storm water program

2016–2018 Business Plan
& 2016 Budget

MISSISSAUGA

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Last year the City of Mississauga undertook an extensive process to create a four year, 2015 through 2018, detailed Business Plan & Budget. Approved in February 2015, the 2015-2018 Business Plan & Budget outlines how and where the City plans to allocate resources to provide good value for taxpayers. Reviewed and updated annually, the four year plan is based on the City's four strategic priorities.

In last year's Business Plan & Budget, the Stormwater Service Area resided within the Roads, Storm Drainage and Watercourses Service Area. While 2016 marks the second year, an "Update Year" of Mississauga's four-year Business Plan and Budget, it is also a year where the Roads, Storm Drainage and Watercourses Service Area will be separated into two stand-alone service areas: Stormwater and Roads. This was adopted to align the service area with the introduction of a stormwater charge in 2016 and to better address the growing stormwater pressures faced by the City.

A Corporate Report to the May 20, 2015 General Committee meeting provided a stormwater charge implementation update that recommended: (i) corporate policies and procedures for the administration of the charge, (ii) an outreach and education strategy; and (iii) an annual rate of $100.00 per stormwater billing unit for stormwater fees and charges. This rate is comprised of four different cost components: capital, operations and maintenance, stormwater pipe reinvestment and administration costs. This Report was adopted by Council on May 27, 2015.

The proposed 2016 -2018 Stormwater Business Plan and 2016 Budget outlines how and where the City plans to allocate resources to meet service expectations over the next three years. The following document sets out: the operating budget, capital financing and projects, reserve and reserve funds and appendices. The complete 2016-2018 Business Plan & Budget can be found on the City's website.

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What is the Stormwater Service Area?

This Business Planning cycle marks the first year that Stormwater is a stand-alone service area.

This was adopted to better address the growing stormwater pressures faced by the City and to align the service area with the introduction of a stormwater charge in 2016.

The stormwater charge is a new, dedicated source of funding that will enable the City to address present and future needs including water quality, flood control, stormwater facility rehabilitation and watercourse erosion control projects. The charge will also enable increased service levels for activities such as watercourse maintenance, by-law enforcement and sewer monitoring, and the introduction of a reserve fund for pipe renewal as they reach the end of their useful life.

The pressures of aging stormwater infrastructure and greater frequency of extreme storm events (climate change) are resulting in the need to retrofit infrastructure and improve stormwater conveyance, quality and flow control targets.

The Stormwater service area operates primarily out of the Transportation and Works Department and is responsible for the planning, development, construction, monitoring, maintenance and renewal of stormwater infrastructure that includes stormwater management facilities and flood relief works, creeks and other drainage improvements.

Planning and programming of stormwater-related projects in the capital program will ensure that the renewal of stormwater infrastructure is carefully managed in a systematic manner while being aware of pressures such as extreme rainfall events. This includes the implementation of new capital infrastructure projects involving design, obtaining approvals and permits, potential land acquisition and construction management to undertaking master planning studies related to flood remediation, watercourse erosion and watershed planning.

The Stormwater service area also includes monitoring and operations and maintenance of stormwater infrastructure to ensure that stormwater assets are functioning effectively. Maintenance programs also have economic benefit by identifying and addressing minor issues before they become major. The management of stormwater infrastructure assets is accomplished through a number of operational activities including: stormwater infrastructure inspection, cleaning and repairs, watercourse litter removal, street sweeping, spills management and watercourse maintenance.

Other responsibilities of the service area include environmental awareness, spills management and enforcement, and management of the stormwater charge.

This service is delivered with support from the service areas of Roads and Parks and Forestry.

Extreme storm events, such as the July 2013 event (above), are resulting in growing stormwater pressures.

Executive Summary of Stormwater Business Plan

Mission: To be a leader in delivering and managing safe, functional stormwater infrastructure, and to plan, develop, construct, maintain and renew a stormwater system which protects property and infrastructure from erosion and flooding and enhances water quality.

This service is delivered with key support provided by:

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

Interesting facts about this service:

- The City has nearly 2,000 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, 31 creeks and 57 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 2016 replacement value of $1.97 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:

- Stormwater is now a stand-alone service area in the 2016-2018 Business Plan
- A dedicated stormwater charge based on a user pay principle is scheduled for implementation in 2016 to address increasing future needs including infrastructure renewal and pressures as a result of flooding events
- An annual rate of $100.00 per stormwater billing unit in 2016 will be applied to properties
- In 2016, a comprehensive asset management plan will be initiated to manage all stormwater infrastructure
- Mitigation measures will be implemented for the Lisgar community to address basement water infiltration
- Cooksville Creek flood relief and improvement projects, including stormwater management facilities, continue to move forward to implementation
- This service is funded by the Stormwater Charge service

	2016	2017	2018
Stormwater Rate (per billing unit)	$100	$102	$104

To learn more about the Stormwater service area please visit: **www.mississauga.ca/stormwater**

Focus of the Business Plan

The inaugural 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 greater frequency of extreme storm events (climate change).

As a result, a comprehensive asset management plan to better manage all stormwater infrastructure will be initiated in 2016. This will include the development of inventories and assessment programs for storm sewers and technology to manage stormwater infrastructure effectively and efficiently. Additional resources in 2016 will provide program coordination. While this plan will be initiated in 2016, it is a long-term strategy with a phased approach.

Cooksville Creek flood remediation projects continue to move forward including several stormwater management facilities. Construction of the Cooksville Creek stormwater facility, located on the north side of Matheson Boulevard West and between Hurontario Street and McLaughlin Road, will continue in 2016.

Several mitigation measures that will address basement water infiltration in the Lisgar community are included in the Stormwater capital program, based on the study's findings this past spring. The prioritized action plan will continue into 2016 with storm sewer lining, dewatering of the utility trench and monitoring. These projects will be funded from property tax.

Additional staff resources in 2016 will provide administrative support to the stormwater charge and manage the increasing needs of the service area.

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

Existing Core Services

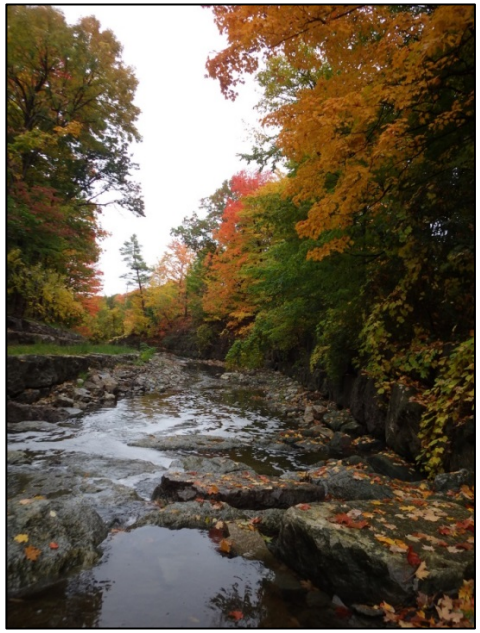
Vision, Mission, Service Delivery Model

Vision

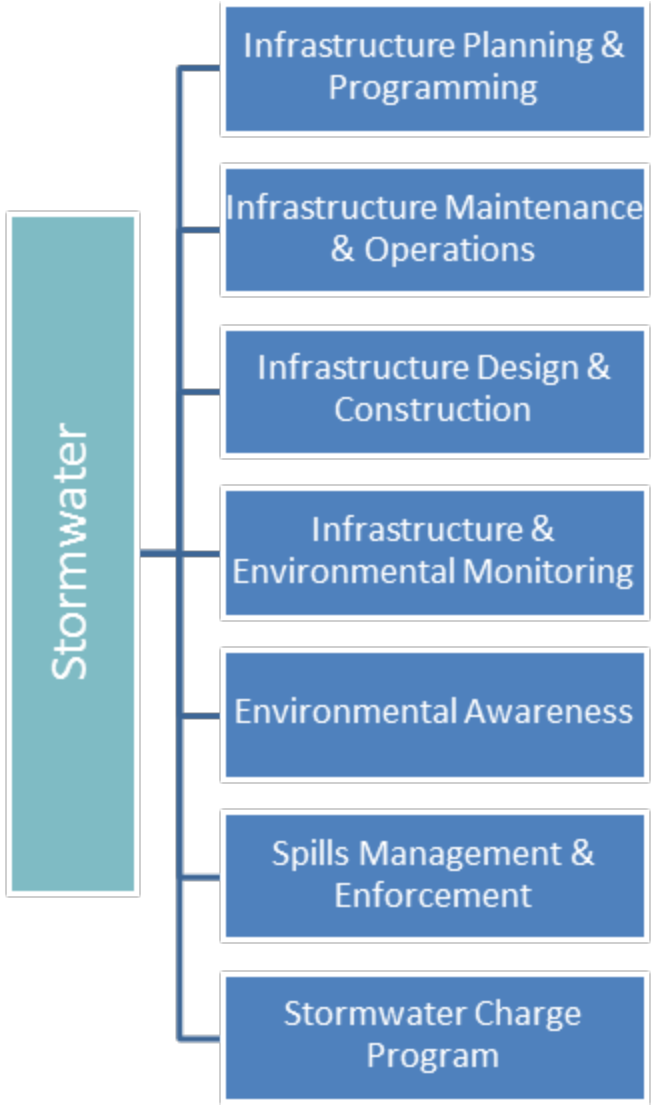
The Stormwater service area leads in delivering and managing safe, functional stormwater infrastructure.

Mission

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



Cooksville Creek north of Burnhamthorpe Road West during the beautiful Fall season.



Accomplishments

As the city faces the increasing pressures of aging infrastructure and climate change, the need to protect property and infrastructure from erosion and flooding and enhance water quality is essential for the Stormwater service area. The following is a list of accomplishments made over this past year (2015):

Stormwater Charge

- Council approved the implementation of a stormwater charge in 2016. This dedicated funding source will allow for increased service levels within the Stormwater capital, maintenance and operations programs, and introduce a reserve fund for storm sewer pipe renewal

Stormwater Management Facilities

- Completed the design and began construction for the Cooksville Creek stormwater facility, located on the north side of Matheson Boulevard West and between Hurontario Street and McLaughlin Road
- Completed the dredging and rehabilitation of the Eastgate Business Park stormwater facility to improve water quality

Storm Sewers

- Initiated replacement of the Cooksville Creek trunk storm sewer along Elm Drive
- Completed a study that assessed the condition of Metal Trunk Storm Sewers (MTSS)

Creek Erosion Control and Flood Relief Projects

- Initiated dyking of Cooksville Creek south of Central Parkway East behind Rhonda Valley to provide flood protection
- Began construction of the Cooksville Creek culvert improvement at Paisley Boulevard
- Completed erosion control along Sawmill Creek at three locations including north and south of Burnhamthorpe Road and north of The Collegeway
- Completed watercourse maintenance at several sites along Birchwood, Cooksville (three locations) and Mimico Creeks

Environmental Awareness

- Attended over 40 education and outreach events to educate the public on the stormwater charge and to provide environmental awareness

Spills Management and Enforcement

- Received and investigated nearly 80 requests related to spills and follow-up issues
- Resolved approximately 60 inquiries related to enforcement of the Storm Sewer By-law which protects water quality by preventing the discharge of harmful substances to stormwater infrastructure

The Cooksville Creek stormwater management facility located north of Matheson Boulevard West will be the largest facility within the watershed.

Stormwater Charge

Calculation of the Stormwater Charge

A stormwater charge will be applied to all properties that are serviced by the City's stormwater drainage system and are subject to municipal fees and charges. The following terms provide an understanding of the stormwater charge:

- The **stormwater charge** for each property is calculated by multiplying the number of stormwater billing units assessed to a property by the stormwater rate
- A single **stormwater billing unit** is equivalent to the average total impervious area (267 m^2), or the total area of paved surfaces, found on a typical detached single family property in Mississauga. Each property is assigned a number of stormwater billing units as the result of a stormwater charge assessment
- The **stormwater rate** represents the amount of money per billing unit charged over a specific period of time

The Stormwater Financing Study (Phase 1) report recommended that the stormwater rate be set based on the proposed "interim" service level for the City's stormwater management program. The philosophy of the interim service level is that all of the capital program needs and operations and maintenance pressures of the program would be funded, along with a modest initial collection into a storm pipe renewal reserve.

Based on 2012 cost estimates, the Phase 1 Study estimated that the stormwater rate would be approximately $94.00 per billing unit per year to support the interim service level. Indexing this value to 2016 dollars, using the Non-Residential Building Construction Price Index published by Statistics Canada as a guide, results in a stormwater rate for 2016 of $100.00 per billing unit per year.

Categories of Billing Units

Stormwater billing units are assigned to various property categories that include Single Residential Property, Multi-Residential and/or Non-Residential Property using the City's best available information, which includes, but is not limited to, classification by the Municipal Property Assessment Corporation (MPAC), the City's Planning and Building Department information and aerial imagery.

Single Residential Property

A single residential property contains one dwelling unit per parcel of land. The rooftop area of all single residential properties has been individually assessed using the best available aerial imagery. The rooftop area is used as a predictor of the total impervious area for the purpose of assigning a property to a tier. A fixed number of stormwater billing units is assigned to each tier. There are five tiers, ranging from the smallest to the largest groups of homes, as summarized below.

Tier	Typical Property Type	Rooftop Area (m^2)	Predicted Impervious Surface Area (m^2)	Number of Billing Units
Smallest	Freehold townhomes and row houses	26.7 – 99.0	26.7 – 147.0	0.5
Small	Semis, linked homes and small single detached homes	99.1 – 151.0	147.1 – 227.0	0.7
Medium	Medium single detached homes	151.1 – 194.0	227.1 – 286.0	1.0
Large	Large single detached homes	194.1 – 242.0	286.1 – 400.0	1.2
Largest	Very large single detached homes	242.1 and up	400.1 and up	1.7

Properties with less than 26.7 m^2 of rooftop area will be assessed with 0.0 stormwater billing units and will not be charged.

Based on this tier schedule and an annual stormwater rate of $100.00 per billing unit, single residential property owners will pay between $50.00 and $170.00 per year.

Multi-Residential and/or Non-Residential Property

A multi-residential property contains two or more dwelling units per parcel of land. The total impervious area of multi-residential and/or non-residential properties has been individually assessed using the best available aerial imagery. The number of stormwater billing units assigned to a multi-residential and/or non-residential property is calculated by dividing the total impervious area by the area of one stormwater billing unit (267 m^2).

Education and Outreach

To recognize and support the efforts that single residential homeowners make on their properties, the City has introduced a residential outreach and education program. The goals of the program are as follows:

- Educate homeowners about stormwater, how the City manages stormwater, and the relationship between private property and the municipal stormwater management system
- Educate homeowners on stormwater best management practices for their properties
- Direct these stakeholders 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 property drains, what common practices can put homes at risk of flooding, and what actions can be taken to reduce that risk as well as benefit the environment. Such actions include downspout disconnections, eavestrough cleaning, alternatives to fertilizers and pesticides, use of native groundcover and

plantings, lot grading improvements, pet waste pick-up and proper disposal, use of permeable paving materials, rain gardens, rain barrels, tree planting, winter salt alternatives 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.

Credits, Subsidies and Exemptions

Credits for Multi-Residential and Non-Residential Properties

Multi-residential and non-residential property owners will be provided the opportunity to receive a reduction to their stormwater charges in recognition of the stormwater best management practices (BMPs) that have been implemented and maintained on their property. The objective of this credit is to recognize and encourage stormwater BMPs which reduce the amount of stormwater runoff and pollutants that enter the municipal stormwater drainage system, providing benefit to the City's stormwater management program.

Four credit categories will be available which reflect the key areas of the City's stormwater management program. These categories include peak flow reduction, water quality treatment, runoff volume reduction and pollution prevention. A maximum credit amount of 50 percent will be offered which reflects the approximate portion of the City's program costs which can potentially be influenced by stormwater measures on individual properties.

Subsidies

Subsidies will be provided to help offset the cost of stormwater charges assessed to eligible places of religious worship and veterans' organization properties and will be funded from property tax. Properties, or portions of properties, which meet the eligibility criteria will be automatically enrolled in the stormwater subsidy program with no action required by the property owner or tenant. The stormwater subsidy will provide 100 percent of the annual stormwater charge on the eligible portion of property.

Exemptions

Two types of exemptions to the stormwater charge may apply: technical and legal.

Property owners or tenants subject to municipal fees and charges who believe that their property drains directly to Lake Ontario or an adjacent municipality may initiate an application for a technical exemption from the charge. Applicants will be contacted by staff to discuss criteria and required drainage reports and documentation for engineering review.

Properties owned and occupied by persons or entities not subject to municipal fees and charges will be considered legally exempt from the charge.

In both cases, the exemptions may equal all or a part of the assessed stormwater charges, based on demonstrated physical site storm drainage or occupancy characteristics.

Administrative Billing

The stormwater charge will be administered by the Transportation and Works Department at the City of Mississauga. Billing and collection of stormwater charges will be processed through the Region of Peel water bill.

Property owners will receive and pay the stormwater charge through their Region of Peel water bill account starting in 2016. Water billing dates vary depending on the geographic location of the property within the city and the volume of water consumed on that property. The annual stormwater charge for each property will be divided into a daily rate. The bill will show the total stormwater charge accrued over the number of days that have passed since the previous bill.

As water consumption can only be determined and billed after it occurs, the Region issues water bills in arrears. Further, residential water bills are typically issued four times a year. These two factors will reduce the amount of stormwater revenue in 2016 only. It is simply a cash flow impact from a budget perspective with some 2016 stormwater revenue being billed and collected in 2017. This will be accrued on the City's Financial Statements.

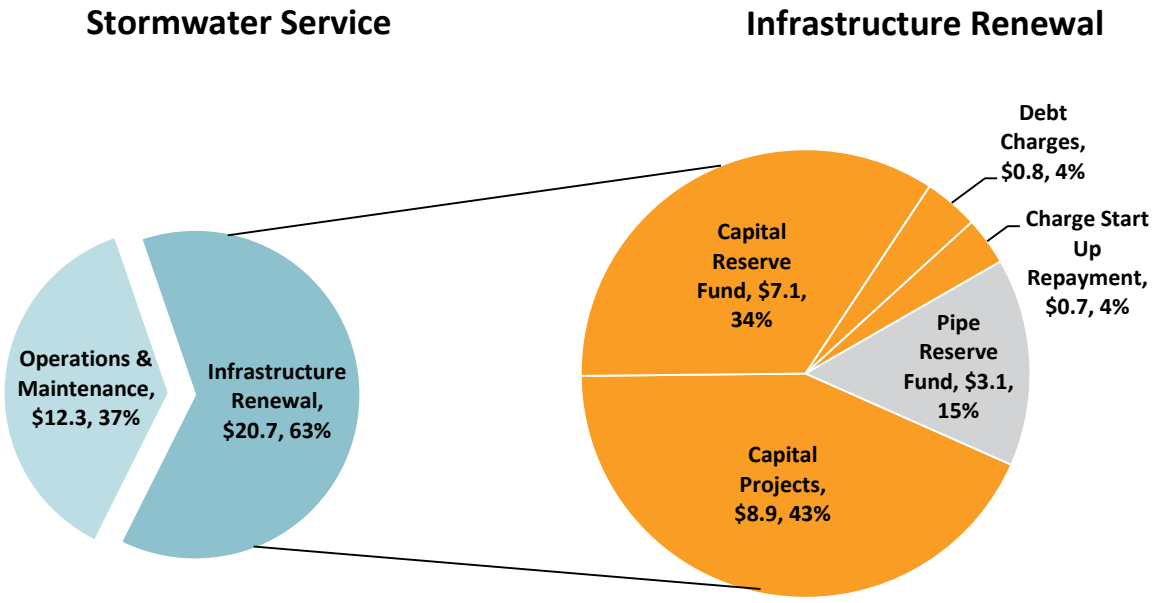
Future Rate Adjustments

The stormwater rate will be established on an annual basis, during the budget approval process, through a fees and charges by-law subject to Council approval. Future adjustments to the stormwater rate will allow future stormwater capital and operational needs to be addressed.

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

Stormwater Budget & Financial Overview

The following pie charts provide an overview of the Stormwater Service segregated by Capital Programs ($millions).



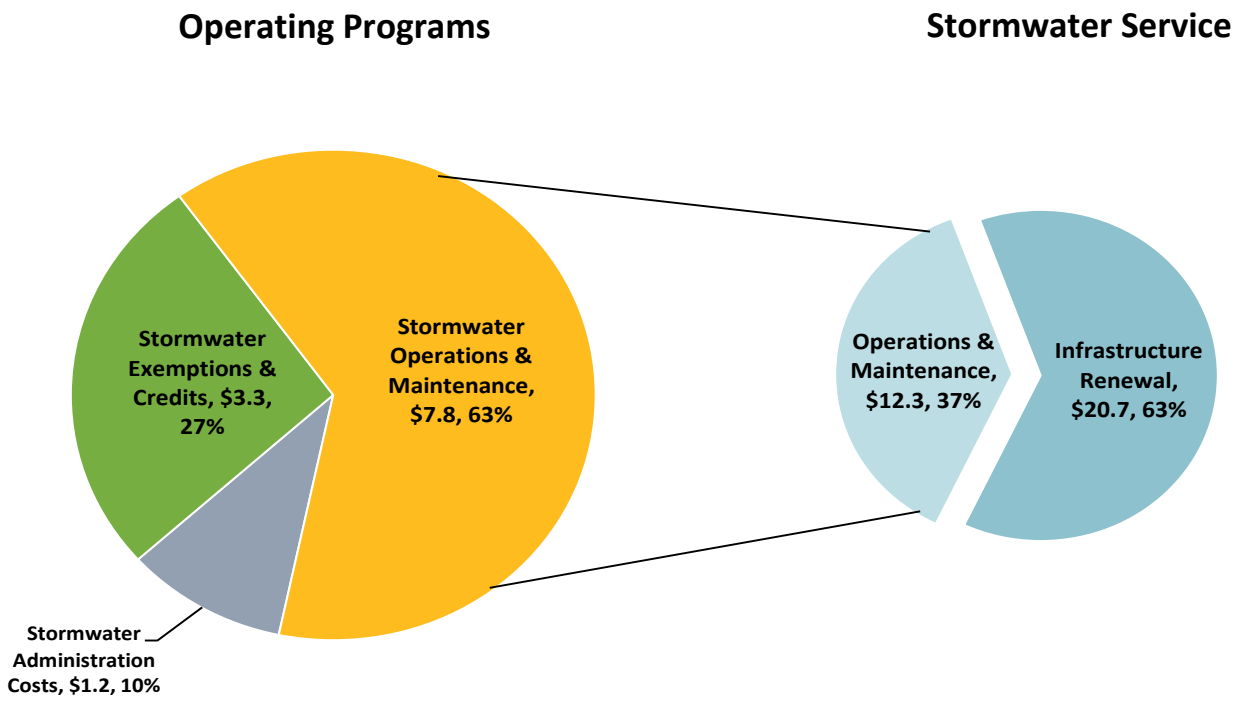
Note: Excludes revenue accrual, numbers may not balance due to rounding

Description of Stormwater Capital Programs

Transfers to **Stormwater Capital** Reserve Fund – Provides for transfers to a Stormwater Capital Reserve Fund that is used in four ways: (i) to fund the 2016 capital projects; (ii) to set aside funds for future capital infrastructure replacement needs (iii). debt repayments associated with financing of capital projects; and (iv) repayment to the tax based for investment in the initial stormwater charge start-up costs.

Transfers to **Stormwater 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.

The following pie charts provide an overview of the Stormwater Service segregated by Operating Programs ($millions).



Note: Excludes revenue accrual, numbers may not balance due to rounding

Description of Stormwater Operating Programs:

Stormwater 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.

Stormwater 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.

Stormwater Credit and Exemption Program – Provides for technical exemptions and credits which reduces the amount of stormwater revenue received.

Summary of 2016 Budget

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

Category	2016 Budget ($000's)	Details ($000's)
Labour and Benefits	**3,608**	Increases include labour adjustments and other fringe benefit changes for costs previously funded from the tax rate and increases of $138 for a new engineer and asset management staff person
Advertising & Promotions	1	
Contractor & Professional Services	4,098	$864 for Region of Peel costs for billing and customer service with the remainder for costs to deliver services such as storm sewer repairs and street cleaning
Equipment Costs & Maintenance	31	
Finance Other	203	$150 for fees for OneCall centralized program $43k Region of Peel administrative contingency costs
Materials, Supplies & Other Services	71	
Occupancy & City Costs	101	
Transfers To Reserves	600	$500 provision for Stormwater Reserve for Contingency $100 provision for Region of Peel billing system costs
Transportation Costs	495	Vehicle rental costs
Storm Exemptions & Credits	3,300	Revenue reductions for technical exemptions and program credits
Revenues	(165)	Fees, licenses and recoveries
Total Operations & Maintenance	**12,343**	
Infrastructure Renewal	19,891	$8,937 funding for capital projects $7,133 transfers to the Stormwater Capital Reserve Fund $3,100 transfers to the Stormwater Pipe Reserve Fund $720 repayment of the Stormwater Charge Start-up Costs
Debt	812	Repayment of debt associated with the construction of a stormwater pond
Total Infrastructure Renewal	**20,703**	
Stormwater Revenue Accrual	**7,254**	To be accrued on the City's 2016 Financial Statements
Total	**40,300**	

Note: Numbers may not balance due to rounding.

Stormwater Proposed Budget by Program

The following table provides a breakdown of the Stormwater Service by budget program.

Description	2016 Proposed Budget ($000's)	2017 Forecast ($000's)	2018 Forecast ($000's)
Expenditures to Deliver Current Services			
Stormwater Administration Costs	1,231	1,118	1,125
Stormwater Exemptions & Credits	3,300	3,366	3,433
Stormwater Operations and Maintenance	7,673	7,435	7,697
New Initiatives	138	230	783
Total Operations & Maintenance	**12,343**	**12,149**	**13,038**
Stormwater Capital	17,603	24,712	23,642
Stormwater Pipe	3,100	4,100	5,100
Total Infrastructure Renewal	**20,703**	**28,812**	**28,742**
Stormwater Revenue Accrual	**7,254**	**0**	**0**
Stormwater Program	**40,300**	**40,961**	**41,780**

Note: Numbers may not balance due to rounding.

Provisions for the capital program (i.e. transfers to capital) have been increased to set aside funds in keeping with the sustainable funding model. Also, moderate increases have been included for operating expenses associated with maintaining service levels and the start of an asset management plan. These have been offset by decreases in the start-up costs with the Region of Peel.

2016 Operating Budget

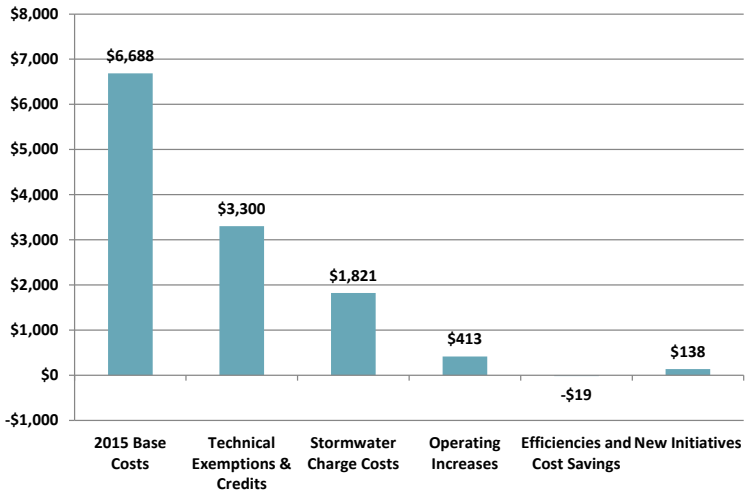
This part of the Business Plan sets out the financial resources required to deliver the proposed 2016-2018 Business Plan.

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

- Stormwater Operating and Maintenance
- Stormwater Administration
- Stormwater Credit and Exemption Programs

The proposed 2016-2018 Business Plan and 2016 Budget provides a balance between financial pressures and meeting the service demands of the community.

Proposed Changes to 2016 Net Operating Budget by Category ($000's)



2015 Base

The 2015 base refers to the amount of the Stormwater service that was previously delivered through property tax funding. This is made up of the direct costs transferred from the Roads and Parks and Forestry Services as well as overhead allocations from various City services.

Maintaining Current Service Levels

The City aims to keep cost increases, to maintain current service level, in line with inflation. Each year, City staff is challenged to reduce costs by identifying efficiencies and streamlining processes through continuous improvement while maintaining service levels and managing additional costs associated with administering the stormwater charge.

New Initiatives

Proposals for new initiatives in 2016 are described in Appendix 1. In this budget, proposed 2016 initiatives support Mississauga's Strategic Plan and are primarily focused on delivering the stormwater management program.

The sections below outline the areas which impact the 2016 proposed budget. Incremental costs have been identified which are greater than the 2015 base.

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 impact of maintaining current service levels for the Stormwater service is an increase of $12.3 million for 2016.

Highlights of the proposed budget changes are:

- $6.7 million in operational and maintenance costs which were previously funded from the property tax
- $3.3 million in revenue reductions associated with technical exemptions (stormwater that drains outside of Mississauga's border) and program credits
- $1.2 million of costs associated with administering the new stormwater charge
- $0.6 million transfer to the Stormwater Reserve for Contingency to provide for fluctuations in the Stormwater service such as flooding and potential costs associated with the Region of Peel's billing system
- $0.4 million in operating increases such as street cleaning and maintaining the closed circuit television (CCTV) visual inspection of the pipes every 10 years

Category	2016 Budget ($000's)
2015 Base Budget	**$6,688**
Stormwater Charge Costs:	
Technical Exemptions and Credits	$3,300
Region of Peel Costs for billing and customer service	$907
Stormwater Reserve for Contingency	$500
Provision for Region of Peel Billing Software	$100
Staff required to administer the Stormwater Charge	$314
Operating Increases:	
Increased street cleaning costs	$154
Maintain 10 year service level for visual inspection of pipes	$103
Increased cost of sewer repairs	$79
Increased cost of ditch and culvert cleaning	$36
Other Increases	$42
Maintain Current Service Levels	**$5,535**
Efficiencies and Cost Savings	
Other Decreases	-$19
Total Changes to Maintain Current Service Levels	**$5,516**
New Initiatives	$138
Total 2016 Operating Budget	**$12,342**

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 #	2016 FTE Impact	2016 Proposed Budget ($000's)	2017 Forecast ($000's)	2018 Forecast ($000's)	2016 to 2018 FTE Impact	2016 to 2018 Capital ($000's)
New Initiative							
Asset Management Plan for Stormwater Infrastructure	2056	1.0	53	110	662	3.0	5,240
Storm Drainage Engineer	2294	1.0	85	119	122	1.0	0
Stormwater Charge Program Support *	2295	1.0	0	0	0	0.0	0
Total New Initiative		**3.0**	**138**	**230**	**783**	**4.0**	**5,240**

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

* Contract staff fully funded from Capital

Asset Management Plan for Stormwater Infrastructure

Improving stormwater conveyance, quality and flow control targets are required to address the pressures of aging stormwater infrastructure and greater frequency of extreme storm events (climate change).

As a result, a comprehensive asset management plan to manage all stormwater infrastructure will be initiated in 2016. This will include the development of inventories and assessment programs for storm sewers and technology to manage stormwater infrastructure effectively and efficiently. Additional resources in 2016 will provide asset management program coordination.

While this plan will be initiated in 2016, it is a long-term strategy with a phased approach.

Storm Drainage Engineer

The stormwater charge will be based on an Interim Service Level which is more comprehensive than the existing service level and will meet all current stormwater related capital, operation and maintenance needs while also starting to collect funds for future pipe renewal. The new stormwater charge funded capital program will double as compared to the past property tax supported program. Further, existing resources are currently being fully utilized, in part, due to staff obligations to the stormwater charge.

To meet the above demands and to ensure the City can deliver the stormwater capital program an additional Storm Drainage Engineer position will be required.

Stormwater Charge Program Support

During 2016, the first year of stormwater billing, a higher than normal workload is anticipated for staff administering the stormwater charge, especially in the areas of customer service, data management, and billing data reporting and reconciliation. An additional staff resource is requested on a contract basis to assist with these important functions and responsibilities related to the delivery and management of the Stormwater Charge Program.

This staff resource will be fully funded from Capital.

Human Resources

Proposed Full Time Equivalent Staffing Distribution by Program

Program	2016	2017	2018
Stormwater Operations	10.1	10.1	9.1
Stormwater Planning	13.3	13.3	15.3
Total Service Distribution	**23.4**	**23.4**	**24.4**

Note: Numbers may not balance due to rounding.

Staffing changes in 2016 include:

- 23.4 full time equivalents (FTEs) represents the shift of direct staff transferred from Roads Service
- An increase of one permanent FTE represents Storm Drainage Infrastructure Coordinator to administer the asset management program (BR 2056)
- An increase of one permanent FTE represents Storm Drainage Engineer to assist, in part, with delivery of the stormwater capital program (BR 2294)
- An increase of one contract FTE represents stormwater charge program support funded from capital project
- Reduction of three contract FTE positions due to the completion of Stormwater Charge Implementation Project including Project Lead, Administrative Assistant and Policy Planner

Capital Program & Financing Overview

Infrastructure

The City of Mississauga is committed to providing quality stormwater services through 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 were 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 sustain the infrastructure requirements.

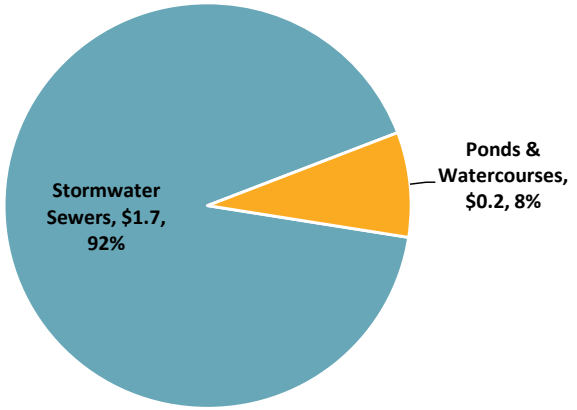
At the core of the City's need to achieve a sustainable stormwater business model is the need to implement sound asset management practices involving:

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

As previously mentioned, the 2016 Stormwater capital budget includes a new initiative to improve asset management practices as they pertain to storm sewers. Budget Request 2056, an *Asset Management Plan for Stormwater Infrastructure*, is proposed to improve inventory, monitoring, capital and maintenance planning and the financing of future storm sewer infrastructure. The Budget Request also includes capital funds in future years for the anticipated repair and rehabilitation of storm sewers and associated stormwater infrastructure.

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 pipes, in addition to watercourse erosion control.



Stormwater Infrastructure (Replacement Costs $1.9 billion)

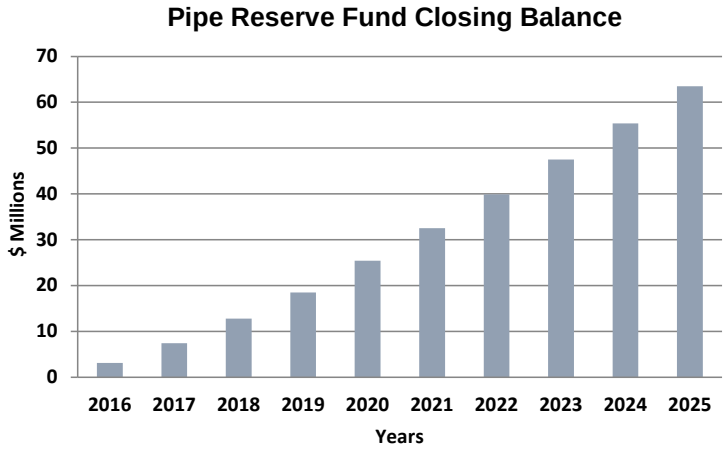
Capital Infrastructure Gap

The stormwater charge includes a provision of $3.1 million in 2016 for future pipe replacement needs. This budget assumes it will increase to an annual provision of $6.1 million over the next ten years.

The following chart reflects the closing balances of the Stormwater Pipe Reserve Fund which will start at $3.1 million and builds to $63.5 million over the ten years.

Currently there are no projects funded from this reserve fund. Work is underway to assess the condition of storm sewers and program any future repair and rehabilitation needs. 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 going forward

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



Capital Program Funding

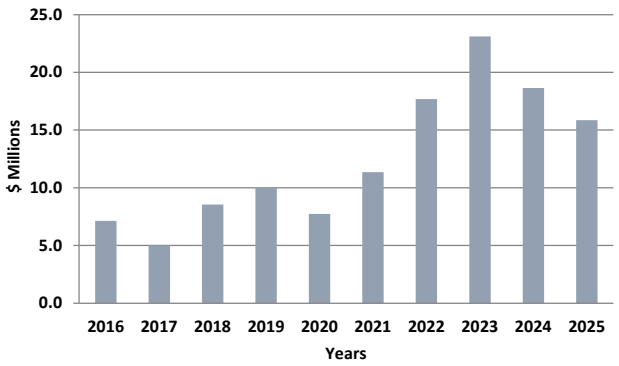
In addition to the funding required for the City's pipe infrastructure, the Stormwater service must address present and future needs that include stormwater management facilities, flood relief, watercourse erosion control and drainage studies and improvements.

Revenues from the 2016 stormwater charge will be $16.1 million and are estimated to increase annually to $23.0 million by 2025. As shown in the chart below, the charge is expected to fund the Stormwater Capital Reserve Fund. The closing balances for the Stormwater Capital Reserve Fund range between $5.0 million and $23.1 million over the 10 year period.

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

Ideally, the balance of the reserve fund should reflect 10 per cent of the future year forecasted spending or approximately $20.0 million. Future years will require careful review to ensure that the City's top priorities are being funded.

Stormwater Capital Reserve Fund Balance

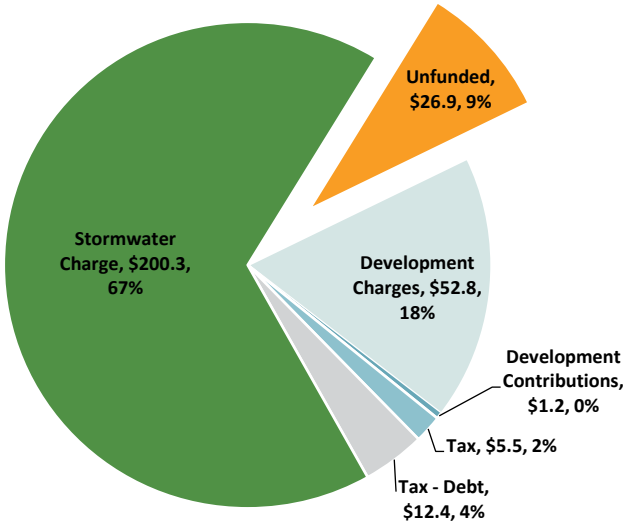


2016-2025 Total Gross Capital Requests

The following chart shows total proposed 10 year capital program for 2016-2025. The unfunded amount is $26.9 million or 10 per cent for the 10 year requests. These unfunded projects include new stormwater management facilities, a facility dredging and rehabilitation project and erosion control projects. Ideally the timing of these projects would be from 2016 to 2019. Given the existing funding level, they are unaffordable in this budget period.

2016-2025 Total Gross Capital Requests $299.0 million

(Funded Capital Requests $272.2 million)



Note: Numbers may not balance due to rounding.

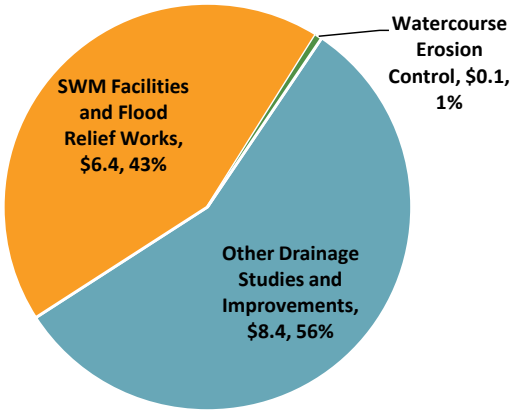
Additional funding sources, other than stormwater rate based are as follows:

- Development Charges are used to fund projects required due to growth
- Development Contributions can be used for storm drainage improvements
- Property Tax based funding
- Debt which relates to the construction of a stormwater management facility project

2016 Capital Budget

The proposed 2016 Gross Capital budget is $14.9 million. The allocation by major program is shown below. Storm drainage projects comprise the majority of the projects at $8.4 million or 56 per cent and stormwater management (SWM) facilities and flood relief works follow with $6.4 million or 43 per cent of the total funding.

2016 Proposed Capital Budget by Program $14.9 Million



Highlights of the 2016 proposed capital program are as follows:

Beginning in 2016, the implementation of the Stormwater Charge will enable 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 2016.

Stormwater management facility projects in 2016 include progressing with facilities recommended in the **Cooksville Creek Flood Mitigation Master Plan EA** along with a dredging project to improve water quality. This includes the continuation of construction of the **Cooksville Creek stormwater facility located north of Matheson Boulevard West** ($5.68 million) into 2016 and the design work for a new **Cooksville Creek stormwater facility near Mississauga Valley Boulevard and Central Parkway East** ($0.17 million) that will begin in 2016. Further, **dredging and rehabilitation of a stormwater facility within Fletchers Business Park** ($0.58 million) will occur.

As part of the initial phase for the asset management plan for stormwater infrastructure, capital projects to **rehabilitate trunk storm sewers** through design and construction ($0.35 million) will start in 2016. Other components of the plan, including condition assessments, design and renewal of both trunk and local storm sewers, are programmed for following years.

With the **Hurontario-Main Light Rail Transit (HMLRT) project moving forward, storm sewer condition assessments** ($1.5 million) along the route will occur in 2016 to identify the need for any storm sewer improvements.

Improvement **projects to address basement water infiltration in the Lisgar community** will continue into 2016 with the design and construction of storm sewer lining, dewatering of the utility trench and monitoring activities ($5.6 million). High priority projects that began in the Black Walnut Trail area continue to progress.

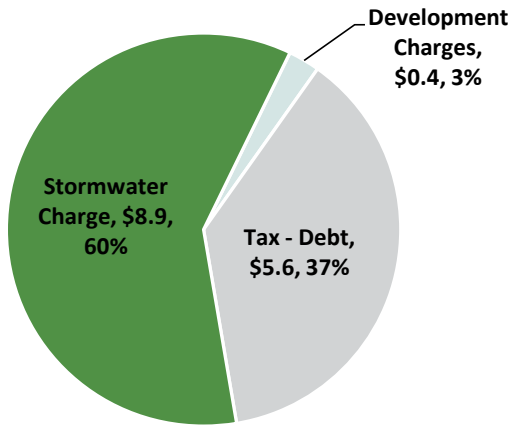
Low Impact Development (LID) is an innovative stormwater management approach that mimics nature by infiltrating, filtering, storing, evaporating and detaining runoff close to its source. Recognizing the benefit of this approach, **new projects that incorporate LID design techniques into roadways** ($0.25 million) will continue into 2016.

Low Impact Development (LID) projects, such as Elm Drive (above), are intended to mimic nature's stormwater management approach.

The following chart shows the funding sources for the 2016-2025 Capital Budget.

Nearly 60 per cent of the 2016 Capital Budget is financed from the stormwater charge. This is followed by $5.6 million or 37 per cent in debt which will be funded from the property tax. The debt financing is being used to fund improvements in Lisgar to address the basement water infiltration issue.

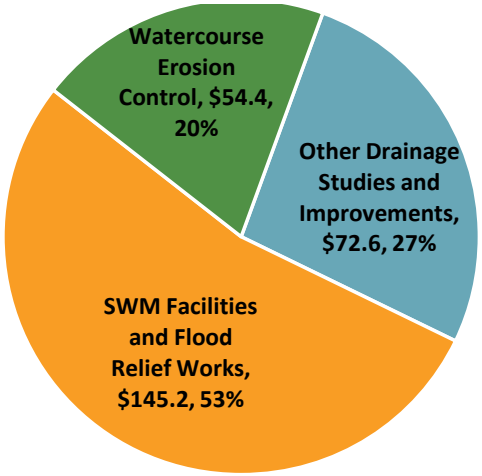
Funding Sources of the 2016 Proposed Capital Budget $14.9 Million



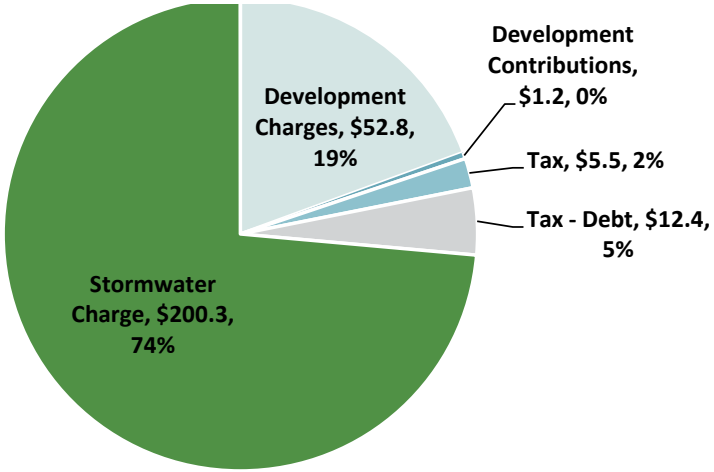
2016-2025 Capital Budget Forecast

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 of infrastructure required to adequately manage the City's stormwater. The 10 year capital budget totals $272.2 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.

2016-2025 Capital Budget Forecast by Program $272.2 Million



Financing the 2016-2025 Capital Budget Forecast $272.2 Million



Highlights of the 2017-2025 Capital Budget are as follows:

- $64.9 million for land acquisition, design and construction of Cooksville Creek stormwater management facilities to mitigate flood risk
- $54.4 million for watercourse erosion control projects including design and construction
- $18.2 million for new stormwater management facilities identified in the 2014 Development Charges Study to support development within the Ninth Line corridor
- $15.0 million for renewal of trunk and local storm sewers
- $12.3 million for implementation of mitigation measures to address basement infiltration issues in the Lisgar community
- $10.0 million for inspections and assessments of storm sewers
- $4.8 million in 2017 for the rehabilitation of corrugated metal pipe trunk sewers at various locations
- $3.3 million to complete master drainage plans and other stormwater studies
- $2.6 million to rehabilitate and dredge accumulated sediment from stormwater management facilities
- $2.3 million for new projects that incorporate LID design techniques into roadways
- $0.5 million in 2017 to support a new stormwater management facility dredging program to specifically dredge forebays

Watercourse erosion control projects that ensure public safety while protecting property and infrastructure are a key component of the 2017-2025 Capital Budget.

Performance Measures / Balanced Scorecard

A Balanced Scorecard identifies and measures key areas of an organization's performances.

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

Financial Measures

The average stormwater management operating cost of storm sewers is a measure that indicates the City's ability to manage cost pressures associated with aging infrastructure and climate change. Without compromising public safety, this service area will continue to apply best practices and find efficiencies in day to day operations while providing consistent service levels.

The replacement cost of the City's stormwater infrastructure is a measure that highlights the anticipated costs to replace all storm sewers, stormwater management facilities and creeks across the City. This measure highlights the financial need to address aging stormwater infrastructure.

Stormwater Charge

Average age and service life remaining of stormwater infrastructure are measures that highlight the need for the ultimate replacement of stormwater assets.

Annual rate per stormwater billing unit is a measure of how the stormwater charge will be calculated and applied to properties. This rate will be utilized to fund stormwater capital, operations and maintenance, stormwater pipe reinvestment and administration costs.

Customer Measures

Citizen satisfaction is a measure that indicates how satisfied residents are with environmental planning, road maintenance and traffic flow.

Employee Measures

Overall employee engagement is a measure which indicates the extent to which employees value, enjoy and believe in what they do. The employee engagement survey is conducted every two years.

Employee engagement survey participation is a measure indicating the percentage of employees participating in the Employee Engagement Survey. This statistic is measured every two years. It is important to the City that employees continue to participate in this survey and express how they feel about working at the City.

Employee engagement with professional and personal development is a measure which indicates employee's opportunities for personal and professional growth. This statistic is measured every two years as part of the Employee Engagement Survey.

Business Process Measures

With Stormwater now a stand-alone service area, recommendations may be made for future business process measures.

Balanced Scorecard

Measures for Stormwater[1]		2016	2017	2018
Financial:				
Average stormwater management operating cost per km of storm sewer[2]		$1,280	$1,310	$1,340
Replacement cost of stormwater infrastructure ($ billions)	Storm Sewers	$1.80 B	$1.84 B	$1.88 B
	Stormwater Management Facilities	$0.09 B	$0.09 B	$0.09 B
	Watercourses	$0.08 B	$0.08 B	$0.08 B
	TOTAL REPLACEMENT COST	*$1.97 B*	*$2.01 B*	*$2.05 B*
Stormwater Charge:				
Average age of stormwater infrastructure (years)	Storm Sewers	35.9	36.9	37.9
	Stormwater Management Facilities	20.7	21.7	22.7
	Watercourses	18.0	19.0	20.0
	TOTAL AVERAGE	*25.9*	*26.9*	*27.9*
Average service life remaining of stormwater infrastructure (years)	Storm Sewers	63.2	62.2	61.2
	Stormwater Management Facilities	17.7	16.7	15.7
	Watercourses	18.0	17.0	16.0
	TOTAL AVERAGE	*33.0*	*32.0*	*31.0*
Annual rate per stormwater billing unit		$100	$102	$104
Customer:				
Average citizen satisfaction rating for roads, storm drainage and watercourses[3]		75%	75%	75%
Employee/Innovations and Learning Measures:				
Overall Employee Engagement Survey Participation[4]		75%	75%	75%
Overall Job Engagement[4]		74%	74%	74%
Employee satisfaction[4]		77%	77%	77%
Internal Business Process Measures:				
Recommendations may be made for future Stormwater scorecards				

1 Recommendations may be made to provide existing scorecards solely for Stormwater.
2 MPMP Program definitions were used.
3 This indicator is now measured as a percentage out of 100 instead of 10 response units
4 Survey results from the 2012 Employee Engagement Survey reflect the totals for Engineering and Works. Transportation Infrastructure Planning and The Transportation Office and Business Services, whereas the previous results were for all of Transportation and Works

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Reserves and Reserve Funds

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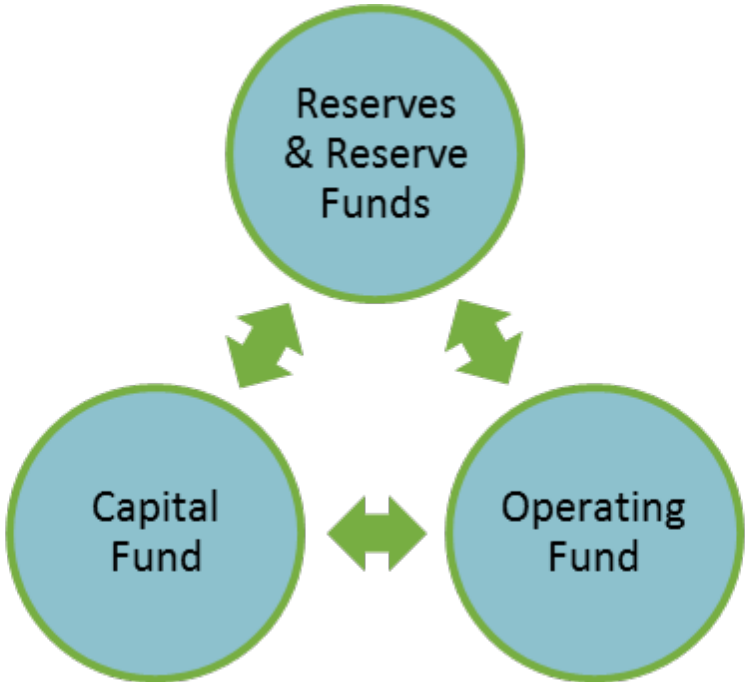
Reserves and Reserve Funds

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 new and 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

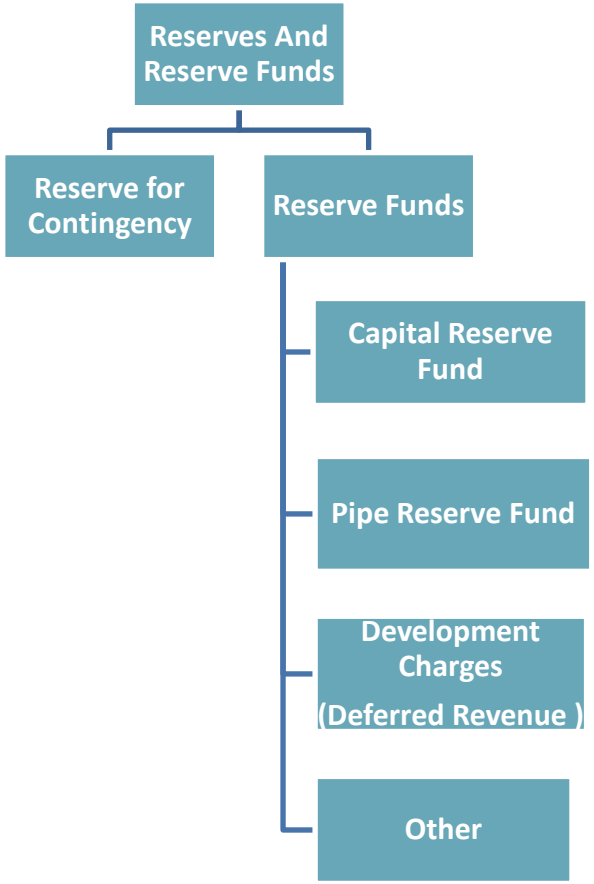
Reserve Funds are segregated, restricted and provide for capital emplacements.

With the introduction of the new stormwater charge, two new Reserve Funds have been created. 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 2016 Reserve and Reserve Funds as compared to 2015. Detailed descriptions of each Reserve and Reserve Fund can be found at the end of this section

Reserve and Reserve Funds Summary

2016 Operating and Capital Reserve Funds	2015 Estimated Balance ($000's)	2016 Projected Balance ($000's)	Change ($000's)	% Change
Stormwater Reserve for Contingency		600	600	N/A
Stormwater Capital Reserve Fund		7,125	7,125	N/A
Stormwater Pipe Reserve Fund		3,146	3,146	N/A
Stormwater Deferred Fund (Development Charges)	21,647	25,793	4,147	19%
Stormwater - Other Reserve Funds	23,578	24,235	657	3%
Total	**45,225**	**60,899**	**15,674**	**35%**

Note: Numbers may not add due to rounding

The 2016 balances in the Reserves and Reserve Funds have increased by $15.6 million or 35 per cent.

The projected increased has occurred primarily due to the addition of the new stormwater reserve and reserve funds which accounts for the majority of the increase.

Transfers to Stormwater Reserve and Reserve Funds:

The 2016 Stormwater Operating Program recommends transfer to the Reserve and Reserve Funds totalling $19.8 million as follows:

- $16.1 million to Stormwater Capital Reserve Fund
- $3.1 million to the Stormwater Pipe Reserve Fund
- $0.6 million to the Stormwater Reserve for Contingency which will provide for $500,000 for potential fluctuations in revenue and expenses and $100,000 for potential costs associated with the Region of Peel's new billing system

Transfers from Reserve Funds:

The 2016 Stormwater Capital Program recommends transfer from the Reserves and Reserve Funds to capital totalling $9.3 million as follows:

- $8.9 million from the Stormwater Capital Reserve Fund
- $0.4 million from the Developer Contributions – Stormwater Drainage

Continuity Schedule of Stormwater Reserve and Reserve Funds

Reserve and Reserve Funds	Balance Jan 1, 2015 ($000's)	2016 Projected Contributions ($000's)	2016 Projected Interest ($000's)	2016 Projected Expenditures ($000's)	2016 Projected External Sources ($000's)	Projected Balance Dec 31, 2016 ($000's)
Stormwater Total Operating Reserve						
Stormwater Reserve for Contingency	**0**	600	0	0	0	**600**
Stormwater Total Operating Reserve	**0**	**600**	**0**	**0**	**0**	**600**
Stormwater Total						
Stormwater Capital Reserve Fund	**0**	16,071	-8	-8,938	0	**7,125**
Stormwater Pipe Reserve Fund	**0**	3,100	46	0	0	**3,146**
Stormwater Total	**0**	**19,171**	**38**	**-8,938**	**0**	**10,271**
Stromwater Total Deferred Funded						
Development Charges Reserve Fund	**21,647**	0	384	-385	4,148	**25,794**
Stormwater Total Deferred Funded	**21,647**	**0**	**384**	**-385**	**4,148**	**25,794**
Total Other Funded						
Debt Management Reserve Fund - Stormwater Capital	**487**	0	14	0	0	**501**
Developer Contributions Reserve Fund	**3,186**	0	89	0	0	**3,274**
General Mun. Dev. Reserve Fund-Lot Levy	**19,313**	0	538	0	0	**19,851**
General Mun. Dev. Reserve Fund-Other	**592**	0	16	0	0	**609**
Stormwater Total Other Funded	**23,578**	**0**	**657**	**0**	**0**	**24,235**
Stormwater Total Non-Tax Supported Reserve Funds	**45,225**	**19,771**	**1,079**	**-9,323**	**4,148**	**60,899**

Note: Numbers may not balance 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 2015 dollars for the 2016 to 2025 capital forecast.

Stormwater Capital Reserve Fund

	2016 ($000's)	2017 ($000's)	2018 ($000's)	2019 ($000's)	20120 ($000's)	2021 ($000's)	2022 ($000's)	2023 ($000's)	2024 ($000's)	2025 ($000's)	2016-2025 Total ($000's)
Opening Balance	0	7,125	5,006	8,539	10,024	7,733	11,355	17,685	23,105	18,633	**0**
Capital Infrastructure Levy	16,071	23,180	22,110	22,110	20,837	21,254	21,679	22,112	22,555	23,006	**214,914**
Interest Income (Charge)	-8	-168	-53	-5	-4	106	303	471	323	228	**1,193**
Total Available Balance	16,063	30,137	27,063	30,644	30,857	29,093	33,337	40,268	45,983	41,867	216,107
Allocation to Projects	8,938	25,131	18,524	20,620	23,124	17,738	15,652	17,163	27,350	26,020	**200,260**
Closing Balance	**7,125**	**5,006**	**8,539**	**10,024**	**7,733**	**11,355**	**17,685**	**23,105**	**18,633**	**15,847**	**15,847**

Note: Numbers may not add due to rounding

This is a new reserve fund 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 capital infrastructure levy will be fully funded from the stormwater charge and fund $216 million in projects over the 10 year period. The annual stormwater charge, currently at $100 per billable unit, will need to increase to maintain the proposed capital spending included in this plan.

The closing balances range between $5.0 to $23 million. The target for the closing balance is approximately $21.6 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 (BR# 2056) included in the 2016 Budget.

This new reserve fund will be used to fund the eventual replacement of the City's stormwater pipe network. The estimated replacement costs 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 starting at $3.1 million and increasing to $6.1 million, the annual stormwater charge, currently at $100 per billable unit, 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 $63.5 million with $54 million from contributions and $9.5 million from interest.

	2016 ($000's)	2017 ($000's)	2018 ($000's)	2019 ($000's)	20120 ($000's)	2021 ($000's)	2022 ($000's)	2023 ($000's)	2024 ($000's)	2025 ($000's)	2016-2025 Total ($000's)
Opening Balance	0	3,146	7,409	12,844	18,458	25,368	32,505	39,878	47,495	55,363	**0**
Capital Infrastructure Levy	3,100	4,100	5,100	5,100	6,100	6,100	6,100	6,100	6,100	6,100	**54,000**
Interest Income (Charge)	46	163	335	514	810	1,037	1,273	1,517	1,768	2,027	**9,490**
Closing Balance	**3,146**	**7,409**	**12,844**	**18,458**	**25,368**	**32,505**	**39,878**	**47,495**	**55,363**	**63,490**	**63,490**

Note: Numbers may not add due to rounding

Stormwater Developer Charges – Stormwater Management

The following tables summarize the Stormwater Developer Charges – Stormwater Management Reserve Fund opening balance, contributions, withdrawals, allocation to projects and closing balance. It is based on committed funds in 2015 dollars for the 2016 to 2025 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.

	2016 ($000's)	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)	2016-2025 Total ($000's)
Opening Balance	21,647	25,793	29,395	25,745	20,481	13,481	11,172	11,539	6,243	4,579	**21,647**
Development Revenue	4,148	4,187	3,434	3,460	3,487	3,514	3,541	2,787	2,803	2,817	**34,178**
Interest Income (Charge)	384	510	635	505	333	276	285	154	113	157	**3,349**
Total Available Balance	26,178	30,490	33,464	29,710	24,301	17,270	14,997	14,480	9,159	7,553	59,174
Allocation to Projects	385	1,095	7,720	9,229	10,820	6,099	3,458	8,237	4,580	1,190	**52,811**
Closing Balance	**25,793**	**29,395**	**25,745**	**20,481**	**13,481**	**11,172**	**11,539**	**6,243**	**4,579**	**6,363**	**6,363**

Note: Numbers may not add due to rounding

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Appendices

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Appendices

Appendix 1 – Listing of Budget Requests

Budget Request #: 2056

Proposed Initiative

Asset Management Plan for Stormwater Infrastructure

Department

Transportation & Works Department

Service Area

Stormwater

Required Annual Operating Investment

Impacts ($000s)	2016	2017	2018
Gross Expenditures	53.1	110.2	661.7
Reserves & Reserve Funds	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0
Tax Levy Requirements	53.1	110.2	661.7
* Net Change in $		57.1	551.5
FTEs	1.0	1.0	3.0

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

Required Capital Investment

Total Capital ($000s)	2015 & Prior	2016	2017	2018	2019 & Beyond
Expenditures	0.0	100.0	2,060.0	3,080.0	23,210.0

Why Staff Recommend this Initiative

At a 2016 replacement value of $1.97 billion, storm drainage infrastructure is the second largest asset owned and operated by the City. It is estimated that 18 kilometres of trunk and 428 kilometres of the local storm sewer network is over 40 years of age and has not been sufficiently assessed as to its physical condition. As the storm sewer network ages, it is critical that the City deploy a more rigorous inventory and assessment program to prevent system failure.

Details of Service Change

This request identifies the need to develop and implement a comprehensive asset management approach for the storm drainage infrastructure. Building on the success of existing management systems and approaches for roads, bridges and City facilities, this service area's goal is to develop inventories and assessment programs for all major stormwater infrastructure in the same manner. While the asset management plan will be initiated in 2016, it is a long-term strategy that will be implemented in phases. The first phase includes resources to sufficiently inventory and assess the condition of 160 kilometres of trunk storm and 2275 kilometres of local storm sewers over the next five years. The second phase includes resources to deploy the necessary technology required to efficiently and effectively manage the entire storm drainage network and ensure that system monitoring and reporting can take place. It is important to note that eligibility for future provincial and federal funding will depend on the City creating a sustainable Asset Management Plan.

Service Impact

The major service change is that the City will be 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. Residents will see an improvement in the way we manage and maintain our physical infrastructure assets and they will also see an improvement in the way decision-making takes place for stormwater-related infrastructure investment. The management plan and system will help to support and manage the Stormwater Rate Program.

Budget Request #: 2294

Proposed Initiative	Department	Service Area
Storm Drainage Engineer	Transportation & Works Department	Stormwater

Required Annual Operating Investment

Impacts ($000s)	2016	2017	2018
Gross Expenditures	85.3	119.4	121.7
Reserves & Reserve Funds	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0
Tax Levy Requirements	85.3	119.4	121.7
* Net Change in $		34.1	2.3
FTEs	1.0	1.0	1.0

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

Required Capital Investment

Total Capital ($000s)	2015 & Prior	2016	2017	2018	2019 & Beyond
Expenditures	0.0	0.0	0.0	0.0	0.0

Why Staff Recommend this Initiative

Staff resources within Environmental Services are currently being utilized at or above capacity, in part, due to staff obligations to the stormwater charge. Further, the new stormwater charge funded capital program will double as compared to the past property tax supported program. To meet the above demands and strive to ensure that the increased expectations from residents and businesses on the City are met, an additional Storm Drainage Engineer position will be required.

Details of Service Change

In 2016, the City will be launching its stormwater charge which will be administered under Environmental Services.

This charge will be based on an Interim Service Level which is more comprehensive than the existing service level and will meet all current stormwater related capital, operation and maintenance needs while also starting to collect funds for future pipe renewal.

Through the implementation of the stormwater charge, the stormwater capital program will double from $120 Million in the 2014-2023 capital program to $260 Million in the 2016-2025 capital program.

Service Impact

The proposed addition of a Storm Drainage Engineer will contribute to business planning, capital planning / programming and delivery and thus ensure that the City can deliver the needed Stormwater capital program.

Budget Request #: 2295

Proposed Initiative	Department	Service Area
Stormwater Charge Program Support	Transportation & Works Department	Stormwater

Required Annual Operating Investment

Impacts ($000s)	2016	2017	2018
Gross Expenditures	0.0	0.0	0.0
Reserves & Reserve Funds	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0
Tax Levy Requirements	0.0	0.0	0.0
* Net Change in $		0.0	0.0
FTEs	1.0	1.0	0.0

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

Required Capital Investment

Total Capital ($000s)	2015 & Prior	2016	2017	2018	2019 & Beyond
Expenditures	0.0	0.0	0.0	0.0	0.0

Why Staff Recommend this Initiative

In May 2015, Council endorsed the Corporate Policies and Fees and Charges Bylaw for the Stormwater Charge. Stormwater Charge billing will begin in 2016. A new business unit with support services is being put in place to manage the Stormwater Charge, including its programs, data systems and customer service needs. This initiative identifies additional contract staff resources needed to address the expected spike in data management and customer service efforts during the first billing year.

Details of Service Change

Management of the Stormwater Charge and its related programs, data, customer service needs and service level agreements is the responsibility of the Stormwater Charge Program Coordinator in the Environmental Services Section. During 2016, the first year of billing, a higher than normal volume of customer service requests, stormwater credit applications, exemption inquiries, education and outreach needs, and data management and reporting requirements is anticipated. This additional staff resource will be dedicated to the Stormwater Charge Program on a contract basis to assist with the responsibilities of the Program Coordinator to ensure timely responses are made to customer service requests, applications and inquiries, and to ensure that the integrity of the stormwater data and its management systems is maintained, such as through intensive data reporting, reconciliation and business process monitoring and improvement activities, as the program stabilizes.

Service Impact

This resource will represent one-time pressures of $74k and $27k in 2016 and 2017, respectively, to the Stormwater Charge Implementation capital project. Without this resource, it is anticipated that response times to customer service requests, credit applications and other inquiries will not meet expected levels of service, the integrity of the stormwater assessment data will be at risk, education and outreach activities will less robust, and the overall stabilization of the business processes governing the program will take longer than desirable to achieve.

Appendix 2 – Proposed Operating Budgets

	2016		2017 Forecast		2018 Forecast	
Program Description	**Gross Cost**	**Net Cost**	**Gross**	**Net**	**Gross**	**Net**
Stormwater Administration Costs	1,231,300	1,231,300	1,118,201	1,118,201	1,124,874	1,124,874
Stormwater Capital	17,602,851	17,602,851	24,711,700	24,711,700	23,641,819	23,641,819
Stormwater Pipe	3,100,000	3,100,000	4,100,000	4,100,000	5,100,000	5,100,000
Stormwater Exemptions & Credits	0	3,300,000	0	3,366,000	0	3,433,000
Stormwater Operations and Maintenance	7,976,422	7,811,848	7,829,673	7,665,099	8,644,881	8,480,307
Total	**29,910,573**	**33,046,000**	**37,759,574**	**40,961,000**	**38,511,574**	**41,780,000**

Note: Excludes revenue accrual, numbers may not balance due to rounding

Appendix 3 – 2016 Capital Projects

Program: Other Drainage Studies and Improvements

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00115	Monitoring and minor modification of Storm Water Management Facilities - Various Locations	80	0	80	DCA -Storm Water Management Reserve Fund
TWSD00226	Low Impact Development for Roads and Stormwater Sustainable Practices - Various Locations	250	0	250	Storm Water Management - Cap Res Fund
TWSD00242	Stormwater Financing Study, Phase 2, Stages 3 and 4	310	0	310	Storm Water Management - Cap Res Fund
TWSD00319	Storm Sewer Oversizing - Various Locations	270	0	270	DCA -Storm Water Management Reserve Fund
TWSD00341	Lisgar Improvements - Storm Sewer Lining and Dewatering Utility Trench	5,600	0	5,600	Tax - Debt-Other
TWSD00342	Rain Gauge Improvements	60	0	60	Storm Water Management - Cap Res Fund
TWSD00364	Corrugated Metal Pipe Rehab - Various	250	0	250	Storm Water Management - Cap Res Fund
TWSD00365	HMLRT Storm Sewer Condition Assessment	1,500	0	1,500	Storm Water Management - Cap Res Fund
TWSD00366	Detailed Design Works Renew Trunk Sewers	100	0	100	Storm Water Management - Cap Res Fund
Total		**8,420**	**0**	**8,420**	

Note: Numbers may not balance due to rounding.

Program: SWM Facilities and Flood Relief Works

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00199	New Facility - Cooksville Creek Pond #2101 - Mississauga Valley Boulevard and Cntrl Pkwy (Design)	167	0	167	Storm Water Management - Cap Res Fund,DCA -Storm Water Management Reserve Fund
TWSD00207	Land/Cooksville Creek SWM Pond#3702/N of Matheson Blvd (Cash Flow)	5,680	0	5,680	Storm Water Management - Cap Res Fund
TWSD00243	SWM Pond Dredging and Rehabilitation - Pond 4404 (Fletchers Business Park)	575	0	575	Storm Water Management - Cap Res Fund
Total		**6,422**	**0**	**6,422**	

Note: Numbers may not balance due to rounding.

Program: Watercourse Erosion Control

Project Number	Project Name	Gross Cost ($000's)	Recovery ($000's)	Net Cost ($000's)	Funding Source
TWSD00110	Minor Erosion Control Works - Various Locations	80	0	80	DCA -Storm Water Management Reserve Fund,Storm Water Management - Cap Res Fund
Total		**80**	**0**	**80**	

Note: Numbers may not balance due to rounding.

Appendix 4 – Summary of Full Time Equivalents

Program	2016	2017	2018
Stormwater Operations	10.1	10.1	9.1
Stormwater Planning	13.3	13.3	15.3
Total Service Distribution	**23.4**	**23.4**	**24.4**

Note: Numbers may not balance due to rounding.

Appendix 5 – Multi-year Funded Capital Projects

Project Number	Project Name	Periods	Comments	Total Amount ($M)
TWSD00197	Cooksville Creek Erosion Control-Behind Mineola Gardens, from Willa Road to Orano Ave (Construct)	2015 to 2017	Previously approved multi-year funded project. Shift $0.67M from 2016 to 2017.	$1,340
TWSD00329	Moore Creek erosion control - Lakeshore Road West (EA/Design)	2015 to 2017	Previously approved multi-year funded project. Additional $10K requested for 2017.	$420
TWSD00364	Corrugated Metal Pipe Rehab - Various	2016 to 2017	New	$5,000
Total				**$6,760**

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

Transfers from the Operating Program to the following Reserve and Reserve Funds in 2016 are:

- $16,070,851 to Stormwater Capital Reserve Fund
- $3,100,000 to Stormwater Pipe Reserve Fund
- $720,000 to Tax Capital Reserve Fund
- $600,000 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

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Glossary

Term	Description
2015 Base Budget	• This represents the net budget which was transferred from the property tax funded budget
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 longterm 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.
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
City	• The Corporation of the City of Mississauga.

Term	Description
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.
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.
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.

Term	Description
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.
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.
HMLRT	• Light Rapid Transit. A planned aboveground light rail line used as public transit.
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.

Term	Description
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.
Operating Budget	• A budget for general revenues and expenditures such as salaries, utilities and supplies.
Operating Program	• Provides funding to departments for short-term expenditures.
Operations and Maintenance Program	• Comprised of the following Operating Budget Programs: o Stormwater Operations and Maintenance, o Stormwater Administration Costs, and o Stormwater Exemptions and Credits
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

Term	Description
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.
Place of Worship	• A property recognized as such by the Municipal Property Assessment Corporation (MPAC) by the designation of an MPAC property code of 700 or 701 (Place of Worship With/Without a Clergy Residence), with the property tax/class qualifier “EN”, meaning exempt.
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.
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.

Term	Description
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 Use 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 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.
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.
Stormwater Capital Reserve Fund	• Provides for transfers to a Stormwater Capital Reserve Fund that is used in four ways: o (i) to fund the 2016 capital projects; o (ii) to set aside funds for future capital infrastructure replacement needs; o (iii) debt repayments associated with financing of capital projects; and o (iv) repayment to the tax based for investment in the initial stormwater charge start-up costs.
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.

Term	Description
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.
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 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.
Stormwater 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.
Stormwater Rate	• The amount of money per billing unit charged over a prescribed period of time.

Term	Description
Stormwater Service	• Comprised of two main programs that include the Operations and Maintenance Program and Infrastructure Renewal Program. A number of sub-programs exist within these programs which include Stormwater Operations and Maintenance, Stormwater Administration Costs, Credit and Exemption Program, Transfers to Stormwater Capital Reserve Fund and Transfer to the Stormwater Pipe Reserve Budget Programs. • Refer to Operations and Maintenance 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.
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.

Term	Description
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.
Veterans' Organization Property	• Properties recognized by the City as being used and occupied by the three Mississauga Legion Clubs and the Army, Navy & Air Force Veteran's Club.
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.