MISSISSAUGA

Stormwater

2017–2020 Business Plan
& 2017 Budget

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Executive Summary of Stormwater Business Plan

Mission: To be a leader in the delivery and management of a safe, functional stormwater system, and to plan, develop, construct, maintain and renew a stormwater system which protects property, infrastructure and the natural environment from erosion and flooding and enhances water quality.

This service is delivered with key support provided by:

- Engineering and Construction
- Parks and Forestry
- Region of Peel for stormwater charge billing purposes
- Transportation and Infrastructure Planning
- Works Operations and Maintenance

Interesting facts about this service:

- The City has over 2,100 kilometres of storm sewer pipes in its stormwater drainage system. If laid out end-to-end these pipes would connect the City of Mississauga to the territory of Nunavut
- The stormwater drainage system also includes over 51,000 catch basins, over 250 kilometres of ditches, 31 creeks and 62 stormwater management facilities across the City that help to collect, drain and clean the City's rain water runoff before it enters Lake Ontario
- At a 2017 replacement value of $2.04 billion, the stormwater drainage system is the 2nd largest asset owned and operated by the City
- Our changing climate with more extreme weather events including more frequent, intense storms are placing significant stress on this service

Highlights of the Business Plan include:

- The dedicated stormwater charge funds the increasing stormwater management needs including infrastructure renewal and pressures as a result of flooding events
- An annual rate of $102 per stormwater billing unit is proposed for 2017
- Further developing the service area and initiating the transition from an 'interim' to a 'sustainable' service level
- In 2017, the ongoing development of a comprehensive asset management plan will ensure the cost-effective management of all Stormwater infrastructure
- An enhanced residential Outreach and Education program will be launched in 2017 together with a Residential Home Visit Program
- Mitigation measures continue to be implemented for the Lisgar community to address basement water infiltration
- Cooksville Creek flood relief and improvement projects continue to move forward to implementation
- Federal and provincial infrastructure funds (Clean Water and Wastewater Fund) will support the Capital Budget

Net Investment (000's)	2017	2018	2019	2020
Operating	12,083	12,521	12,592	12,635
Capital	33,123	33,188	36,800	44,200
Full Time Equivalents	22.4	22.4	22.4	22.4

Focus of the Business Plan

The Business Plan for the Stormwater service area focuses on improving stormwater conveyance, quality and flow control targets to address the pressures of aging stormwater infrastructure and climate change resulting in greater frequency of extreme storm events.

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 provide 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 2017-2020 Business Plan starts this transition from an interim to a sustainable service level.

The transition begins with the ongoing development of a comprehensive asset management plan to better manage all stormwater infrastructure. This plan will include the development of inventories and assessment programs for storm sewers and technology to manage all stormwater infrastructure effectively and efficiently. The addition of an Infrastructure Management System (IMS) Specialist in 2017 is crucial to the successful development of effective data management systems and to support asset management programming for stormwater pipes, ponds and watercourses. While this plan was initiated in 2016, it is a long-term strategy with a phased approach. Contribution to the storm pipe renewal reserve fund will also increase.

Other aspects of the Business Plan include the delivery of several key infrastructure projects. The Cooksville Creek flood remediation projects continue to move forward including several above and below-ground stormwater management facilities. Construction of the Cooksville Creek stormwater pond on the north side of Matheson Boulevard West, between Hurontario Street and McLaughlin Road, will continue in 2017.

Several infrastructure projects and related initiatives to address basement water infiltration issues in the Lisgar community are included in the Stormwater capital program, based on the recommendations of the 2015 Lisgar District Basement Water Infiltration Investigation Summary Report. The prioritized action plan has commenced and will continue into 2017 with storm sewer lining, the installation of dewatering works for the utility trench and monitoring. These projects will be funded from property tax.

The stormwater asset management plan includes managing the City's storm sewer network effectively and efficiently

Core Services

Vision, Mission, Goals of Service and Service Delivery Model

Vision

To be a leader in the delivery and management of a safe, functional stormwater system.

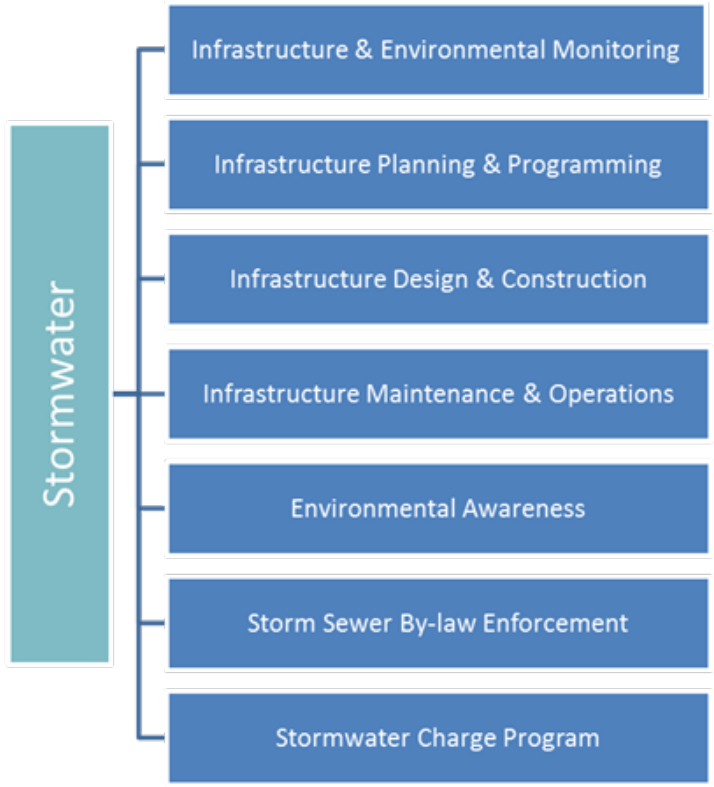
Mission

The Stormwater service area plans, develops, constructs, maintains and renews a stormwater system which protects property, infrastructure and the natural environment from erosion and flooding and enhances water quality.

Goals of Service

- Establish a sustainable service level for Stormwater through:
  - Development of a comprehensive asset management plan to better manage all stormwater infrastructure
  - Increased contribution to Pipe Renewal Reserve Fund
  - Enhanced Storm Sewer By-law enforcement
- Delivery of flood relief, mitigation measures and improvement projects

Service Delivery Model



Achieving our Goals

As the City faces the increasing pressures of aging infrastructure and climate change, the need to protect property, infrastructure and the natural environment from erosion and flooding and enhance water quality is essential for the Stormwater service area. The following is a list of accomplishments made over the past year (2016):

Stormwater Charge Program

- Successfully implemented the Stormwater Charge with an effective date of January 1, 2016
- Responded to over 1,000 phone and e-mail inquiries regarding the Stormwater Charge Program
- Processed and approved over 150 technical exemptions and credit applications
- Undertook a review of Stormwater Residential Programs which included hosting two workshops that were attended by approximately 200 residents
- Introduced new Stormwater Charge subsidy programs for low income seniors and persons with disabilities as well as for properties that are a working farm

Stormwater Management Facilities

- Continued construction of the Cooksville Creek stormwater pond located on the north side of Matheson Boulevard West and between Hurontario Street and McLaughlin Road
- Initiated the retrofit of the Collegeway stormwater pond to provide water quality control
- Completed design of Low Impact Development (LID) bioretention feature on Alpha Mills Road

Storm Sewers

- Completed replacement of the Cooksville Creek trunk storm sewer along Elm Drive
- Initiated the storm sewer lining mitigation measures in the Lisgar community

Creek Erosion Control and Flood Relief Projects

- Initiated flood protection works along Cooksville Creek behind the homes on Rhonda Valley
- Completed watercourse maintenance at several sites along Cooksville; Little Etobicoke and Levi Creeks

Outreach and Education

- Improved online resources related to the Municipal stormwater system and the Stormwater Charge
- Engaged residents at over 80 outreach and education events to inform the public on the Stormwater Charge and to provide environmental awareness

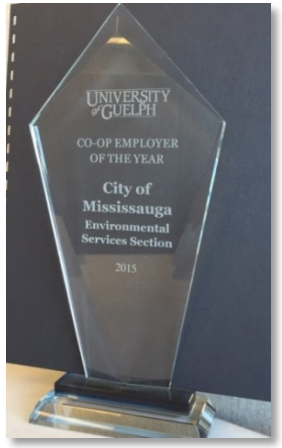
Storm Sewer By-law Enforcement

- Investigated nearly 80 requests related to spills, sanitary cross connections and enforcement of the Storm Sewer By-law

Awards and Recognition

The Stormwater service area has received recognition and been the recipient of the following awards over the past year:

- Friends of the Credit Award - Central Parkway Low Impact Development (LID) rain garden installation
- Ontario Public Works Association (OPWA) Technical Innovation Award - Lisgar Basement Water Infiltration Investigation
- 2015 National Co-op Employer of the Year, University of Guelph – Environmental Services Section
- Canadian Association of Municipal Administrators (CAMA) Environment Award – Stormwater Charge Program
- Stormwater Charge Program Team – winner of City Manager's Award of Excellence, nominated for six other Corporate Awards



The Environmental Services Section award for 2015 National Co-op Employer of the Year – University of Guelph

Central Parkway Rain Garden shown before installation (top) and after (bottom)

Existing Services and Trends

The Stormwater service area provides the following services annually:

Infrastructure Planning and Programming

- Regular inspections and condition assessments of stormwater infrastructure assets (e.g. watercourses and stormwater facilities)
- 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 Maintenance and Operations

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

Infrastructure Design and Construction

- Timely delivery of stormwater capital projects

Environmental Monitoring

- Management of the City's rain gauge network
- Water quality monitoring

Stormwater and Environmental Awareness

- Delivery of outreach and education programs for residents
- Development and maintenance of the online and print resources for stormwater and environmental awareness

Storm Sewer By-law Enforcement

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

Stormwater Charge Program

- Administration of the Stormwater Charge and processing of technical exemptions and credit applications

Several trends are putting pressure on our ability to deliver the above services such as aging infrastructure, greater frequency of extreme storm events and the need for additional resources to support asset management, public outreach, Storm Sewer By-law enforcement and the delivery of infrastructure projects.

Flooding of rail underpass during an extreme storm event (source: Credit Valley Conservation)

The 2017-2020 Business Plan Outlook

Planning for the Future

The Stormwater service area is planning for the future by recognizing the pressures and challenges ahead resulting from aging stormwater infrastructure and greater frequency of extreme storm events.

The basis of the stormwater charge was realizing the need to increase the City's investment in its stormwater infrastructure and supporting programs. During the development of the stormwater charge program it was recognized that the charge would initially be set at 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 2017-2020 Business Plan starts this transition from an interim to a sustainable service level.

The transition includes the ongoing development of a comprehensive asset management plan to better manage and renew all stormwater infrastructure assets. This will include the development of inventories and assessment programs for storm sewers and technology to manage all stormwater infrastructure effectively and efficiently. The addition of an Infrastructure Management System (IMS) Specialist in 2017 is crucial to the successful development of effective data management systems and to support asset management programming for stormwater pipes, ponds and watercourses.

In addition, increased contribution to the storm pipe renewal reserve fund is proposed to allow for large storm sewer replacement projects to be undertaken, as necessary, in future years.

Maintaining and Improving Our Infrastructure

To maintain stormwater infrastructure now and in the future, the 2017-2020 Stormwater Business Plan proposes new initiatives and additional resources for the development of a storm pipe asset management plan, enhancement of existing asset management plans and integration of all storm assets into a comprehensive system, increased investment in capital and pipe reserves and enhanced enforcement of the Storm Sewer by-law.

Optimizing the Use of Technology

As the Stormwater service area develops, optimizing the use of technology will provide an opportunity to realize efficiencies and cost savings in the delivery of our services through:

- Implementation of an infrastructure management system to support inventories and condition assessments for all stormwater assets
- New technologies or tools for field data collection that enhance our ability to proactively identify issues and prioritize work accordingly
- Application of innovative engineering products and technologies (e.g. sewer lining, soil cells bank stabilization and green infrastructure)
- Enhanced asset management practices allowing for improved coordination between road and storm sewer rehabilitation programs

Linkages to the City's Strategic Plan

connect - completing our neighbourhoods

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

- The ongoing development of a comprehensive asset management plan will ensure the cost-effective management of all stormwater infrastructure
- Implementation of Cooksville Creek flood relief and improvement projects, including stormwater management facilities
- Implementation of mitigation measures for the Lisgar community to address basement water infiltration

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 an enhanced residential Outreach and Education program with a Residential Home Visit Program
- Completion of Low Impact Development (LID) projects such as the Central Parkway Rain Garden that mimic natural processes and improve water quality to the receiving drainage system
- Initiation of the Collegeway stormwater pond retrofit to provide water quality control to Loyalist Creek

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Engaging Our Residents

The Stormwater service area has introduced a Residential Outreach and Education Program with the following goals:

- Educate homeowners about stormwater, how the City manages stormwater, the relationship between private property and the municipal stormwater management system, and the stormwater charge
- Educate homeowners on stormwater best management practices for their properties
- Direct homeowners to education and/or incentive programs offered by other levels of government, local conservation authorities, public agencies and not-for-profit organizations

The program focuses on providing information that helps homeowners understand how their properties drain, common issues that can put homes at risk of flooding, and actions that can be taken to reduce flooding risks and benefit the environment. Such actions include disconnecting downspouts, clearing debris from eaves troughs, choosing environmentally friendly alternatives to fertilizers, pesticides and winter salt, using native groundcover and plant species, improving lot grading conditions, proper disposal of pet waste, introducing permeable paving materials, rain gardens and rain barrels, tree planting and other best practices.

Face-to-face interactions, training and demonstrations are key features of the outreach program. Other channels may include direct mail, online information including illustrations and videos, brochures, flyers, displays, billboards and outreach events.

At the core of the program is a comprehensive website (www.mississauga.ca/stormwater), featuring links to stormwater incentives and programs offered by local partners such as Credit Valley Conservation, Toronto and Region Conservation Authority and the Region of Peel.

Engaging our residents and future generations is an integral part of the Stormwater service area. In 2016, staff attended over 80 events and workshops to discuss the Stormwater Charge with residents and promote environmental awareness. The 2017-2020 Business Plan expands our engagement with residents through:

- Implementation of an enhanced Residential Stormwater Outreach and Education Program
- Implementation of a Residential Stormwater Home Visit Service for a two year trial period
- Continued development and expansion of online support (e.g. social media) and website information

Stormwater information booth at community outreach and education event

Stormwater Budget & Financial Overview

2017 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 a state of good repair. In addition, 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 increased frequency of extreme storm events, the need to invest in our infrastructure to ensure we have a resilient stormwater system is more apparent than ever. This investment in our 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/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 reflects a balance between fiscal responsibility and resident expectations.

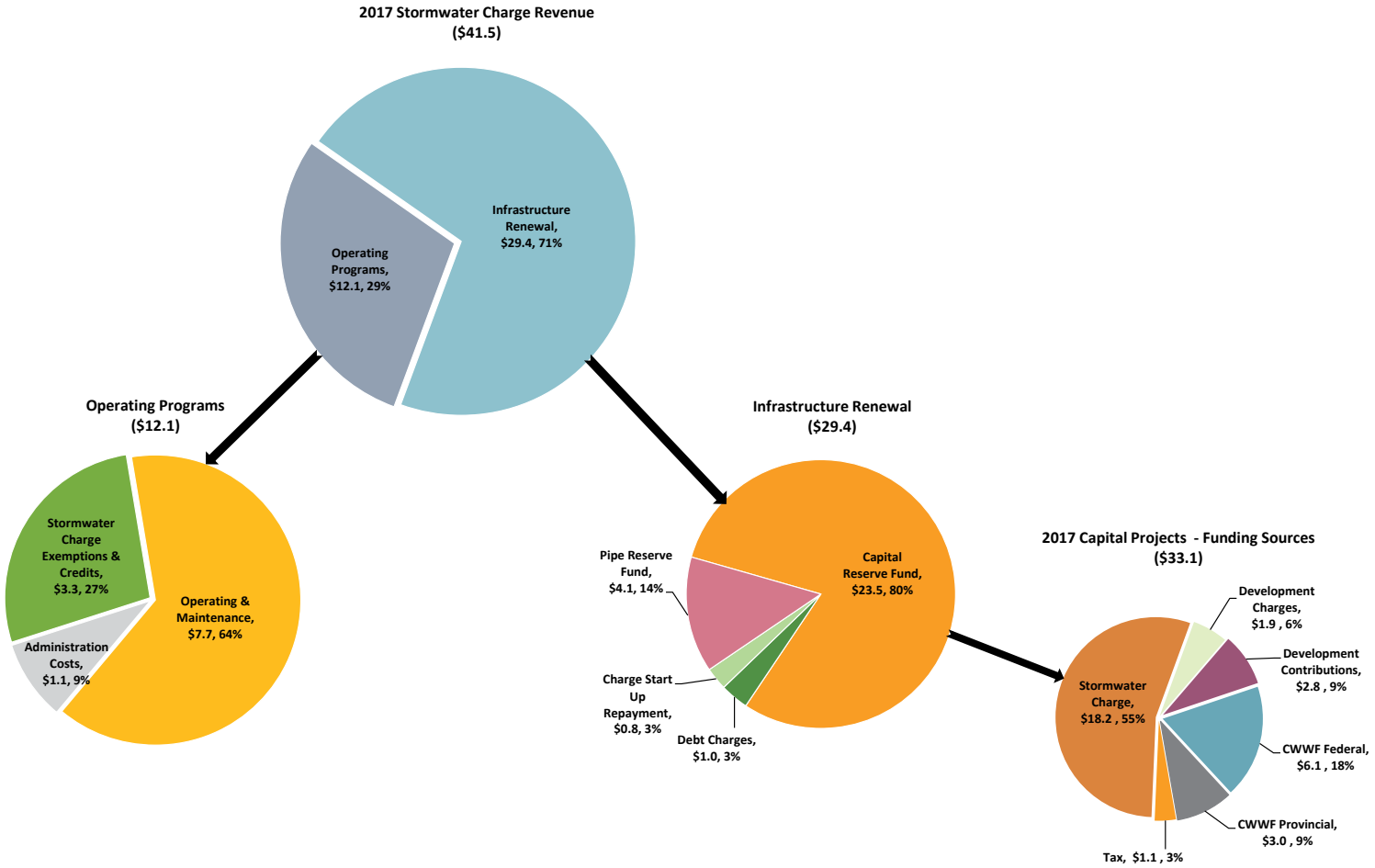
The stormwater rate is established on an annual basis, during the budget approval process, through a fees and charges by-law subject to Council approval. An increase to the stormwater rate, from the initial 2016 rate that funded an interim level of service, will allow future stormwater capital and operational needs to be addressed. An annual rate of $102.00 per stormwater billing unit is proposed for 2017. The table below forecasts future adjustments to the stormwater rate to account for inflation and increased investment into the program to approach a sustainable level of service.

	2016	2017	2018	2019	2020
Stormwater Rate (per billing unit)	$100	$102	$104	$106	$108

To learn more about the stormwater charge please visit:
www.stormwatercharge.ca

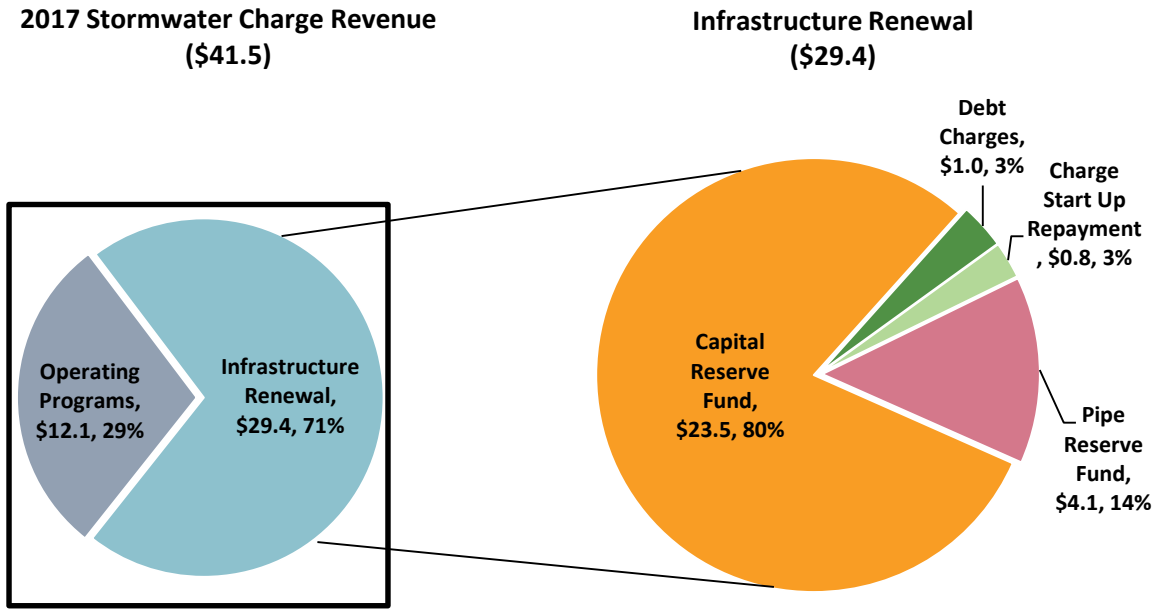
Distribution of Stormwater Charge Revenue ($ Millions)

The pie charts below provide an overview of Stormwater Charge Revenue segregated by the Operating and Infrastructure Renewal Programs for 2017. Furthermore, the 2017 Capital Budget is distributed by funding source.



Note: Numbers may not balance due to rounding.

The following pie charts provide an overview of Stormwater Charge Revenue segregated by Infrastructure Renewal Programs for 2017.



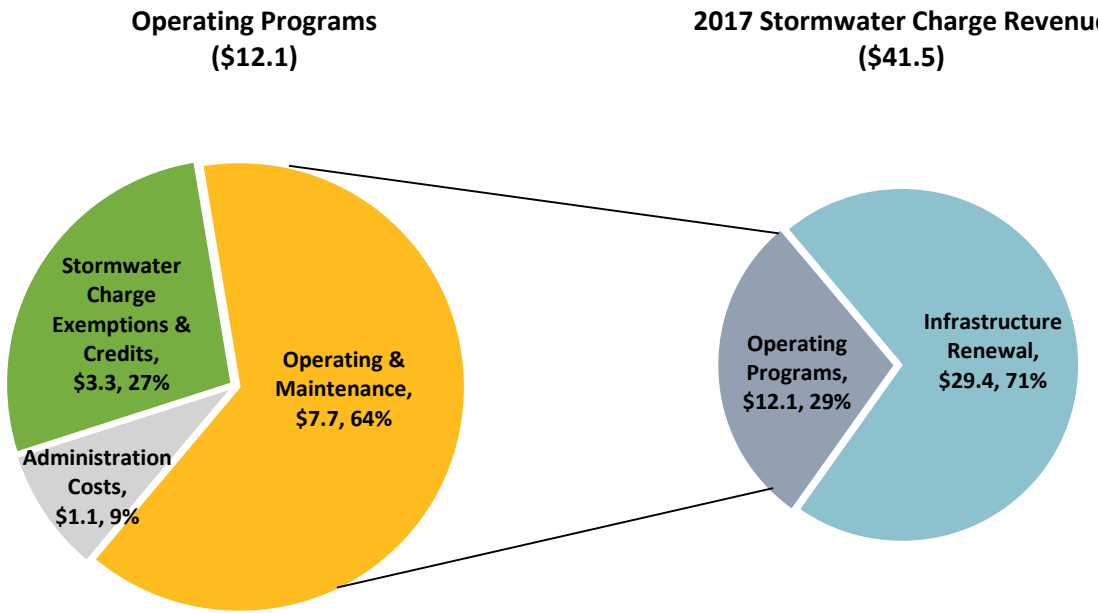
Note: Numbers may not balance due to rounding.

Description of Stormwater Infrastructure Renewal Allocations

Infrastructure Renewal – 71 per cent of the total stormwater revenue is to be allocated for infrastructure renewal items as follows:

(i) Capital Reserve Fund ($23.5 million)
(ii) Debt charges associated with the financing of capital projects from previous years ($1 million)
(iii) Repayment to the tax base for investment in the stormwater charge start-up costs ($0.8 million)
(iv) Stormwater Pipe Reserve Fund for future pipe replacement needs ($4.1 million)

The following pie charts provide an overview of Stormwater Charge Revenue segregated by Operating Programs for 2017.



Note: Numbers may not balance due to rounding.

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, catch basin cleaning, storm sewer inspection and repair and enhanced residential outreach and education program ($7.7 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 ($1.1 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 ($3.3 million).

Proposed Budget Changes Excluding New Initiatives and New Revenues

The following table provides detailed highlights of Stormwater budget changes from 2016 to 2017 by major cost and revenue category. It provides an overview of the 2017 Budget.

Description	2016 Budget ($000's)	2017 Proposed Budget ($000's)	Change ($000's)	Details ($000's)
Labour and Benefits	**3,604**	**4,092**	**488**	Increase reflects labour adjustments and other fringe benefit changes
Contractor & Professional Services	4,098	3,803	(295)	Decrease of $364 for Region of Peel costs for customer service post stormwater charge implementation with the remainder increase for storm sewer repairs and catchbasin cleaning
Transportation, Equipment Costs & Maintenance	526	546	20	
One Call Program	207	160	(47)	Reduction in fees for OneCall centralized program
Materials, Supplies & Other Services	72	92	20	
Occupancy & City Costs	101	50	(52)	
Transfers To Reserves	600	100	(500)	Decrease due to $500 one time provision setup for Stormwater Reserve Contingency in 2016
Stormwater Charge Exemptions & Credits	3,300	3,300	0	
Other Revenues	(165)	(170)	(5)	
Total Operating Programs	**12,343**	**11,973**	**(370)**	
Infrastructure Renewal	19,891	28,453	8,562	$7,562 increase funding for capital projects $1,000 increase transfers to the Stormwater Pipe Reserve Fund
Debt	812	1,010	198	Increase in debt repayment associated with the construction of a stormwater pond
Total Infrastructure Renewal	**20,703**	**29,463**	**8,760**	
Stormwater Revenue Accrual	**7,254**		**(7,254)**	2016 Stormwater Charges that were billed in 2017
Total	**40,300**	**41,436**	**1,136**	

Note: Numbers may not balance due to rounding.

Proposed Budget by Program

The following table identifies the budgeted and forecasted Stormwater Charge revenue for 2017-2020, as well as the 2016 Budget, allocated by program within the Service Area.

Description	2016 Budget ($000's)	2017 Proposed Budget ($000's)	2018 Forecast ($000's)	2019 Forecast ($000's)	2020 Forecast ($000's)
Expenditures to Deliver Current Services					
Operations and Maintenance	7,671	7,597	7,940	7,969	7,999
Administration Costs	1,234	1,076	1,084	1,092	1,100
Stormwater Charge Exemptions & Credits	3,300	3,300	3,300	3,300	3,300
New Initiatives	138	110	197	231	235
Total Operating Programs	12,343	12,083	12,521	12,592	12,635
Capital Reserve Fund Contributions	16,791	24,353	23,885	23,674	23,510
Pipe Reserve Fund Contributions	3,100	4,100	5,100	6,100	7,100
Debt Charges	812	1,010	1,000	990	978
Total Infrastructure Renewal	20,703	29,463	29,985	30,764	31,588
Stormwater Revenue Accrual	7,254				
Stormwater Program	**40,300**	**41,546**	**42,506**	**43,356**	**44,223**

Note: Numbers may not balance due to rounding.

Provisions for infrastructure renewal (e.g. transfers to pipe reserve fund) have been increased in keeping with the transition to a sustainable funding model. Moderate increases have also been included for operating expenses associated with maintaining service levels and enhancing stormwater asset management planning.

2017 Operating Budget

This part of the Business Plan sets out the financial resources required to deliver the proposed 2017-2020 Business Plan.

It will identify changes in costs and revenues associated with the:

- Operations and Maintenance
- Administration

The proposed 2017-2020 Business Plan and 2017 Budget provides a balance between financial pressures and meeting the service demands of the community.

Maintaining Current Service Levels

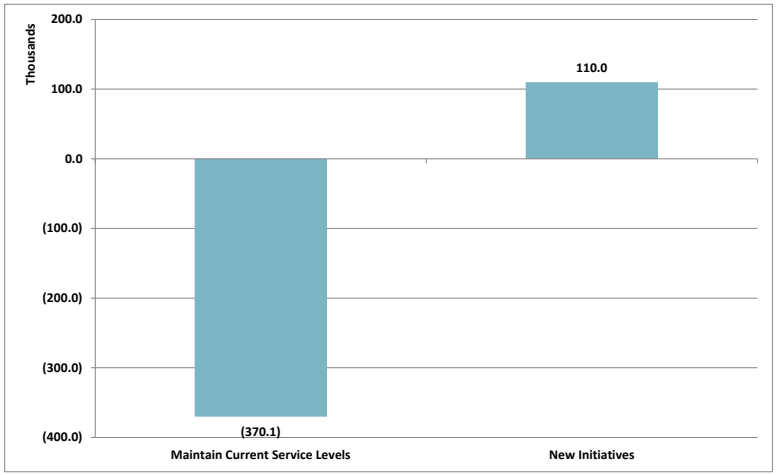
The City aims to keep cost increases needed to maintain current service levels, in line with inflation. Each year, City staff identifies efficiencies and streamline processes through continuous improvement while maintaining service levels and managing additional costs associated with administering the Stormwater Charge. In 2017, savings of $370,000 will be realized in comparison to 2016, in part due to the completion of the Stormwater Charge implementation initiative.

New Initiatives

Proposals for new initiatives in 2017 are described in the following section and in Appendix 1. In this budget, proposed 2017 initiatives support the *Connect – Maintain Infrastructure* pillar of Mississauga's Strategic Plan and are primarily focused on delivering the stormwater infrastructure asset management program.

The sections below outline the areas which impact the proposed 2017 operating budget.

Proposed Changes to 2017 Net Operating Budget by Category ($000's)



The Operating Budget is presented in two different components:

- The cost to maintain current service levels
- The cost to implement new initiatives

Total Changes to Maintain Current Service Levels

The following table provides the total cost ($12 million) to maintain current service levels for the Stormwater service area which is a net operating budget decrease of $0.3 million over the 2016 Budget.

Increases to the 2017 proposed budget include:

- $0.2 million increase resulting from the shift in recovery of labour costs from the Stormwater Charge implementation project to the operating budget
- $0.3 million in operating increases, including cleaning and repair budgets for sewers, ditches and culverts, and rain gauge network costs

Decreases to the 2017 proposed budget include:

- $0.5 million savings realized as no additional contribution to the Stormwater Contingency is required in 2017
- $0.3 million savings associated with the expected decrease in Region of Peel costs related to the administration of the Stormwater Charge

Category	Changes to 2017 budget from 2016 ($000's)
2016 Base Budget	**12,343**
Operating Decreases:	
Region of Peel Costs for billing and customer service	(364)
Contribution to Stormwater Reserve Contingency	(500)
Operating Increases:	
Increased rain gauge network costs	15
Increased catchbasin and inlet/outlet cleaning costs	20
Increased watercourse maintenance costs	50
Increased ditch, culvert and headwall maintenance costs	19
Decrease in labour recovery post stormwater charge implementation	227
Other Increases	163
Total Changes to Maintain Current Service Levels	**11,973**
New Initiatives	110
Total 2017 Operating Budget	**12,083**

Note: Numbers may not balance due to rounding.

Proposed New Initiatives and New Revenues

This table presents the costs by budget request (BR#) for proposed new initiatives. Detailed descriptions of each budget request can be found in Appendix 1.

Description	BR #	2017 FTE Impact	2017 Proposed Budget ($000's)	2018 Forecast ($000's)	2019 Forecast ($000's)	2020 Forecast ($000's)	2017 to 2020 FTE Impact	2017 to 2020 Capital ($000's)
New Initiative								
Asset Management Plan for Stormwater Infrastructure	2500	1.0	110	112	113	115	1.0	0
Enhanced Storm Sewer By-law Enforcement	2525	0.0	0	85	118	120	1.0	0
Total New Initiatives		**1.0**	**110**	**197**	**231**	**235**	**2.0**	**0**

Note: Numbers may not balance due to rounding.

Asset Management Plan for Stormwater Infrastructure

With a 2017 replacement value of $2.04 billion, the City's storm drainage infrastructure is the second largest asset owned and operated by the City and asset management is crucial to programming maintenance and capital improvements to prevent costly repairs and potential system failures.

As a result, the preparation of a comprehensive asset management plan to manage all stormwater infrastructure that was initiated in 2016 will continue in 2017. This will include the development of inventories and assessment programs for storm sewers and technology to manage stormwater infrastructure effectively and efficiently. The addition of an Infrastructure Management System (IMS) Specialist in 2017 is crucial to the successful development of effective data management systems and to support asset management programming for stormwater pipes, ponds and watercourses. While this plan was initiated in 2016, it is a long-term strategy with a phased approach.

Enhanced Storm Sewer By-law Enforcement

The City's stormwater system allows for rain water and snowmelt to drain into our watercourses and to Lake Ontario. However, any contaminants such as oils, grease, paint and other toxic discharges which are accidently or deliberately released into the stormwater system will also be conveyed to our watercourses and Lake Ontario, impacting the quality of our water resources and our source of drinking water. Therefore, it is imperative that we do what we can to prevent the discharge of contaminants to our stormwater system, through enhanced enforcement of the Storm Sewer by-law, to protect the quality of our water resources, including Lake Ontario, and the integrity of our stormwater drainage system.

Staff will design and implement an enhanced Storm Sewer By-law Enforcement Program to proactively identify problem areas and issues and apply the appropriate tools to address them. Specific objectives include: investigation and response to complaints initiated within 24 hours; monitoring of sites at the appropriate frequency; investigation and correction of potential cross-connections; regular updating of the City's Oil and Grit Separator (OGS) database; regular inspection and maintenance of all OGS units; successful implementation and maintenance of pollution prevention plans (PPP's).

Human Resources

Proposed Full Time Equivalent Staffing Distribution by Program

Program	2016	2017	2018	2019	2020
Administration	3.0	3.0	2.0	2.0	2.0
Planning & Operations	18.4	19.4	20.4	20.4	20.4
Total Service Distribution	**21.4**	**22.4**	**22.4**	**22.4**	**22.4**

Note: These FTEs are directly funded by the Stormwater Program.

Note: Numbers may not balance due to rounding.

Staffing changes for 2017

- Total of 22.4 full time equivalents (FTEs):
  - An increase of one permanent FTE represents the Infrastructure Management System (IMS) Specialist to assist in the development of the comprehensive asset management program (BR 2500)

Staffing changes for 2018

- No net change in total FTEs:
  - One contract position that supports the Stormwater Charge ends in 2017
  - An increase of one permanent FTE for a Storm Sewer By-law Enforcement Coordinator (BR 2525)

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 principles are key concepts underlying the stormwater charge. When the charge was initially approved at $100 per stormwater billing unit, it was based on the "interim" funding level. It was anticipated that funding available 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:

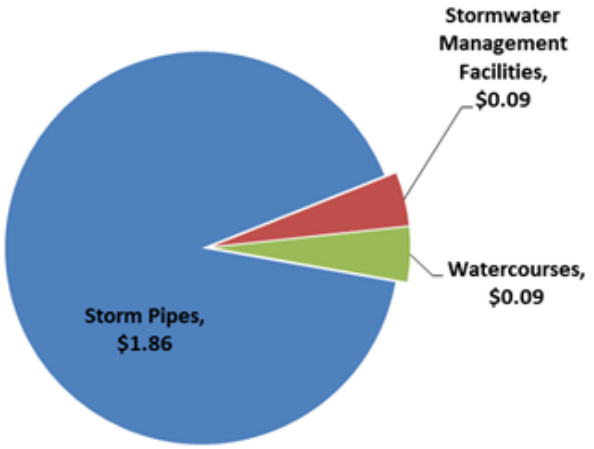
- An inventory of Municipally-owned assets
- Monitoring and reporting of infrastructure condition
- Preparing appropriate asset renewal and maintenance programs
- Developing financial strategies to effectively manage those programs over the lifecycle of stormwater infrastructure

As previously mentioned, the 2017 Stormwater capital budget includes a new initiative to improve asset management practices as they pertain to storm pipes and all stormwater assets. Budget Request 2500, an *Asset Management Plan for Stormwater Infrastructure*, is proposed to improve 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 2017 Replacement Costs ($2.04 billion)



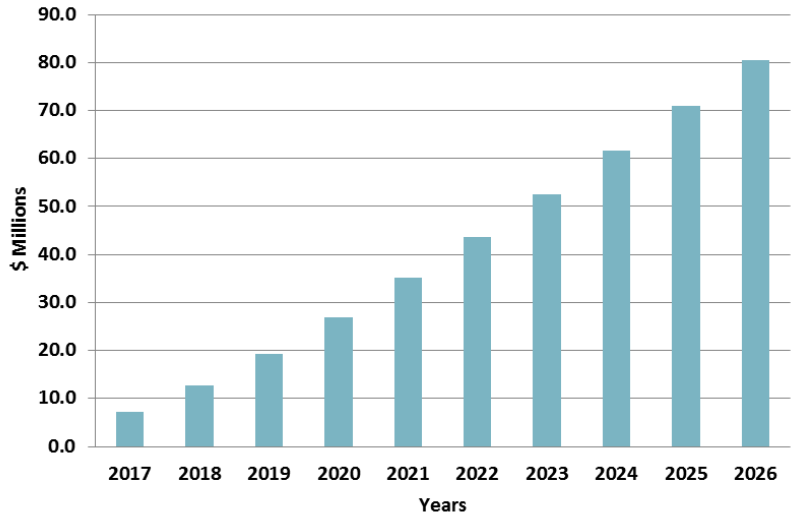
Capital Infrastructure Gap

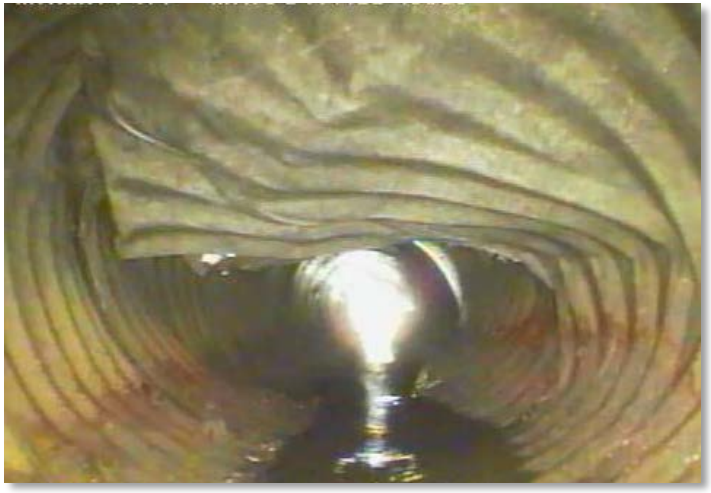
The stormwater charge includes a provision of $4.1 million in 2017 for future pipe replacement needs. This budget assumes it will increase to an annual provision of $7.1 million over the next four years, starting in 2020.

The following chart reflects the projected annual closing balances of the Stormwater Pipe Reserve Fund, with a balance of $80.6 million in 2026.

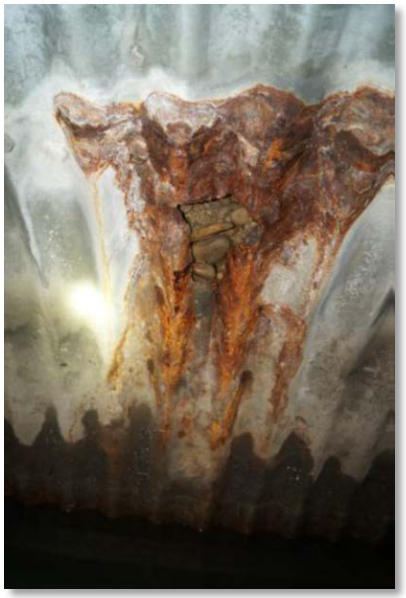
Work is underway to assess the condition of storm sewers, program any future repair and rehabilitation needs and identify funding pressures. The resources required to continue this work and deliver a comprehensive asset management plan are included in this budget. This body of work will provide more accurate information to determine the appropriate level of annual funding required to fund the Pipe Reserve Fund moving forward.

Pipe Reserve Fund Closing Balances (2017-2026)





Renewal of storm sewers is a major focus of the Business Plan



Corroded metal storm sewers require replacement

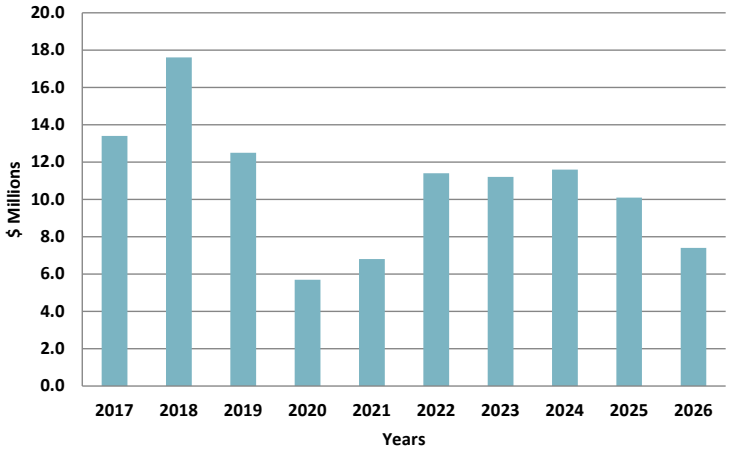
Capital Program Funding

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 2017 stormwater charge will be $41.5 million and are estimated to increase to $44.2 million by 2020. As shown in the chart below, the charge is expected to fund the Stormwater Capital Reserve Fund. The closing balances for the Reserve Fund will range between $5.7 million and $17.6 million over the 10-year period. Careful planning will ensure that capital priorities will be funded throughout the forecast to 2026, with a positive balance remaining in the reserve fund.

Maintaining adequate balances will allow flexibility to address infrastructure needs that arise as the City moves to implement the asset management plan, recommendations from future studies and to fund projects which are currently unfunded.

Stormwater Capital Reserve Fund Balance (2017-2026)

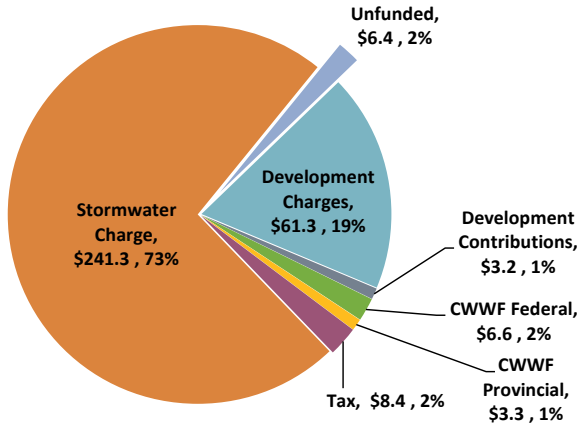


2017-2026 Total Gross Capital Requests

The following chart shows the total gross proposed 10-year capital program for 2017-2026. The unfunded amount of $6.4 million is related to a project forecasted in 2026 dealing with the retrofit of a stormwater outfall to provide water quality treatment. This project was identified in the 2014 Development Charges Background Study Stormwater Component as growth-related and eligible for 100 per cent funding from the Development Charges Reserve Fund. Given the decreasing amount of development charges revenue to be collected by the City over the next several years, the available funding for projects such as this will be reduced, applying funding pressures on the Stormwater program.

2017-2026 Total Gross Capital Requests $330.5 million

(Funded Capital Requests $324.1 million)



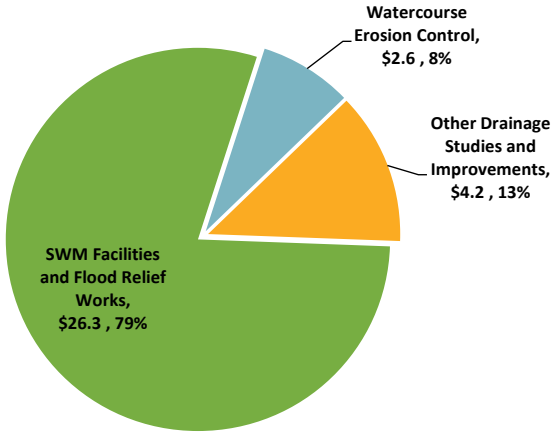
Additional funding sources, other than the Stormwater Charge, for 2017-2026 include:

- Development Charges used to fund projects required due to growth
- Development Contributions used for stormwater drainage improvements
- Property Tax based funding
- Federal and Provincial infrastructure funding (Clean Water and Wastewater Fund)

2017 Capital Budget

The proposed 2017 Gross Capital budget is $33.1 million. The allocation by major program is shown below. Stormwater Management (SWM) facilities and flood relief works comprise the majority of projects at $26.3 million or 79 per cent and the combination of erosion control and other drainage studies follow with $6.8 million or 21 per cent of the total funding.

Proposed 2017 Capital Budget by Program $33.1 Million



Highlights of the 2017 proposed capital program are as follows:

The Stormwater Charge enables full funding and an increased delivery of the stormwater capital program. Cooksville Creek flood relief projects and storm sewer improvement initiatives are the focus of 2017.

Stormwater management facility projects in 2017 include progressing with the design of facilities recommended in the **Cooksville Creek Flood Mitigation Master Plan EA** along with rehabilitation projects to improve water quality. This includes the continuation of construction of the **Cooksville Creek**

stormwater facility located north of Matheson Boulevard West ($5.8 million) and planning for construction of a new **Cooksville Creek stormwater facility near Eglinton Avenue and Kennedy Road, Eastgate Park** ($6.4 million). Further, **dredging and rehabilitation of existing stormwater management facilities** in several watersheds ($2.4 million) will occur based on their priority for sediment removal.

Several watercourse erosion control and maintenance projects will be undertaken in 2017 most notably construction on **Cooksville Creek from Mississauga Valley Boulevard to Central Parkway** ($1.5 million).

As part of establishing a comprehensive asset management plan for stormwater infrastructure, the design and construction for the **rehabilitation of corrugated metal pipe trunk sewers** will be prioritized and programmed upon completion of the conditions assessment in 2016.

Research and development of a **Storm Sewer Asset Management System** ($0.6 million) will also commence in 2017.

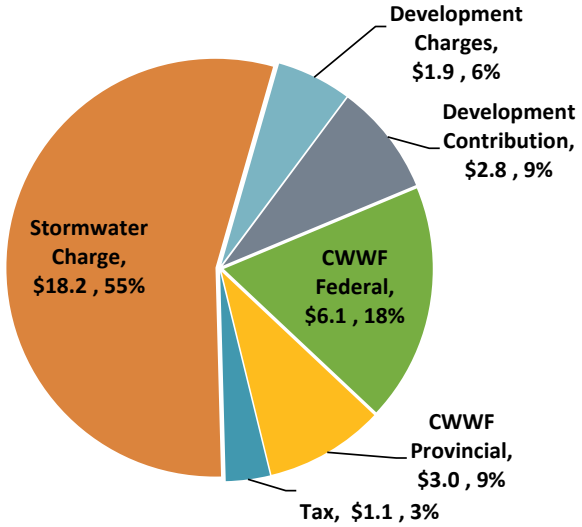
Improvement **projects to address basement water infiltration in the Lisgar community** will continue in 2017 with Phase 2 of design and construction of storm sewer lining, dewatering of the utility trench and monitoring activities ($2 million). High priority projects that began in the Black Walnut Trail area continue to progress.

Construction of the Cooksville Creek stormwater facility located north of Matheson Boulevard West will continue into 2017

The following chart shows the funding sources for the 2017 Capital Budget.

Nearly 55 per cent of the 2017 Capital Budget is financed from the stormwater charge. This is followed by $6.1 million or 18 per cent of funding from Clean Water and Wastewater Fund (CWWF) Federal and $3 million or nine per cent will be funded from CWWF Provincial (CWWF projects are included in this budget subject to approval and funding from the federal and provincial governments).

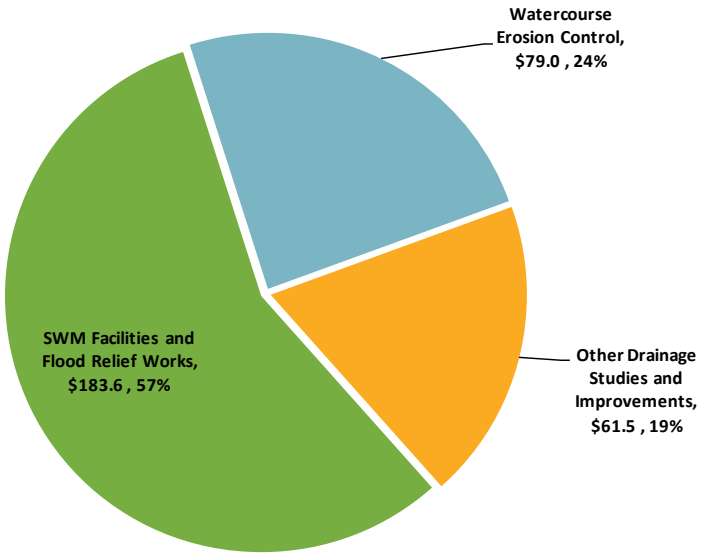
Proposed 2017 Capital Budget by Funding Source $33.1 Million



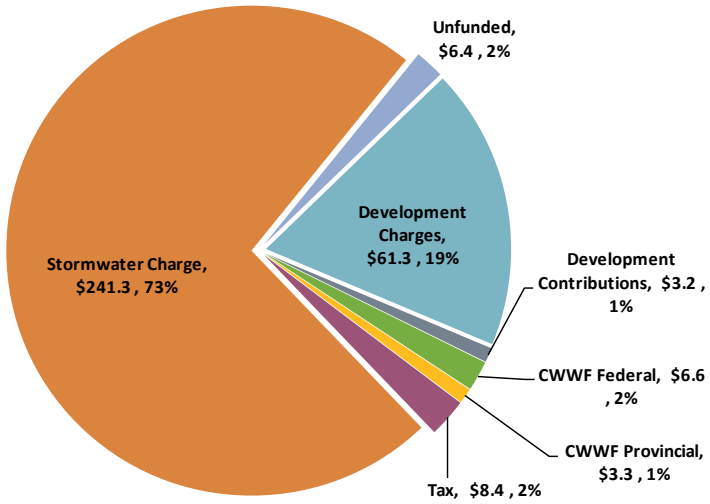
2017-2026 Capital Budget Forecast

The 10-year Capital Budget provides for investments in the City's stormwater infrastructure to maintain it in a state of good repair and in the development or improvement of infrastructure required to adequately manage the City's stormwater. The 10-year capital budget totals $324.1 million which is primarily allocated to stormwater management facilities and flood relief works. The following charts show the forecasted 10-year capital program and the source of funding for this program.

Proposed 2017-2026 Capital Budget by Program $324.1 Million



Proposed 2017-2026 Capital Budget by Funding Source $324.1 Million



Highlights of the 2018-2026 Capital Budget are as follows:

- $81.6 million for land acquisition, design and construction of Cooksville Creek stormwater management facilities to mitigate flood risk
- $76.4 million for watercourse erosion control projects including design and construction
- $18.8 million for new stormwater management facilities identified in the 2014 Development Charges Study to support development within the Ninth Line corridor
- $17.8 million for renewal of trunk and local storm sewers
- $11.5 million for inspections and assessments of storm sewers
- $9.1 million for implementation of mitigation measures to address basement infiltration issues in the Lisgar community
- $4.1 million in 2018 for crossing improvements to Applewood Creek at QEW
- $3.6 million in 2018 to rehabilitate and dredge accumulated sediment from stormwater management facilities
- $2.3 million for new projects that incorporate LID design techniques into roadways
- $720,000 in 2018 for the Port Credit and Lakeview Master Drainage Plans
- $250,000 in 2021 for the Mary Fix Creek Flood Evaluation Study

Watercourse erosion control projects that ensure public safety while protecting property and infrastructure are a key component of the 2018-2026 Capital Budget forecast

Performance Measures

A Balanced Scorecard identifies and measures key areas of an organization's performance: Asset Management, Customers, Employees and Business processes.

By paying attention to all four areas, an organization can retain balance in its performance and ensure that it is moving towards the attainment of its goals.

With the Stormwater service being segregated from the former Roads, Storm Drainage and Watercourses service area in 2016, applicable performance measures will be considered as the service area matures. In the interim, several key indicators relevant to the Stormwater service are provided.

Asset Management

The replacement cost of stormwater infrastructure is a measure that highlights the present value of the future renewal of all the City's storm sewers, stormwater management facilities and creek works. This measure is an indicator of the financial pressures the City will face to maintain service levels as its stormwater infrastructure ages into the future.

Average service life remaining of stormwater infrastructure is a measure that highlights the need for the ultimate replacement of stormwater assets.

Customer Measures

Citizen satisfaction is a measure that indicates how satisfied residents are with the Stormwater service area. As this is a newly established service area this type of performance measurement data is not available at this time.

Beginning in 2016, data from outreach activities, such as the number of events, number of interactions with the public and number of storm drains painted as part of the 'Yellow Fish Road' program, have been collected and is displayed in the Scorecard.

The Stormwater service area will be initiating an enhanced Residential Outreach & Education program in 2017.

Employee Measures

The Employee engagement survey has not been conducted since the implementation of the Stormwater Charge and creation of a separate service area for Stormwater. As a result, no performance measures are available at this time.

Business Process Measures

The stormwater rate per billing unit is a measure of how the stormwater program costs are shared by properties in Mississauga and collected through the Stormwater Charge. These revenues will be exclusively utilized to fund stormwater capital, operations and maintenance, stormwater pipe reinvestment and administration costs.

The resolution of Requests for Review and review of Credit applications, within their respective service levels, demonstrates performance as it relates to administering the Stormwater Charge effectively.

Balanced Scorecard

Measures for Stormwater		2013 (Actual)	2014 (Actual)	2015 (Actual)	2016 (Plan)	2017 (Plan)	2018 (Plan)	2019 (Plan)	2020 (Plan)
Asset Management:									
Replacement cost of stormwater infrastructure ($ billions)[1]	*Storm Pipes*	1.68	1.73	1.77	1.82	1.86	1.91	1.96	2.01
	Stormwater Management Facilities	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10
	Watercourses	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10
	TOTAL REPLACEMENT COST	1.83	1.89	1.94	1.99	2.04	2.09	2.15	2.20
Average service life remaining of stormwater infrastructure (years)	*Storm Pipes*	66.2	65.2	64.2	63.2	62.2	61.2	60.2	59.2
	Stormwater Management Facilities	20.7	19.7	18.7	17.7	16.7	15.7	14.7	13.7
	Watercourses	21.0	20.0	19.0	18.0	17.0	16.0	15.0	14.0
	AVERAGE SERVICE LIFE	36.0	35.0	34.0	33.0	32.0	31.0	30.0	29.0
Customer:									
Number of stormwater outreach & education events[2]		--	--	--	83	100	100	100	100
Number of interactions/participants at stormwater outreach & education events[3]		--	--	--	3585	4300	4515	4741	4978
Number of painted storm drains at Yellow Fish Road events[4]		158	116	318	429	450	450	450	450
Employees:									
No data available at this time		--	--	--	--	--	--	--	--
Internal Business Process:									
Stormwater Rate (per billing unit)		--	--	--	$100	$102	$104	$106	$108
Stormwater Charge - Requests for Review resolved within 60-day service level		--	--	--	90%	95%	95%	95%	95%
Stormwater Charge - Credit Applications reviewed within 30-day service level		--	--	--	82%	85%	90%	90%	90%

[1] Replacement costs updated for 2015; forecasted values based on average year-to-year percent increase.

[2] Number of outreach events (Community Events, Information Booths, Yellow Fish Road, etc.) completed/scheduled in 2016. Forecasted increase resulting from Enhanced Outreach & Education Program.

[3] Number of interactions/participants at events projected to year-end. Forecasted increase due increasing number of events and new methods of interaction (e.g. social media).

[4] Number of storm drains painted during Yellow Fish Road events projected to year-end. Minor overall increase forecasted.

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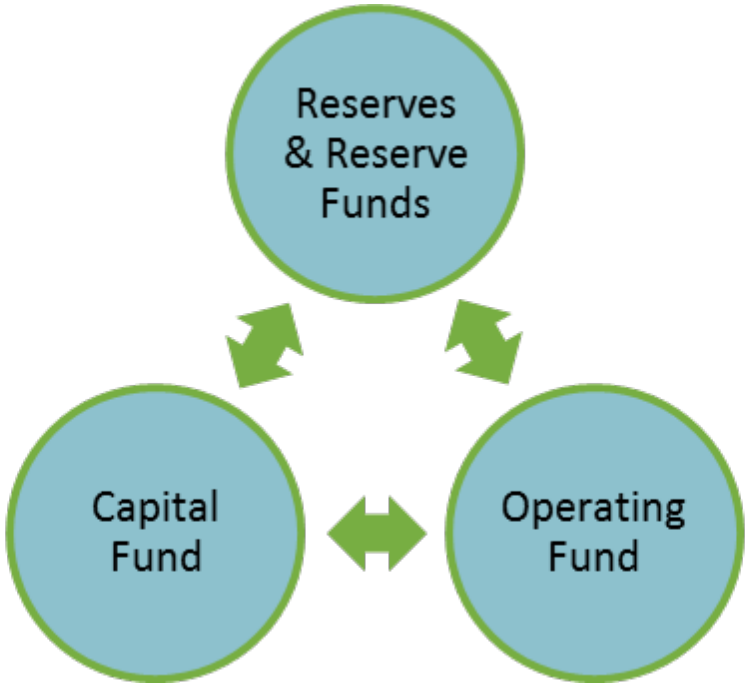
Reserves and Reserve Funds

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:



Existing Core Services

Reserves

The Stormwater Reserve for Contingency 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. Also, it will provide for costs associated with the implementation of the new Regional water billing system.

Reserve Funds

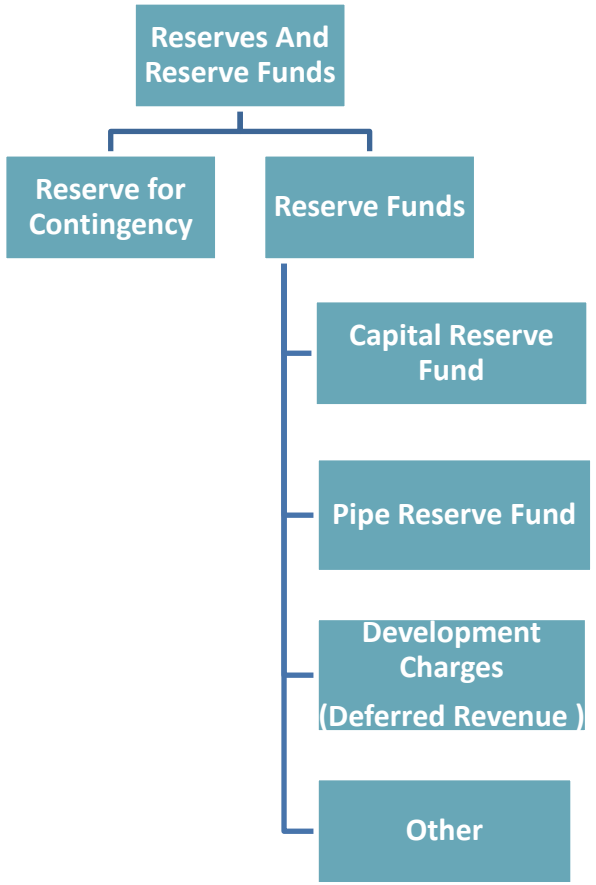
Reserve Funds are segregated, restricted and provide for capital emplacements.

The Stormwater **Capital Reserve Fund** will provide funding for infrastructure needs related to ponds and erosion control along waterways. 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.

Additional Reserve Funds included in this Section are:

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



Forecast Change

The following table provides a summary of the projected 2017 Reserve and Reserve Funds as compared to 2016. Detailed descriptions of each Reserve and Reserve Fund can be found at the end of this section.

Reserve and Reserve Funds Summary

2017 Operating and Capital Reserve Funds	2016 Projected Balance ($000's)	2017 Projected Balance ($000's)	Change ($000's)	% Change
Reserve for Contingency	600	700	100	17%
Capital Reserve Fund	7,935	13,363	5,428	68%
Pipe Reserve Fund	3,182	7,380	4,198	132%
Deferred Fund (Development Charges)	29,382	31,351	1,969	7%
Other Reserve Funds	22,911	20,897	(2,014)	(9%)
Total	**64,010**	**73,692**	**9,682**	**15%**

Note: Numbers may not add due to rounding.

Transfers to Stormwater Reserve and Reserve Funds:

The 2017 Stormwater Operating Program recommends transfer to the Reserve and Reserve Funds totalling $28.7 million as follows:

- $23.5 million to Stormwater Capital Reserve Fund
- $4.1 million to the Stormwater Pipe Reserve Fund
- $0.1 million to the Stormwater Reserve for Contingency which will provide for potential costs associated with the Region of Peel's billing system

Transfers from Reserve Funds:

The 2017 Stormwater Capital Program recommends transfer from the Reserves and Reserve Funds to capital totalling $22.7 million as follows:

- $18.2 million from the Stormwater Capital Reserve Fund
- $2.6 million from the Developer Contributions – Stormwater Drainage
- $1.9 million from the Development Charges Reserve Fund

Continuity Schedule of Stormwater Reserve and Reserve Funds

Reserves and Reserve Funds	Projected Balance Dec 31, 2016	2017 Projected Contributions	2017 Projected Expenditures	2017 Projected External Sources	2017 Projected Interest	Projected Balance Dec 31, 2017
Total Stormwater Operating Reserve						
Reserve for Contingency	**600**	100	0	0	0	**700**
Total Stormwater Operating Reserve	**600**	**100**	**0**	**0**	**0**	**700**
Total Storm Water						
Capital Reserve Fund	**7,935**	23,533	-18,173	0	68	**13,363**
Pipe Reserve Fund	**3,182**	4,100	0	0	98	**7,380**
Total Storm Water	**11,117**	**27,633**	**-18,173**	**0**	**166**	**20,743**
Total Deferred Funded						
Development Charges Reserve Fund	**29,382**	0	-1,897	3,400	466	**31,351**
Total Deferred Funded	**29,382**	**0**	**-1,897**	**3,400**	**466**	**31,351**
Total Other Funded						
Excess Debt Financing	**504**	0	0	0	14	**518**
Developer Contributions Reserve Fund	**2,976**	0	-2,580	0	11	**407**
General Mun. Dev. Reserve Fund-Lot Levy	**19,431**	0	0	0	541	**19,973**
Total Other Funded	**22,911**	**0**	**-2,580**	**0**	**566**	**20,897**
Total Non-Tax Supported Reserve Funds	**64,010**	**27,733**	**-22,650**	**3,400**	**1,199**	**73,692**

Note: Numbers may not add due to rounding.

10 Year Forecast Schedule

The following tables summarize the Stormwater Capital Reserve Fund opening balances, contributions, withdrawals, allocation to projects and closing balance. It is based on committed funds in 2016 dollars for the 2017 to 2026 capital forecast.

Stormwater Capital Reserve Fund

	2017 ($000's)	2018 ($000's)	2019 ($000's)	2020 ($000's)	2021 ($000's)	2022 ($000's)	2023 ($000's)	2024 ($000's)	2025 ($000's)	2026 ($000's)	2017-2026 Total ($000's)
Opening Balance	7,935	13,363	17,648	12,494	5,688	6,817	11,365	11,180	11,648	10,069	7,935
Infrastructure Contribution	23,533	23,065	22,844	23,510	24,300	24,300	24,300	24,300	24,300	24,300	238,752
Interest Income (Charge)	68	207	63	(164)	218	363	357	372	322	236	2,041
Total Available Balance	31,536	36,635	40,554	35,840	30,206	31,480	36,022	35,852	36,269	34,605	248,728
Allocation to Projects	18,173	18,988	28,060	30,152	23,388	20,115	24,842	24,204	26,200	27,218	241,341
Closing Balance	**13,363**	**17,648**	**12,494**	**5,688**	**6,817**	**11,365**	**11,180**	**11,648**	**10,069**	**7,387**	**7,387**

Note: Numbers may not add due to rounding.

This reserve fund is used to fund stormwater infrastructure capital repair and replacement costs as well as investments required to ensure that the infrastructure continues to operate effectively especially in light of recent large rain storms (i.e. climate change). The infrastructure contribution will be fully funded from the stormwater charge and fund $241 million in projects over the 10 year period. The annual stormwater charge will be $102 per billable unit in 2017, and will need to increase to maintain the proposed capital spending included in this plan.

The closing balances range between approximately $6 and $18 million. The target for the closing balance is approximately $24 million which equates to an annual average project funding over the 10 years.

Stormwater Pipe Reserve Fund

The following tables summarize the new Stormwater Pipe Reserve Fund. It reflects the opening balances, contributions, interest earnings and closing balances. No projects are currently planned for the pipe infrastructure which will change with the completion of the City's asset management plan initiative.

This reserve fund will be used to fund the eventual replacement of the City's stormwater pipe network. The estimated replacement cost of the pipe inventory is $1.9 billion. In the 2012 Stormwater Financing Study, the sustainable level of recommended funding was $16 million annually. With annual contributions in 2017 of $4.1 million and increasing to $7.1 million, the annual stormwater charge, at $102 per billable unit in 2017, will need to increase to maintain the proposed capital spending included in this plan.

The estimated closing balance at the end of the 10 year period is $80.6 million with $65 million from contributions and $12.4 million from interest.

	2017 ($000's)	2018 ($000's)	2019 ($000's)	2020 ($000's)	2021 ($000's)	2022 ($000's)	2023 ($000's)	2024 ($000's)	2025 ($000's)	2026 ($000's)	2017-2026 Total ($000's)
Opening Balance	3,182	7,380	12,718	19,254	27,008	35,233	43,729	52,506	61,572	70,937	3,182
Infrastructure Contribution	4,100	5,100	6,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	65,000
Interest Income (Charge)	98	237	436	654	1,125	1,396	1,677	1,966	2,265	2,574	12,429
Closing Balance	**7,380**	**12,718**	**19,254**	**27,008**	**35,233**	**43,729**	**52,506**	**61,572**	**70,937**	**80,611**	**80,611**

Note: Numbers may not add due to rounding.

Stormwater Development Charges – Stormwater Management

The following tables summarize the Stormwater Development Charges – Stormwater Management Reserve Fund opening balance, contributions, withdrawals, allocation to projects and closing balance. It is based on committed funds in 2016 dollars for the 2017 to 2026 capital forecast.

In keeping with the City 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.

	2017 ($000's)	2018 ($000's)	2019 ($000's)	2020 ($000's)	2021 ($000's)	2022 ($000's)	2023 ($000's)	2024 ($000's)	2025 ($000's)	2026 ($000's)	2017-2026 Total ($000's)
Opening Balance	29,382	31,351	26,298	22,382	14,469	9,468	8,775	2,894	5,026	6,799	29,382
Development Revenue	3,400	3,426	3,486	3,513	3,540	2,787	2,802	2,817	2,832	2,832	31,435
Interest Income (Charge)	466	456	498	322	210	195	64	112	151	44	2,518
Total Available Balance	33,248	35,233	30,282	26,217	18,220	12,450	11,641	5,822	8,009	9,675	63,336
Allocation Projects	1,897	8,934	7,900	11,748	8,752	3,675	8,748	796	1,210	7,678	61,338
Closing Balance	**31,351**	**26,298**	**22,382**	**14,469**	**9,468**	**8,775**	**2,894**	**5,026**	**6,799**	**1,997**	**1,997**

Note: Numbers may not add due to rounding.

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Appendices

Appendix 1 – Listing of Budget Requests

Budget Request #: 2500

Proposed Initiative	Department	Service Area
Asset Management Plan for Stormwater Infrastructure	Transportation & Works Department	Stormwater

Required Annual Operating Investment

Impacts ($000s)	2017	2018	2019
Gross Expenditures	110.0	111.5	113.1
Reserves & Reserve Funds	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0
Tax Levy Requirements	110.0	111.5	113.1
* Net Change in $		1.6	1.6
FTEs	1.0	1.0	1.0

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

Required Capital Investment

Total Capital ($000s)	2016 & Prior	2017	2018	2019	2020 & Beyond
Expenditures	0.0	0.0	0.0	0.0	0.0

Why Staff Recommend this Initiative

With a 2016 replacement value of $1.99 billion, the City's stormwater drainage infrastructure is the second largest asset owned and operated by the City. The development of an asset management plan, supported by the resources required to design, implement and maintain an asset inventory database system, is crucial to facilitate the programming of maintenance and capital improvement needs for this important infrastructure to prevent costlier repairs and potential system failures in the future.

Details of Service Change

This updated request identifies the need for a new resource in 2017 to support the design, implementation and maintenance of an asset data management system, in support of the asset management plan, for the City's stormwater pipe infrastructure. This resource will also provide much needed support to the coordinators of the other asset database systems within the Stormwater Service Area, including those associated with the stormwater charge assessment data, the watercourse management program and the stormwater management facilities. A goal of the Stormwater Service Area is to develop, implement and maintain the inventories and assessment programs for all Municipal stormwater infrastructure in a comprehensive and consistent manner.

The requested resource is an Infrastructure Management System (IMS) Specialist. Starting in 2017, this position will initially focus on providing support to the Storm Drainage Asset Coordinator with business process mapping, data management needs analysis, and the design, testing and implementation of the IT data management system for the stormwater pipe asset information. The position will then shift its focus to supporting the development of reports and on-going maintenance and improvements to the system. The position will provide similar support for the data management system recently developed and implemented in-house to support the stormwater charge - a critically important data set for the residents and businesses of Mississauga.

Service Impact

With this asset management plan, the City is moving away from a cursory review of its storm sewer infrastructure by deploying a more rigorous inventory and assessment program along with the necessary technology to ensure that the City does so as effectively and efficiently as possible. This program will improve the City's ability to manage and maintain its storm sewer assets and support decision-making for future infrastructure investments. The requested resource will provide specialized support to the asset coordinators within the program to ensure the design of the data management system for these assets will be robust and meet the business needs for effective asset management. The long term integrity of the stormwater charge assessment database will also rely on specialized support provided by this resource.

This resource will represent an operating pressure of $114,000 in 2017.

Budget Request #: 2525

Proposed Initiative	Department	Service Area
Enhanced Storm Sewer By-law Enforcement	Transportation & Works Department	Stormwater

Required Annual Operating Investment

Impacts ($000s)	2017	2018	2019
Gross Expenditures	0.0	85.4	118.4
Reserves & Reserve Funds	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0
Tax Levy Requirements	0.0	85.4	118.4
* Net Change in $		85.4	33.0
FTEs	0.0	1.0	1.0

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

Required Capital Investment

Total Capital ($000s)	2016 & Prior	2017	2018	2019	2020 & Beyond
Expenditures	0.0	0.0	0.0	0.0	0.0

Why Staff Recommend this Initiative

The percentage of the Environmental Engineering Technologist's time devoted to Storm By-law activities has dropped from 50 per cent to 30 per cent, due to increasing development application review pressures. At the same time, the need for additional resources allocated to enforcement activities has continued to increase. Effective enforcement of the Storm By-law requires dedicated staff that can focus on the protection of our water resources and stormwater drainage system.

Details of Service Change

A new FTE is proposed for 2018, to be dedicated to Storm By-law enforcement. The objective is to provide an enhanced level of service for the enforcement of the City's Storm By-law and protect the quality of our water resources and our stormwater drainage system. Dedicated staff will be able to provide not only a prompt response to complaints, but will be able to design and implement a Storm By-law Program to proactively identify problem areas and apply the appropriate tools to address them. Specific objectives include: complaints are investigated and appropriate action initiated within 24 hours; sites requiring monitoring are monitored at the appropriate frequency; potential cross-connections are investigated in a timely manner and proven cross-connections are rectified; the City's Oil and Grit Separator (OGS) database is kept up to date and all OGS units are properly inspected and maintained as required; sites that would benefit from a pollution prevention plan are requested to prepare a plan and, once accepted by the City, the plan is successfully implemented and maintained; sites that undertake a Pollution Prevention Plan as part of the Stormwater Credit program will have their reports reviewed and their implementation inspected in a timely manner; and problem areas are proactively identified, specific contaminants are tracked to their source and appropriate actions are taken to achieve compliance. Details on the work plan for this position will be developed in 2017.

Service Impact

This resource, a Storm By-law Enforcement Coordinator, will represent an operating budget increase of $85,000 starting in April, 2018. Without this resource, it is anticipated that response times to investigate complaints and cross-connections will not meet expected levels of service, and adequate protection for our stormwater drainage system from illicit discharges may not be provided. Furthermore, we will not be in a position to respond to any increased expectations on the part of residents with respect to water quality issues related to the implementation of the Stormwater Charge or to review and inspect any pollution prevention plans submitted under the Stormwater Credit Program. In the absence of a demonstrated commitment to the protection of our water resources, the City may be put at some risk of litigation and loss of reputation in the eyes of residents, environmental organizations and the media.

Appendix 2 – Proposed Operating Budgets

	2016 Budget		2017 Budget		2018 Forecast		2019 Forecast		2020 Forecast	
Program Description	**Gross Cost**	**Net Cost**	**Gross**	**Net**	**Gross**	**Net**	**Gross**	**Net**	**Gross**	**Net**
Operations and Maintenance	7,977	7,812	7,877	7,707	8,307	8,137	8,371	8,201	8,404	8,234
Administration Costs	1,231	1,231	1,076	1,076	1,084	1,084	1,092	1,092	1,100	1,100
Capital Reserve Fund Contributions	17,603	17,603	25,363	25,363	24,885	24,885	24,664	24,664	24,488	24,488
Pipe Reserve Fund Contributions	3,100	3,100	4,100	4,100	5,100	5,100	6,100	6,100	7,100	7,100
Stormwater Charge Exemptions & Credits	0	3,300	0	3,300	0	3,300	0	3,300	0	3,300
Total	**29,911**	**33,046**	**38,416**	**41,546**	**39,376**	**42,506**	**40,226**	**43,356**	**41,093**	**44,223**

Note: Numbers may not balance due to rounding.

Appendix 3 – Proposed 2017 Capital Budget Detail

Program: SWM Facilities and Flood Relief Works

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWMR00180	Condition Assessments Trunk Storm Sewers	320	0	320	Stormwater - Capital Reserve Fund
TWSD00199	New Facility - Cooksville Creek Pond #2101 - Mississauga Valley Boulevard and Cntrl Pkwy	166	0	166	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00203	New Facility - Cooksville Creek Pond #3702 - North of Matheson Boulevard (Park 317)	5,750	0	5,750	DCA -Stormwater Management Reserve Fund,Developer Contribution-Stormwater Reserve Fund,Developer Contribution-Stormwater Reserve Fund,Developer Contributions -Parks Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00204	Cooksville Creek Flood Storage Facility - Eglinton Avenue East and Kennedy Road (Eastgate Park)	6,380	4,785	1,595	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00207	Land/Cooksville Creek SWM Pond#3702/N of Matheson Blvd (Cash Flow)	5,680	0	5,680	Stormwater - Capital Reserve Fund

Appendix 3 – Proposed 2017 Capital Budget Detail (Cont'd)

Program: SWM Facilities and Flood Relief Works

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00208	Land/Cooksville Creek SWM Pond#2101/City Centre Outlet	3,500	0	3,500	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00211	Cooksville Creek Flood Storage Facility - McKenzie Park, Mississauga Valley Boulevard	1,200	0	1,200	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00244	SWM Pond Rehabilitation – Various Locations	680	0	680	Developer Contribution-Stormwater Reserve Fund
TWSD00277	Cooksville Creek Flood Protection-Dyking downstream of Central Pky E, behind Rhonda Valley (Phase 2)	650	0	650	DCA -Stormwater Management Reserve Fund,Tax - Capital Reserve Fund
TWSD00343	SWM Pond Rehabilitation – Various Locations	1,715	1,286	429	Stormwater - Capital Reserve Fund
TWSD00376	Pinnacle SWM Facility (#37##) - near Hurontario & Eglinton	250	0	250	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
Total		**26,291**	**6,071**	**20,220**	

Note: Numbers may not balance due to rounding.

Appendix 3 – Proposed 2017 Capital Budget Detail (Cont'd)

Program: Other Drainage Studies and Improvements

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00105	Culvert Capacity Analysis - Various Locations	100	0	100	Stormwater - Capital Reserve Fund
TWSD00127	Monitoring and minor modification of Storm Water Management Facilities - Various Locations	80	0	80	DCA -Stormwater Management Reserve Fund
TWSD00136	Development Charges Update	80	0	80	DCA -Stormwater Management Reserve Fund
TWSD00307	Southdown Master Drainage Plan	350	0	350	DCA -Stormwater Management Reserve Fund
TWSD00320	Storm Sewer Oversizing - Various Locations	270	0	270	DCA -Stormwater Management Reserve Fund
TWSD00335	Trunk Storm Sewer Renewal	640	0	640	Stormwater - Capital Reserve Fund
TWSD00383	Lisgar Improvements - Storm Sewer Lining & Dewatering Utility Trench - Phase II	2,000	1,500	500	Tax -Capital Reserve Fund
TWSD00441	Corrugated Metal Pipe Rehab - Various	655	0	655	Stormwater - Capital Reserve Fund
TWSD00445	CWWF Implementation Support	65	49	16	Stormwater - Capital Reserve Fund
Total		**4,240**	**1,549**	**2,691**	

Note: Numbers may not balance due to rounding.

Appendix 3 – Proposed 2017 Capital Budget Detail (Cont'd)

Program: Watercourse Erosion Control

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00122	Minor Erosion Control Works - Various Locations	80	0	80	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00192	Cooksville Creek Erosion Control - Queen Elizabeth Way to Elaine Trail	219	164	55	Stormwater - Capital Reserve Fund,DCA - Stormwater Management Reserve Fund
TWSD00251	Cooksville Creek - Meadows Blvd. to Rathburn Rd. E.	143	107	36	Stormwater - Capital Reserve Fund,DCA - Stormwater Management Reserve Fund
TWSD00316	Cooksville Creek Erosion Control - Mississauga Valley Blvd to Downstream of Central Parkway East	1,470	1,103	368	Stormwater - Capital Reserve Fund,DCA - Stormwater Management Reserve Fund
TWSD00329	Moore Creek erosion control - Lakeshore Road West (EA/Design)	340	0	340	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00370	Little Etobicoke Creek Erosion Control	60	0	60	Stormwater - Capital Reserve Fund,DCA - Stormwater Management Reserve Fund

Appendix 3 – Proposed 2017 Capital Budget Detail (Cont'd)

Program: Watercourse Erosion Control

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00371	Levi Creek watercourse realignment, upstream of Old Derry Road (60m)	44	33	11	DCA -Stormwater Management Reserve Fund,Stormwater - Capital Reserve Fund
TWSD00372	Mary Fix Creek erosion control, downstream of Dundas Street West (175m)	87	65	22	Stormwater - Capital Reserve Fund,DCA - Stormwater Management Reserve Fund
TWSD00373	Credit River eroson control ice dam repair (40m)	150	0	150	Stormwater - Capital Reserve Fund,DCA - Stormwater Management Reserve Fund
Total		**2,592**	**1,472**	**1,121**	

Note: Numbers may not balance due to rounding.

Appendix 4 – Summary of Full Time Equivalents

Program	2016	2017	2018	2019	2020
Administration	3.0	3.0	2.0	2.0	2.0
Planning & Operations	18.4	19.4	20.4	20.4	20.4
Total Service Distribution	**21.4**	**22.4**	**22.4**	**22.4**	**22.4**

Note: These FTEs are directly funded by the Stormwater Program.

Note: Numbers may not balance due to rounding.

Appendix 5 – Multi-year Funded Capital Projects

Project Number	Project Name	Periods	Comments	Total Amount ($000's)
TWSD00208	Cooksville Creek SWM Pond#2101 Land /City Centre Outlet (Land Acquisition)	2017 to 2018	New	$9,300
TWSD00335	Storm Sewer Asset Management System (Construction)	2017 to 2019	New	$1,450
TWSD00209	Cooksville Creek Flood Storage Facility - Frank McKechnie Park (#330) (Design)	2017 to 2018	New	$558
TWSD00213	Cooksville Creek Flood Storage Facility - Mississauga Valley (Design)	2017 to 2018	New	$471
Total				**$11,779**

Note: Numbers may not balance due to rounding.

- TOTAL - Capital Project Listing – multi-year funded for cash flowed projects

Appendix 6 – Summary of Reserve and Reserve Fund Transfers (000's)

Transfers from the Operating Program to the following Reserve and Reserve Funds in 2017 are:

- $23,533 to Stormwater Capital Reserve Fund
- $4,100 to Stormwater Pipe Reserve Fund
- $820 to Tax Capital Reserve Fund
- $100 to Stormwater Reserve for Contingency

Transfers from the Stormwater Reserve for Contingency for the billing system implemented in conjunction with the Region of Peel and fluctuations in revenues and expenses, will be based on the actual amounts incurred.

Glossary

Term	Description
Administration Costs	• Provides for Region of Peel costs for stormwater charge billing and customer service support as well as any incremental costs for the City to administer the stormwater charge.
Base Budget	• This represents the net operating budget in the previous year (2016).
Best Management Practice (BMPs)	• Physical, structural, and managerial practices that singly or in combination have been proven to be the most effective, practical and reliable means of achieving desired water quality or quantity outcomes. With regard to stormwater, the same that temporarily store or treat stormwater runoff in order to mitigate flooding, erosion, threat to public safety, reduce pollution and provide other amenities.
Budget	• Planned expenditures for a specified time period along with the proposed means of financing these expenditures.
Budget Request	• Major initiatives to provide for growth, enhanced service levels, new service and efficiencies. These are requests above existing service levels. Provides description of benefits of proposed initiatives to assist Council in making informed decisions.
Capital	• The word “capital” has a specific meaning in the municipal context. It is used to describe the transactions of the capital fund, including both long-term expenditures and long-term financing.
Capital Budget	• A multi-year program adopted by Council comprising of an approved capital program for the current year and a planned program for the succeeding nine years. The multi-year plan covers longer-term and onetime expenditures for capital assets.
Capital Expenditure/Project	• A capital expenditure/project results in the acquisition of an asset of a permanent nature or which improves an existing asset, extending the useful life of such an asset. Projects in the 10 year annual forecast advance from year to year in an orderly fashion.
Capital Fund	• Fund to account for all capital expenditures and the financing of capital expenditures.

Term	Description
Capital Reserve Fund	• Provides funds, including capital cash receipts not required for the retirements of debenture debts as prescribed by Section 413 (2) of the *Municipal Act*, 2001 S.O 2001, c.25. Funds may be used for : o The construction and improvement of any municipal works; o The acquisitions or expropriation of land required for Municipal purposes; o The acquisitions of vehicles or equipment for Municipal purposes; and o The payment of debentures of the Corporate for any aforementioned purposes
Climate Change	• A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards. Climate change trends related to stormwater focus on greater extreme weather events occurring including more frequent, intense storms.
Contingency	• An appropriation of funds available to cover unforeseen events that occur during the fiscal year.
Conveyance	• A structure or feature used for transferring water from one location to another. Examples include storm sewers, watercourses, road surfaces and other overland flow routes.
Cost	• The amount of resources required for a business program, product, activity or service to produce an output.
Council	• City of Mississauga Council is comprised of the Mayor and 11 Councillors.
CWWF	• The Clean Water and Wastewater Fund (CWWF) is a federal program designed to accelerate short-term community investments, while supporting the rehabilitation and modernization of drinking water, wastewater and stormwater infrastructure, and the planning and design of future facilities and upgrades to existing systems. The Province of Ontario is cost-matching recipient contributions up to a maximum of 25% of total eligible costs within the specified allocations.
DCA	• *Development Charges Act*. Municipal councils may impose development charges against land to pay for increased capital costs required because of increased needs for services arising from development. These charges are regulated by the Province of Ontario.
Debt Repayment	• Principal and interest payments necessary to retire debentures issued for City purposes.

Term	Description
Development Related Revenue	• Revenue collected from developers for city services constructed in new residential and non-residential areas.
Drainage	• The removal of excess surface water or ground water from land by means of surface or subsurface drains.
Drainage Study	• The technical report or study that comprises all the information and specifications for the programs, drainage systems, structures, BMPs, concepts, and techniques intended to manage stormwater. • See Stormwater Management (SWM) for additional details. • May also be referred to as Master Drainage Plan or Stormwater Study.
Dredging	• The removal of accumulated sediments and/or deposits to improve water quality and/or flow capacity. Typically performed to improve water quality of stormwater management facilities or increase flow capacity of watercourses.
EA	• Environmental Assessment. A study/review of the impact public sector undertakings, usually infrastructure, will have on the environment.
Erosion	• The removal of soil or rock fragments by the action of water, wind, ice, gravity, or other geological agents, whether naturally occurring or acting in conjunction with or promoted by man-made activities or effects.
Exemption (Legal)	• Freedom from payment of a stormwater fee based on legal authority of property owner.
Exemption (Technical)	• Freedom from payment of a stormwater fee based on the drainage of a property outside the City's stormwater management system.
Expenditures	• The disbursement of appropriated funds to purchase goods and/or services. Expenditures include current operating expenses that require the current or future use of net current assets, debt service and capital outlays. This term designates the cost of goods delivered or services rendered, whether paid or unpaid, including expenses, provision for debt retirement not reported as a liability of the fund from which retired, and capital outlays.
Flood Control	• See Peak Flow Reduction
Flood Relief	• See Peak Flow Reduction
Flooding	• A storm event where stormwater covers or submerges a place or area, and places people, property and/or infrastructure at risk.

Term	Description
Full-time Equivalent (FTE)	• A measure of staffing, equivalent to that produced by one person working full-time for one year.
Grant	• A contribution from a level of government to support a particular function, service, or program.
Gross Expenditures	• Total expenditures of the city prior to the netting of any external revenues and/or recoveries.
Impervious Area	• The total area of paved surfaces, building rooftops, compacted gravel, artificial turf, compacted soil stripped of vegetation and other surfaces on a property which are considered highly resistant to the infiltration of water.
Infrastructure Renewal Program	• Comprised of the Transfers to Stormwater Capital Reserve Fund and Transfer to the Stormwater Pipe Reserve Budget Programs.
Labour and Benefit	• Salary and wages in respect of full-time, part-time, contract, temporary or overtime employment including holiday pay. • City's share of employee's fringe benefits, clothing and food allowances and any other benefits paid through payroll, both taxable and non-taxable.
Levy (Tax)	• Represents the property and business taxation funding which must be raised by the taxpayers.
Local Storm Sewers	• A storm sewer with an inside diameter equal to or less than 1500mm of a typical round shaped sewer that receives runoff from the surrounding tributary. Local storm sewers can be shaped as elliptical or a box culvert subject to the above sizing criteria to an equivalent round shape.
Low Impact Development (LID)	• Low Impact Development (LID) is a stormwater management strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution by managing runoff as close to its source as possible. LID strategies minimize runoff and mimic natural or predevelopment hydrology through the processes of infiltration, evapotranspiration, harvesting, filtration and detention of stormwater. These practices can effectively remove nutrients, pathogens and metals from runoff, and reduce the volume and intensity of stormwater flows.
Municipal Performance Management Program (MPMP)	• Municipalities are required to report municipal performance data in the Financial Information Return (FIR) and submit to the Province of Ontario by May 31st annually. The data can be used in the calculation of performance measures for services provided.

Term	Description
Operating Budget	• A budget for general revenues and expenditures such as salaries, utilities and supplies.
Operating Program	• Program to maintain current Stormwater service levels, comprised of the following: o Operations and Maintenance, o Administration Costs, and o Stormwater Exemptions and Credits
Operations and Maintenance	• Provides for the city-wide direct and allocated costs associated with providing the Stormwater service. Examples include street sweeping, catch basin cleaning and the woody debris management program.
Peak Flow	• The maximum instantaneous rate of flow of water at a particular point.
Peak Flow Reduction	• The planning, design, construction, operation, maintenance and renewal of infrastructure to manage peak stormwater runoff rates to mitigate the potential and severity of flooding impacts on “downstream” property and persons. • May also be referred to as Flood Control or Flood Relief
Performance Measurement	• A planning and management system which sets goals and measures accomplishments for the provision of services. Establishes specific planned service levels for each major service and monitors the degree of success of achieving those levels.
Pipe Reserve Fund	• Provides for transfers to a Stormwater Pipe Reserve Fund that is used to fund the capital projects as well as providing for the future pipe replacement needs.
Property	• A parcel or multiple parcels as classified by the Municipal Property Assessment Corporation (MPAC) and assigned an Assessment Roll Number(s).
Rehabilitation	• The restoring of stormwater infrastructure to its former condition. Rehabilitation for stormwater management facilities may include general repairs to control device structures.
Reserve	• A reserve is an amount of revenue earmarked for a particular purpose. It has no reference to any specific assets and therefore no investment income is attributed. A more detailed listing of the City’s reserves and their purpose is contained in the Reserve and Reserve Funds Section.

Term	Description
Reserve Fund	• A reserve fund is similar to a reserve except that it is earmarked for a specific purpose. The money set aside is accounted for separately. Income earned on investment is required to be added to the reserve fund and accounted for as part of the reserve fund. A more detailed listing of the City's reserve funds and their purpose is contained in the Reserve and Reserve Funds Section.
Revenue	• Income received by the City for the fiscal year. Includes tax revenues, user fees, transfers from reserves and interest income.
Service Level	• The measure of core service delivery by the Stormwater service area that includes infrastructure planning and programming, maintenance and operations, design and construction, monitoring, environmental awareness, spills management and enforcement, and management of the stormwater charge program.
Service Life	• The expected lifetime, or the acceptable period of use in service for stormwater infrastructure.
Storm Sewer (Sewer, Pipe)	• A hollow cylinder or tube for the conveyance of stormwater, ultimately discharging to Lake Ontario. An underground box culvert may also be considered a storm sewer.
Storm Sewer Lining	• A rehabilitation process where a length of material is introduced to extend the life of the existing storm sewer and restore original performance qualities to extent practical.
Storm Sewer By-law	• City by-law which regulates the discharge of matter to municipal and private storm sewer systems and protects water quality by preventing the discharge of harmful substances to stormwater infrastructure.
Stormwater	• That portion of liquid precipitation generated during rain storms or by snow and ice melt that does not naturally soak into the ground or evaporate.
Stormwater Billing Unit	• A single "Stormwater Billing Unit" is equivalent to the average total impervious area (267 m2) found on a detached single family property in Mississauga. Each property is assigned a number of Stormwater Billing Units as the result of a stormwater charge assessment.

Term	Description
Stormwater Capital Reserve Fund	• Provides for transfers to a Stormwater Capital Reserve Fund that is used in four ways: o (i) to fund capital projects; o (ii) to repay debt associated with the financing of capital projects from previous years; o (iii) to repay the tax base for investment in the stormwater charge start-up costs; and o (iv) to provide for transfers to the Stormwater Pipe Reserve Fund for future pipe replacement needs.
Stormwater Charge	• A fee authorized by ordinance(s) established to pay operations and maintenance expenses, extension and replacement costs, and debt service. The fee assessed on developed properties with impervious areas within the City. The utility service fee established under this ordinance and levied on parcels serviced by the City stormwater management system to fund the costs of stormwater management and of operating, maintaining, and improving the stormwater system in the municipality.
Stormwater Charge Expenditures	• The disbursement of appropriated funds to purchase goods and/or services specifically related to the delivery of Stormwater services. Expenditures include current operating expenses that require the current or future use of net current assets, debt service and capital outlays. This term designates the cost of goods delivered or services rendered, whether paid or unpaid, including expenses, provision for debt retirement not reported as a liability of the fund from which retired, and capital outlays.
Stormwater Drainage System	• Various drainage works, including but not limited to inlets, conduits, energy dissipation structures, channels, outlets, retention/detention basins, and other structural components of this nature designed to manage the flow of water (convey, withhold or divert) at the surface and/or subsurface to a suitable outlet. A component of Stormwater Management.
Stormwater Exemptions and Credits	• Provides for technical exemptions and credits which reduces the amount of stormwater revenue
Stormwater Infrastructure	• The basic installations and facilities necessary for the continuance and growth of the City's stormwater system, including storm sewer pipes, stormwater management facilities and watercourses.
Stormwater Management (SWM)	• Techniques, methods, and policies for control planning, maintenance, and regulation of stormwater runoff to reduce the potential for flooding and erosion, to ensure the safety of the public will not be threatened, and to achieve water quality and quantity objectives.

Term	Description
Stormwater Management Facility	• A structure that stores stormwater runoff and is designed to eliminate subsequent surface discharges. These facilities are effective in reducing downstream flooding because they do not allow discharge of stormwater runoff to downstream locations except in extreme flood events where the storage volume of the facility is exceeded. Retention facilities can also be effective in reducing stormwater pollution since the pollutants contained in stormwater are not released downstream.
Stormwater Rate	• The amount of money per billing unit charged over a prescribed period of time.
Stormwater Service	• Comprised of two main programs that include the Operating Program and Infrastructure Renewal Program. A number of sub-programs exist within these programs which include Operations and Maintenance, Administration Costs, Stormwater Credit and Exemption Program, Transfers to Stormwater Capital Reserve Fund and Transfer to the Stormwater Pipe Reserve Budget Programs. • Refer to Operating Program and Infrastructure Renewal Program for additional details.
Stormwater Service Area	• The Stormwater Service area is defined as the group of services and programs that plan, develop, construct, maintain and renew a stormwater system which protects property and infrastructure from erosion and flooding and enhances water quality. This service area has a number of funding sources that include the Stormwater Charge, Tax, Development Charges and Development Contributions.
Strategic Plan	• A document outlining long-term goals, critical issues and action plans which will increase the organization's effectiveness in attaining its mission, priorities, goals and objectives. Strategic planning starts with examining the present, envisioning the future, choosing how to get there and making it happen.
Subsidy	• A payment made by City Council on behalf of a property owner for the partial or complete cost of the stormwater charge assessed to that property.
Tax Based Sources	• Funding sources generated through taxation. Funding examples include tax based reserve funds, internal or external debt, and federal and provincial gas tax. Also, any funds generated by way of the current fund via the operating program.
Tax Levy	• The total tax dollars assessed on property, calculated by multiplying the tax rate by the tax base. The term can also refer to the tax rate itself.
Tax Rate	• The tax rate is the percentage of assessed property value. The current value property assessment is multiplied by the tax rate to equal the amount of a taxpayer's property taxes.

Term	Description
Taxation	• The process by which a municipality raises money to fund its operation.
Total Gross Capital Requests	• The actual cost to the corporation of all capital expenditures
Transfers	• City grants to outside agencies. • Contributions to city reserves and reserve funds including the contribution to capital financing.
Trunk Storm Sewers	• A storm sewer with an inside diameter greater than 1500mm of a typical round shaped sewer that receives runoff from the surrounding tributary. Local storm sewers can be shaped as elliptical or a box culvert subject to the above sizing criteria to an equivalent round shape.
Water Quality	• A measure of how suitable water is for a particular type of use (such as drinking and bathing) based on physical, chemical, and biological characteristics such as temperature, turbidity, mineral content, and the presence of bacteria.
Water Quality Control	• The planning, design, construction, operation, maintenance and renewal of infrastructure to remove suspended solids and other contaminants from stormwater, either actively or passively.
Watercourse	• An open channel, either natural or manmade or a combination thereof, which gathers or carriers surface water with some degree of regularity.
Watercourse Erosion Control	• Measures employed to prevent or control the loosening and removal of soil from the bank and/or bed of a watercourse by running water. These measures may include bank or bed protection, grading modifications, watercourse realignment and capacity improvements. • Refer to Erosion and Watercourse for additional details.
Watershed	• A topographically defined land area in which all stormwater runoff drains to the same point. It is separated from other watersheds by a divide.