drainage Improvement Project

Construction was completed for Phase 1 of the three-phase MPDIP in 2022. 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).

Design plans and public engagement were completed in 2022 for Phase 2 of the project. Construction of Phase 2 is planned to be completed over 2023 and 2024. Phase 3 is tentatively scheduled to be completed in 2025 and 2026. The drainage improvement phases will be completed in collaboration with roadway preservation work for 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, SW applied for \$3.9 million in GoC funding through the Natural Infrastructure Fund in 2021. This funding application proposes to restore the overland green network drainage system that exists in the CN Industrial Neighbourhood. Specifically, this funding would help restore the overland ditch and culvert drainage network for the area of Melville Street, Portage Avenue, and Jasper Avenue S. This application was conditionally approved by the GoC in June 2022. The ditch/swale reconstruction and culvert additions in the area will be completed in 2023 and 2024. The drainage improvements for this neighbourhood are being coordinated with other capital projects that will include sanitary upgrades, road preservation, and storm system expansion.

A hydro-vac program of external and internal utilities was completed in 2022 to assist with the completion of design plans.



Figure 6: Hydrovac Work for the CN Industrial Drainage Improvement Project

4.3 Maintenance and Operations

Citizen Inquiries

In 2022, the Customer Care Centre responded to 1,510 inquiries from citizens regarding culverts, drainage, storm sewer, and storm water flooding issues, which was up from 801 inquiries in 2021. The type of inquiries received are shown below in Table 3. Note that the increase in Customer Care inquiries is partially due to an underreporting of inquiries in past annual reports, as additional filtered data was included in 2022 reporting than in past years.

The Storm Water Utility group responded to 325 citizen inquiries, up from 195 in 2021. Of these inquiries, 60 inquiries were related to storm water billing, 27 were internal inquiries requested by other City staff, while 12 required a site visit. Table 4 below presents a break down of the handled 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: Customer Care Summary of Inquiries

Description	2021	2022
CB Plugged/Clogged/Frozen	148	545
Street Drainage	57	40
Lane and/or Lot Drainage	78	17
CB Damaged	-	81
CB Lead Damaged	-	10
Manholes	-	85
Spring Drainage	489	689
Storm Sewer Blockage	-	13
Storm Ponds	19	9
Other	10	17
Total	801	1,510

Table 4: 2022 Storm Water Group Customer Inquiries

Description	2021	2022
Alley Drainage	1	3
Surface Drainage	12	36
Sewer Drainage	11	7
Montgomery General	1	10
Montgomery Drainage Strategy	26	20
Montgomery Ditch Crossings	6	8
Flooding	9	24
Flood Control Strategy	-	43
Storm Water Utility Billing	52	60
General	38	59
Bylaw	1	2
Catch Basin Drainage	15	46
Councillor Requests	16	3
Storm Water Credit	7	4
Total	195	325

Roadways, Fleet and Support Fall Sweep

The 2022 fall Street Sweep Program utilized a tree density and flood risk approach similar to the methodology used in previous years. A total of 104 km of streets were swept, with 1,738 tonnes of debris collected. The tonnage of debris removed was up from 1,320 tonnes collected in 2021, 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

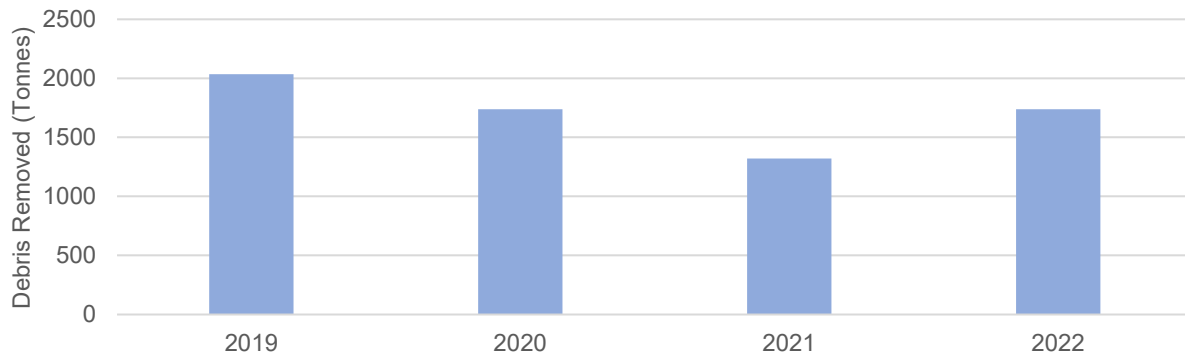


Figure 7: Fall Sweep Total Debris Tonnage Removed

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 2022 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	2021	2022	Units
CCTV of Storm Mains	6,937 ²	14,964	Meters
CCTV of CB Leads	N/A ¹	55	Meters
Storm Sewer Meters	N/A ¹	4,737	Meters
Catch Basin Leads	227 ²	N/A ³	Each
Inspect Catch Basins	1,021	591	Each
Clean Catch Basins	N/A ¹	6,231	Each
Repair Catch Basins	208 repaired, 28 replaced	163 repaired, 17 replaced	Each
Inspect Storm Manholes	441 ²	292	Each
Repair Storm Manholes	133	102	Each
Grout MHs/CBs	14	8	Each
Outfalls	N/A ¹	8	Each
Storm Ponds	N/A ¹	N/A ³	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.

¹Not reported in 2021

²Only includes data from April 2021 to December 2021

³Not reported in 2022

A total of 163 catch basins, 102 manholes, 24 segments of catch basin leads, and 8 segments of storm sewer were repaired, while 17 catch basins and 16 segments of catch basin leads were replaced in 2022. Data regarding cleaning of catch basin leads and maintenance visits to storm ponds were not available at the time of this report. Figure 8 displays the 2022 WWO repairs and replacements of storm water infrastructure compared to the previous five years.

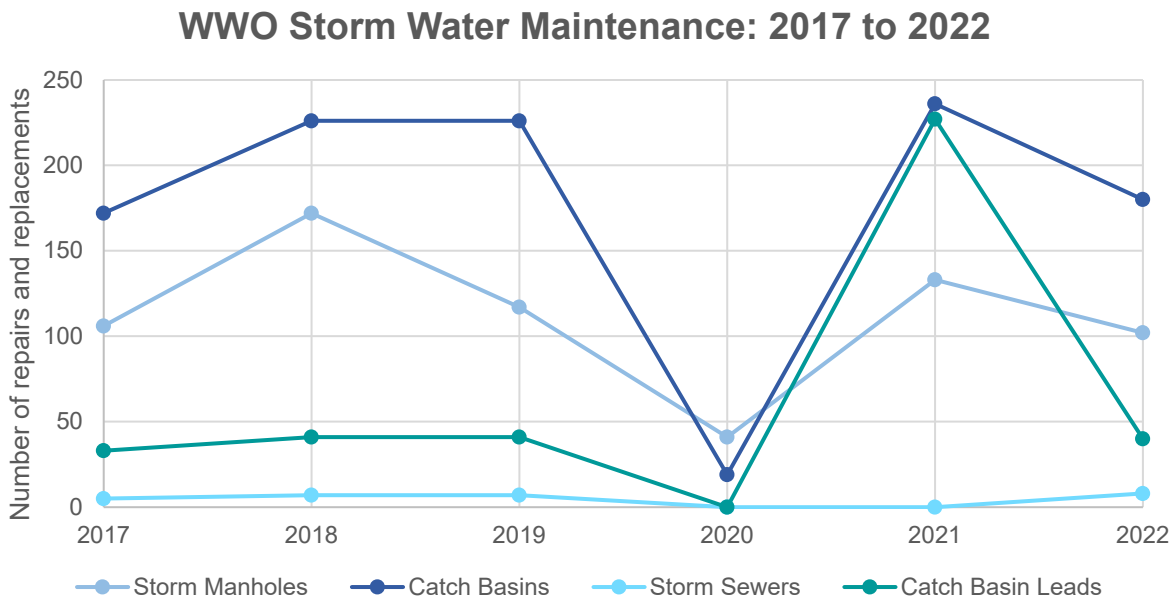


Figure 8: WWO Storm Water Maintenance Repairs and Replacements: 2017 to 2022

4.4 Asset Management

Storm Sewer Inspection, Cleaning and Lining

In 2022, the Storm Water Utility funded the cleaning and inspection of approximately 15 km of storm sewers. As of the end of 2022, over 180 km of storm pipes have been inspected (27% of linear storm sewer pipe system), and 136 km of these have been rated (20% of linear storm sewer pipe system). The inspected storm sewers were rated using a three-point scale:

- A: No structural problem evident
- C: Sewer main showing deterioration
- F: Physical condition has failed

The rating for 136 km of inspected sewer mains is provided in Figure 10.



Figure 9: Image of Sediment within Storm Sewer Pipe

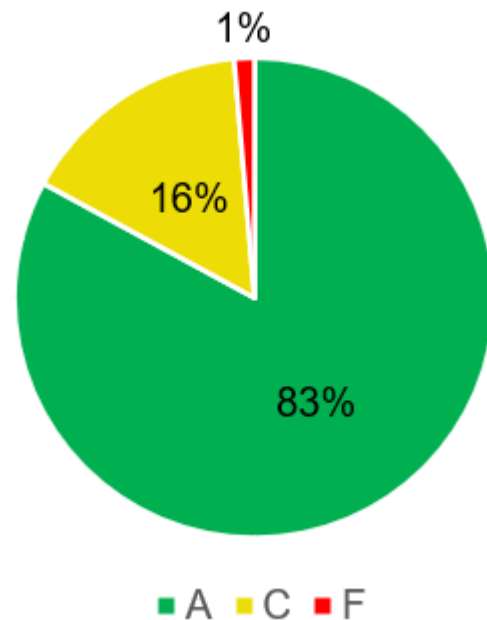


Figure 10: Image of Storm Sewer Main & Trunk Ratings

Storm Water Infrastructure Corporate Asset Management Update

The current inventory of storm water infrastructure has a replacement valuation of \$3.0 billion. As of the end of 2022, approximately 27% of the storm infrastructure network (storm sewer, outfalls, manholes, catch basins, culverts, ponds, etc.) has been inspected. The focus of the future will be to further inspect 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 Asset Management Plan

A comprehensive Storm Water Asset Management Plan was developed in 2021 and updated in 2022. This will be a working document to be improved and progressed over the next several years in collaboration with other civic departments.

4.5 Storm Water Outfalls

2022 Outfall Visual Assessment

The Storm Water Utility formally inspects the storm water sewer outfalls every three years. In 2022, Saskatoon Water completed visual inspections of 90 outfalls in the City's inventory. Overall, 143 action items were identified following the visual inspections, which will be completed in coordination with Saskatoon Water, WWO, and external projects. Based on the number and severity of action items recommended for each outfall, grades were assigned to each outfall (A being the best condition and D being the worst). A summary of the assigned outfall conditions is presented in Figure 11.

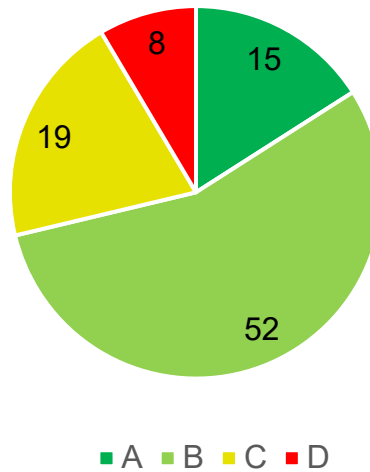


Figure 11: Outfall Grade Summary

4.6 Storm Water Ponds

Storm Water Ponds Inventory

The city currently has 32 wet ponds and 10 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. The next comprehensive inspection program is scheduled for 2024. WWO also inspects storm ponds on emergency or inquiry basis.

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 previous site inspections.

New Welcome Signage

In 2022, Saskatoon Water continued to install new welcome signage at select storm ponds, including the replacement of the remaining ten existing “old” welcome signs at six storm pond locations, as well as the installation of four new welcome signs at W.W. Ashley Dry Storm Pond. The 2022 installations, which maintained a similar sign face design as the 2021 installations, were constructed of a more durable material, and a slightly higher installation height than the 2021 installations to lengthen the lifespan and improve accessibility of the sign messaging to the public. The new signage is consistent with current City visual identity guidelines and provides messaging regarding safety and permitted recreational use of the storm ponds. An image of one of the RCAF Pond signs installed in 2022 is shown in Figure 12.

Three new welcome signs are currently planned to be installed in 2023 at Churchill Park Dry Storm Pond and yahkōhtēwin Pond.



Figure 12: New Welcome Sign Installed at RCAF Pond

Storm Pond Bathymetric Survey Program

In 2022, 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. Five wet ponds were surveyed in 2022, with two of the wet ponds containing sediment build-up equivalent to over 50% of the ponds’ dead storage. Since 2017, 47% of the City’s wet storm ponds have been surveyed, including 70% of ponds greater than 20 years of age. To monitor sediment levels, Saskatoon Water plans to continue surveying four to five ponds per year in the future, with the program to be incorporated into the Storm Water Asset Management Plan.

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 2022, Community Standard's Bylaw Enforcement Network software tracked 168 property drainage-related complaints, up from 115 in 2021. Table 6 displays the number of drainage-related complaints in 2022 compared to 2021.

Table 6: Drainage Complaint Numbers

Complaint Type	2021	2022
Lot Grading Concern	33	37
Sump Pump Discharge	9	14
Sump Pump Winter Bypass	9	19
Lot Grading Plan Requests & Questions	6	10
Rear Property Line Drainage	8	7
Eaves Trough & Downspouts	22	36
ROW Closure Approvals	1	0
Side Yard Drainage Concerns	13	22
Garden/Garage Suite Plan Approvals	-	-
Commercial Property Development	3	2
Retaining Wall Concerns	-	-
Groundwater Issues	-	-
Infill Development	7	17
Condo Development	-	-
Garage Pad Elevations	3	1
Water Retention Structure	1	3
Total	115	168

The Storm Water Utility provided funding for a capital project led by Community Standards to improve Drainage Bylaw compliance. In-progress initiatives under this project are described below:

- Commercial & Multi-Family Site Grading Regulation:* A Site Grading Plan review and inspection process has been developed. The process includes the current requirement of submitting a site grading plan to Saskatoon Water for approval prior to development and submitting an as-built drawing upon completion of the development. The process also involves an optional inspection at the “rough grade” stage and a mandatory inspection at the “final grade” stage. Site inspections will be performed by Community Standards. With the approval of the new Drainage Bylaw in 2021, the developed process is underway with grade inspections that started in the last quarter of 2022 and continuing in the spring of 2023.

- *Infill Development Site Grading Regulation:* Bylaw Compliance reviewed and approved 113 site grading plans for new infill development as part of the residential building permit process. Final site grading inspections associated with approved site grading plans began in late fall of 2022 as some homebuilders completed the required site grading and will continue in the Spring of 2023. The site grading plan review and inspection process aims to reduce grading and drainage conflicts between new infill and existing development.
- *Back of Lot Grading:* Stakeholder engagement will continue potential specifications for new low-density suburban development, including the possibility of concrete swales.

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.

The Spring Reconnaissance had previously been completed by an external geotechnical consultant, but in 2020 following the purchase of instrumentation equipment and the hire of an internal Geotechnical Engineer in 2018, the reconnaissance was successfully completed by Saskatoon Water staff. Completion of this report internally will enable the City to have a more detailed understanding of the East Riverbank and to provide a higher level of maintenance where required. 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 16th Street 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 2022 by WSP Golder with the results communicated to residents of the area. Visual inspections and instrumentation monitoring was completed monthly by City staff during the water main replacement construction that occurred on 11th Street, upslope of the previous instability within this area.

Groundwater Protection Project

In 2021, a collaboration between members of the Sustainability Department and the City Geotechnical Engineering Specialist presented a report to City Council with options to address gaps in the regulation of groundwater wells within city limits that contribute to the risk of aquifer contamination, drinking water cross-contamination, public health issues, and associated liabilities.

In 2022, in compliance with the City Council approval in 2021, the Waterworks Bylaw was updated to prohibit new domestic-purpose pumping wells. A monitoring well standard was also created for monitoring wells installed, maintained, and decommissioned on City land and on private land as part of the land development process.

A new webpage providing information on groundwater, its protection, the updated bylaw, and new monitoring well standard was created in 2022. The License and Encroachment Agreement to permit installation of third party boreholes and monitoring wells on City right-of-way or land was updated and also made accessible through the new [Groundwater Webpage](#).

Geotechnical Support

In addition to managing the riverbank, the City Geotechnical Engineering Specialist is a resource for all City departments, and in 2022, was involved in several projects, providing geotechnical support. Some of these projects included the following:

- Hampton Village Business Park Storm Sewer Conceptual Design
- Weaver Park Dry Storm Pond Design
- Melville Street Sanitary Sewer Replacement decision quality analysis and conceptual design
- Land Development Review
- Rosewood Linear Park Construction
- Blairmore Sector Planning

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 the Weaver Park dry pond project in 2022, which is the third FCS project:

- Early notification of project planned for 2023 (January 2022)
- Notification of City Council meeting requesting project approval (March 2022)
- City Council approval of Project & Engage webpage (May 2022)
- Video Presentation on Engage webpage (August 2022)
- Public Engagement Event Invitation (September 2022)
- Public Engagement Summary (December 2022)

Three FCS news releases were completed in 2022 including two for W.W. Ashley Park and one for Churchill Park, which are shown in Appendix 2 and described below:

- June 24, 2022: New W.W. Ashley Park dry storm pond exceeds expectations
- October 4, 2022: City's first flood mitigation project complete; new park space open
- November 10, 2022: Churchill Park dry storm pond substantially complete

Regular communication was completed for the W.W. Ashley Park and Churchill Park projects as applicable. The City hosted a grand opening event on October 4, 2022 at W.W. Ashley Park. Engage pages were created for each FCS project and can be found on [Saskatoon.ca/engage](https://saskatoon.ca/engage).



Figure 13: October 2022 Opening Event at W.W. Ashley Park Dry Storm Pond

Montgomery Place Drainage

The construction notices and updates for Phase 1 of the MPDIP were completed by the construction management team of Construction and Design. Engagement was completed for Phase 2, with a formal event occurring in November 2022. The engage page for the MPDIP can be found at [Saskatoon.ca/engage](https://saskatoon.ca/engage).

CN Industrial

The engagement process was completed for the CN Industrial Drainage Improvement project, with an open house occurring on November 22, 2022. The engagement feedback was utilized for Administration to propose amendments to existing [Bylaw 9730 – The Private Crossing Over Ditches Bylaw](#), for non-compliant ditch crossing cost sharing for commercial and industrial neighbourhoods. 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 Partners for the Saskatchewan River Basin and 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 2022, in-person and virtual presentations were offered to schools in the province. Twenty schools/groups and 537 students and teachers participated in the Yellow Fish Road™ Program. Yellow fish were painted on 554 storm drains in 15 neighbourhoods, and 2,338 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 changes to rates from 2021 to 2022 and 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 2022, the following webpages were updated:

- Flood Control Strategy
- Storm Water System
- Storm Water Credit Program
- Storm Ponds

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 10-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.

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

The City has 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 will include the installation of trash trap nets on two of the City's storm water outfalls. The nets, which will look like the image in Figure 14, will hold trash and other pollutants that would have otherwise reached the South Saskatchewan River through the storm water system. The nets were ordered from the manufacturer in late 2022 and are expected to be installed in spring 2023. Results of the pilot project will determine whether the installation of trash trap nets at other outfalls throughout the city are an efficient way to prevent debris from entering the river.



Figure 14: Image of Outfall Net

4.11 Utility Billing

Equivalent Runoff Unit Assessment Updates

In 2022, the Storm Water team reassessed a total of 527 ICI and multi-residential properties. Of these sites, 478 assessments were due to internal observations of recent construction, 33 assessments were due to new sites being created, and 16 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 2022 ICI Storm Water Utility bills. The City received two inquiries and follow-up questions regarding the storm water credit program, though no property owners submitted a formal application. The Storm Water Utility will continue to explore options in 2023 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 2022:

- The FCS cost-shared with the GoC, to help the City adapt to the risk of more intense storms associated with climate change. Project 1 (W.W. Ashley Park Dry Pond) construction reached final completion and Project 2 (Churchill Neighbourhood Park Dry Pond) reached substantial completion. As of December 31, 2022, the GoC contributed approximate \$3.6 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 got underway in 2022. As of December 31, 2022, approximately \$0.9 million has been contributed by the GoC and GoS. Phase 2 and 3 will be completed before the end of 2026.
- Approximately \$3.9 million to be contributed by the GoC Natural Infrastructure Fund to restore the drainage routes in the CN Industrial Neighbourhood was conditionally approved in June 2022. Construction of this project will be completed in 2023 and 2024.
- Cost-effective research was leveraged through a partnership with the University of Saskatchewan for debris prevention from the storm sewer system to the South Saskatchewan River and storm water treatment applications.
- Storm sewer asset inventories were updated in 2022. Updates to the storm sewer outfall inspection template and report were completed to improve the management and engineering aspects of the inspections.
- Participation in the Canadian Infrastructure Benchmarking Initiative provided access to best practices and lessons learned from other Canadian municipalities regarding storm water management.
- The new welcome signs installed and planned to be installed at storm water wet ponds provide a more user friendly and education awareness of the function and safety implications regarding storm ponds and recreational use.

5.0 OUR FINANCES

The Storm Water Utility is funded through a user-pay principle with charges reasonably 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 2022 was \$8.90 per month (\$106.80 annually). In 2022, 66,977 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 2022. In 2022, the Storm Water Utility billed 4,848 properties, including 3,733 ICI properties and 1,115 multi-residential properties. The Flood Prevention Program, which was previously used to fund system improvements to prevent sanitary sewer backups during intense rains and general flood protection, was phased out in 2021 and not charged in 2022.

5.1 Revenues

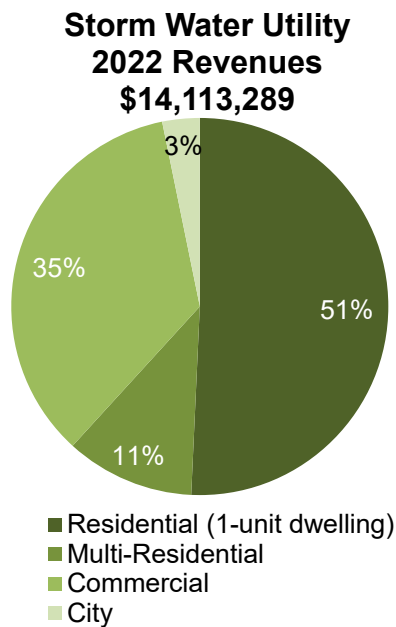


Figure 15: 2022 Revenues by Category

In 2022, total Storm Water Utility revenues were \$14.1 million, an increase of 8.5% from 2021. Storm Water Management revenues based on ERUs included \$5.4 million from ICI properties (38% of total revenues and 5% of customers of the storm water management charge), and \$8.7 million from residential properties (61% of total revenues and 95% of customers of the storm water management charge). Revenue from City-owned properties was \$452,000. Figure 15 displays the revenues in percentage by category.

Variiances: Actual total Storm Water Utility revenues were \$332,000 (2.4%) higher than budgeted in 2022 because of new sites and ERU reassessments completed.

5.2 Operating Expenditures

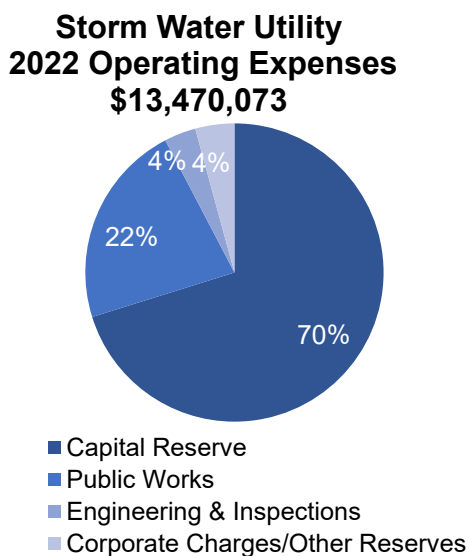


Figure 16: 2022 Operating Expenses by Category

The Storm Water Utility's 2022 operating expenditures were \$13.5 million, including \$9.5 million (70%) allocated to Capital reserves.

WVO and RFS (Public Works) expended \$3.0 million (22% of total operating expenses) to operate and maintain the storm water system, including handling citizen drainage calls, keeping storm drains clear, replacing and repairing infrastructure, and sweeping streets in the fall. Of the \$3.0 million, \$2.1 million was spent on sewer maintenance by WVO, while \$0.9 million was spent on drainage by RFS, which are both consistent with amount spent in 2021.

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 \$0.6 million.

Variances: Operating expenditures in 2022 were \$0.32 million (2.4%) below budget. Public Works (RFS drainage and WWO maintenance) actuals for 2022 were \$0.27 million (8.4%) below budget. Expenses also included a \$107,300 transfer to a capital reserve for the City's enterprise resource program (Fusion).

Table 8 displays the actual 2022 Operating Revenues and Expenditures compared to the 2022 budgeted and 2021 actual amounts.

Table 8: 2022 Storm Water Operating Revenues and Expenditures

Storm Water Utility Operating Revenues and Expenses (\$1000s)			
	2022 Actual	2022 Budget	2021 Actual
Revenues			
Storm Water Charges	\$ 14,113	\$ 13,783	\$ 11,947
Flood Protection Program	\$ -	\$ -	\$ 1,064
Late Charges	\$ 14	\$ 12	\$ 12
Ditch Crossing Permits	\$ 0	\$ -	\$ 2
Total Revenues	\$ 14,127	\$ 13,795	\$ 13,024
Expenses			
Engineering & Inspections Operations	\$ 466	\$ 603	\$ 474
Maintenance (Public Works)	\$ 2,072	\$ 2,212	\$ 2,083
Drainage (Public Works)	\$ 925	\$ 1,059	\$ 883
Customer Billing	\$ 129	\$ 139	\$ 117
Corporate Services	\$ 67	\$ 61	\$ 59
Licenses & Insurance	\$ 109	\$ 109	\$ 88
Other Admin Expenses	\$ 147	\$ -	\$ 126
Interest Expense/(Revenue)	\$ (54)	\$ (30)	\$ (54)
Provision to Capital Reserve	\$ 9,500	\$ 9,535	\$ 7,725
Provision to Other Reserves	\$ 107	\$ 107	\$ 114
Provision to Infrastructure Reserve	\$ -	\$ -	1,064
Total Operating Expenses	\$ 13,470	\$ 13,795	\$ 12,679
Revenues Less Expenses	\$ 657	\$ -	\$ 345
(To)/From Stabilization/Capital Reserves	\$ (657)	\$ -	\$ (345)

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 2020 are shown in Table 9. The reserve cap was reset in 2021 to be 50% of the one-year operation budget of WWO and RFS after reaching the previous cap of 100% of the one-year operation budget of WWO and RFS in 2020. This cap reset was completed to assist with the implementation of the current capital programs undertaken by the Storm Water Utility. The stabilization reserve reached its cap in 2022 at \$1.7 million.

Table 9: 2022 Change in Stabilization Reserve

Change in Storm Water Stabilization Reserve (\$1000s)			
Description/Year	2022	2021	2020
Stabilization Reserve Beginning of Year	\$ 1,356	\$ 3,144	\$ 2,803
Balance From Year	\$ 657	\$ 345	\$ 1,611
Transfer Out to Capital Project	\$ (345)	\$ (2,134)	\$ (1,270)
Storm Stabilization Reserve End of Year	\$ 1,669	\$ 1,356	\$ 3,144

5.4 Capital Funding

In 2022, \$9.5 million was allocated to the Storm Water Capital Reserve. In addition to revenue allocated to capital from the Storm Water Operations, \$2.1 million from the GoC’s Disaster Mitigation and Adaptation Fund program was utilized for the FCS (W.W. Ashley and Churchill Storm Pond eligible expenditures), while \$0.9 million from the GoC’s and GoS’s Investing in Canada Infrastructure Program was utilized for the drainage improvement project in Montgomery Place.

5.5 Capital Expenditures

In 2022, Storm Water Utility capital expenditures were approximately \$9.7 million (Figure 17). Approximately 96% of capital expenditures were for storm sewer network management, asset preservation, and capacity improvements (\$9.3 million).

East Riverbank Stabilization expenditures included \$221,000 primarily included in the internal Geotechnical Engineer salary, slope instrumentation monitoring, and other riverbank monitoring costs.

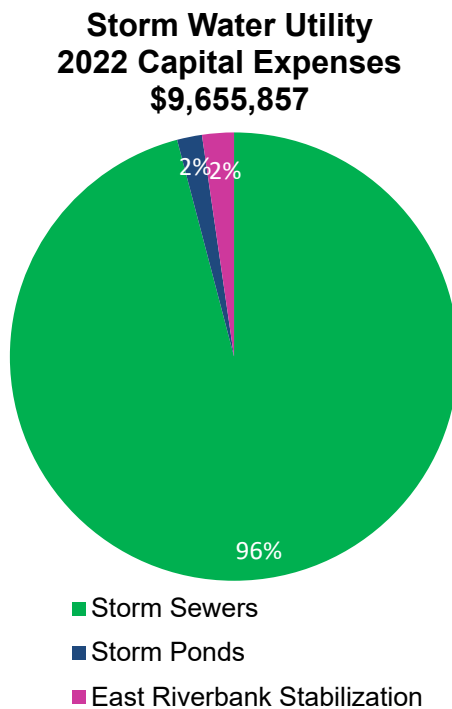


Figure 17: 2022 Capital Expenditures by Category

Storm pond preservation expenditures were \$174,000 and included inspections, monitoring, asset management, and report costs. Significant capital expenditures are expected for storm pond maintenance in the future.

Variances: Table 10 displays the actual 2022 Storm Water Capital Expenditures compared to the 2022 budget and 2021 actuals. The amounts shown in Table 10 does not factor in reimbursement from the Disaster Mitigation and Adaptation Fund and Investing in Canada Infrastructure Program funding agreements. These reimbursements factor in the 'Storm Trunk and Collection Sewer' capital expenditures. Total net capital expenditures for the Storm Trunk and Collection Sewers would be reduced from \$9.3 million to \$6.2 million, considering the external funding received. Furthermore, the Total Capital Expenditures Actuals is reduced from \$9.7 million to \$6.6 million, factoring the external funding.

At the end of 2022, ongoing capital projects extending over more than one year had unspent capital balances of \$20.2 million. This does not include funding that has been allocated from external sources (GoC and GoS) for funding agreements.

Table 10: Storm Water Capital Expenditures from Capital Reserve Fund

Storm Water Capital Expenditures (\$1000s)			
	2022 Actual	2022 Budget	2021 Actual
Storm Trunk and Collection Sewers	\$ 9,261	\$ 14,294	\$ 5,108
Storm Sewer Pond Preservation	\$ 174	\$ 667	\$ 95
East Riverbank Stabilization	\$ 221	\$ 235	\$ 147
Drainage Regulation	\$ -	\$ -	\$ 2
Watershed Mgmt and Assessment Program	\$ -	\$ 78	\$ 49
Total Capital Expenditures	\$ 9,656	\$ 15,274	\$ 5,401

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 2022 was \$5.3 million. Table 11 displays the comparison of the 2022 Capital Reserves of this year to those of 2021 and 2020.

Table 11: 2022 Change in Storm Water Capital Reserve

Change in Storm Water Capital Reserve (\$1000s)			
Description/Year	2022	2021	2020
Capital Reserve Beginning of Year	\$ 4,418	\$ 2,557	\$ 1,052
Provision to Capital Reserve	\$ 7,465	\$ 7,725	\$ 6,041
Capital Budget	\$ (8,990)	\$ (9,033)	\$ (8,793)
Redevelopment Levy Adjustment	\$ 2,036	\$ 2,384	\$ 2,402
Transfer in from Stabilization	\$ 345	\$ -	\$ 1,270
Closures and Adjustments Returned to Capital Reserve	\$ 57	\$ 785	\$ 585
Capital Reserve End of Year	\$ 5,330	\$ 4,418	\$ 2,557

The Flood Prevention Program that was phased out at the end of 2021, had been paid into the Infrastructure Reserve. In 2022, \$2.0 million was transferred from the Infrastructure Reserve into the Storm Water Capital Reserve to fund portions on the FCS.

At the conclusion of 2022, the total balance of the three storm water related reserves (Stabilization Reserve, Capital Reserve, and Infrastructure Reserve) was \$7.1 million, which is shown in Table 12.

Table 12: 2022 Year End Balance of Storm Water Reserves

All End of Year Storm Water Reserves (\$1000s)			
Description/Year	2022	2021	2020
Storm Stabilization Reserve	\$ 1,669	\$ 1,356	\$ 3,144
Capital Reserve	\$ 5,330	\$ 4,418	\$ 2,557
Infrastructure Reserve	\$ 57	\$ 2,020	\$ 1,969
Total Storm Water Reserves End of Year	\$ 7,055	\$ 7,794	\$ 7,670

5.7 Storm Water Utility Benchmarking

In 2021, the City storm water utility rate was the third lowest of the seven Canadian cities that participated in the Canadian Infrastructure Benchmarking Initiative. Results of the 2022 comparison is not yet known through the benchmarking program.

In 2022, 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 18.

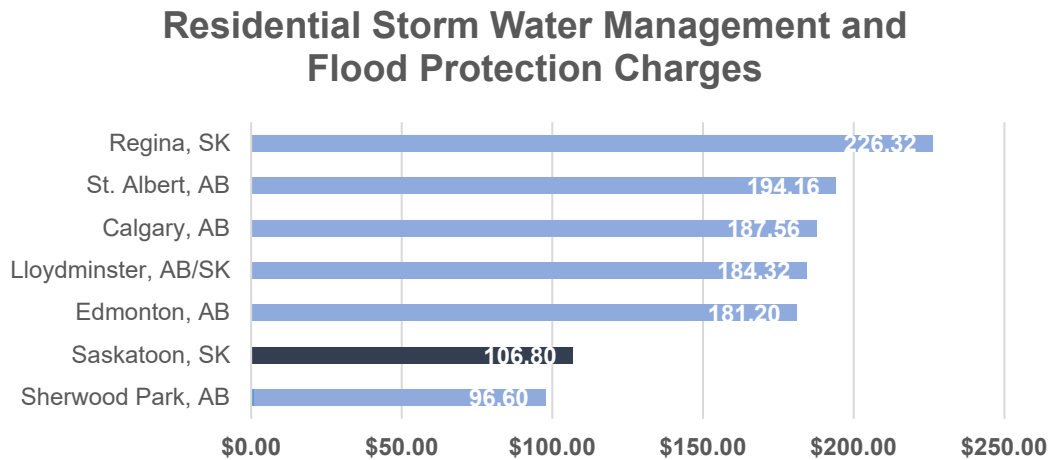


Figure 18: 2022 Residential Storm Water Management and Flood Protection Charges¹

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

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 m²) that is all hard surface, municipality storm water charges range nationally from \$97 (Sherwood Park) to \$2,794 (Kitchener). Saskatoon has the fourth highest annual rate, charging \$1,602.
- For a large shopping centre (37,200 m²) that is all hard surface, municipality storm water charges range nationally from \$97 (Sherwood Park) to \$22,864 (Edmonton). Saskatoon has the third highest annual rate, charging \$10,860.

Saskatoon’s maximum annual storm water charge was \$10,860 in 2022 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 19.

Commercial Annual Minimum and Maximum Storm Water Management and Flood Protection Charges

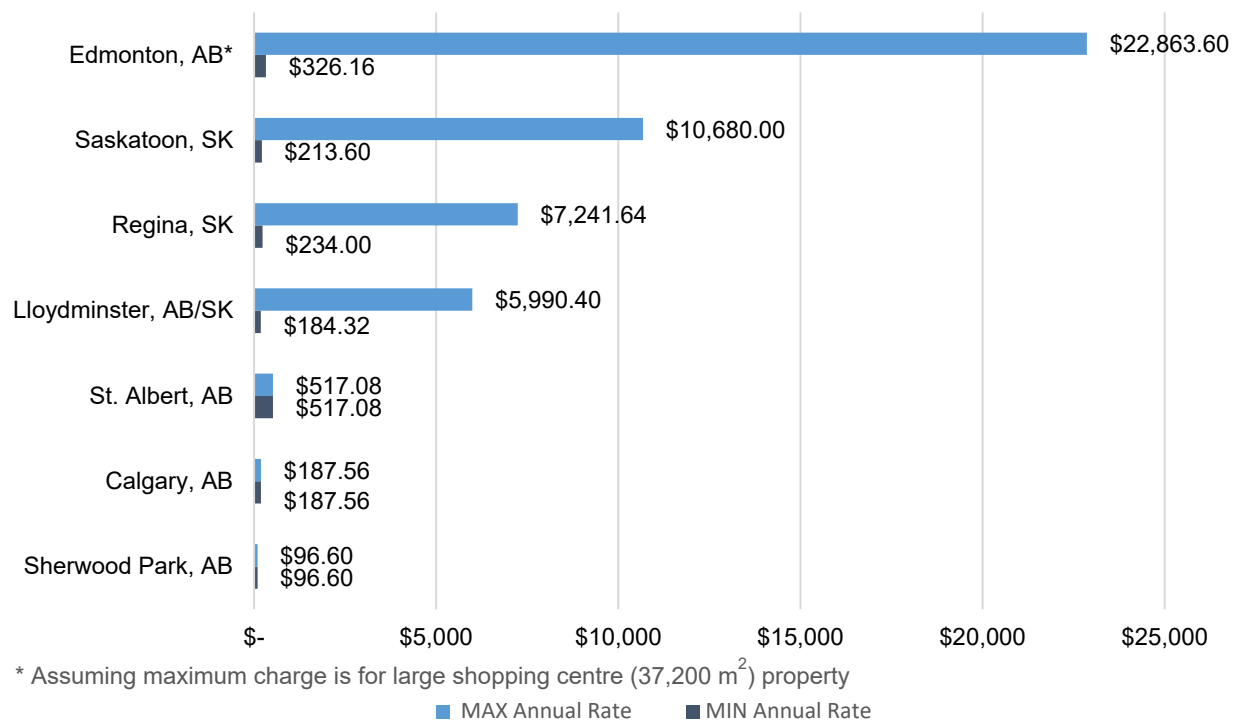


Figure 19: 2022 Commercial Annual Minimum and Maximum Storm Water Charges

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 will more than double between 2018 and 2022, 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 2022 will be further developed in 2023 and beyond, including the following:

- Flood Control Strategy
- Montgomery Place Drainage Improvement Project
- CN Industrial Drainage Improvement
- Asset Management
- Storm Pond Signage
- Outfall Inspections
- Storm Water Management Charge Billing
- 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 2-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 Inclinator: 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

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

Appendix 2: Communications

FCS Engagement Summary – Weaver Park

Weaver Park Dry Storm Pond Project Update

BACKGROUND

The City of Saskatoon is upgrading the storm water system to reduce the flood risk for residential properties near the intersections of Cascade Street and Dufferin Avenue, and Bute Street and Dufferin Avenue.

When intense rainfall occurs, storm water will drain into a newly constructed dry storm pond in the nearby Weaver Park rather than flood intersections. It will then slowly drain into the storm water system and to the river.

SCHEDULE

Construction of the dry storm pond at Weaver Park begins with excavation in early 2023. The remaining phases (storm sewer pipes, outlet-inlet structures and landscape construction) will be scheduled between May and November 2023. Water main replacements, sanitary connection replacements and road paving will be completed within the same time frame.

PROJECT FUNDING

The Weaver Park dry storm pond is the third of nine projects that will address flooding at Saskatoon's most flood-prone areas through the nine-year \$54-million Flood Control Strategy. The Government of Canada is contributing 40% of the eligible construction costs up to a maximum of \$21.6 million.

ENGAGEMENT & COMMUNICATIONS

Learn more about the Weaver Park Dry Storm Pond at saskatoon.ca/engage. Properties adjacent to the park and the storm sewer construction area will receive a Construction Notice with important information prior to excavation beginning in early 2023.

In the meantime, we ask that residents sign up to receive project updates. To sign up, please email us at constructionupdates@saskatoon.ca from your preferred email address with "Weaver Park" as the subject to provide your name and address.

DESIGN

Feedback Included

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).
- The dry pond will have the capacity to store storm water volume for a 1-in-10-year rain event.
- The playground area will remain open throughout construction in the park.
- Grass pathways with gradual slopes on the west, northeast, and southeast ends of the pond will allow citizens to safely descend to and ascend from the pond.
- Drainage improvements will be completed in the noted alleys along Dufferin Avenue, but not through the upcoming project. City staff have found that regrading and paving the alleys would not significantly reduce flooding experienced at private properties during rainfall events. As a result, the City will look into other options to improve alley drainage at these locations.
- The roadway design of Cascade Street will be reviewed, with drainage deficiencies being corrected in upcoming repaving work.
- The storm pond will not worsen the risk of flooding in areas north of Weaver Park, as the pond will not drain until there is sufficient capacity in the storm system. In fact, the pond may indirectly mitigate flooding in these areas by reducing the volume of storm water within the storm sewer system during significant rain events.



Customer Care Centre | 306-975-2476 | stormwater@saskatoon.ca



New W.W. Ashley Park dry storm pond exceeded expectations

UE22-3224

The new dry storm pond in W.W. Ashley District performed exceptionally well when approximately 65 millimetres of rain fell (Aden Bowman Collegiate rain gauge) during the afternoon of Monday, June 20, 2022. The pond, which was completed last fall, was designed to handle a 1-in-10-year rain event but accommodated a storm closer to a 1-in-25-year rain event, preventing water damage to approximately 37 neighbourhood homes that typically experience flooding during intense rainfall.

“Flash flooding, especially in neighbourhoods developed prior to storm water infrastructure standard improvements in 1989, can be devastating which is why we have been working to protect as many people and properties as we can through our Flood Control Strategy,” says Angela Gardiner, General Manager of Utilities and Environment. “Monday’s rain was an ideal test. We are very impressed as we have not received any reports of flooded homes adjacent to the new pond and the infrastructure handled more water than anticipated. The pond had completely drained by 8 o’clock that evening.”

Dry storm ponds hold water that would otherwise cause nearby flooding during intense rainfalls. The water flows into storm drains and through pipes into the dry storm pond, then slowly drains into the storm sewer before it drains into the South Saskatchewan River. Whenever dry, it is used as park space. When it fills with storm water, it is deep and dangerous, and residents should stay away.

The W.W. Ashley Park Dry Storm Pond will open to the public this fall after the landscaping has fully rooted. Residents are asked to stay out of the enclosed area until then.

Construction on a dry storm pond in Churchill Park is underway right now and will be completed later this year. Plans are in the works for a dry storm pond in Weaver Park in 2023 and more flood mitigation projects will be built between 2024 and 2027.

“Once these flood control projects are completed, we anticipate seeing a substantial decrease in the amount of neighbourhood flooding in the top 10 highest risk areas of the city.” says Gardiner.

On Monday, storm water and debris infiltrated the sewer system and ended up at the Wastewater Treatment Plant. As a result, the city’s lift stations were operating at capacity and there was a minor sewage spill into the South Saskatchewan River.

“This is an extremely rare occurrence. Due to the small volume, the sewage quickly diluted, and downstream lab sampling did not detect any harmful impacts. The spill was reported to the Water Security Agency and there was no risk to the public.”

A report on the City’s June 20, 2022 Rain Event Response will be presented to City Council on Monday, June 27, 2022.



City's first flood mitigation project complete; new park space open

UE22-3490

October 4, 2022 - 10:00 am

Dozens of residents in Saskatoon's Haultain and Queen Elizabeth neighbourhoods can rest a little easier knowing there is less of a likelihood of their properties flooding during intense rainfalls. A new dry storm pond in W.W. Ashley District Park, enjoyed as a newly developed park and sports field during dry weather, officially opened today.

The new dry storm pond is the first of nine to be completed under the Flood Control Strategy (FCS) which was approved by City Council in 2018. The second project is underway right now in Churchill Park and will open in fall 2023. In early 2023, construction will start on a dry storm pond in Weaver Park and **six more FCS projects will be built between 2024 and 2027**. The Government of Canada has contributed \$21.6 million towards Saskatoon's Flood Control Strategy through the Disaster Mitigation and Adaptation Fund.

"Our Government is proud to be contributing to Saskatoon's Flood Control Strategy," said the Honourable Dominic LeBlanc, Minister of Intergovernmental Affairs, Infrastructure and Communities. "By investing in disaster mitigation and adaptation, we are safeguarding Saskatonians' homes and livelihoods against the natural events brought on by climate change and building more resilient Prairie communities."

"The W.W. Ashley Park Dry Storm Pond has already proven to be a tremendous success," said Saskatoon Mayor, Charlie Clark. "During a significant rain event this summer, it prevented flooding in an area of the city that historically experiences floods. It also provides accessible walking paths and retains recreational space and green space when not containing storm water. The City has plans for more dry ponds and will continue work on projects in the Flood Control Strategy to help minimize flooding in the highest risk locations in the city. Through continued partnerships, we're able to deliver better infrastructure to residents that help mitigate damage from natural events."

"We have a well thought out strategy in place to ensure all of our projects are built and functioning by 2027," said Russ Munro, Director of Saskatoon Water. "Flooding is never ideal, but I think we were fortunate to witness how this first flood mitigation project actually ended up exceeding our expectations during the rainstorm on June 20th. It demonstrated these projects are a solution when it comes to protecting neighbourhood homes from being devastated by floods."

Dry storm ponds hold water that would otherwise cause nearby flooding during intense rainfalls. The water flows into storm drains, then through underground pipes into the dry storm pond, where it then flows toward and empties into the South Saskatchewan River.

Once the FCS projects are completed, the City anticipates seeing a substantial decrease in the amount of neighbourhood flooding in the top 10 highest risk areas of Saskatoon.

For more information about the FCS, visit saskatoon.ca/floodplan.



Flood Control Strategy: Churchill Park dry storm pond substantially complete

UE22-3669

November 10, 2022 - 9:45 am

The risk of flooding during intense summer rainfalls is much lower for more than 50 properties near Churchill District Park. A dry storm pond in the park, which will hold flood water and serve as a sports field whenever dry, is substantially complete. It is the second dry storm pond to be built under the City of Saskatoon's [Flood Control Strategy \(FCS\)](#).

"Substantial completion means it is mostly done, but there's still some finishing touches to do before the space can officially open," says Director of Saskatoon Water, Russ Munro. "The site will remain fenced off until fall 2023 to give the newly installed sod and trees time to establish."

The FCS, approved by City Council in 2018, is aimed at reducing flooding in nine of Saskatoon's most flood prone areas. The first dry storm pond opened in [W.W. Ashley District Park](#) in October. Right now, plans are in the works to begin construction on a third dry storm pond in [Weaver Park](#) in early 2023.

The Churchill Park dry storm pond took approximately nine months to build. It will reduce summer flood concerns around Ruth Street and Cairns Avenue, Bute Street and Munroe Avenue, Ruth Street and York Avenue, and Bute Street and Albert Avenue.

"Residents will notice new trees, a new pathway, new multi-use sports fields, and spectator seating built into the slopes. We are very pleased with the result and look forward to the neighbourhood enjoying the new space next year," says Munro.

Dry storm ponds are designed to hold water that would otherwise cause flooding during intense rainfalls. The water flows from nearby properties and roads into the dry storm pond before it slowly drains into the storm sewer and to the South Saskatchewan River. Prior to the establishment of the FCS, Saskatoon already had nine dry storm ponds, mostly in neighbourhoods built after 1989 when enhanced storm water infrastructure standards were established.

The Government of Canada is contributing 40% of the eligible construction costs up to a maximum of \$21.6 million toward 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.

For more information about the FCS, visit saskatoon.ca/floodplan.



Montgomery Place 2022 Drainage Update

Drainage

When it rains or melts, help maintain ditch drainage to reduce flooding in Montgomery Place

How you can help:

- › Do not fill in ditches within City of Saskatoon right-of-way (ROW). A permit to alter the ROW is required.
- › Keep culverts clear.
- › Work with neighbours to resolve ditch drainage issues.

What you can expect from us:

- › The City will clear major drainage paths and culverts each spring.
- › The City will assist homeowners through the Ditch Crossing Driveway Permit application process.
- › The City will follow up on ditch drainage complaints regarding new driveway crossings.

Contact Us

Customer Care Centre
Email: customercare@saskatoon.ca
Phone: 306-975-2476

General Drainage and Flooding Questions
Email: stormwater@saskatoon.ca
Phone: 306-975-7611
Web: saskatoon.ca/stormwater

Sign Up for Project Updates

To receive biweekly Drainage Improvement Project updates when construction begins, please e-mail your name and e-mail address to constructionupdates@saskatoon.ca.



Spring 2022 Drainage Improvement Project Update Montgomery Place



Montgomery Place Drainage Improvement Project



The City has received funding from the Government of Canada and Government of Saskatchewan to continue working on drainage improvements in the Montgomery Place neighbourhood.

Over the next few years, the City will improve overland drainage throughout the neighbourhood by reconstructing drainage ditches and driveway crossings, and by adding standardized culverts. The Storm Water Utility is funding a portion of the projects along with the external funding.

In addition to the project to be constructed in 2022 (Phase 1), the City is planning three drainage improvement projects before 2027 in the following areas of Montgomery Place:

- › **Phase 2** (2023) – Southeast
- › **Phase 3** (2025) – South central
- › **Phase 4** (2026) – Northwest and Montgomery Pond

An engagement event will be planned this fall for residents to learn about more detailed information about Phase 2, as well as preliminary information about Phase 3 and Phase 4.

Watch your mailbox for a future flyer with more information.

For more information and background on the Drainage Improvement Project, visit saskatoon.ca/montgomeryplace

Ditch Crossing Driveway Permits

Saskatoon Water manages private ditch crossing permits for Montgomery Place. Permits are necessary for the construction of any driveway or landscaping project that crosses over the public right of way (ROW).

Ditch crossing specifications for driveway width within the ROW have been updated and are based on lot frontage in Montgomery Place.

To apply for a permit and to view the Driveway Crossing Information Package, visit: saskatoon.ca/ditchcrossingpermit

Questions?

Call 306-975-7611 or email stormwater@saskatoon.ca

Private Crossings Over Ditches Bylaw

A new bylaw (Bylaw No. 9730) is specific to drainage improvement projects in Montgomery Place and improving driveway ditch crossing permitting and compliance.

To review the bylaw, please visit saskatoon.ca/bylaws and enter "9730" into the search field.