



# Stormwater

2022-2025 Business Plan  
& 2022 Budget

# Foreword

## Our Vision for the Future

Mississauga will inspire the world as a dynamic and beautiful global city for creativity and innovation, with vibrant, safe and connected communities; where we celebrate the rich diversity of our cultures, historic villages, Lake Ontario and the Credit River Valley. A place where people choose to be.

Mississauga City Council approved Our Future Mississauga; a Strategic Plan to achieve this vision over a 40-year timeframe. The City engaged over 100,000 people to develop this Vision Statement. To achieve this vision the City has identified five Strategic Pillars for Change: **move**, **belong**, **connect**, **prosper**, and **green**. Each year the City proposes various initiatives that are aligned with the Strategic Pillars and are intended to bring us closer to fulfilling our vision for the future. The City delivers over 300 services which are consolidated into 16 Service Areas (including the Stormwater Program) that are outlined in this Plan. The 2022-2025 Business Plan & 2022 Budget document details how and where the City plans to allocate resources to deliver programs and services.

The City is committed to providing programs and services cost effectively. In this Plan we have outlined measures that will help assess the quality, efficiency and customer satisfaction that our services achieve. The results help inform decisions on resource allocations and direct program offerings, and improve service delivery to ensure our vision is efficiently realized.

The ongoing COVID-19 global pandemic is a significant factor impacting the 2022-2025 Business Plan & 2022 Budget. Service levels and service delivery continue to be affected.

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## Executive Summary of Stormwater

**Mission:** The Stormwater Service Area plans, develops, constructs, maintains and renews the City's stormwater system which protects property, infrastructure and the natural environment from flooding and erosion and helps to protect water quality.

### Services we provide:

- Storm sewer, pond and watercourse inspections and maintenance
- Dredging and rehabilitation of Stormwater Management (SWM) facilities to maintain water quality and quantity control
- Watercourse erosion control and restoration
- Stormwater asset management, capital programming and project delivery
- Storm Sewer By-law enforcement
- Outreach and education program

### Interesting facts about this service:

- The City has over 1,900 kilometres of storm sewer pipes in its drainage system. If laid out end-to-end these pipes would connect the City of Mississauga to the City of Winnipeg
- The stormwater drainage system also includes over 51,000 catchbasins, 270 kilometres of ditches, 150 kilometres of creeks, and 81 SWM facilities (including ponds, underground storage and Low Impact Development facilities) that help to collect, drain and clean the city's rainwater runoff before it enters Lake Ontario
- At an estimated 2020 replacement value of over \$5.2 billion, the stormwater drainage system is one of the largest assets owned and operated by the City of Mississauga

### Highlights of the Business Plan include:

- Continuation of the dedicated Stormwater Charge, which funds the City's increasing stormwater management needs including infrastructure renewal and pressures due to flooding
- The proposed 2022 Stormwater Charge Rate, effective April 1, 2022, is \$113.40 per stormwater billing unit, a \$3.00 increase over the 2021 rate
- Continued growth in the Stormwater Capital Program for state of good repair projects and construction of new infrastructure as well as increased contributions to the Pipe Reserve Fund
- Further development of the Stormwater Asset Management Plan and implementation of its recommendations to ensure the cost-effective management of stormwater infrastructure
- Continued preparation of flood mitigation studies and master drainage plans, including the City's Stormwater Master Plan
- Continued design and implementation of watercourse erosion control and restoration projects in various creeks
- Planning of flood mitigation work to provide flood relief to homes and businesses in the Malton and Dixie-Dundas neighbourhoods

Net Investment (\$000s)	2022	2023	2024	2025
Operating	11,905	11,951	12,022	12,147
Capital	44,165	46,650	39,983	41,990
Full Time Equivalents	23.1	24.1	25.1	24.1

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## Focus of the Business Plan

The Business Plan for the Stormwater Service Area focuses on improving stormwater conveyance, quality and flow control to adapt to extreme storm events and address the pressures of aging infrastructure.

The Stormwater Service Area was established as a standalone Service Area in 2016 with the introduction of the Stormwater Charge. The impetus for the Stormwater Charge was the need to increase the City's investment in its stormwater infrastructure and supporting programs with a fair and dedicated source of funding. During the development of the Stormwater Charge program, it was recognized that the Charge would initially be set at a point to fund an interim service level and that over time, the Charge would increase to attain a sustainable service level that would allow for all Stormwater program needs to be fully funded. The 2022-2025 Business Plan continues this transition from an interim to a sustainable service level.



*The Stormwater Asset Management Plan includes managing the city's network of storm sewers effectively and efficiently*

The transition continues with a growing capital program, increased contributions to the storm Pipe Reserve Fund and the continued development of a comprehensive and integrated Asset

Management Plan. Implementing the recommendations of this plan will ensure that cost-effective and service-efficient decisions are made to meet the Service Area's infrastructure needs and to plan for future demand. This plan includes the development of inventories and assessment programs for storm sewers and technology to effectively manage all stormwater infrastructure.

In 2022, the Stormwater Service Area will continue improving business practices to meet the legislated asset management requirements and focus on business improvements to the administration of the Stormwater Charge, including updating its credit program. Staff will also continue several capital project design and construction projects and master drainage plans. Master drainage plans are essential for the identification and prioritization of infrastructure needs and the recommendation of future capital projects. Over the coming years, the Service Area will deliver several flood relief and improvement projects, such as storm sewer renewal, erosion control and water quality enhancements.



*Erosion control projects improve the condition of City watercourses*

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The 2022-2025 Business Plan includes the continued development of a City-wide Stormwater Master Plan and implementation of several key infrastructure projects. Highlights include the following:

- The Cooksville Creek flood relief and improvement projects continue to progress, including the design and construction of several underground stormwater management facilities
- The planning and design of other capital projects to address the flood-susceptibility of homes and businesses in the Dixie-Dundas neighbourhood and the Justine Drive neighbourhood in Malton are also progressing
- Projects to address basement water infiltration in the Lisgar neighbourhood are also continuing. Following the recently constructed pumping station, further planning and design work will see similar solutions implemented at other locations within the neighbourhood
- The Stormwater Capital Program also includes the assessment, rehabilitation and renewal of numerous storm sewer pipes as well as erosion control works along various watercourses throughout the city

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## Core Services

### Vision, Mission, Goals of Service and Service Delivery Model

#### Vision

To deliver world-class stormwater networks while upholding community standards and enhancing quality of life.

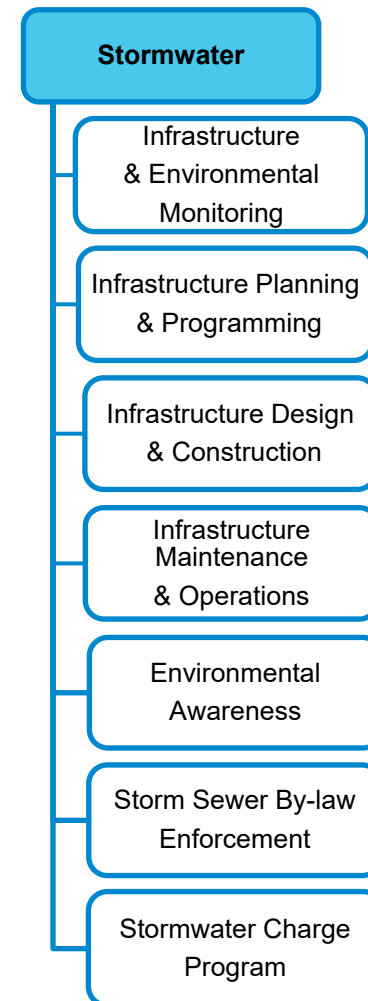
#### Mission

The Stormwater Service Area plans, develops, constructs, maintains and renews the City's stormwater system which protects property, infrastructure and the natural environment from flooding and erosion and helps to protect water quality.

#### Goals of Service

- **Establish** a sustainable service level for Stormwater
  - Maintain and implement the integrated Asset Management Plan to better manage all stormwater infrastructure
  - Plan and deliver a growing capital program effectively and efficiently
  - Increase contribution to Pipe Reserve Fund
  - Enforce the Storm Sewer By-law
- **Deliver** mitigation and improvement projects
  - Flood relief
  - Erosion control
  - Water quality enhancement

#### Service Delivery Model



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## Service Levels and Trends

### Service Levels

The Stormwater Service Area provides the following services:

#### Infrastructure and Environmental Monitoring

- Regular inspections and condition assessments of stormwater infrastructure assets (e.g., watercourses, storm pipes and stormwater ponds)
- Management of the City's rain gauge network
- Stormwater quality monitoring at the inlets and outlets of stormwater facilities

#### Infrastructure Planning and Programming

- Timely completion of district, watershed or City-wide studies to inform infrastructure needs to support growth and maintain expected levels of service
- Annual development of the 10-year Capital Plan for infrastructure investments

#### Infrastructure Design and Construction

- Timely delivery of stormwater capital projects

#### Infrastructure Maintenance and Operations

- Regular inspections and maintenance of stormwater assets (e.g., catchbasins, ditches and storm sewer outfalls)

#### Storm Sewer By-law Enforcement

- Investigation of inquiries, spills and sanitary cross connections, and proactive enforcement of By-law

#### Stormwater Charge Program

- Administration of the Stormwater Charge and processing of technical exemptions, subsidies and credit applications
- Regular reviews of Stormwater Charge administrative processes to ensure accuracy and efficiency

### Environmental Awareness

- Establishing a strong online presence to engage with the community about stormwater best management practices
- Conveying stormwater messages regarding by-law enforcement and pollution prevention to small businesses
- Development and maintenance of online resources for stormwater and environmental awareness

### Issues and Trends

Several trends put pressure on our ability to deliver the described services:

- Frequent extreme storm events add pressure to improve stormwater conveyance, quality and flow control
- Aging stormwater infrastructure and asset management regulation compliance reinforce the need to maintain and implement an integrated Asset Management Plan
- Urban development and intensification add pressure to plan for and deliver upgrades to the stormwater drainage system
- Changes to legislation and approval agency requirements increase operating and capital pressures

The above issues in turn place pressures on the capital and operating budgets and ultimately on the Stormwater Charge.



*Increased risk of urban flooding due to greater frequency of extreme storms and aging infrastructure*



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## Performance Measures and Results

The City of Mississauga is committed to delivering services economically and efficiently. The City's performance measures are used to help assess how well we are doing at achieving our goals and where we need to improve operations. The results also inform decision-making and strengthen accountability.

### Balanced Scorecard

A Balanced Scorecard traditionally assembles organizational performance measures from four areas: customer, financial, workforce, and business process. Measures from each area tell an important part of the performance story. Changes in one area can result in pressures in another, as they do within an ecosystem; taken together, measures from all four areas present a balanced overview of how things are going.

- Customer measures describe how well the service is provided (quality; outcome attainment; and user and citizen satisfaction measures on dimensions such as quality, value, price, product, and service), and how much service the organization provides (volume or capacity measures)
- Financial measures describe the organization's financial performance. Companies often use measures such as profit, revenue to cost, and cash flow. Corporately, City examples include investment performance and interest costs. Service Area measures could include ratios of revenue to cost, costs per unit of service delivered (cost efficiency), per capita costs
- Workforce (formerly 'Employee') measures describe workforce factors that can contribute to the effective delivery of service. These could include rates of innovation, employee satisfaction, qualifications/training, and workforce stability measures such as the rate of succession plan participation

- Business Process measures describe the efficiency and/or effectiveness of a given process. They help to identify any gaps, delays, bottlenecks, shortages, or waste. Time is often a dimension of these measures; e.g., time to respond on scene to an emergency. Resource use and rate of targeted outcome attainment are also often dimensions of business process measures

As an organization with a service (vs. profit) mandate, the City gives customer measures pre-eminence on its Balanced Scorecards. Doing this does not diminish the importance of financial, workforce and efficiency measures. Those measures help the City focus on achieving an outcome that is as important to taxpayers as any other, which is to get the most value possible out of their money.

Below are descriptions of the customer, financial, workforce, and business process performance measures tracked in this Service Area's Balanced Scorecard. The Balanced Scorecard table that follows shows trends since 2018 and expected outcomes to 2025.

### Customer Measures

*Citizens who are satisfied with the City's stormwater service* is a measure included in the Citizen Satisfaction Survey, which is typically conducted every two years. Stormwater services were included in the survey beginning in 2019.

*Number of stormwater inquiries per 1,000 people* is a measure that encompasses our citizens' requests for stormwater services as well as questions about the service. Increases in this measure may alert staff to an issue that needs to be addressed, such as the necessity for additional maintenance activities in specific neighbourhoods, or that further communication is required to address questions about the Stormwater Charge program, for example. This measure has seen a general downward trend,

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with the exception of 2019 when there were numerous inquiries about the Lisgar sump pump subsidy program offered that year.

*Requests for review resolved within service level and credit applications reviewed within service level* are Stormwater Charge-related measures that indicate the City's ability to serve customers in a timely and an effective manner. For these measures, there is an internal target of 90 per cent or better.

### **Financial Measures**

*Unit cost of catchbasin cleaning* is a measure of the City's ability to manage catchbasin cleaning operating pressures while maintaining service levels. Catchbasins are an integral component of the stormwater pipe network and require regular cleaning. In accordance with the existing service level, 33 per cent of the City's catchbasins must be cleaned each year.

*Cost to maintain watercourses per kilometre* is a measure that indicates the amount spent on labour, contracts and equipment for minor watercourse maintenance over the length of the City's watercourses. Watercourses are a significant asset maintained by the Stormwater Service Area and preserving their function and health are critical for drainage and the environment. This measure is subject to fluctuation due to storm event impacts that require more extensive maintenance and repair works in some years than in others.

### **Workforce Measures**

The two items measured here are derived from the results of the Employee Engagement Survey that is typically administered to City staff every three years (2018 is the most recent year available).

*Overall job engagement* indicates the extent to which employees feel engaged in decision-making at the City.

*Job satisfaction* measures the extent to which employees value, enjoy, and believe in what they do.

### **Business Process Measures**

*Watercourses in fair or better condition and quality control stormwater ponds in fair or better condition* are measures that indicate the City's ability to manage lifecycle asset management programs for watercourses and ponds. These measures are derived from condition ratings assessed during field inspections. Condition assessments of creeks and ponds assist in prioritizing maintenance activities and capital projects as well as long-term planning. The internal target is to improve each measure by one per cent annually.

*Progress toward achieving a sustainable service level* is a measure that indicates the City's ability to reach an appropriate annual contribution to the Pipe Reserve Fund, while fully funding the operating and capital programs. Initially a target equal to one per cent of the replacement value of the City's storm sewer pipes was established with annual increases to the Pipe Reserve Fund to allow the fund to grow and reach a sustainable level. Through the development of the Stormwater Service Area's 2021 Asset Management Plan, a consultant-led study was undertaken to update asset replacement values including storm sewer pipes. As a result of this detailed analysis, the replacement value for storm sewer pipes has increased from the original estimate of \$2.1 billion to \$4.7 billion.

This increase can be attributed to the greater level of detail acquired on the length and condition of the City's pipe network in addition to a more refined assessment of pipe replacement cost based on actual material and construction costs according to size, length and age of sewers. For now, the performance measure maintains the modest increase to the annual contribution to the pipe reserve as staff continue to work toward establishing a refined target contribution based on sewer conditions (rather than age alone) and the development of a rehabilitation/replacement strategy through asset management planning. This performance measure will be re-evaluated in the 2023 Business Plan based on the results of the ongoing asset management planning activity.

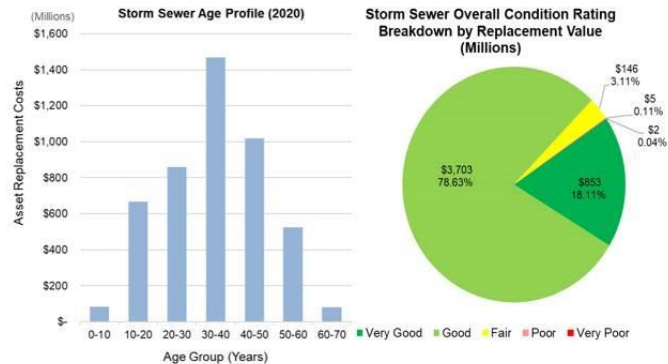
## Balanced Scorecard

Measures for Stormwater	2018 (Actual)	2019 (Actual)	2020 (Actual)	2021 (Plan)	2022 (Plan)	2023 (Plan)	2024 (Plan)	2025 (Plan)
<b>Customer:</b>								
Citizens who are satisfied with the City's stormwater service	N/A	77%	N/A	78%	N/A	79%	N/A	80%
Number of stormwater inquiries per 1,000 people	2.3	2.8	2.1	2.6	2.5	2.4	2.3	2.2
Requests for review resolved within service level	87%	93%	93%	90%	90%	90%	90%	90%
Credit applications reviewed within service level	100%	100%	100%	90%	90%	90%	90%	90%
<b>Financial:</b>								
Unit Cost of catchbasin cleaning	\$35.00	\$40.43	\$40.28	\$41.09	\$41.91	\$42.75	\$43.61	\$44.48
Cost to maintain watercourses per kilometre	\$793	\$4,040	\$880	\$1,454	\$1,483	\$1,513	\$1,543	\$1,574
<b>Workforce:</b>								
Overall job engagement	78%	N/A	N/A	79%	N/A	N/A	80%	N/A
Job satisfaction	86%	N/A	N/A	87%	N/A	N/A	88%	N/A
<b>Business Process:</b>								
Watercourses in fair or better condition	79%	79%	79%	80%	81%	82%	83%	84%
Quality control stormwater ponds in fair or better condition	81%	85%	83%	84%	85%	86%	87%	88%
Progress toward achieving a sustainable Service Level (through contributions to Pipe Reserve Fund)*	26%	29%	34%	39%	43%	48%	53%	58%

\* Based on a replacement value estimate of \$2.1 billion

## Awards and Achievements

In July 2021, the Stormwater Service Area prepared a comprehensive asset management plan for the City's core stormwater assets in accordance with O. Reg. 588/17. To achieve this milestone, staff from the stormwater team worked diligently with other specialists and inter-departmental teams to gather and analyse data and report on the state of the stormwater asset portfolio. The 2021 Asset Management Plan is an essential report to ensure the Stormwater Service Area is delivering the highest value of services in the most economical manner at the right time, while balancing current needs and future demands.



*The 2021 Asset Management Plan reports on the age, value and condition of the City's stormwater assets*

The City continues to implement the recommendations of the Cooksville Creek Flood Evaluation Study by continuing with the construction of a series of stormwater management facilities to capture and slow the stormwater runoff entering Cooksville Creek:

- In Sandalwood Park, construction was completed on the second in a series of underground storage galleries. The facility was constructed beneath the park's soccer field and

playground to provide 15,000 cubic metres of flood storage during extreme storm events

- Designs for two more underground storage galleries are also progressing toward construction at McKenzie Park and Central Parkway East near the Mississauga Valley Community Centre
- In addition to the above projects and the previously completed stormwater projects in Saigon and Eastgate parks, flood storage projects are also planned at four other City parks in future years



*Construction of the Sandalwood Park underground flood storage facility in the Cooksville Creek watershed*

In 2021, the Little Etobicoke Creek Flood Evaluation Study was completed. The study identified urban flood risks throughout the watershed and recommended measures to mitigate these risks to people, property and infrastructure. These measures have been planned for in the 2022 Capital Plan and Forecast.

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# The 2022-2025 Business Plan Outlook

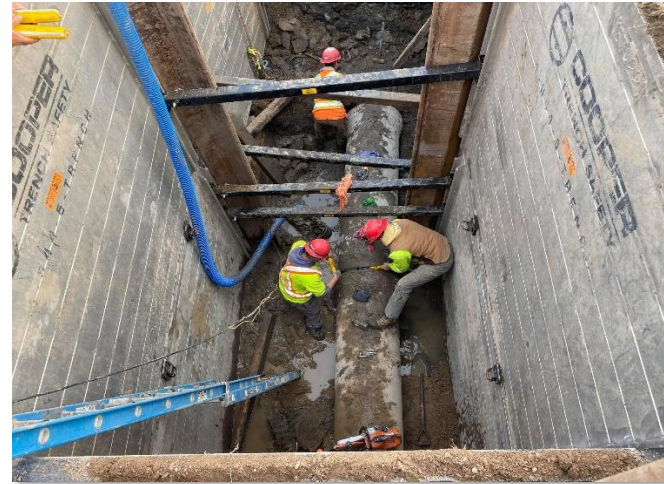
## Planning for the Future

### Service Delivery

The Stormwater Service Area is planning for the future by recognizing the pressures and challenges ahead resulting from extreme storm events and aging stormwater infrastructure. There is an increasing need to plan and deliver effective and timely stormwater services while addressing legislative compliance and conservation authority requirements.

The Stormwater Service Area strives to build a resilient stormwater system and establish a sustainable service level. Planning for the future includes increasing contributions to the Pipe Reserve Fund, delivering an increasing number of capital projects effectively, managing the associated increase in construction costs, and completing studies and plans, including the City's Stormwater Master Plan.

The basis of the Stormwater Charge was to have a fair and equitable dedicated funding source to draw upon to invest in the City's stormwater infrastructure and supporting programs. During the development of the Stormwater Charge program, it was understood that the Charge would initially be set to fund an interim service level and over time increase to attain a sustainable service level that would allow for all stormwater program needs to be fully funded. However, recent financial projections have determined that the current level of stormwater rate increases are inadequate to meet this sustainable service level. As a result, the 2022-2025 Business Plan proposes rate increases aimed to fully fund a growing capital program and to increase the annual contribution to the Pipe Reserve Fund in anticipation of storm sewer replacement projects that will be undertaken in future years.



*The Stormwater Asset Management Plan forecasts significant expenses to replace aging pipes in future years*

### Asset Management

The Stormwater Service Area's goal is to plan, design and deliver stormwater infrastructure that will ensure Mississauga remains a vibrant, economically competitive and climate-resilient city. Integrated and comprehensive asset management ensures that cost-effective and service-efficient decisions are made to not only meet today's infrastructure needs, but plan for future demand and long-term growth.

In 2017, the Province of Ontario introduced and enacted the Asset Management Planning for Municipal Infrastructure Regulation, O. Reg. 588/17. The Regulation required all municipalities to publish a Strategic Asset Management Policy by July 1, 2019 and requires them to develop asset management plans for core infrastructure – which includes all stormwater infrastructure – by July 1, 2022.

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In 2018, the Stormwater Service Area began the first phase of developing an asset management plan and strategy, involving the review of stormwater assets, current business practices, available supporting tools and required training. Several initial improvement tasks that were identified through this review have been implemented or are in progress. Over the course of 2020 and 2021, staff implemented several improvements identified through this review and completed the inaugural Asset Management Plan for the Stormwater Service Area. While the preparation of an asset management plan in 2021 was a significant achievement, staff will continuously improve the asset management processes and implement further improvements that will support the preparation of an enhanced asset management plan in 2025, detailing proposed levels of service in accordance with the legislated requirement under O. Reg. 588/17.

## Finding Efficiencies

### Lean Program

The City's Lean Program focuses on strengthening the organization's culture of continuous improvement and instills Lean concepts and principles as a way of work in every Service Area. The program focuses on maximizing customer value and minimizing waste along with empowering staff at all levels to problem-solve on a daily basis. Since becoming permanent in 2016, the Lean program has produced such enhancements as improved customer experience, faster processing times, higher quality and lower costs.

Highlights of the many projects and improvements completed include:

- Consolidation of the publication of notices for Class Environmental Assessment Studies for stormwater projects, resulting in reduced time and effort for the City's consultants

as well as significant savings in advertising costs. The use of combined notices for study commencements and public information centres garnered annual savings and cost avoidance of \$12,000

- Creation of a standardized storm outfall sampling field sheet to ensure consistency in data collection as part of the City's stormwater water quality sampling program. This improved staff's ability to investigate potentially illegal discharges to the City's storm sewer system and reduced staff search time, resulting in an estimated cost avoidance of \$700 per year
- While mapping watercourse assets for the Asset Management Plan, stormwater staff worked with the Geospatial Solutions team to develop a standardized classification system that resulted in a one-time savings of over 630 hours of staff time

Completed Initiatives					Total Benefits	
Improvement Type	2014 – 2019	2020	Up to Sep 2021	Total	Type	Total
Small Improvements	48	21	12	81	Cost Savings and Avoidance	\$389,253
Rapid Improvements	2	2	0	4	Customer Service Improvements	49
Projects	1	0	0	1	Safety Improvements	13
Total	51	23	12	86	Environmental Improvements	28
In-progress Initiative	Goals of the Initiative					
Work Request: Environmental Services to Works Operations & Maintenance (WOM)	Staff from Environmental Services and WOM are streamlining the work intake and resolution process for the maintenance of stormwater assets. The objective is to improve the tracking and reporting of completed maintenance work activity, enabling staff to build financial reports to track costs for asset management activities.					



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## Advancing the City's Strategic Plan

The City's Vision and Strategic Plan are the starting points for our annual business planning and budgeting cycle. The 40-year Strategic Plan, Our Future Mississauga, is built on five pillars – **move, belong, connect, prosper, and green**. Business Plans are designed to strengthen aspects of these pillars to support the attainment of Mississauga's Vision.

Below are examples of how the initiatives of Stormwater relate to the Strategic Plan pillars.

### move - developing a transit oriented city

"Connect our City – to contribute to a vibrant, successful city by connecting communities within Mississauga and within the Greater Golden Horseshoe to support a 24-hour city."

- Investing in stormwater management and infrastructure to convey stormwater drainage on our roads and keep our bus fleet moving

### belong - ensuring youth, older adults and new immigrants thrive

"Nurture Diverse Cultures – to provide more cultural exchange, understanding and opportunity for small-scale entrepreneurialism."

- Establishing a strong online presence to engage with the community about best stormwater management practices
- Developing strong visual and easy-to-understand graphic content, including infographics and digital brochures
- Improving stormwater literacy in schools by teaching key stormwater messages to youth

### connect - completing our neighbourhoods

"Build and Maintain Infrastructure – to deliver infrastructure in a sustainable way."

- Maintaining and implementing a comprehensive Asset Management Plan to ensure the cost effective management of all stormwater infrastructure
- Effective planning and delivery of capital projects, drainage studies and master plans
- Continuation of regular inspection and maintenance programs to assess conditions of stormwater infrastructure

### prosper - cultivating creative and innovative businesses

"Meet Employment Needs – to provide the infrastructure and network of services and opportunities that business requires to thrive."

- Creating a safe environment and provide reliable stormwater infrastructure for businesses to thrive

### green - living green

"Conserve, Enhance and Connect Natural Environments – to be responsible stewards of the land by conserving, enhancing and connecting natural environments."

- Development of the Mississauga Stormwater Master Plan
- Construction of erosion control projects along Cooksville, Applewood, Sheridan, Sawmill and Loyalist Creeks using natural channel designs and enhancements, where feasible
- Implementation of Low Impact Development techniques to mimic natural processes and improve water quality to the receiving drainage system



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## Transforming Service with Technology

The Stormwater Service area has been striving to improve its use of technology to deliver service.

Technology plays an integral role in planning, managing and maintaining the City's stormwater infrastructure. The Service Area utilizes a variety of technology to aid in optimizing the service it provides. Technology is leveraged to improve analysis, planning, co-ordination and design of this critical infrastructure.

Staff continue to work with IT to find opportunities where technology can be further leveraged to improve service planning, management and delivery. Key initiatives include improving asset management planning with geographic information systems (GIS) and the use of technology for customer service.

### Improving Asset Management with GIS Mapping Tools

Stormwater and the City's Geomatics staff are utilizing GIS technology for the development of an asset management strategy and plan for stormwater infrastructure:

- In 2020 and 2021, staff developed a data model, hierarchy, and data management practices for the stormwater asset inventory in ESRI GIS. As a result, significant improvements were made to the data quality, accuracy and availability. Staff are now able to leverage mapping tools and spatial reporting, enhancing their ability to manage programming for maintenance and capital improvement works as well as overall asset management planning
- A storm sewer asset data model has been completed and the majority of the storm sewer system has been mapped in the GIS tool
- A project to identify and map the City's watercourse system assets in GIS was also initiated in 2021

### Customer Service

Several methods to serve customers are utilized:

- Applicants are able to submit online applications through the Dynamic Portal for Stormwater Credits, Technical Exemptions and Requests for Review. Residents are able to submit stormwater-related concerns online
- Other self-service processes and alternative ways for the public to connect with staff (e.g., social media) are continually reviewed to improve the overall customer experience
- The Stormwater website continues to be updated in order to keep residents informed of the progress of important studies and capital projects. Given the necessary restrictions on face-to-face public meetings as a result of the COVID-19 pandemic, the stormwater website has become the primary point of contact for study notices and public engagement for our Environmental Assessments and Master Plans

## Maintaining City Infrastructure

To maintain stormwater infrastructure now and into the future, the proposed 2022-2025 Stormwater Business Plan & 2022 Budget continues with the development of an asset management plan and strategy for the Stormwater asset portfolio and the increased investment in capital and pipe reserves.

In 2021, several erosion control and stormwater management facility designs were completed. Construction of these projects will begin later in 2021 and in 2022. Additionally, various project designs, flood mitigation studies and master drainage plans are currently underway. These projects include the City's Stormwater Master Plan, the Dixie-Dundas Flood Mitigation Study, the Malton Flood Mitigation Study, the Little Etobicoke Creek Flood Evaluation Study, and the Southdown Stormwater Servicing and Environmental Management Plan. These studies and plans help to identify additional capital needs and pressures within the 10-year capital program and assist staff in planning, maintaining infrastructure and building resilience to the storm drainage system.

Stormwater infrastructure is also regularly inspected and maintained through the Service Area's operating program. Catchbasins, storm sewers, watercourses, stormwater ponds, inlets and outlets are regularly inspected for deficiencies. These condition assessments identify the need for maintenance or infrastructure renewal.

Some maintenance and infrastructure renewal achievements include the following:

- A network of metal trunk sewers along the Credit River valley near Stavebank Road and Queensway West were rehabilitated using trenchless pipe lining technology.

Rather than completely replacing the sewers, stormwater staff selected this method of rehabilitation to extend the lifespan of the pipes while limiting disturbance to the natural environment and nearby residents



*Rehabilitation of metal storm sewers using pipe lining technology*

- In 2020, Storm Sewer By-law enforcement staff conducted 631 site visits in response to 79 spill and release incidents. By-Law enforcement staff collaborated extensively with the Region of Peel, Ministry of the Environment, Conservation and Parks personnel to deal with remediation and rehabilitation of stormwater assets. Enforcement of the Storm Sewer By-law is necessary to comply with provincial legislation and to protect water quality within the city's watercourses



*Spill containment from a storm sewer outfall to Lake Wabukayne*

- Sediment removal operations were completed on two stormwater management ponds in the Meadowvale neighbourhood. This maintenance activity takes place on stormwater ponds every 10 to 15 years to ensure proper operation of the facilities and to maintain treatment capacity as designed



*Sediment removal from stormwater management ponds near  
Old Derry Road in Meadowvale*

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## People and Culture

A municipality is a service organization, and people deliver services. The continuous understanding, balancing and development of the City's workforce are essential to its members' success in delivering superior service. The following describes this Service Area's people, and its plans to foster the supportive culture that enables them to succeed in their work with trust, quality and excellence.

### Workforce Analytics

The Stormwater Service Area has a relatively young, established workforce with a mix of municipal and private sector work experience. Current staff continue to expand their roles and contributions within the Service Area. The team also includes seasonal staff and co-op student positions that provide valuable support to the annual monitoring of the City's stormwater assets and enforcement of the Storm Sewer By-Law.

### Our Structure

Having a team of staff making key contributions to the Service Area requires strong internal relationships and communication to effectively organize and deliver our services. Working together, our Service Area staff support the Stormwater business goals of establishing a sustainable service level and delivering mitigation and improvement projects.

Stormwater services are delivered with key support provided by the following departments, divisions and external partners:

- Finance
- Information Technology
- Parks, Forestry and Environment
- Region of Peel (Stormwater Charge billing)
- Infrastructure Planning & Engineering
- Works Operations & Maintenance

### Our Talent

The Stormwater team is comprised of individuals that bring a wealth of expertise and experience from across Canada and around the world, supporting our vision to be a leader in the delivery of stormwater services. The table below provides some of the roles that are part of the Stormwater Service Area and staff memberships in professional associations.

Our Service Area staff roles include:	Staff are active members of various associations:
<ul style="list-style-type: none"><li>• Environmental/Storm Drainage Engineers and Technologists</li><li>• Environmental/Storm Drainage Co-ordinators</li><li>• Infrastructure Management Specialist</li><li>• Environmental Services Specialist</li><li>• Manager, Stormwater Assets and Programming</li><li>• Project Leader, Storm Drainage Assets</li><li>• Manager, Stormwater Projects and Approvals</li><li>• Stormwater Charge Program Co-ordinator</li><li>• Financial Analyst</li><li>• GIS Analyst</li></ul>	<ul style="list-style-type: none"><li>• American Public Works Association (APWA)</li><li>• Association of Professional Geoscientists of Ontario (APGO)</li><li>• Canadian Network of Asset Managers (CNAM)</li><li>• Institute of Asset Management (IAM)</li><li>• Municipal Engineers Association (MEA)</li><li>• Ontario Association of Certified Engineering Technicians and Technologists (OACETT)</li><li>• Ontario Professional Planners Institute (OPPI)</li><li>• Professional Engineers of Ontario (PEO)</li></ul>

### Critical Roles/Functions to Achieve Business Goals

Staff continue to work together and support one another to deliver services and achieve the business goals within the Stormwater Service Area. The following functions are critical to achieving the 2022-2025 Stormwater business goals:

- Asset management planning and system development
- Monitoring and management of stormwater assets using the asset management plan and system
- Implementing the enhanced Storm Sewer By-law enforcement program
- Effective project management
- Planning and delivery of capital projects, drainage studies and master plans
- Improvements to the Stormwater Charge Program

Critical roles and functions will continue to evolve from 2022 through to 2025 with the ongoing development of new and refined asset management plans and enhanced programs.

### Talent Needs

The Stormwater Service Area is planning for the future by ensuring effective talent management and succession planning. Service Area talent is supplied from internal promotions and external hires. Qualified applicants from the labour market as well as co-op students, Engineers-In-Training (EIT) and the

Technologist Internship Program contribute to Stormwater. Historically, seasonal staff and students have proven to be a good source of candidates for full-time positions. In 2021, the Stormwater Service Area is participating in the second round of the Transportation & Works Engineer-in-Training (EIT) program, developed to prepare recent engineering graduates, through a series of job rotations, to become qualified and compete for permanent positions at the City. The inaugural EIT program successfully ran from 2016-2019 and resulted in all three EITs being hired into permanent positions at the City, including one in the Stormwater Service Area.

#### *Staffing changes for 2022:*

- Conversion of an existing FTE (Storm Drainage Technologist) from a capital-funded contract position to a permanent operating-funded position (BR #8441)
- Reduction of an existing FTE from the Storm Administration Cost program as part of internal reorganization

#### *Staffing changes for 2023 and 2024:*

- An increase of two capital-funded FTEs (both temporary contracts) as part of the Stormwater Asset Management Program, including:
  - IT Business Analyst (one year contract: April 2023-April 2024)
  - GIS Specialist (one year contract: April 2024-April 2025)

### Proposed Full-time Equivalent Staffing Distribution by Program

Program	2021	2022	2023	2024	2025
Storm Administration Costs	2.0	1.0	1.0	1.0	1.0
Storm Operations and Maintenance	22.1	22.1	23.1	24.1	23.1
Total Service Distribution	24.1	23.1	24.1	25.1	24.1

Note: Numbers may not balance due to rounding.



## Stormwater Budget & Financial Overview

### 2022 Stormwater Rate and Future Adjustments

The Stormwater Service Area, like other Service Areas in the City, depends on safe and reliable infrastructure to operate successfully. While some of Mississauga's stormwater infrastructure is relatively new, many of the assets are aging and require significant maintenance or renewal, and therefore require dedicated funding to maintain them in a state of good repair. Additionally, assets that were built many years ago, such as storm sewer pipes, are approaching the end of their service life and will require replacement in the near future. With frequent extreme storm events associated with climate change, the need to invest in our infrastructure to ensure we have a resilient stormwater system is more apparent than ever. This investment in stormwater infrastructure will provide for properly funded maintenance and capital improvement programming to mitigate flooding, enhance water quality and allow the Stormwater Service Area to continue to provide safe and reliable infrastructure moving forward.

To determine the stormwater rate, service levels and operating and capital needs are set to reflect infrastructure priorities, inflationary pressure and reserve fund contributions needed now to plan for funding challenges foreseen with replacing costly

assets (e.g., pipes) in the future. Furthermore, service level changes and the resulting stormwater rate increase reflect a balance between fiscal responsibility and resident service expectations. The stormwater rate is established on an annual basis during the budget approval process, through a fees and charges by-law subject to Council approval. An increase to the stormwater rate will allow future stormwater capital and operational needs to be addressed.

Since the onset of the Stormwater Charge in 2016, the annual stormwater rate increase has been maintained at two per cent or roughly \$2 for an average single family detached home. However, long-term financial forecasting (beyond the 10-year plan) has identified that a greater increase in the stormwater rate is necessary to meet future demands. In order to continue to fully fund operations and maintenance activities, an increasing capital program and maintain increases in the annual contributions to the pipe reserve, a larger annual rate increase of 2.75 per cent or roughly \$3 for an average single family detached home starting in 2022 is proposed. This additional 0.75 per cent is equivalent to an increase of 80 cents for an average single family detached home. As shown in the table below, an annual rate of \$113.40 per stormwater billing unit is proposed to be effective for April 1, 2022.

	Previous						Proposed	Forecast	
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Stormwater Rate (per billing unit)	\$100.00	\$102.00	\$104.00	\$106.10	\$108.20	\$110.40*	<b>113.40*</b>	\$116.50*	\$119.70*

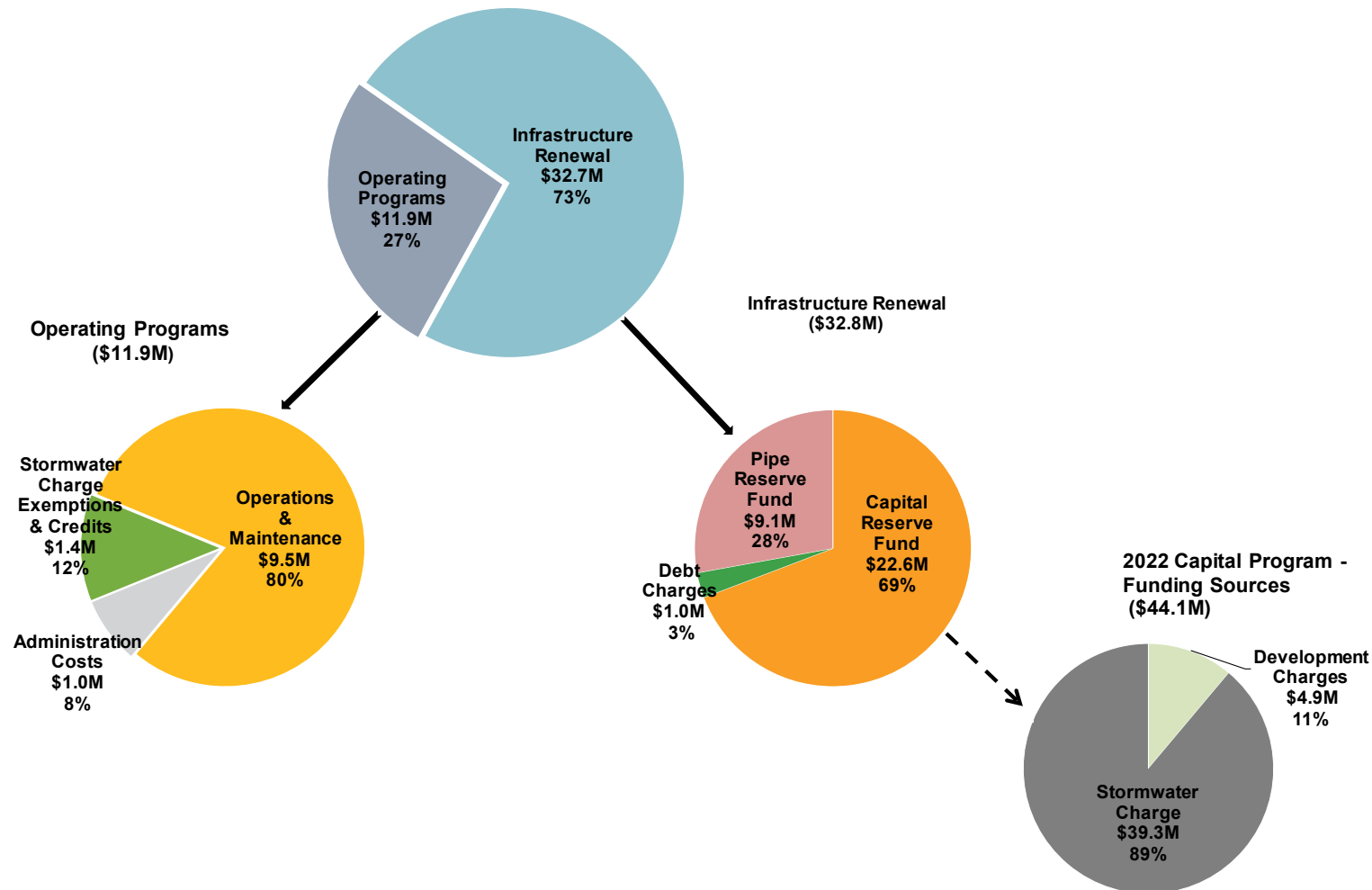
\* Effective April 1 of each year.

To learn more about the Stormwater Charge please visit:  
[www.stormwatercharge.ca](http://www.stormwatercharge.ca)

## Distribution of Stormwater Charge Revenue

The pie charts below provide an overview of Stormwater Charge Revenue segregated by the Operating and Infrastructure Renewal Programs for 2022, and also show how the 2022 Stormwater Capital Program is distributed by funding source.

**2022 Stormwater Charge Revenue (\$44.6 Million)**



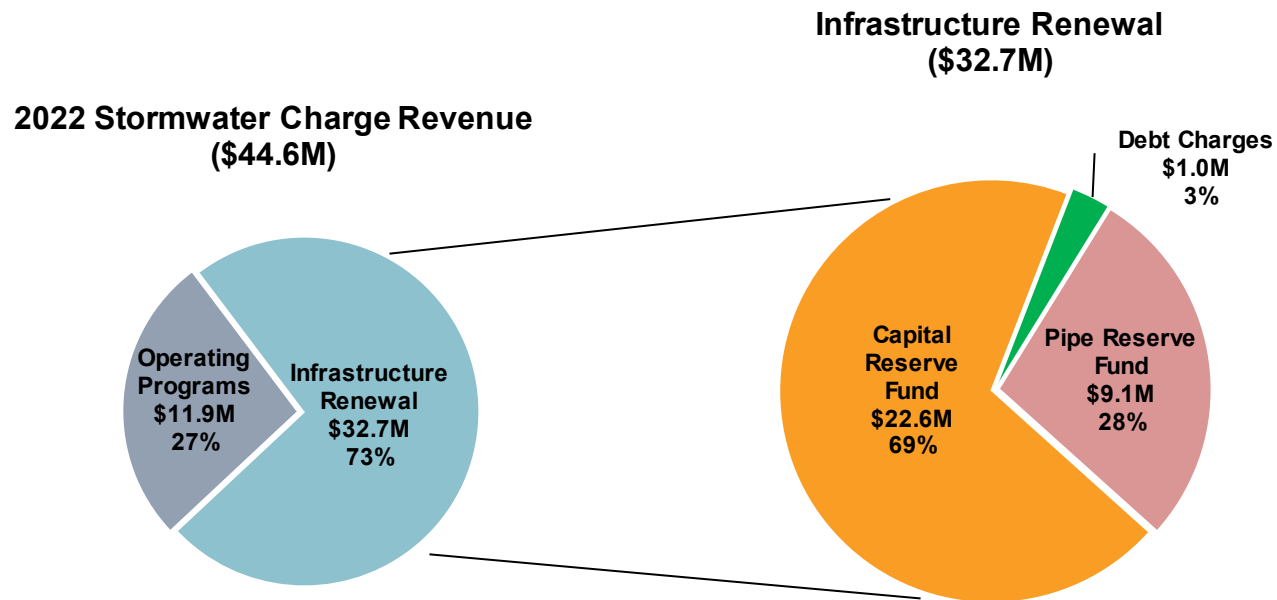
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The following pie charts provide an overview of Stormwater Charge Revenue allocated to Infrastructure Renewal Programs for 2022.

**Description of Stormwater Infrastructure Renewal Allocations**

Infrastructure Renewal – 73 per cent of the total stormwater revenue is to be allocated for infrastructure renewal items as follows:

- Capital Reserve Fund (\$22.6 million)
- Debt charges associated with the financing of capital projects from previous years (\$1.0 million)
- Pipe Reserve Fund for future pipe replacement needs (\$9.1 million)





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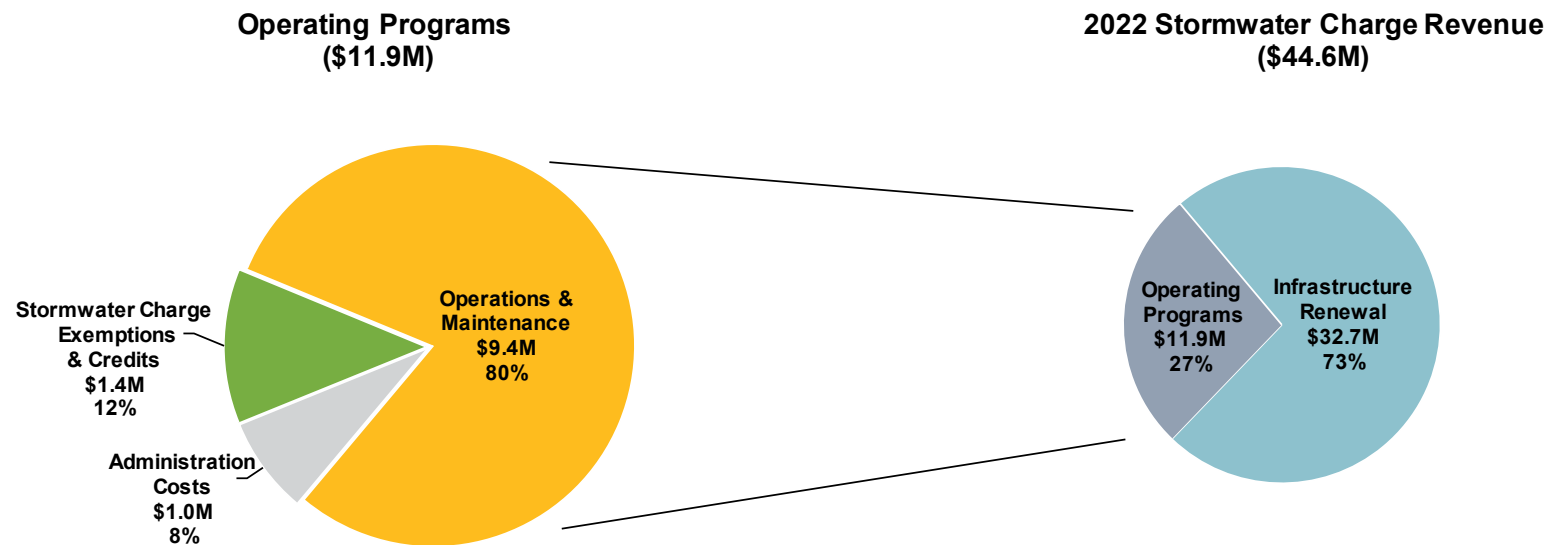
The following pie charts provide an overview of Stormwater Charge Revenue allocated to Operating Programs for 2022.

**Description of Stormwater Operating Programs:**

Operations and Maintenance – Provides for the City-wide direct and allocated costs associated with providing the stormwater service. Examples include watercourse maintenance, catchbasin cleaning, and storm sewer inspection and repair (\$9.4 million).

Administration Costs – Provides for Region of Peel costs for Stormwater Charge billing and customer service support as well as costs for the City to administer the Stormwater Charge (\$1.0 million).

Stormwater Charge Exemptions and Credits – Provides for credits and technical exemptions to recognize properties with stormwater management best practices or which drain directly to Lake Ontario or an adjacent municipality (\$1.4 million).



Note: Numbers may not balance due to rounding.

## Proposed Operating Budget

This part of the Business Plan sets out the financial resources required to deliver the proposed 2022-2025 Business Plan. Information is provided by major expenditure and revenue category as well as by program. The costs to maintain existing service levels and operationalize prior decisions are identified separately from proposed changes. The budget for 2021 was \$11.79 million and the proposed budget for 2022 is \$11.91 million.

### Total Changes to Maintain Current Service Levels

The Stormwater Service Area aims to manage operating pressures while maintaining service levels and remaining in line with inflation. The change of \$239,000 to Maintain Current Service Levels is principally due to an increase in the budget for ditch and culvert maintenance.

### Stormwater Charge Exemptions and Credits

The 2022 budget proposes a \$54,000 increase in technical exemptions and program credits based on the latest analysis indicating an increased volume of applications.

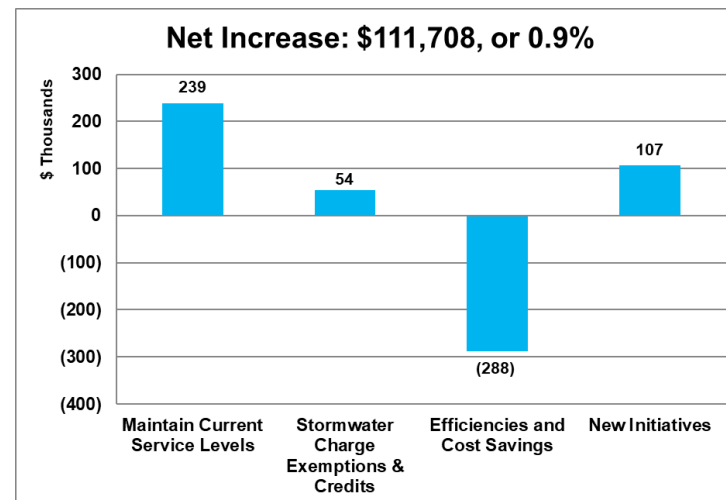
### Efficiencies and Cost Savings

Each year, City staff identify efficiencies and streamline processes through continuous improvement while maintaining service levels and managing additional costs. For 2022, staff have achieved cost savings in the Lisgar sump pump subsidy program and other operating materials expenses.

### New Initiatives

An existing capital-funded contract FTE position is proposed to be converted to permanent in 2022 (BR #8441), to implement the stormwater Asset Management Plan to meet legislated milestones and support ongoing asset management planning.

### Proposed Changes for 2022 Net Operating Budget by Category



The following table breaks down the total 2022 Operating Budget of \$11.91 million, which is a net operating budget increase of \$111,708 over the 2021 Budget.

Category	Changes to 2022 Budget from 2021 (\$000s)
<b>2021 Base Budget</b>	<b>11,793</b>
<b>Operating Decreases</b>	
Labour & Benefits	(6)
Materials, Supplies & Other Services	(10)
Finance Other	(270)
Transportation, Equipment Costs & Maintenance	(1)
<b>Operating Increases</b>	
Stormwater Charge Exemptions & Credits	54
Contractor & Professional Services	222
Occupancy & City Costs, Advertising & Promotions Communication Costs	5
Other Revenues	10
<b>Total Changes to Maintain Current Service Levels</b>	<b>11,798</b>
New Initiatives	107
<b>Total 2022 Operating Budget</b>	<b>11,905</b>
<b>Net Operating Budget Increase</b>	<b>112</b>

Note: Numbers may not balance due to rounding.

## Operating Budget Details

The following table identifies the budgeted and forecasted operating expenditures and revenues for 2022-2025, as well as the 2021 Budget and the 2020 actuals by major program within the Service Area.

### Proposed Budget by Program

Description	2020 Actuals (\$000s)	2021 Budget (\$000s)	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)
<b>Expenditures to Deliver Current Services</b>						
Storm Operations and Maintenance	9,021	9,577	9,577	9,577	9,604	9,645
Storm Administration Costs	885	980	922	924	925	927
Storm Exemptions & Credits	1,367	1,421	1,475	1,515	1,556	1,599
Other Revenues	(183)	(185)	(175)	(175)	(175)	(175)
New Initiatives and New Revenues			107	110	112	152
<b>Total Operating Programs</b>	<b>11,090</b>	<b>11,793</b>	<b>11,905</b>	<b>11,951</b>	<b>12,022</b>	<b>12,147</b>
Capital Reserve Fund Contributions	23,618	22,688	22,618	22,461	22,296	22,096
Pipe Reserve fund Contributions	7,100	8,100	9,100	10,100	11,100	12,100
Debt Charges	978	964	964	964	964	964
<b>Total Infrastructure Renewal</b>	<b>31,696</b>	<b>31,752</b>	<b>32,682</b>	<b>33,525</b>	<b>34,361</b>	<b>35,161</b>
<b>Stormwater Program</b>	<b>42,786</b>	<b>43,546</b>	<b>44,587</b>	<b>45,476</b>	<b>46,383</b>	<b>47,308</b>
Expenditures Budget - Changes by Year			1%	0%	0%	1%
Proposed Net Budget - Changes by Year			0%	3%	2%	2%

Note: Numbers may not balance due to rounding.

### Proposed Cost Increase Required to Maintain Current Service Levels

The following table provides detailed highlights of budget changes by major cost and revenue category. It identifies the net changes to maintain existing service levels, taking into account efficiencies, cost savings, and cost increases arising from prior year decisions.

Category	2021 Budget (\$000s)	2022 Proposed Budget (\$000s)	Change (\$000s)	Details (all values in thousands)
<b>Labour and Benefits</b>	<b>4,922</b>	<b>4,916</b>	<b>(6)</b>	<b>Increase/Decrease Reflects Labour Adjustments and Other Fringe Benefit Changes, Annualization of Prior Year Commitments and Budget Allocation Adjustment</b>
Contractor & Professional Services	3,896	4,119	222	\$250 Increase for Ditch and Culvert Repairs \$41 Increase for Region of Peel Administration (\$69) Budget Allocation Adjustment
Transportation, Equipment Costs & Maintenance	522	522	(1)	
Materials, Supplies & Other Services	60	50	(10)	(\$10) Operating Material Savings based on historic trends
Occupancy & City Costs, Advertising & Promotion Communication Costs & Staff Development	108	113	5	
Finance Other	1,050	780	(270)	(\$260) Reduction in Lisgar Sump Pump Grants (\$10) Reduction in Write Off Expenses based on historical trends
Transfers To Reserves and Reserve Funds	0	0	0	
Stormwater Charge Exemptions & Credits	1,421	1,475	54	\$54 Increase to adjust budget based on actual processed technical exemptions and credits
Other Revenues	(185)	(175)	10	\$10 Reduction to External Recoveries based on historic trends
<b>Total Operating Programs</b>	<b>11,793</b>	<b>11,798</b>	<b>5</b>	
Infrastructure Renewal	30,788	31,718	930	\$1,000 Increase Transfer to Stormwater Pipe Reserve Fund (\$70) Decrease Transfer to Storm Capital Reserve Fund
Debt	964	964	0	
<b>Total Infrastructure Renewal</b>	<b>31,752</b>	<b>32,682</b>	<b>930</b>	
<b>Total</b>	<b>43,546</b>	<b>44,480</b>	<b>935</b>	

Note: Numbers may not balance due to rounding.

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### Proposed New Initiatives

This table presents the costs by Budget Request (BR) for proposed new initiatives. Each BR is numbered. Detailed descriptions of any year one and year two BRs can be found in the pages following the table.

Description	BR #	2022 FTE Impact	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)	2022 to 2025 FTE Impact	2022 to 2025 Capital (\$000s)
Stormwater Asset Management Program	8441	1.0	107	110	112	152	2.0	580
<b>Total</b>		<b>1.0</b>	<b>107</b>	<b>110</b>	<b>112</b>	<b>152</b>	<b>2.0</b>	<b>580</b>

Note: Numbers may not balance due to rounding. Numbers are net.

**Proposed Initiative**

Stormwater Asset Management  
Program

**Department**

Transportation & Works  
Department

**Service Area**

Stormwater

**Description of Budget Request**

This BR is to convert a capital contract FTE, Storm Drainage Technologist, to permanent starting 2022, and to procure and implement a comprehensive Asset Analysis System for 2023/24 for the better management of the City's storm sewer assets.

**Required Annual Operating Investment**

Impacts (\$000s)	2022	2023	2024	2025
Gross Expenditures	106.7	110.4	112.2	151.5
Reserves & Reserve Funds	0.0	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0	0.0
Stormwater Charge	106.7	110.4	112.2	151.5
* Net Change in \$		3.7	1.8	39.3
FTEs	1.0	2.0	3.0	2.0

*\*In each year, all values are cumulative, not incremental.*

**Required Capital Investment**

Total Capital (\$000s)	2021 & Prior	2022	2023	2024	2025 & Beyond
Expenditures	0.0	0.0	290.0	290.0	0.0

**Why Staff Recommend this Initiative**

This initiative supports compliance with O. Reg. 588/17. Sewer assets built over the last 70+ years are reaching their end of life which adds pressure to prioritize works effectively. Prioritization improves with this initiative, and it will formalize asset management, align with best business practices and yield data that informs the Stormwater rate. Benchmarking indicates formal condition assessment programs require a number of dedicated staff.

### **Details of Service Change**

Process and technology improvements are required to streamline asset management. Operating costs will be incurred beginning in 2022 to convert the existing contract to a permanent resource. Implementing the Asset Analysis System requires additional operating and capital resources. Capital costs include the temporary addition of two contract FTEs from 2023 to 2024 (GIS Specialist and IT Business Analyst); the purchase of software licences, IT resources and staff training to integrate with existing systems and business processes; and additional hardware. Operating changes include the contract FTE conversion and the associated maintenance fees for the Asset Analysis System. All operating costs required will be funded by the Stormwater Charge.

### **Service Impact**

The Storm Drainage Technologist will support Stormwater's current asset management work and establish formal sewer programming. The position and Asset Analysis System will also streamline and improve the way we manage asset information, improve service delivery processes and ultimately improve maintenance and renewal investment decision-making, maintaining Mississauga's stormwater sewer network at the optimal cost to ratepayers.



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# Capital Program & Financing Overview

## Infrastructure

The City of Mississauga is committed to providing quality stormwater services through safe, reliable infrastructure. **Build and Maintain Infrastructure** is a key strategic goal in the City of Mississauga's Strategic Plan as well as a top priority of the City's Business Plan. These commitments are key concepts underlying the Stormwater Charge. When the rate for the Charge was initially approved at \$100 per stormwater billing unit, it was based on an interim funding level. It was anticipated that funding would increase in the future to respond to increasing infrastructure requirements.

At the core of the City's need to achieve a sustainable stormwater business model is the need to implement sound asset management practices involving:

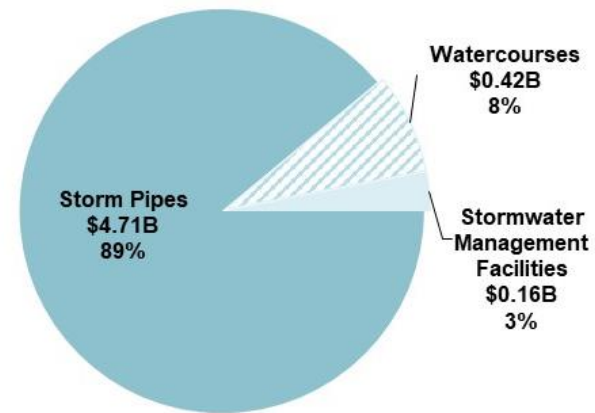
- Developing an inventory of City-owned assets
- Monitoring and reporting of infrastructure condition
- Preparing appropriate asset renewal and maintenance programs
- Developing financial strategies to effectively manage those programs over the lifecycle of stormwater infrastructure

As previously mentioned, one of the business goals of the 2022-2025 plan is to continue to improve asset management practices as they pertain to storm pipes and all other stormwater assets. This includes the improvement of inventory data, monitoring, capital and maintenance planning and the financing of storm sewer infrastructure with the development of an asset management system.

Repairing and rehabilitating aging stormwater infrastructure requires an increased focus on the funding needed to renew the City's long-term assets. As such, enhanced infrastructure funding strategies and mechanisms are being developed to assist the City in addressing these challenges.

A critical part of the City's Stormwater Charge is the need to provide adequate and sustainable funding for the renewal of the storm pipes, in addition to stormwater management ponds and watercourse erosion control.

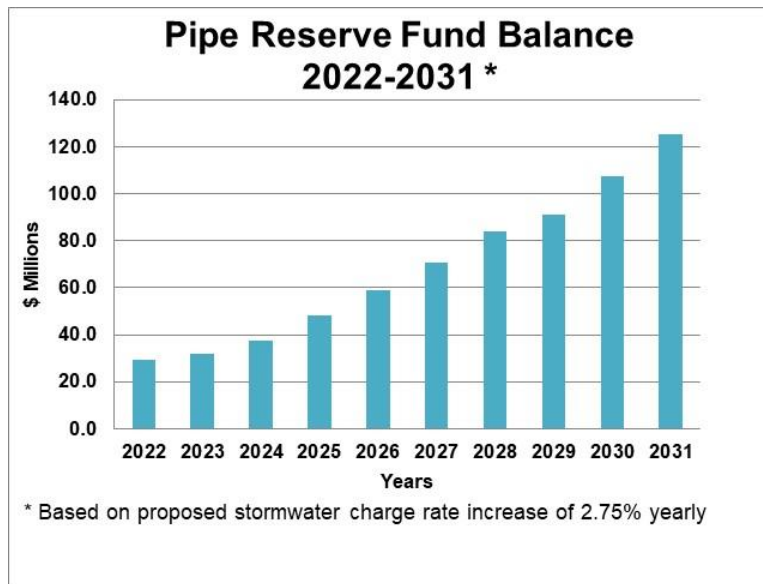
**Stormwater Infrastructure 2020 Replacement Costs  
(Estimated \$5.29 Billion)**



## Pipe Program Financing

The stormwater program includes a provision of \$9.1 million in 2022 for future pipe replacement needs. The proposed 2022-2025 Business Plan & 2022 Budget assumes this provision will increase by \$1.0 million in each of the next four years. As part of the Asset Management Plan development, staff will be assessing the value of the annual contribution to the Pipe Reserve Fund and making recommendations in future Business Plans to ensure that sufficient funds are being set aside for future pipe replacements. This increase is necessary as part of the Service Area's goal to reach a sustainable service level.

The following chart reflects the projected annual closing balances of the Pipe Reserve Fund, with a forecasted balance of \$125.2 million in 2031.



Capital projects pertaining to stormwater pipes are currently being funded from the Pipe Reserve Fund. The most significant expenditures will begin in 40-50 years, as current stormwater pipes begin to reach their end of life. Work is underway to

assess the conditions of storm sewers, program any future repair and rehabilitation needs and identify funding pressures.

Continuation of this work to deliver a comprehensive Asset Management Plan is included in this Business Plan. This body of work will provide more accurate information to determine the appropriate level of annual funding required for the Pipe Reserve Fund moving forward.



*Renewal of damaged and aging storm sewers is a major focus of the Business Plan*

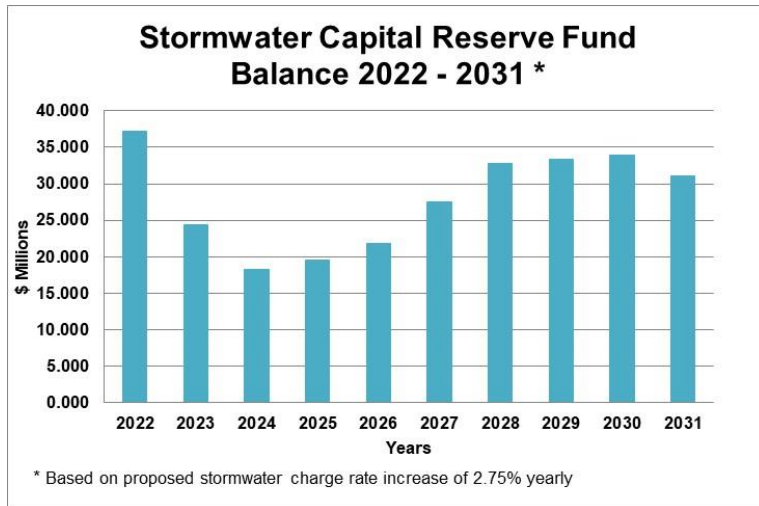


*Corroded metal storm sewers require replacement*

## Capital Program Financing

In addition to the funding required for the City's pipe infrastructure, the Stormwater Service Area must address present and future needs that include stormwater ponds, flood relief, watercourse erosion control and drainage studies.

Revenues from the 2022 Stormwater Charge will be \$44.6 million and are estimated to increase to \$47.3 million by 2025. Some of this revenue funds the Stormwater Capital Reserve Fund. As shown in the chart, with the proposed yearly rate increases the forecasted closing balances for this reserve fund will range between \$18.3 million and \$37.2 million over the 10-year period. Careful planning will ensure that capital priorities will be funded throughout the forecast to 2031, with a positive balance remaining in this Reserve Fund.



Maintaining adequate balances will allow flexibility to address infrastructure needs that arise as the City moves to implement the Stormwater Asset Management Plan, recommendations from future studies and to fund projects that are currently unfunded.



*Construction of flood storage facilities and watercourse erosion control works are funded through the Stormwater Capital Program*

## Infrastructure Gap

The City's 2021 stormwater infrastructure replacement cost is valued at \$5.29 billion. Future funding of the Stormwater Management Program will need to address asset renewals (replacement and rehabilitation) for the current infrastructure base in addition to new capital assets constructed and assumed.

Future capital stormwater infrastructure requirements are examined in two ways:

- The infrastructure needs for the Stormwater Program 2022 Budget are calculated over the ten-year period 2022-2031 and include the capital requirements for all elements of the program (stormwater pipes, watercourses and stormwater management facilities)
- A 100-year analysis (2022-2121) is performed to forecast the replacement cycle of the existing stormwater pipe infrastructure. The analysis provides the average annual funding requirements over the 100-year period

The difference between the capital infrastructure requirements and the available funding committed in the 2022-2031 capital budget is the infrastructure gap for the Stormwater Program.

The 100-year infrastructure gap is the difference between the forecasted 100-year capital needs and the forecasted funding available in the Pipe Reserve Fund, supported primarily by the Stormwater Charge.

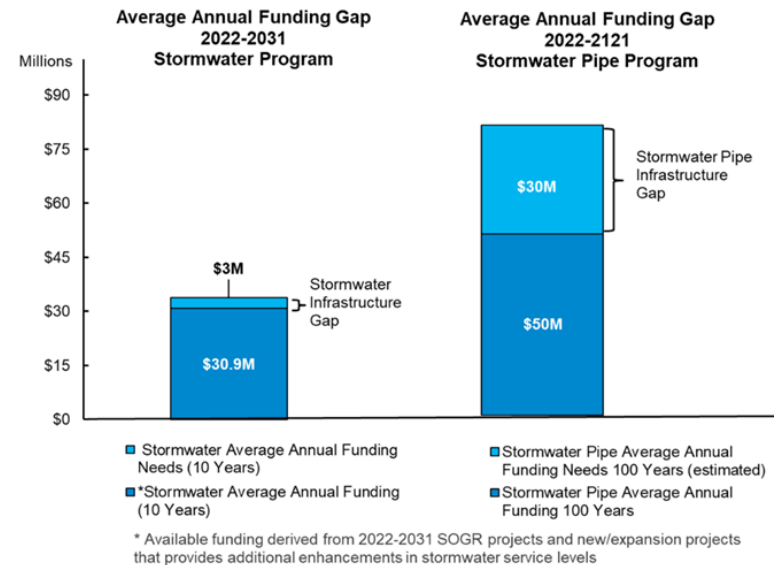
The following chart illustrates the ten-year Stormwater Program and the 100-year Stormwater Pipe Program funded and unfunded requirements, on an average annual basis from 2022 to 2031 and 2022 to 2121, respectively.

Over the ten-year period, on average, the City forecasts spending \$30.9 million annually to maintain, replace and enhance its stormwater program assets. Based on identified requirements, additional funding of approximately \$3 million per year would fully address our needs for the Stormwater Program.

Looking at the 100-year period, on average, the City forecasts spending \$50 million per year on its stormwater pipe infrastructure. Annual renewal costs start to increase significantly around 2051 and continue to escalate for the next 40+ years. To ensure stormwater pipes are replaced at the end of their useful life, an additional \$30 million per year from 2022 to 2122 is required to fully fund the stormwater pipe program.

As mentioned earlier, Council adopted an Asset Management Plan for the City's core infrastructure in 2021. Implementation of asset management best practices as well as assistance from senior levels of government through continued infrastructure funding programs will provide opportunities to address some elements of the funding gap.

Through prudent asset management, our Service Area staff ensure that available funds are applied in a prioritized manner to manage the stormwater infrastructure gap.



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## Proposed Capital Budget

This section summarizes the forecast 10-year capital requirements for this service. The following table presents the forecast by major program.

### Proposed 2022-2031 Capital Budget by Program

Program Expenditures	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)	2026-2031 Forecast (\$000s)	2022-2031 Total (\$000s)
Storm Sewers	18,395	18,020	19,563	2,960	37,448	96,386
Storm Studies	1,580	290	1,360	3,200	3,760	10,190
SWM Facilities and Flood Relief Works	11,560	19,310	12,230	28,020	88,098	159,218
Watercourse Erosion Control	12,630	9,030	6,830	7,810	56,000	92,300
<b>Total</b>	<b>44,165</b>	<b>46,650</b>	<b>39,983</b>	<b>41,990</b>	<b>185,306</b>	<b>358,094</b>

Note: Numbers may not balance due to rounding. Numbers are gross.

### Proposed 2022-2031 Capital Forecast Highlights:

- Cooksville Creek Flood Storage Facility at McKenzie Park (2022-2023) – \$15.7 million
- Hurontario Light Rapid Transit Storm Sewer Improvements (2022-2024) – \$19.6 million
- Rehabilitation and Dredging of Lake Wabukayne, Lake Aquitaine and other stormwater facilities (2022, ongoing) – \$18.8 million
- Lisgar Neighbourhood basement water infiltration improvements (2022, ongoing) – \$17 million
- New stormwater management facilities for the Ninth Line lands (2022) – \$21.3 million
- Storm Sewer Condition Assessment, Rehabilitation and Renewal (2022, ongoing) – \$4.7 million
- Construction of erosion control projects on the Credit River, Sawmill Creek and Sheridan Creek – \$23.6 million
- Environmental Assessment and design for erosion control projects on Cooksville Creek and Cawthra Creek – \$16.0 million

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**Proposed 2022-2031 Capital Budget by Funding Source**

The following table provides the funding sources proposed to fund the capital portion of the proposed 2022-2025 Business Plan & 2022 Budget and the consolidated forecast for 2026-2031.

<b>Funding</b>	<b>2022 Proposed Budget (\$000s)</b>	<b>2023 Forecast (\$000s)</b>	<b>2024 Forecast (\$000s)</b>	<b>2025 Forecast (\$000s)</b>	<b>2026-2031 Forecast (\$000s)</b>	<b>2022-2031 Total (\$000s)</b>
Tax Capital	0	0	0	0	0	0
Development Charges	4,912	2,112	4,961	15,737	15,351	43,073
Developer Contributions	0	0	35	2,120	4,275	6,430
Stormwater Charge	39,253	44,538	34,987	24,134	165,679	308,590
<b>Total</b>	<b>44,165</b>	<b>46,650</b>	<b>39,983</b>	<b>41,990</b>	<b>185,306</b>	<b>358,094</b>

Note: Numbers may not balance due to rounding. Numbers are gross.

## Proposed 2022 Capital Budget Detail

The following tables provide a detailed listing of proposed capital projects for 2022.

Program: Storm Sewers

Project Number	Project Name	Gross Cost (\$000s)	Recovery (\$000s)	Net (\$000s)	Funding Source
TWSD00325	Storm Sewer Oversizing - Various Locations	270	0	270	Development Charges
TWSD00404	Lisgar Improvements	5,610	0	5,610	Stormwater Charge
TWSD00412	Storm Sewer Renewal	2,000	0	2,000	Stormwater Charge
TWSD00455	Storm Sewer Cross-Connection Rehabilitations - Various Locations	100	0	100	Stormwater Charge
TWSD00512	Roadway Rehabilitation Storm Sewer Contributions	2,275	0	2,275	Stormwater Charge
TWSD08702	QEW Culvert Contributions	3,000	0	3,000	Stormwater Charge
TWSD08790	Hurontario LRT Storm Sewer Improvements	4,890	0	4,890	Development Charges, Stormwater Charge
TWSD8808	Applewood Creek Culvert Expansion Study	250	0	250	Stormwater Charge
<b>Total</b>		<b>18,395</b>	<b>0</b>	<b>18,395</b>	

Note: Numbers may not balance due to rounding.

Program: Storm Studies

Project Number	Project Name	Gross Cost (\$000s)	Recovery (\$000s)	Net (\$000s)	Funding Source
TWSD00397	Storm Sewers Condition Assessment & Survey	1,000	0	1,000	Stormwater Charge
TWSD8806	Stormwater Charge Program Review & Updates	350	0	350	Stormwater Charge
TWSD8811	National Disaster Mitigation Program Contribution to CVC	30	0	30	Stormwater Charge
TWSD8813	Ninth Line Watercourse and Floodplain Study	200	0	200	Stormwater Charge
<b>Total</b>		<b>1,580</b>	<b>0</b>	<b>1,580</b>	

Note: Numbers may not balance due to rounding.



Program: SWM Facilities and Flood Relief Works

Project Number	Project Name	Gross Cost (\$000s)	Recovery (\$000s)	Net (\$000s)	Funding Source
TWSD00212	Cooksville Creek Flood Storage Facility - McKenzie Park, Mississauga Valley Boulevard	1,090	0	1,090	Development Charges, Stormwater Charge
TWSD00214	Cooksville Creek Flood Storage Facility - Mississauga Valley	5,000	0	5,000	Development Charges, Stormwater Charge
TWSD00218	Cooksville Creek Flood Storage Fac/Huron Heights Park(#273)	240	0	240	Development Charges, Stormwater Charge
TWSD00235	Low Impact Development for Roads and Stormwater and Sustainable Practices - Various Locations	250	0	250	Stormwater Charge
TWSD00252	Monitoring and minor modification of SWM Facilities - Various Locations	80	0	80	Development Charges, Stormwater Charge
TWSD00289	New SWM Facility - Ninth Line Corridor - Facility 5602 - West of Ninth Line and North of Britannia Rd.	100	0	100	Development Charges
TWSD00291	SWM Facility 5602 - - Ninth Line Lands - West of Ninth Line and North of Britannia Rd.	2,700	0	2,700	Development Charges
TWSD00517	SWM Pond Dredging & Rehabilitation	400	0	400	Stormwater Charge
TWSD08722	New SWM Facility - Ninth Line Corridor - Facility 5602 - West of Ninth Line and North of Britannia Rd.	400	0	400	Development Charges
TWSD8822	SWM Pond Dredging & Rehabilitation	1,300	0	1,300	Stormwater Charge
<b>Total</b>		<b>11,560</b>	<b>0</b>	<b>11,560</b>	

Note: Numbers may not balance due to rounding.



Program: Watercourse Erosion Control

Project Number	Project Name	Gross Cost (\$000s)	Recovery (\$000s)	Net (\$000s)	Funding Source
TWSD00186	Credit River Erosion Control - West of Creditview Road, behind Kenninghall Boulevard	400	0	400	Development Charges, Stormwater Charge
TWSD00206	Applewood Creek Erosion Control - Lakeview Golf Course	3,060	0	3,060	Development Charges, Stormwater Charge
TWSD00245	Credit River Erosion Control - Adjacent to Ostler Court	3,010	0	3,010	Development Charges, Stormwater Charge
TWSD00249	Minor Erosion Control Works - Various Locations	150	0	150	Development Charges, Stormwater Charge
TWSD00309	Sawmill Creek Erosion Control - The Folkway to Erin Mills Pkwy	2,500	0	2,500	Development Charges, Stormwater Charge
TWSD00489	Cooksville Creek at CN Track (north of Lakeshore) Conveyance Improvement	500	0	500	Stormwater Charge
TWSD008990	Sheridan Creek Erosion Control - Lushes Ave. to behind Fletchers Valley Cres.	1,030	0	1,030	Development Charges, Stormwater Charge
TWSD8812	Cooksville Creek Erosion Control - CP Rail to Kirwin Avenue	1,980	0	1,980	Development Charges, Stormwater Charge
<b>Total</b>		<b>12,630</b>	<b>0</b>	<b>12,630</b>	

Note: Numbers may not balance due to rounding.

## Proposed 2022-2031 Capital Budget by Sub-Program

The following tables provide a listing of capital needs by sub-program for 2022-2031.

Sub-Program	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)	2026 Forecast (\$000s)	2027 Forecast (\$000s)	2028 Forecast (\$000s)	2029 Forecast (\$000s)	2030 Forecast (\$000s)	2031 Forecast (\$000s)	Total Forecast (\$000s)
<b>Storm Sewers</b>											
STM Drainage	5,610	5,610	6,113	110	360	110	1,110	2,278	4,110	1,886	27,296
STM Storm Oversizing	270	270	0	0	0	0	0	0	0	0	540
STM Storm Sewer	12,515	12,140	13,450	2,850	2,850	4,750	3,050	11,245	2,850	2,850	68,550
<b>Subtotal</b>	<b>18,395</b>	<b>18,020</b>	<b>19,563</b>	<b>2,960</b>	<b>3,210</b>	<b>4,860</b>	<b>4,160</b>	<b>13,523</b>	<b>6,960</b>	<b>4,736</b>	<b>96,386</b>

Sub-Program	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)	2026 Forecast (\$000s)	2027 Forecast (\$000s)	2028 Forecast (\$000s)	2029 Forecast (\$000s)	2030 Forecast (\$000s)	2031 Forecast (\$000s)	Total Forecast (\$000s)
<b>Storm Studies</b>											
STM Studies	1,580	290	1,360	3,200	1,080	100	1,000	100	1,300	180	10,190
<b>Subtotal</b>	<b>1,580</b>	<b>290</b>	<b>1,360</b>	<b>3,200</b>	<b>1,080</b>	<b>100</b>	<b>1,000</b>	<b>100</b>	<b>1,300</b>	<b>180</b>	<b>10,190</b>

Sub-Program	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)	2026 Forecast (\$000s)	2027 Forecast (\$000s)	2028 Forecast (\$000s)	2029 Forecast (\$000s)	2030 Forecast (\$000s)	2031 Forecast (\$000s)	Total Forecast (\$000s)
<b>SWM Facilities and Flood Relief Works</b>											
STM Channelization	0	0	0	0	0	0	3,200	0	0	2,910	6,110
STM Flood Relief	6,330	17,380	3,100	8,230	13,130	6,330	6,630	0	0	0	61,130
STM SWM Facilities	5,230	1,930	9,130	19,790	3,030	8,430	6,930	14,730	3,278	19,500	91,978
<b>Subtotal</b>	<b>11,560</b>	<b>19,310</b>	<b>12,230</b>	<b>28,020</b>	<b>16,160</b>	<b>14,760</b>	<b>16,760</b>	<b>14,730</b>	<b>3,278</b>	<b>22,410</b>	<b>159,218</b>

Sub-Program	2022 Proposed Budget (\$000s)	2023 Forecast (\$000s)	2024 Forecast (\$000s)	2025 Forecast (\$000s)	2026 Forecast (\$000s)	2027 Forecast (\$000s)	2028 Forecast (\$000s)	2029 Forecast (\$000s)	2030 Forecast (\$000s)	2031 Forecast (\$000s)	Total Forecast (\$000s)
<b>Watercourse Erosion Control</b>											
STM Erosion Control	12,630	9,030	6,830	7,810	6,730	5,630	6,480	8,240	18,280	10,640	92,300
<b>Subtotal</b>	<b>12,630</b>	<b>9,030</b>	<b>6,830</b>	<b>7,810</b>	<b>6,730</b>	<b>5,630</b>	<b>6,480</b>	<b>8,240</b>	<b>18,280</b>	<b>10,640</b>	<b>92,300</b>
<b>Total Expenditures</b>	<b>44,165</b>	<b>46,650</b>	<b>39,983</b>	<b>41,990</b>	<b>27,180</b>	<b>25,350</b>	<b>28,400</b>	<b>36,593</b>	<b>29,818</b>	<b>37,966</b>	<b>358,094</b>

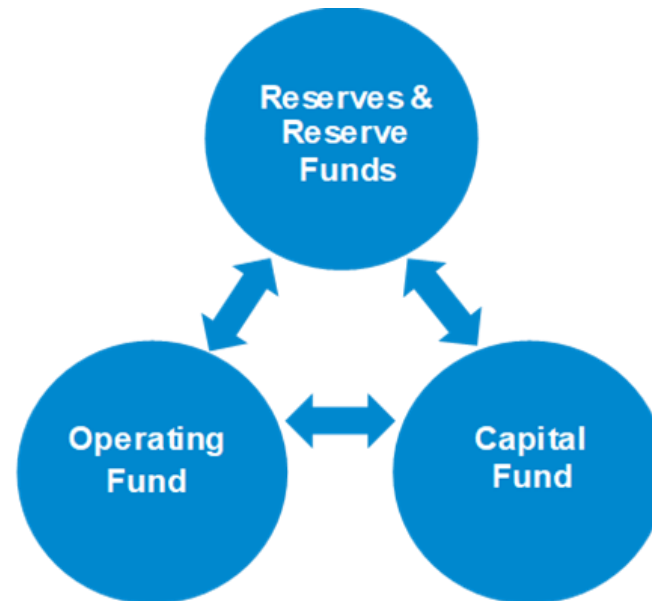
Note: Numbers may not balance due to rounding. Numbers are net.

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## Reserves and Reserve Funds

Reserves and reserve funds are established by Council to assist with long term financial stability and financial planning. These funds are set aside to help offset future capital needs, obligations, pressures and costs. They are drawn upon to finance specific-purpose capital and operating expenditures as designated by Council, to minimize Stormwater Charge fluctuations due to unanticipated expenditures and revenue shortfalls and to fund ongoing projects and programs.

The following chart shows the relationship between the different funds:



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## Existing Core Services

### Reserves

The Stormwater **Fiscal Stability Reserve** is funded entirely from the Stormwater Operating Budget. If needed, these funds will offset any unanticipated fluctuations in revenue or expenses which occur during the year.

### Reserve Funds

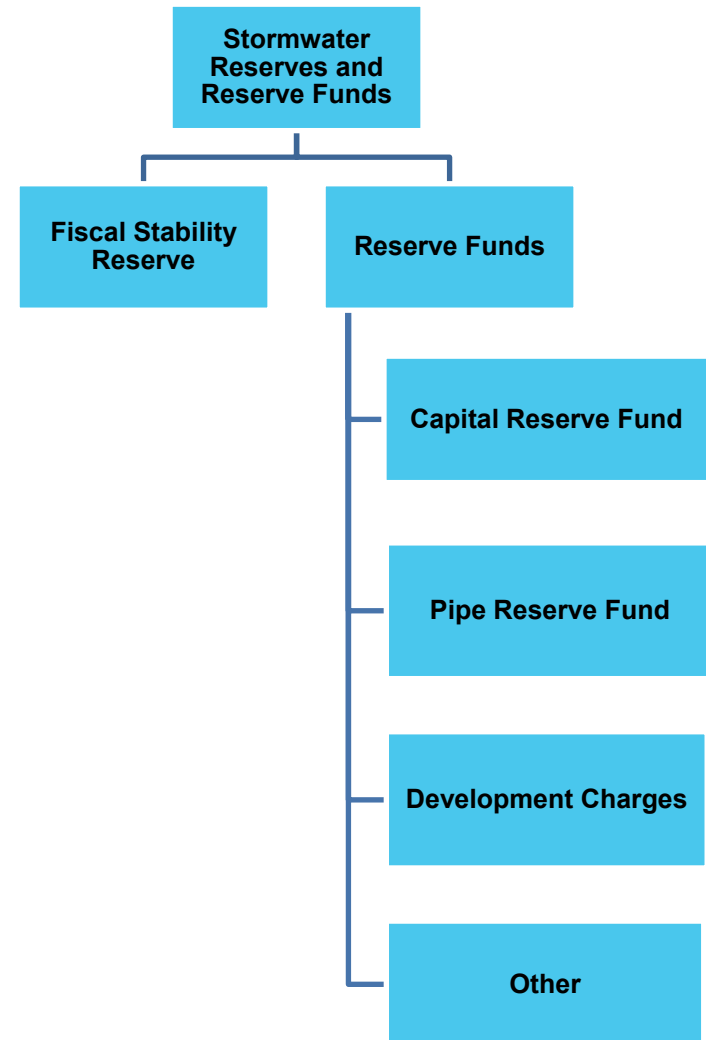
Reserve funds are segregated, restricted and provide for capital replacements.

The Stormwater **Capital Reserve Fund** provides funding for infrastructure needs related to ponds and erosion control along watercourses. The Stormwater **Pipe Reserve Fund** provides for the renewal of the City's pipe infrastructure.

The **Development Charges Reserve Fund** accumulates funds collected under the City's Development Charges By-law as permitted under the *Development Charges Act, 1997* and funds growth-related projects. These funds are obligatory in nature and reported as deferred revenue on the City's Financial Statements.

Other reserve funds included in this Section are:

- Developer Contributions
- Lot Levies
- General Municipal Development
- Excess Debt



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## Forecast Change

The following table provides a summary of the projected 2022 reserves and reserve funds as compared to 2021. Detailed descriptions of each reserve and reserve fund can be found at the end of this section.

### Reserve and Reserve Funds Summary

2020 Operating and Capital Reserve Funds	2021 Projected Balance (\$000s)	2022 Projected Balance (\$000s)	\$ Change Over 2021 (\$000s)	% Change Over 2021
Stormwater Fiscal Stability Reserve	5,952	6,133	181	3.0%
Capital Reserve Fund	46,105	36,707	(9,398)	(20.4%)
Pipe Reserve Fund	25,848	29,064	3,216	12.4%
Development Charges	35,153	31,512	(3,641)	(10.4%)
Other Reserve Funds	25,975	26,765	790	3.0%
<b>Total</b>	<b>139,033</b>	<b>130,181</b>	<b>(8,852)</b>	<b>(6.4%)</b>

Note: Numbers may not add due to rounding

## Continuity Schedule of Stormwater Reserve and Reserve Funds

Reserves and Reserve Funds	Projected Balance Dec 31, 2021 (\$000s)	2022 Projected Contributions (\$000s)	2022 Projected Expenditures (\$000s)	2022 Projected Interfund Transfers (\$000s)	2022 Projected External Sources (\$000s)	2022 Projected Interest (\$000s)	Projected Balance Dec 31, 2022 (\$000s)
<b>Stormwater Operating Reserve</b>							
Stormwater Fiscal Stability Reserve	5,952	0	0	0	0	0	5,952
<b>Total Stormwater Operating Reserve</b>	<b>5,952</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,952</b>
<b>Stormwater</b>							
Stormwater Capital Reserve Fund	46,105	22,618	(32,680)	0	0	664	36,707
Stormwater Pipe Reserve Fund	25,848	9,100	(6,573)	0	0	689	29,064
<b>Total Stormwater</b>	<b>71,953</b>	<b>31,718</b>	<b>(39,253)</b>	<b>0</b>	<b>0</b>	<b>1,353</b>	<b>65,771</b>
<b>Deferred Funded</b>							
Development Charges Reserve Fund	35,153	0	(4,912)	0	725	546	31,512
<b>Total Deferred Funded</b>	<b>35,153</b>	<b>0</b>	<b>(4,912)</b>	<b>0</b>	<b>725</b>	<b>546</b>	<b>31,512</b>
<b>Total Other Funded</b>							
Major Storm Improvement	19,863	0	0	0	0	604	20,467
Major Watercourses	3,715	0	0	0	0	113	3,828
Stormwater	2,398	0	0	0	0	73	2,471
<b>Total Other Funded</b>	<b>25,975</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>790</b>	<b>26,765</b>
<b>Total Non-Tax Supported Reserve Funds</b>	<b>139,033</b>	<b>31,718</b>	<b>(44,165)</b>	<b>0</b>	<b>725</b>	<b>2,689</b>	<b>130,000</b>

Note: Numbers may not balance due to rounding.

## Reserve and Reserve Fund Purposes

Reserve/Reserve Fund Name	Purpose
Stormwater Fiscal Stability Reserve	Provides funds for unforeseen situations directly related to Stormwater and Stormwater billing services delivered by the Region of Peel on behalf of the City of Mississauga
Development Charges Stormwater Reserve Fund	Provides funding for growth-related Stormwater capital projects
Major Watercourse Unallocated Reserve Fund	This reserve fund consists of funds collected under lot levy policies in effect prior to 1991, and reflects current liabilities. When an organization develops land related to the Lot Levies agreement in which the Stormwater payments were waived, the relevant amount the current DC rates is transferred from Lot Levy Reserve Fund to the Stormwater DC Reserve Fund
Major Storm Improvement Reserve Fund	This reserve fund consists of funds collected under lot levy policies in effect prior to 1991, and reflects current liabilities. When an organization develops land related to the Lot Levies agreement in which the Stormwater payments were waived, the relevant amount the current DC rates is transferred from Lot Levy Reserve Fund to the Stormwater DC Reserve Fund
Debt Management – Stormwater Reserve Fund	Provides for surplus of debt funded monies from stormwater projects which were not required
Stormwater – Developer Contribution Reserve Fund	Consists of contributions for specific municipal infrastructure collected as a condition of land development
Stormwater Capital Reserve Fund	Provides funds from capital projects for stormwater infrastructure including: study, design or construction of any stormwater public works; acquisition or expropriation of land required for stormwater purposes; acquisition of vehicles for stormwater purposes; and payment of debt charges of the Corporation for any stormwater aforementioned purposes
Stormwater Pipe Reserve Fund	Provides funds from capital projects for stormwater pipe infrastructure including: study, design or construction of any stormwater pipe public works; acquisition or expropriation of land required for stormwater pipe purposes; acquisition of vehicles for stormwater pipe purposes; and payment of debt charges of the Corporation for any stormwater pipe aforementioned purposes

# 10-Year Forecast Schedule

## Stormwater Capital Reserve Fund

The following table summarizes the Stormwater Capital Reserve Fund opening balances, contributions, withdrawals, allocation to projects and closing balance. This reserve fund is used to fund stormwater infrastructure capital repair and replacement costs as well as investments required to ensure that the aging infrastructure continues to operate effectively, especially in light of the increasingly frequent extreme storm events resulting from climate change. The infrastructure contribution is fully funded from the Stormwater Charge. This reserve fund funds \$255.4 million in projects over the 10-year period 2022-2031. The annual Stormwater Charge is forecast to increase to maintain the proposed capital spending included in this plan.

Stormwater Capital Reserve Fund	2022 (\$000s)	2023 (\$000s)	2024 (\$000s)	2025 (\$000s)	2026 (\$000s)	2027 (\$000s)	2028 (\$000s)	2029 (\$000s)	2030 (\$000s)	2031 (\$000s)	2022-2031 Total (\$000s)
Opening Balance	46,105	37,172	24,378	18,311	19,537	21,828	27,543	32,801	33,418	33,865	46,105
Infrastructure Contribution	22,618	22,461	22,296	22,096	22,673	23,126	23,589	24,061	24,542	25,033	232,495
Interest Income (Charge)	1,130	835	579	513	561	670	818	898	913	880	7,797
Total Available Balance	69,852	60,468	47,254	40,920	42,771	45,623	51,950	57,760	58,872	59,778	286,396
Allocation to Projects	32,680	36,090	28,943	21,384	20,943	18,081	19,149	24,343	25,007	28,762	255,380
<b>Closing Balance</b>	<b>37,172</b>	<b>24,378</b>	<b>18,311</b>	<b>19,537</b>	<b>21,828</b>	<b>27,543</b>	<b>32,801</b>	<b>33,418</b>	<b>33,865</b>	<b>31,016</b>	<b>31,016</b>

Note: Numbers may not balance due to rounding.



## Stormwater Pipe Reserve Fund

The following table summarizes the Stormwater Pipe Reserve Fund opening balances, contributions, withdrawals, allocation to projects and closing balance. Over the next 10 years, \$53.2 million in capital projects are planned for the replacement of the City's pipe infrastructure. This estimate is most likely to change with the completion of the City's asset management plan initiative.

The estimated replacement cost of the pipe inventory is \$4.7 billion. In the 2012 Stormwater Financing Study, the sustainable level of recommended funding was \$16 million annually. The annual contributions will amount to \$9.1 million in 2022 and increase to \$17.4 million by 2031. The annual Stormwater Charge will need to increase to maintain the proposed capital spending included in this plan.

Stormwater Pipe Reserve Fund	2022 (\$000s)	2023 (\$000s)	2024 (\$000s)	2025 (\$000s)	2026 (\$000s)	2027 (\$000s)	2028 (\$000s)	2029 (\$000s)	2030 (\$000s)	2031 (\$000s)	2022-2031 Total (\$000s)
Opening Balance	25,848	29,121	31,596	37,591	48,103	58,904	70,510	83,955	91,286	107,330	25,848
Infrastructure Contribution	9,100	10,100	11,100	12,100	13,100	14,100	15,100	16,100	17,100	17,442	135,342
Interest Income (Charge)	746	824	938	1,162	1,451	1,755	2,095	2,377	2,694	3,154	17,196
Total Available Balance	35,694	40,044	43,634	50,853	62,654	74,760	87,705	102,431	111,080	127,926	178,386
Allocation to Projects	6,573	8,448	6,044	2,750	3,750	4,250	3,750	11,145	3,750	2,750	53,211
<b>Closing Balance</b>	<b>29,121</b>	<b>31,596</b>	<b>37,591</b>	<b>48,103</b>	<b>58,904</b>	<b>70,510</b>	<b>83,955</b>	<b>91,286</b>	<b>107,330</b>	<b>125,176</b>	<b>125,176</b>

Note: Numbers may not add due to rounding.

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### Stormwater Development Charges – Stormwater Management

The following table summarizes the Stormwater Development Charges – Stormwater Management Reserve Fund opening balance, contributions, withdrawals, allocation to projects and closing balance. In keeping with the City's Development Charges policy, Development Charges revenues and costs are closely monitored. Projects in the medium and longer term will be re-evaluated as part of the annual budget process.

DCA - Stormwater Management Reserve Fund	2022 (\$000s)	2023 (\$000s)	2024 (\$000s)	2025 (\$000s)	2026 (\$000s)	2027 (\$000s)	2028 (\$000s)	2029 (\$000s)	2030 (\$000s)	2031 (\$000s)	2022-2031 Total (\$000s)
Opening Balance	35,153	31,545	30,699	26,968	12,380	12,598	12,153	9,273	9,439	9,701	35,153
Infrastructure Contribution	725	726	730	808	1,062	935	1,011	1,108	1,157	1,156	9,418
Interest Income (Charge)	579	540	500	341	217	215	186	162	166	123	3,029
Total Available Balance	36,457	32,811	31,929	28,117	13,659	13,747	13,350	10,543	10,761	10,981	47,600
Allocation to Projects	4,912	2,112	4,961	15,737	1,062	1,594	4,076	1,105	1,060	6,454	43,073
<b>Closing Balance</b>	<b>31,545</b>	<b>30,699</b>	<b>26,968</b>	<b>12,380</b>	<b>12,598</b>	<b>12,153</b>	<b>9,273</b>	<b>9,439</b>	<b>9,701</b>	<b>4,527</b>	<b>4,527</b>

Note: Numbers may not add due to rounding.

## Appendix 1: Listing of Projects for Multi-year Funding

The following projects with multi-year funding, which have begun or will commence prior to full funding being allocated, are recommended to be approved to a maximum cost as follows:

Service Area	Project Number	Project Name	Total Budget (\$)	Periods
Stormwater	TWSD08790	Hurontario LRT Storm Sewer Improvements	19,550,000	2022-2024
Stormwater	TWSD008990	Sheridan Creek Erosion Control - Lushes Ave. to behind Fletchers Valley Cres.	3,830,000	2022-2023

### List of Existing Multi-year Projects with Funding Changes

Service Area	Project Number	Project Name	Prior Years Approved Budget	2022-2031 Request	Total Budget (\$)	Periods
Stormwater	TWSD00206	Applewood Creek Erosion Control - Lakeview Golf Course	3,000,000	60,000	3,060,000	2018-2022
Stormwater	TWSD00214	Cooksville Creek Flood Storage Facility - Mississauga Valley	4,416,500	583,500	5,000,000	2019-2022
Stormwater	TWSD00245	Credit River Erosion Control - Adjacent to Ostler Court	2,950,000	60,000	3,010,000	2021-2022

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## **Appendix 2: Summary of Reserve and Reserve Fund Transfers**

Transfers from the Operating Program to the following reserve funds in 2022 are:

- \$22,617,516 to Stormwater Capital Reserve Fund
- \$9,100,000 to Stormwater Pipe Reserve Fund

Transfers to and from the Stormwater Fiscal Stability Reserve will be based on actual amounts incurred.