

2022 DEVELOPMENT CHARGES BACKGROUND STUDY UPDATE: STORMWATER DRAINAGE COMPONENT **CITY OF MISSISSAUGA**

Submitted by: **KSGS Engineering Corp.**
470 Hensall Circle, Unit 300
Mississauga ON L5A 3V4

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EXECUTIVE SUMMARY

KSGS Engineering Corp. was retained by the City of Mississauga to carry out an update to the Storm Drainage Development Charge ("DC") Background Study.

Since 1999, the City has undertaken an update of the DC By-laws in five (5) year cycles. Therefore, after completion of the 2019 update, next update would have been in 2024. However, since the introduction of Bill 197, municipalities have until September 2022 to update their DC By-laws to realize the benefits relating to the Community Benefit Charge ("CBC"). The CBC will replace the community benefits currently administered through Section 37 of the Planning Act. The City concluded that it is both viable and prudent for the City to perform a 2022 update of the DC Background Studies.

With this 2022 update, the next five-year update is due in 2027.

This update is based on the 2022 capital plan data provided by the City. All of the following sub-categories of the drainage study deemed growth related have been updated to a varying extent in accordance with the 2022 capital plan.

- 1) Stormwater drainage related background studies and monitoring;
- 2) Storm sewer oversizing;
- 3) Stormwater management which includes stormwater management facility retrofits, flood relief and new stormwater management facilities;
- 4) Stormwater conveyance; and,
- 5) Creek erosion works, which include identified works and future works.

There is a slight increase in vacant land supply based on an analysis completed by Hemson Consulting for the City in the 2022 update. This increase was a result of 31.6 hectare of "recovered" land from proposed floodplain mitigation in the Little Etobicoke Watershed. The total vacant land supply was calculated to be 1,606 hectares or 5.6% of the total area of the City.

The updated total cost of growth-related works calculated in this study is \$64,777,671. In netting out the reserves, the resulting total stormwater management capital cost to be recovered through development charges is \$10,040,476. Based on the available development lands noted above, the storm drainage component of the development charge is \$6,252 per hectare.

1. DEVELOPMENT CHARGE UPDATE - STORMWATER DRAINAGE

1.1 Introduction

KSGS Engineering Corp. was retained by the City of Mississauga to carry out this 2022 Storm Drainage Development Charge Background Study ("Storm DC").

Since 1999, the City has undertaken an update of the DC By-laws in five (5) year cycles. Therefore, after completion of the 2019 update, next update would have been in 2024. However, since the introduction of Bill 197, municipalities have until September 2022 to update their DC By-laws to realize the benefits relating to the Community Benefit Charge ("CBC"). The CBC will replace the community benefits currently administered through Section 37 of the Planning Act. The City concluded that it is both viable and prudent for the City to perform a 2022 update of the DC Background Studies.

Updates to this report are based on the 2022 capital plan provided by the City and are primarily on timelines for various projects and corresponding EA/design and construction costs.

A long-term planning horizon from 2022 to 2041 has been used for the purposes of the Storm DC calculation. Consistent with the City's historical practice, the Storm DC calculation is calculated as a cost per net hectare, which in part recognizes that storm drainage is a function of the impervious area within a development parcel.

The Storm DC considered a list of growth-related capital projects between the years 2022 and 2041. Each project included the following information:

- Project name
- Work category
- Anticipated year of work
- The type of work (i.e. study, EA, design, land acquisition, construction etc.), and
- Estimated cost

1.2 Approach to Study Update

This study update does not make any fundamental structural changes to the previous approach, i.e. increasing or decreasing the scope of development charges in any of the sub-categories. As such, the scope of this study update was to bring the development related projects in-line with the City's 2022 capital plan for the following categories:

- Watercourse Erosion Control (identified and future)
- Conveyance (including channelization and culvert upgrades)
- Stormwater Management Facilities (new and retrofits)
- Storm Sewer Oversizing
- Studies

In general, the following updates have been made:

- Schedule changes for EA/design and construction on projects that were impacted by the COVID-19 pandemic
- Revising project costs to reflect scheduling and better-defined scope of works
- Addition of new development related projects that were previously not identified
- Deletion of projects identified in the capital plan that are either completed or will be funded by other sources

1.3 Analysis for Available Development Lands

The storm water management development charge is calculated as a uniform charge per net hectare of chargeable vacant land. The amount of chargeable vacant land based on an inventory of all the vacant residential, non-residential, mixed use lands and lands available for redevelopment has been updated by Hemson Consulting. The analysis has incorporated 31.6 hectares of recovered floodplain land within the Little Etobicoke Creek watershed based on proposed mitigation works forecast in the City's capital plan that is in the "study" stage at the time of this writing. **Figures 1 to 3** below show the locations and estimated areas of the recovered floodplain lands.

The total future net developable area is 1,606.07 hectares after adjusting for the redevelopment potential of occupied lands. This land will be subject to the stormwater development charge and represents 5.6% of the total area of the City, as noted in **Table 3.1**.

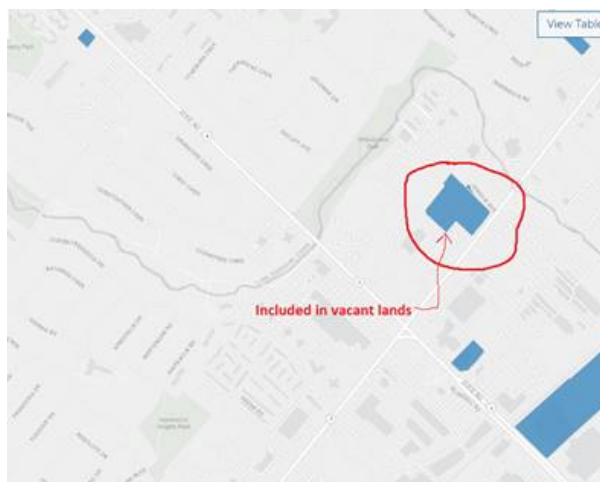


Figure 1 – Vacant Land

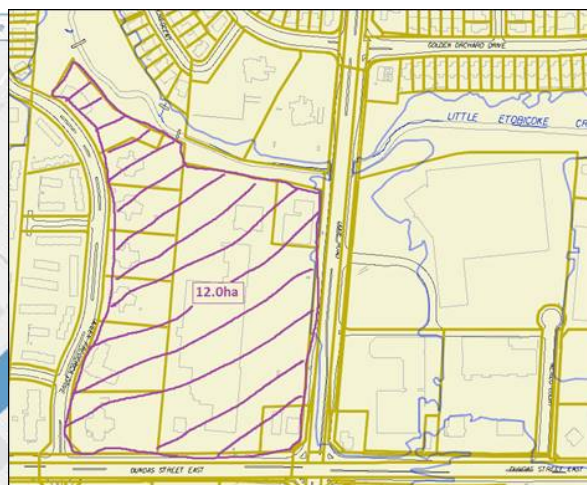


Figure 2 – Recovered Floodplain Land (12ha)



Figure 3 – Recovered Floodplain Land (14.7ha + 4.9ha)

2. STORMWATER DRAINAGE

The following stormwater drainage components were re-evaluated to be updated in the current study:

- 1) Watercourse Erosion Control (identified and future)
- 2) Conveyance (including channelization and culvert upgrades)
- 3) Stormwater Management Facilities (new and retrofits)
- 4) Storm Sewer Oversizing
- 5) Studies

Each of the above is further discussed in the sections below with respect to growth related works and apportionment of cost. In the calculations, it should be noted that the latest Non-Residential Building Construction Price Index (NRBCPI) data was obtained from Statistics Canada, where applicable, to bring the project cost as close to “Present Value” as possible. As of the writing of this 2022 update, no further NRBCPI data has been published since the 2019 DC update was found from Statistics Canada.

Unit rates for future creek erosion control works and SWM pond retrofit works have now been based on 2021 NRBCPI data, as the 2019 DC update used 2017 NRBCPI data.

2.1 Erosion Control Works

Identified Works

Creeks and water conveyance channels in the City of Mississauga continue to experience erosion. The City has had to carry out erosion control works based on priorities identified in various background studies and through annual condition assessments.

The priority projects to be implemented in the City’s Capital Works Budget/Forecast (“Capital Plan”) are shown in **Table 2.1**. If applicable, the supporting study for the erosion control work is noted in the second column of Table 2.1. The development charge portion of each project is calculated based on the percentage of available development lands within the respective watershed where the project is located, as discussed in Section 1.3 above and shown in **Table 3.1**.

The current update incorporates revised project timelines for EA/design and construction as per the 2022 Capital Plan. Furthermore, the corresponding costs related to EA/design, construction and land purchase have also been updated.

Future Works

Future erosion control works are those anticipated in the future but not yet identified in the City’s Capital Plan. The total length of future erosion control was established from desktop assessment and field investigation during the 2014 development charges study update. The method being used to carry out the 2022 update was consistent with that used in the 2014 and 2019 study update. The total length has netted out the quantity

completed by the City prior to the 2022 update. The total length in this 2022 update is 27,129m. This figure is down from 27,239m as noted in the 2019 update. Refer to **Table 2.2** for details.

The cost of future erosion works to be allocated to development charges is calculated based on 5.6% of total estimated cost, as this percentage represents an average of available development lands City-wide, as shown in **Table 3.1**.

The estimated unit rate for creek restoration works is based on past projects of a similar nature from various local and regional municipalities as shown in **Table 2.3**. The original data in **Table 2.3** was taken from the 2014 study update. Additional projects completed up to the 2019 update were added to that table to bring the average unit cost more up to date. In addition, the estimated unit rate used in this 2022 update was indexed based on NRBCPI statistics projected up to 2021.

Minor Erosion Control Works

Item **C** in **Table 2.1** is related to minor erosion control works, the total cost is based on a fixed annual rate for the next 20 years at \$330K per year with exception to the year 2022, for which the rate is \$150K based on the 2022 capital plan. The development charges related portion is based on 5.6% as this percentage represents an average of available development lands City-wide, as shown in **Table 3.1**. The DC apportionment changed from 5.4% to 5.6% due to 31.6 hectares of recovered floodplain land in the Little Etobicoke Creek watershed.

2.2 Stormwater Conveyance

Updates to the stormwater conveyance projects are depicted in **Table 2.4**. All of the culvert improvement projects identified within the Cooksville watershed in the previous capital plan are now removed from the 2022 capital plan. New projects within the Little Etobicoke Creek watershed are included in this 2022 DC update. It should be noted that the DC apportionment changed from 4.0% to 6.1% for projects within the Little Etobicoke Creek watershed due to 31.6 hectares of recovered floodplain land.

2.3 Stormwater Management Facilities

Stormwater management end-of-pipe facilities are a key component in the stormwater development charge study. Outlined below are three (3) sub-components identified in past development charge studies that were reviewed in this current update.

- 1) New SWM Facilities.
- 2) Stormwater Quality Retrofit.
- 3) Flood relief.

1) New SWM Facilities

Updates to the New stormwater management facilities in **Table 2.5** according to the City's Capital Plan have been undertaken. The main updates are related to schedules and estimated costs. The DC apportionment remains at 100% with exception to the Sheridan Park Corporate Centre stormwater management facility where 6.5% of the cost is being attributed to available development lands, as this facility will serve municipal lands beyond the proposed future development.

SWM Ponds #0401, 0402 and 0403 have been removed from this DC update, in order to align with pending updates to the City's Southdown Master Drainage Study.

2) Stormwater Quality Retrofits

Building upon the approach adopted in the 2019 update and the data from that, one (1) new project was identified in the 2022 capital plan; however, two (2) projects that were identified in the 2019 update are now deleted. The following is a list of revised items.

- i. New item - SWM Quality Retrofit – Etobicoke Creek Storm Outfall – Britannia Road East and Netherhart Road

This work is for retrofitting the storm outfall. Design is forecasted to take place in 2024 and construction in 2026. The DC amount apportioned is based on the percentage of available development lands in relation to the total area of the watershed where the project is located. **Refer to Table 2.5.**

- ii. Deleted item - SWM Quality Retrofit - Etobicoke Creek Storm Outfall - Derry Road East and Dixie Road
- iii. Deleted item - SWM Quality Retrofit- Credit River SWM Pond #4506 - Creditview Road & Argentia Road

The DC portion for SWM Pond #3602 retrofit is revised to 6.1% from 4.0% as the portion of developable land in the Little Etobicoke Creek watershed is increased by 31.6 hectares from recovered floodplain land. For details, refer to development lands calculations performed by Hemson Consulting in **Table 3.1.**

3) Flood Relief Works

Item **C** of **Table 2.5** outlines the flood relief projects identified in the City's Capital Plan for providing flood relief. The current update incorporates revised timelines for EA/design and construction. Furthermore, the estimated project costs for EA/design, construction and land purchase were also updated.

The portion of total cost of providing flood relief that is attributable to stormwater development charges is based on the available development lands in the watershed. The available development lands were determined to be 4.7% in the Cooksville Creek watershed. This apportionment percentage remains unchanged from the 2019 update.

2.4 Storm Sewer Oversizing

Storm sewer oversized is a process to improve existing storm sewer systems to accommodate historically induced growth. Based on past history, large sewers generally service drainage areas that are owned by a number of land owners. In the City of Mississauga, trunk sewers are those with a diameter greater than 1500 mm. The cost component of the pipe greater than a 1500 mm pipe is eligible for stormwater development charges.

Table 2.6 depicts the yearly cost estimate for storm sewer oversized. The storm sewer oversized project at South of Eglinton Ave. between Ninth Line & Ridgeway Dr. for future development north of Eglinton Ave. is deleted from the 2022 capital plan. The other items storm sewer oversized items are still 100% eligible for the stormwater development charges as it is directly related to growth.

2.5 Studies

The full cost of development charges study updates is attributable to growth, therefore is eligible to be funded by stormwater management development charge. For studies that have a growth element but also have benefit-to-existing, the apportioning has been allocated based on a City-wide percentage. A summary of studies applicable to stormwater development charges is shown in **Table 2.7**, and the apportioning has been annotated accordingly for clarity.

The project related to Mississauga Stormwater Quality Control Strategy Update (2023, 2028) was removed from the 2022 capital plan as the City is relying on the pending Stormwater Master Plan, titled “Build Beautiful,” to provide over-arching direction. Build Beautiful has been informed by prior recommendations of the Mississauga's Stormwater Quality Control Strategy Update.

2.6 Asset Inventory

The City's asset management program is evolving, but an extract of the Tangible Capital Asset inventory has been included in **Appendix A**. This information is included to contrast the capital plan upon which the DC program is based. This information cites construction of both growth-related and non-growth related assets and excludes any assets constructed by developers as part of their local servicing agreements.

3. SUMMARY OF 2022 STUDY UPDATE

The purpose of this 2022 Storm Drainage Development Charge Background Study was to complete an update of the storm DC subsequent to changes to the Community Benefit Charge (“CBC”) triggered by Bill 197.

The following stormwater drainage components are deemed to be growth related and therefore are included in the current study update:

- 1) Stormwater drainage related background studies and monitoring;
- 2) Storm sewer oversizing;
- 3) Stormwater management which includes stormwater facility retrofits, flood relief, new stormwater management facilities;
- 4) Stormwater conveyance; and,
- 5) Creek erosion works, which include identified works and future works.

The vacant land supply analysis for the City completed by Hemson in this 2022 update was calculated to be 1,606.07 hectares. This represents 5.6% of the total area of the City.

The updated total cost of growth-related works calculated in this study is \$64,777,671. In netting out the reserves, the resulting total stormwater management capital cost to be recovered through development charges is \$10,040,476. Based on the available development lands noted above, the storm drainage component of the development charge is \$6,252 per hectare.

A summary of the calculations is depicted in **Table 4.1**.

**TABLE 2.1:
SUMMARY OF EROSION CONTROL WORKS**

A - EROSION CONTROL - IDENTIFIED WORKS

Map ID#	Background Study*	Project Name / Location	Budget Timing		Cost Estimates			DC Costs	
			EA & Design	Construction	EA & Design Cost	Construction Cost	Total Cost	DC Portion	DC Amount
CRED-1700-01	CRAMS site #4	Credit River Erosion Control - West of Creditview Rd, behind Kenninghall Blvd	2022	2024	\$400,000	\$2,100,000	\$2,500,000	4.1%	\$102,500
COOK-1100-01	CCRS site #4b	Cooksville Creek Erosion Control - CP Rail to Kirwin Avenue		2022			\$1,980,000	4.7%	\$93,060
SAWM-0400-01	SCNCDS Reach # 1 & 4	Sawmill Creek Erosion Control - The Folkway to Erin Mills Pkwy		2022		\$2,500,000	\$2,500,000	4.1%	\$102,500
CRED-0500-03	CRAMS site #25 reach 3	Credit River Erosion Control - Adjacent to Ostler Court		2022		\$3,010,000	\$3,010,000	4.1%	\$123,410
SHER-0300-01	--	Sheridan Creek Erosion Control - Lushes Ave. to behind Fletcher Valley Cres.		2022		\$1,030,000	\$1,030,000	5.5%	\$56,650
APPL-0300-01	--	Applewood Creek Erosion Control - Lakeview Golf Course		2022		\$3,060,000	\$3,060,000	3.5%	\$107,100
CAWT-0200-01	Minor Erosion Program	Cawthra Creek Erosion Control - Dellwood Park	2023	2025	\$300,000	\$1,200,000	\$1,500,000	4.2%	\$63,000
COOK-0100-01	COOK-0100-01	Cooksville Creek Erosion Control - South of Lakeshore Road	2023	2025	\$500,000	\$2,700,000	\$3,200,000	4.7%	\$150,400
COOK-0200-01	CCRS site #1c	Cawthra Creek Diversion, North of Lakeshore Road East	2023	2025	\$300,000	\$1,300,000	\$1,600,000	4.2%	\$67,200
CARO-0100-01	--	Carolyn Creek Erosion Control - Credit River Outlet Channel		2023		\$1,000,000	\$1,000,000	2.5%	\$25,000
CRED-0700-01		Credit River Erosion Control - Upstream of Dundas St W, adjacent to UTM Campus (Dundas to 403)		2023		\$1,100,000	\$1,100,000	4.1%	\$45,100
COOK-1200-01	CRAMS site #20a	Cooksville Creek Erosion Control - Mississauga Valley Blvd to CP Rail		2023		\$1,300,000	\$1,300,000	4.7%	\$61,100
COOK-1300-01	--	Cooksville Creek Erosion Control - Downstream of Central Parkway East to Downstream of Mississauga Valley Boulevard		2023		\$1,400,000	\$1,400,000	4.7%	\$65,800
SHER-0300-01	--	Sheridan Creek Erosion Control - Lushes Ave. to behind Fletcher Valley Cres.		2023		\$2,800,000	\$2,800,000	5.5%	\$154,000
COOK-2400-01	--	Cooksville Creek Erosion Control - Behind Tribal Court - Eglinton to Central Pkwy. E.	2024	2026	\$200,000	\$800,000	\$1,000,000	4.7%	\$47,000
LETO-1200-01	--	Little Etobicoke Creek Erosion Control - Downstream of Britannia Road East	2024	2026	\$200,000	\$800,000	\$1,000,000	6.1%	\$61,000
MULT-0200/0300-01	--	Mullet Creek Erosion Control - Burnhamthorpe Road West to behind Woodchuck Lane	2024	2026	\$600,000	\$2,500,000	\$3,100,000	4.0%	\$124,000
COOK-0700-01	--	Cooksville Creek Erosion Control - Camilla Road to North Service Road		2024		\$1,000,000	\$1,000,000	4.7%	\$47,000
WOLF-0200-01	--	Wolfedale Creek Erosion Control - CPR to Dundas St		2024		\$1,300,000	\$1,300,000	3.0%	\$39,000
CRED-0700-01		Credit River Erosion Control - Upstream of Dundas St W, adjacent to UTM Campus (Dundas to 403)		2024		\$1,100,000	\$1,100,000	4.1%	\$45,100
ETOB-0900-01	internal (2007 WCE)	Etobicoke Creek Erosion Control - Eglinton Avenue to Hwy. 401	2025	2027	\$370,000	\$1,900,000	\$2,270,000	5.2%	\$118,040
MULT-0700/0800-01	MCRS site #5a & 5b	Mullet Creek Erosion Control - GO Transit to D/S of Erin Centre Blvd	2025	2027	\$170,000	\$700,000	\$870,000	4.0%	\$34,800
MULT-0900-01	MCRS site #6b	Mullet Creek Erosion Control - Tannery Street to Thomas Street	2025	2027	\$240,000	\$1,100,000	\$1,340,000	4.0%	\$53,600
MULT-1000-01	MCRS site #6c	Mullet Creek Erosion Control - Upstream of Tannery Road	2025	2027	\$200,000	\$600,000	\$800,000	4.0%	\$32,000
WOLF-0300-01	--	Wolfedale Creek Erosion Control - North and South of Central Parkway W		2025		\$1,300,000	\$1,300,000	3.0%	\$39,000
CRED-0300/400-01		Credit River Erosion Control - North and South of QEW	2026		\$400,000		\$400,000	4.1%	\$16,400
COOK-0800-01									
COOK-1700-01	CCRS site #3e	Cooksville Creek Erosion Control - King Street East to north of Paisley Boulevard East	2026	2028	\$200,000	\$500,000	\$700,000	4.7%	\$32,900
CRED-0300/0400-01		Cooksville Creek Erosion Control - Highway 403 to Hurontario Street	2026	2028	\$200,000	\$800,000	\$1,000,000	4.7%	\$47,000
	--	Credit River Erosion Control - North and South of QEW	2026	2028	\$400,000	\$1,900,000	\$2,300,000	4.1%	\$94,300
MARY-0200	--	Mary Fix Creek, erosion control works - behind Old River Rd	2026	2028	\$200,000	\$1,100,000	\$1,300,000	4.4%	\$57,200
WOLF-0100-01	--	Wolfedale Creek Erosion Control - Courier Lane to Credit River		2026		\$1,300,000	\$1,300,000	3.0%	\$39,000
ETOB-0300-01		Etobicoke Creek Erosion Control - Upstream and Downstream of CPR, south of Dundas St E	2027	2029	\$200,000	\$600,000	\$800,000	5.2%	\$41,600
COOK-1500-01	internal (2007 WCE)	Cooksville Creek (west branch) erosion control, Burnhamthorpe Rd downstream to MVB (580m)	2027	2029	\$200,000	\$600,000	\$800,000	4.7%	\$37,600
CRED-2600-01	--	Credit River erosion control, various sections between Hemus Sq and Queensway W (340m)	2027	2029	\$200,000	\$800,000	\$1,000,000	4.1%	\$41,000
MULT-2000-01	--	Mullet Creek Erosion Control - Quenippenon Tributary, Upstream of Erin Mills Parkway to Middlebury Drive	2027	2029	\$400,000	\$2,100,000	\$2,500,000	4.0%	\$100,000
APPL-0200-01	--	Applewood Creek Erosion Control - CNR to Lakeshore Rd	2028	2030	\$150,000	\$500,000	\$650,000	3.5%	\$22,750
CRED-0200-01		Credit River Erosion Control - North of CN Rail, behind Stavebank Road and behind Mississauga Road	2028	2030	\$700,000	\$3,200,000	\$3,900,000	4.1%	\$159,900
MULT-2200-01	CRAMS site #29 & 30	Mullet Creek Erosion Control - Wabukayne Tributary, Upstream of CP Rail	2028	2030	\$600,000	\$3,600,000	\$4,200,000	4.0%	\$168,000
MULT-2200-02	MCRS site #15a								
	MCRS site #15b	Mullet Creek Erosion Control - Wabukayne Tributary, Downstream of Erin Mills Parkway	2028	2030	\$400,000	\$1,800,000	\$2,200,000	4.0%	\$88,000
CRED-1400-01	CRAMS site #10	Credit River Erosion Control - Streetsville Public Cemetery	2029	2031	\$160,000	\$910,000	\$1,070,000	4.1%	\$43,870
ETOB-0100-01	internal (2007 WCE)	Etobicoke Creek Erosion Control - Downstream of QEW, adjacent to Toronto Golf Club	2029	2031	\$400,000	\$1,320,000	\$1,720,000	5.2%	\$89,440
ETOB-0100-02									
ETOB-0800-01	internal (2007 WCE)	Etobicoke Creek Erosion Control - Upstream of CNR, adjacent to Toronto Golf Club	2029	2031	\$170,000	\$410,000	\$580,000	5.2%	\$30,160
	internal (2007 WCE)	Etobicoke Creek Erosion Control - Eglinton Avenue East to Hydro Corridor	2029	2031	\$170,000	\$360,000	\$530,000	5.2%	\$27,560
ETOB-2300-01	--	Etobicoke Creek erosion control, from Hwy. 410 to Tomken Rd	2030	2030			\$1,500,000	5.2%	\$78,000

**TABLE 2.1:
SUMMARY OF EROSION CONTROL WORKS**

A - EROSION CONTROL - IDENTIFIED WORKS

Map ID#	Background Study*	Project Name / Location	Budget Timing		Cost Estimates			DC Costs	
			EA & Design	Construction	EA & Design Cost	Construction Cost	Total Cost	DC Portion	DC Amount
CRED-2400-01	CRAMS site #1-FP	Credit River Erosion Control - Upstream of Old Derry Rd	2030	2030			\$330,000	4.1%	\$13,530
TECU-0100-01	--	Tecumseh Creek Erosion Control - Lakeshore Rd. to Lake Ontario	2030	2030			\$500,000	3.5%	\$17,500
CRED-0600-01	--	Credit River Erosion Control - South of Dundas Street	2031	2031			\$500,000	4.1%	\$20,500
CRED-0500-02	CRAMS site #22	Credit River Erosion Control - Downstream of Dundas St W, behind Blythe Rd	2031	2031	\$200,000	\$800,000	\$1,000,000	4.1%	\$41,000
CRED-2300-01	CRAMS site #1	Credit River Erosion Control - Downstream of Old Derry Rd	2032	2032	\$200,000	\$220,000	\$420,000	4.1%	\$17,220
MULT-1400/1500-01	MCRS site #10a & 10b	Mullet Creek Erosion Control - Derry Rd W to Argentinia Rd	2032	2032	\$740,000	\$4,280,000	\$5,020,000	4.0%	\$200,800
CRED-0900-01	CRAMS site #17	Credit River Erosion Control - Behind Bridewell Court, downstream of Hwy 403	2032	2032			\$680,000	4.1%	\$27,880
MULT-2300-01	MCRS site #16a	Mullet Creek Erosion Control - Aquitaine Tributary, Eastridge Road to CP Rai	2032	2032	\$480,000	\$2,660,000	\$3,140,000	4.0%	\$125,600
MULT-1525-01	MCRS site #10c	Mullet Creek Erosion Control - Meadowvale Blvd to Derry Rd W	2032	2032			\$1,770,000	4.0%	\$70,800
CRED-1300-01	CRAMS site #11a	Credit River Erosion Control - Old Station Rd, upstream of Reid Dam	2032	2032			\$1,250,000	4.1%	\$51,250
CRED-1700/1800-01	CRAMS site #3	Credit River Erosion Control - West of Creditview Rd, adjacent to Hollywell Ave	2032	2032			\$1,000,000	4.1%	\$41,000
MULT-1200-01	MCRS site #9b	Mullet Creek Erosion Control - Erin Mills Pkwy to Diversion Structure	2032	2032			\$1,140,000	4.0%	\$45,600
MULT-1300-01	MCRS site #9c & 9d	Mullet Creek Erosion Control - Argentinia Rd to Erin Mills Pkwy	2032	2032			\$1,650,000	4.0%	\$66,000
CRED-1500-01	CRAMS site #8	Credit River Erosion Control - Amity Rd, downstream of Britannia Rd W	2032	2032			\$1,500,000	4.1%	\$61,500
MULT-1800/1900-01	MCRS site #12a & 12b	Mullet Creek Erosion Control - Quenippenon Tributary, Credit Valley Rd to Confluence	2032	2032			\$1,350,000	4.0%	\$54,000
MULT-1200-02	MCRS site #8b	Mullet Creek Erosion Control - Diversion Structure to CP Rail	2032	2032			\$1,020,000	4.0%	\$40,800
MULT-1900-02	MCRS site #13a	Mullet Creek Erosion Control - Quenippenon Tributary, Eglinton Ave to Credit Valley Rd	2032	2032			\$390,000	4.0%	\$15,600

* Background Studies Include: CRAMS - Credit River Adaptive Management Strategy (2005), MCRS - Mullet Creek Rehabilitation Study (2001), Cooksville Creek Rehabilitation Study (1997), SCNCDS - Sawmill Creek Natural Channel Design Study (1995)

A - SUBTOTAL: **\$94,170,000** **\$3,982,620**

B - EROSION CONTROL - FUTURE WORKS

Map ID#	Background Study	Project Name / Location	EA & Design	Construction	Design Cost**	Construction Cost**	Total Cost	DC Portion	DC Amount
--	--	Various erosion control works for streams without detailed rehabilitation studies (approx. 27,129 m).	various	various	\$14,605,081	\$97,367,205	\$111,972,285	5.6%	\$6,270,448

** Esimated construction costs based on approx. 27,129m at unit cost of \$3,589 per metre. Design costs assumed to be approximately 15% of construction cost.

B - SUBTOTAL: **\$111,972,285** **\$6,270,448**

C - EROSION CONTROL - MINOR EROSION CONTROL WORKS

Map ID#	Background Study	Project Name / Location	EA & Design	Construction				DC Portion	DC Amount
--	--	Minor site-specific erosion control works	2022 to 2041	various	\$330,000 for 20 years*		\$6,420,000	5.6%	\$359,520

C - SUBTOTAL: **\$6,420,000** **\$359,520**

TOTAL EROSION CONTROL WORKS: **\$212,562,285** **\$10,612,588**

TABLE 2.2
ESTIMATED FUTURE EROSION CONTROL WORKS

Watercourse	Total Length (km)	Drainage Area (km2)	Rational*	Unstable(%) Estimated in '08	Length for Restoration (m) Estimated in '14	Restoration Works Undertaken '14-'18	City Project ID	Length for Restoration (m) Estimated in '19	Restoration Works Undertaken '19-'20	City Project ID	Estimated Future Restoration Length (m)
Applewood	2.70	4.5	ma	13%	171			171			171
Avonhead	3.60	1.7	other	22%	792			792			792
Birchwood Creek	4.20	3.5	ma	13%	546			546			546
Carolyn	3.80	5.3	ma	13%	494			494			494
Cawthra	1.00	2.0	other	22%	220			220			220
Chappell	3.00	1.9	ma	13%	390			390			390
Clearview	1.70	1.3	other	22%	374			374			374
Cooksville	24.60	35.3	n/a	n/a	n/a	1500	13-143,15-135, 14-141, 14-146, 17-010, 12-131	n/a			n/a
Credit	25.60	27.0	n/a	n/a	n/a	100	12-131	n/a			n/a
Cumberland Creek	0.30	0.5	other	22%	66			66			66
Etobicoke	20.40	47.8	n/a	n/a	n/a	100	18-002	n/a	30	18-017	n/a
Etobicoke Lakeshore	0.80	2.8	other	22%	176			176			176
Fletcher's	7.33	7.9	ma	13%	952			952			952
Joshua	0.20	0.2	BR	30%	60			60			60
Kenollie	3.80	2.2	MA-BR	22%	836			836			836
Lakeside	0.30	4.5	other	22%	66			66			66
Levi	2.44	2.3	ma	13%	317			317	100	17-014	217
Little Etobicoke	13.80	22.3	MA	43%	5,934			5,934			5,934
Lornewood	3.20	4.2	ma	13%	416			416			416
Loyalist	4.90	8.8	BR	30%	1,470	70	13-135	1,400			1,400
Mary Fix	9.20	6.5	MA-BR	22%	1,964			1,964			1,964
Meadowvale N	0.63	0.9	other	22%	139			139			139
Mimico	11.00	17.3	MA	43%	4,670			4,670			4,670
Moore	0.30	0.2	ma	13%	39			39	10	15-141	29
Mullet	20.70	27.7	n/a	n/a	n/a			n/a			n/a
Sawmill	8.77	15.8	MA-BR	22%	1,929			1,929			1,929
Serson	1.50	2.3	other	22%	330			330			330
Sheridan	5.02	7.4	BR	30%	986			986			986
Sixteen Mile Creek	5.80	9.5	MA	37%	2,146			2,146			2,146
Tecumseh	1.50	1.6	ma	13%	195			195			195
Turtle	2.90	2.6	ma	13%	377			377			377
Wolfedale	5.70	7.2	MA-BR	22%	1,254			1,254			1,254
Total Length (m)					27,309			27,239			27,129

NOTES

*ma - modern alluvium bed with drainage area <10ha, MA - modern alluvium bed with drainage area >10ha, BR - exposed or thinly covered bedrock,

MA-BR - bedrock and modern alluvium, other - alluvial bed composed of other local geology

n/a - not applicable. Restoration/erosion works for these watercourses have been estimated in individual, detailed studies.

TABLE 2.3
SUMMARY OF CONSTRUCTION COSTS FOR RECENT CREEK EROSION / RESTORATION WORKS

<i>Project Title/Creek Name</i>	<i>Location</i>	<i>Length of Works (m)</i>	<i>Tender/Construction Cost</i>	<i>Base Year for Cost Estimate</i>	<i>Adjusted Cost (2017\$)</i>	<i>Unit Cost (2017\$/m)</i>
Mary Fix Erosion Control Project - Harborn Rd. to Premium Way (City Project No. 12-138)	City of Mississauga	60	\$73,295	2012	\$81,987	\$1,366.45
Sheridan Creek Stabilization - Clarkson Rd. to Meadow Wood Rd. (City Project No. 12-147)	City of Mississauga	400	\$1,339,037	2013	\$1,477,164	\$3,692.91
Little Etobicoke Creek Erosion Control - Eglinton Ave. to Hwy. 401 (City Project No. 06-132)	City of Mississauga	275	\$457,278	2010	\$544,546	\$1,980.17
Cooksville Creek Erosion Control - Atwater Ave. to CNR (City Project No. 07-138)	City of Mississauga	445	\$907,920	2008	\$1,130,954	\$2,541.47
Credit River Erosion Control - North of Eglinton Ave. (City Project No. 06-134)	City of Mississauga	150	\$383,360	2011	\$449,189	\$2,994.59
Cooksville Creek - QEW to Elaine Trail (City Project No. 17-004)	City of Mississauga	550	\$1,200,000	2017/2018	\$1,200,000	\$2,181.82
Cooksville Creek - Rathburn to Meadows(City Project No. 17-008)	City of Mississauga	670	\$2,490,000	2017/2018	\$2,490,000	\$3,716.42
Mary Fix Creek - South to Dundas(City Project No. 17-015)	City of Mississauga	160	\$687,000	2017/2018	\$687,000	\$4,293.75
Levi Creek - North of Old Derry Road(City Project No. 17-014)	City of Mississauga	60	\$156,000	2017/2018	\$156,000	\$2,600.00
Roseland Creek Phase I	City of Burlington	600	\$1,500,858	2013	\$1,655,677	\$2,759.46
Roseland Creek Phase II	City of Burlington	400	\$2,255,431	2013	\$2,488,087	\$6,220.22
Fourteen Mile Creek	Town of Oakville	495	\$1,981,608	2012	\$2,216,623	\$4,478.03
West Don River-Restoration and Sanitary Sewer Alignment	City of Toronto	160	\$779,770	2012	\$872,249	\$5,451.56
Spring Creek-Realignment of Etobicoke Creek-East Branch	Region of Peel	120	\$141,504	2011	\$165,802	\$1,381.69
Pomona Mills Creek Erosion Restoration- Kirk &Henderson Sites	Town of Markham	210	\$586,008	2009	\$668,885	\$3,185.17
Hager Creek	Region Of Halton	40	\$80,000	2013	\$88,252	\$2,206.31
Dick's Creek West Branch-Aberdeen & Glendale	City of St. Catherines	140	\$301,665	2013	\$332,783	\$2,377.02

Avg. Cost (\$/m): \$3,142.77

2020 Adjusted Avg. Cost (\$/m): \$3,589.04

**TABLE 2.4:
SUMMARY OF CONVEYANCE IMPROVEMENT WORKS**

Map ID#	Finance Code	Background Study*	Project Name / Location	Type of Work	Budget Timing			Cost Estimates				Net Costs	DC Costs	
					EA & Design	Land Acquisition	Construction	EA & Design Cost	Construction Cost	Land Cost	Total Cost	Net Cost	DC Portion	DC Amount
LETO-0200/ 0300-01		Dundas Connect Study	Little Etobicoke Creek Drainage Improvements Dixie/Dundas Area	Channelization		2023		\$2,000,000			\$2,000,000	\$2,000,000	6.1%	\$122,000
LETO-0200/ 0300-01		Dundas Connect Study	Little Etobicoke Creek Drainage Improvements Dixie/Dundas Area	Channelization			2025	\$5,830,000			\$5,830,000	\$5,830,000	6.1%	\$355,630
LETO-0200/ 0300-01		Dundas Connect Study	Little Etobicoke Creek Drainage Improvements Dixie/Dundas Area	Channelization			2026	\$5,830,000			\$5,830,000	\$5,830,000	6.1%	\$355,630
LETO-0200/ 0300-01		Dundas Connect Study	Little Etobicoke Creek Drainage Improvements Dixie/Dundas Area	Channelization			2027	\$5,830,000			\$5,830,000	\$5,830,000	6.1%	\$355,630
LETO-0200/ 0300-01		Dundas Connect Study	Little Etobicoke Creek Drainage Improvements Dixie/Dundas Area	Channelization			2028	\$5,830,000			\$5,830,000	\$5,830,000	6.1%	\$355,630
SIXT-1100-01			Meadowvale Business Park (North 16 District) - Tenth Line Drainage Diversio Solution	Channelization	2028		2028	\$1,300,000			\$1,300,000	\$1,300,000	100.0%	\$1,300,000
SIXT-1700-01			Meadowvale Business Park (North 16 District) - Highway 401 Drainage Diversio Channel	Channelization	2028	2028	2028	\$400,000		\$1,500,000	\$1,900,000	\$1,900,000	100.0%	\$1,900,000
CLER-0100-01	New	--	Clearview Creek Channelization - Lakeshore Road to 800m Northerly	Channelization	2031	2031	2031	\$2,910,000			\$2,910,000	\$2,910,000	100.0%	\$2,910,000
			Ninth Line Lands SWS Ninth Line Hydro One Crossing	Drainage			2031	\$1,785,481			\$1,785,481	\$1,785,481	100.0%	\$1,785,481
TOTAL CONVEYANCE IMPROVEMENT WORKS:											\$33,215,481	\$33,215,481		\$9,440,001

TABLE 2.5:
SUMMARY OF STORMWATER MANAGEMENT WORKS

A - New SWM Facilities

Map ID#	Background Study*	Pond Name / Location	Pond Type	Budget Timing			Cost Estimates				DC Costs	
				EA / Design	Land Acquisition	Construction	EA/Design Cost	Construction Cost	Land Cost	Total Cost	DC Portion	DC Amount
5602		SWM Facility 5602 - Ninth Line Lands - West of Ninth Line and North of Britannia Rd.	new SWM pond - quality & quantity	2022	2022	2022	\$100,000	\$400,000	\$2,700,000	\$3,200,000	100.0%	\$3,200,000
5506		Ninth Line Corridor - west of Ninth Line, south of Hwy 401.	new SWM pond - quality & quantity	2024	2024	2025	\$100,000	\$500,000	\$3,200,000	\$3,800,000	100.0%	\$3,800,000
5708		Ninth Line Corridor - Northwest corner of Eglinton Avenue and Ninth Line.	new SWM pond - quality & quantity	2025	2025	2025	\$160,000	\$1,000,000	\$6,770,000	\$7,930,000	100.0%	\$7,930,000
5505		Ninth Line Corridor - west of Ninth Line, north of Derry Road	new SWM pond - quality & quantity	2025	2025	2025	\$100,000	\$1,000,000	\$5,300,000	\$6,400,000	100.0%	\$6,400,000
4503	Meadowvale District MDP / MSWQCS Update	Meadowvale Area SWM Pond #4503 - North of Hwy 401, East of Credit River	new SWM pond - quantity & quality	2025	n/a - floodplain lands	2027	\$130,000	\$850,000	n/a - floodplain lands	\$980,000	100.0%	\$980,000
1802		Sheridan Park Corporate Centre - Speakman Drive, Northeast of Winston Churchill Boulevard and QEW (Dev't driven with municipal drng)	new SWM pond - quality & quantity	2040	2040	2040	\$940,000	\$6,260,000	\$33,990,000	\$41,190,000	5.5%	\$2,265,450
n/a		Additional Growth-related SWM projects	new SWM pond	2030	2030	2030	\$3,500,000			\$3,500,000	100.0%	\$3,500,000

A - SUBTOTAL:

\$67,000,000

\$28,075,450

B - Stormwater Quality Retrofits

		SWM Quality Retrofit - Etobicoke Creek Storm Outfall - Britannia Road East and Netherhart Road	retrofit of ex. storm outfall - quality	2024	n/a - retrofit	2026	\$370,000	\$1,500,000		\$1,870,000	5.2%	\$97,240
3602	MSWQCS Update	Retrofit - Little Etobicoke Creek Timberlea SWM Pond #3602	retrofit of quantity pond for quality	2025	n/a - retrofit	2027	\$600,000	\$5,000,000		\$5,600,000	6.1%	\$341,600
3101	MSWQCS Update	Retrofit - Credit River Storm Outfall - Wellsborough Place and Tillingham Gardens	retrofit of ex. storm outfall - quality	2031	n/a - retrofit	2031	\$5,200,000			\$5,200,000	4.1%	\$213,200
4505	MSWQCS Update	Retrofit - Credit River Storm Outfall - Hwy 401 and Creditview Rd	retrofit of ex. storm outfall - quality	2031	2031	2031	\$6,860,000		\$7,110,000	\$13,970,000	4.1%	\$572,770

B - SUBTOTAL:

\$26,640,000

\$1,224,810

C - New Cooksville Creek Flood Relief Works

2102	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - McKenzie Park, Mississauga Valley Blvd	flood relief		n/a	2022		\$1,090,000	n/a	\$1,090,000	4.7%	\$51,230
2103	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Mississauga Valley	flood relief		n/a	2022		\$5,000,000	n/a	\$5,000,000	4.7%	\$235,000
2805	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Huron Heights Park, Central Parkway E., north of Hwy 403	flood relief	2022	n/a	2024	\$240,000	\$3,100,000	n/a	\$3,340,000	4.7%	\$156,980
2102	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - McKenzie Park, Mississauga Valley Blvd	flood relief		n/a	2023		\$14,590,000	n/a	\$14,590,000	4.7%	\$685,730
3703	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Greyshale Park, Heritage Hills Blvd	flood relief	2023	n/a	2025	\$290,000	\$1,900,000	n/a	\$2,190,000	4.7%	\$102,930
3703	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Greyshale Park, Heritage Hills Blvd	flood relief			2026		\$1,900,000	n/a	\$1,900,000	4.7%	\$89,300
2903	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Heritage Hills Park, Huntington Ridge Drive	flood relief	2025	n/a	2026	\$500,000	\$5,400,000	n/a	\$5,900,000	4.7%	\$277,300
2902	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Hydro Corridor, north of Hwy 403, West of Hurontario Street	flood relief	2028	2029	2029	\$500,000	\$5,000,000	\$5,550,000	\$11,050,000	4.7%	\$519,350
2804	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Hydro Corridor, north of Hwy 403, east of Hurontario Street	flood relief	2028	2028	2029	\$300,000	\$1,650,000	\$7,200,000	\$9,150,000	4.7%	\$430,050
2804	Cooksville Creek Flood Evaluation Study	Cooksville Creek Flood Storage Facility - Hydro Corridor, north of Hwy 403, east of Hurontario Street	flood relief			2030		\$1,648,000		\$1,648,000	4.7%	\$77,456

C - SUBTOTAL:

\$55,858,000

\$2,625,326

TOTAL STORMWATER MANAGEMENT CONTROL WORKS:

\$149,498,000

\$31,925,586

TABLE 2.6
SUMMARY OF STORM SEWER OVERSIZING WORKS

Storm Sewer Oversizing and Timing	Notes	Cost	DC portion	DC amount
Storm Sewer Oversizing - Various Locations (2022-2041)	\$270,000 per year for 20 years	\$5,400,000	100.0%	\$5,400,000
LRT Storm Sewer Improvements (2022/23/24)	Design and Construction Cost (2022- \$4,890K, 2023- \$4,890K, 2024- \$9,770K)	\$19,550,000	11.8%	\$2,306,900
Mississauga Road storm sewer oversizing	Trunk sewer oversizing by "West Village" at 70 Mississauga Road	\$1,999,601	100.0%	\$1,999,601
Lakeview Community storm sewer oversizing	Trunk sewer oversizing by "Lakeview Community Partners Ltd."	\$2,593,885	100.0%	\$2,593,885

TOTAL STORM SEWER OVERSIZING WORKS:

\$29,543,486

\$12,300,386

TABLE 2.7
BACKGROUND STUDIES AND MONITORING

Study and Timing	Unit Cost	Cost	DC portion	DC amount
Development Charges Study Updates (2026, 2031, 2036, 2041)	\$80,000 for each update =	\$320,000	100.0%	\$320,000
Annual Monitoring and Studies of Various SWM Ponds / Various Locations *	\$80,000 per year for 20 years =	\$1,600,000	5.6%	\$89,600
Watercourse Minor Works *	\$80,000 per year for 20 years =	\$1,600,000	5.6%	\$89,600
TOTAL - BACKGROUND STUDIES AND MONITORING:		\$3,520,000		\$499,200

* DC portion based on total watershed %

TABLE 3.1
SUMMARY OF AVAILABLE DEVELOPMENT LANDS

Watershed	Total Area	Vacant Lands	Occupied Lands	Redevelopment Potential @ 2.5%¹	Total Vacant Land + Redevelopment Potential	% by Watershed* + Redevelopment
APPLEWOOD CREEK	450.33	4.84	445.49	11.14	15.98	3.5%
AVONHEAD CREEK	166.54	17.28	149.26	3.73	21.01	12.6%
BIRCHWOOD CREEK	351.78	0.76	351.01	8.78	9.54	2.7%
CAROLYN CREEK	526.23	0.06	526.17	13.15	13.22	2.5%
CAWTHRA CREEK	206.58	3.51	203.07	5.08	8.58	4.2%
CHAPPELL CREEK	185.81	-	185.81	4.65	4.65	2.5%
CLEARVIEW CREEK	133.20	44.91	88.29	2.21	47.12	35.4%
COOKSVILLE CREEK	3,528.85	80.74	3,448.11	86.20	166.94	4.7%
CREDIT RIVER	2,700.01	44.53	2,655.48	66.39	110.91	4.1%
CUMBERLAND CREEK	54.44	0.39	54.05	1.35	1.74	3.2%
ETOBICOKE CREEK	4,781.51	134.48	4,647.03	116.18	250.65	5.2%
ETOBICOKE LAKESHORE	284.80	6.96	277.84	6.95	13.91	4.9%
FLETCHER CREEK	785.08	53.57	731.51	18.29	71.85	9.2%
JOSHUA CREEK	16.73	-	16.73	0.42	0.42	2.5%
KENOLLIE CREEK	216.63	1.66	214.97	5.37	7.03	3.2%
LAKESIDE CREEK	451.04	95.08	355.96	8.90	103.98	23.1%
LEVI CREEK	225.47	0.42	225.05	5.63	6.05	2.7%
LITTLE ETOBICOKE CREEK	2,226.12	82.85	2,143.27	53.58	136.43	6.1%
LORNEWOOD CREEK	421.78	3.55	418.23	10.46	14.01	3.3%
LOYALIST CREEK	878.24	10.35	867.89	21.70	32.04	3.6%
MARY FIX CREEK	653.00	12.86	640.14	16.00	28.87	4.4%
MEADOWVALE NORTH	92.94	8.43	84.51	2.11	10.55	11.3%
MIMICO CREEK	1,731.29	68.81	1,662.48	41.56	110.37	6.4%
MOORE CREEK	18.63	0.09	18.53	0.46	0.56	3.0%
MULLET CREEK DOWNSTREAM	1,158.12	9.79	1,148.33	28.71		0.0%
MULLET CREEK UPSTREAM	1,612.88	33.08	1,579.80	39.50		0.0%
Total Mullet Creek Downstream & Upstream	2,771.01	42.87	2,728.14	68.20	111.07	4.0%
NINTH LINE		59.12	59.12	1.48	60.60	100.0%
OAKVILLE	67.62	16.67	50.95	1.27	17.94	26.5%
PORT CREDIT	96.65	0.44	96.21	2.41	2.85	2.9%
PORT CREDIT WEST	167.00	19.50	147.50	3.69	23.19	13.9%
SAWMILL CREEK	1,583.88	25.93	1,557.95	38.95	64.88	4.1%
SERSON CREEK	234.58	0.71	233.87	5.85	6.56	2.8%
SHERIDAN CREEK	740.84	23.08	717.76	17.94	41.02	5.5%
SIXTEEN MILE CREEK	946.08	33.10	912.98	22.82	55.92	5.9%
TECUMSEH CREEK	162.54	0.82	161.72	4.04	4.86	3.0%
TURTLE CREEK	256.84	2.43	254.41	6.36	8.79	3.4%
WOLFEDALE CREEK	719.50	7.12	712.38	17.81	24.93	3.5%
Total	28,833.55	907.93	27,925.62	698.14	1,606.07	5.6%

(1) Redevelopment potential at 2.5% has been applied to the occupied lands throughout the identified watersheds. This amount is intended to represent an average across the entire City.

TABLE 4.1
2022 STORM DRAINAGE DEVELOPMENT CHARGES UPDATE

	<u>2022</u>
1 - EROSION CONTROL WORKS	
A - EROSION CONTROL - IDENTIFIED WORKS	\$3,982,620
B - EROSION CONTROL - FUTURE WORKS	\$6,270,448
<u>C - MINOR EROSION CONTROL</u>	<u>\$359,520</u>
SUBTOTAL	\$10,612,588
 2 - CONVEYANCE (CHANNELIZATION. CULVERT IMPROVEMENTS)	 \$9,440,001
 3 - STORMWATER MANAGEMENT	
A - STORMWATER MANAGEMENT FACILITIES - NEW FACILITIES:	\$28,075,450
B - STORMWATER QUALITY RETROFITS:	\$1,224,810
C - NEW COOKSVILLE CREEK FLOOD RELIEF WORKS	\$2,625,326
SUBTOTAL	\$31,925,586
 4 - STORM SEWER OVERSIZING	 \$12,300,386
 5 - BACKGROUND STUDIES AND MONITORING:	 \$499,200
<hr/> TOTAL PROGRAM	<hr/> \$64,777,761
 LESS RESERVES:	
(STORM DRAINAGE DC; ACT 31350)	\$33,072,829
(WATER QUALITY ACT; 37513)	\$2,333,530
<u>(SECTION 14 LOT LEVY-MAJOR STORM IMPROVEMENT LEVT; ACT 35124)</u>	<u>\$19,330,926</u>
TOTAL RESERVES:	\$54,737,285
 TOTAL STORMWATER MANAGEMENT CAPITAL COSTS TO BE RECOVERED THROUGH DEVELOPMENT CHARGES	 \$10,040,476
 FUTURE DEVELOPMENT AREA (NET)	 1,606
 UNIT DEVELOPMENT CHARGE	 <u>\$6,252</u>
<hr/>	

APPENDIX A
Asset Inventory

APPENDIX A

**CITY OF MISSISSAUGA
INVENTORY OF CAPITAL ASSETS**

note: the large increase in 2020 replacement costs is a result of more formal inventory & valuation completed for the Stormwater Asset Management Plan. Replacement values for 2019 and prior were estimated from Tangible Capital Asset (TCA) reporting.

STORMWATER MANAGEMENT

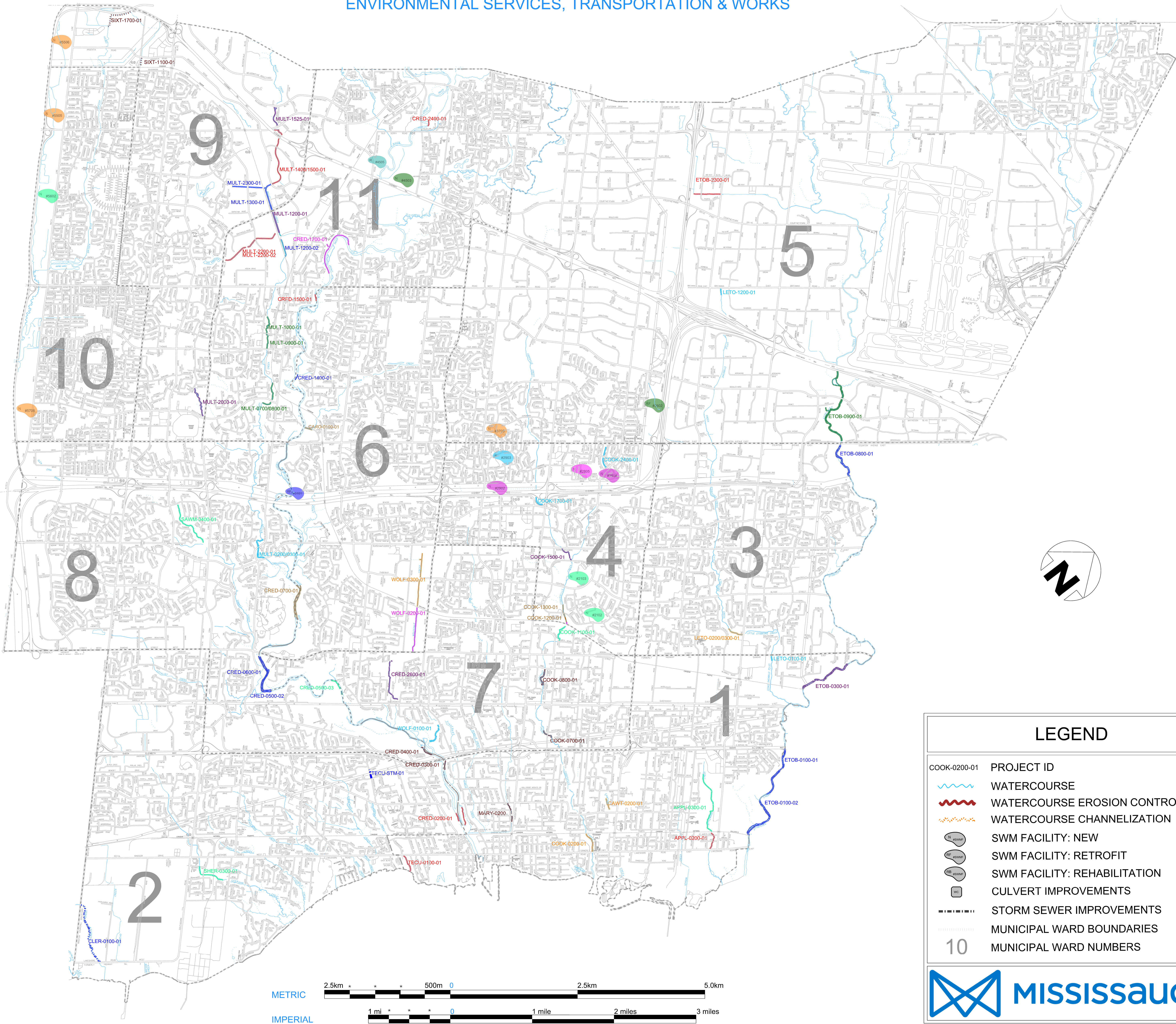
STORM SEWER Type of Storm Sewer	# of Kilometres										2020 UNIT COST (\$/km)
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Main & Trunk	--	--	--	--	--	--	2,100	2,111	1,822		\$1,915
Foundation Drain Collector	--	--	--	--	--	--			93		
Laterals	--	--	--	--	--	--			544		
Total (km)	-	-	-	-	-	-	2,100	2,111	2,459	-	
Total (\$000)	\$0.0	\$0.0	\$0.0	\$0.0	\$1,772,022.4	\$1,902,501.6	\$1,989,699.0	\$2,055,346.5	\$4,709,200.0	\$0.0	

STORMWATER MANAGEMENT FACILITIES Type of Facility	# of SWM Facilities										UNIT COST (\$/unit)
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Wet & Dry Ponds, Overland Flow Parks, Underground Storage, LID, Pumping Stations, etc.	--	--	--	--	62	62	64	80	81		\$1,971
Total (#)	-	-	-	-	62	62	64	80	81	-	
Total (\$000)	\$0.0	\$0.0	\$0.0	\$0.0	\$91,006.6	\$95,184.4	\$109,491.5	\$133,312.0	\$159,621.0	\$0.0	

WATERCOURSES City Owned/Maintained	# of Kilometres										UNIT COST (\$/km)
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Estimated length					n/a	n/a	n/a	n/a	150		\$2,824
Total (km)	-	-	-	-	-	-	-	-	150	-	
Total (\$000)	\$0.0	\$0.0	\$0.0	\$0.0	\$78,022.0	\$88,147.9	\$96,898.0	\$103,821.8	\$423,537.0	\$0.0	

DEVELOPMENT CHARGES PROJECTS [2022-2031]

ENVIRONMENTAL SERVICES, TRANSPORTATION & WORKS



PROJECT INDEX

WATERCOURSE EROSION CONTROL

FORECAST YEAR (CONSTRUCTION)	PROJECT ID	PROJECT TITLE	PROJECT LOCATION
2022	COOK-1100-01 SHER-0300-01 APPL-0200-01 SAWM-2400-01 CRED-0500-03	COOKSVILLE CREEK EROSION CONTROL SHERIDAN CREEK EROSION CONTROL APPLEWOOD CREEK EROSION CONTROL SAWMILL CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL (CASH-FLOWED)	CP RAIL TO KIRWIN AVE ADJACENT TO OSTLER CT LAKEVIEW GOLF COURSE THE FOLKWAY TO ERIN MILLS PKWY ADJACENT TO OSTLER COURT
2023	COOK-1200-01 COOK-1300-01 CRED-0700-01 CARO-0100-01	COOKSVILLE CREEK EROSION CONTROL COOKSVILLE CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL CAROLYN CREEK EROSION CONTROL	MISSISSAUGA VALLEY BLVD TO CP RAIL DIS OF CENTRAL PKWY E TO DIS OF MISS. VALLEY BLVD/S OF DUNDAS ST W ADJACENT TO UTM CAMPUS CREDIT RIVER OUTLET CHANNEL
2024	COOK-0700-01 CRED-1700-01 WOLF-0200-01	COOKSVILLE CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL WOLFDALE CREEK EROSION CONTROL	CAMILLA RD TO NORTH SERVICE RD W OF CREDITVIEW RD, BEHIND KENNINGHALL BLVD CPR TO DUNDAS ST
2025	WOLF-0300-01 CAWT-0200-01 COOK-0200-01 LETO-0200/0300-01	WOLFDALE CREEK EROSION CONTROL CAWTHRA CREEK EROSION CONTROL COOKSVILLE CREEK EROSION CONTROL LITTLE ETOBICOKE CREEK DRAINAGE IMPROV. (CF)	N & S OF CENTRAL PKWY W DELLWOOD PARK CAWTHRA CREEK DIVERSION, NORTH OF LAKESHORE RD E DUNDAS ST / DIXIE RD AREA
2026	COOK-2400-01 LETO-1200-01 MULT-0200/0300-01 WOLF-0100-01	COOKSVILLE CREEK EROSION CONTROL LITTLE ETOBICOKE CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL WOLFDALE CREEK	BEHIND TRIBAL CT DIS OF BRITANNIA RD E BURNHAMTHORPE RD. TO BEHIND WOODCHUCK LN COURRIER LN TO CREDIT RIVER
2027	MULT-0700/0800-01 MULT-0800-01 ETOB-0800-01 MULT-1000-01	MULLET CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL ETOBICOKE CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL	GO TRANSIT TO DIS OF ERIN CENTRE BLVD TANNERY ST TO THOMAS ST EGLINTON AVE. TO HWY 401 US OF TANNERY RD
2028	COOK-0800-01 COOK-1700-01 MARY-0200 CRED-0300/0400-01	COOKSVILLE CREEK EROSION CONTROL COOKSVILLE CREEK EROSION CONTROL EROSION CONTROL WORKS CREDIT RIVER EROSION CONTROL	KING STREET E TO NORTH OF PAISLEY BLVD E HWY 403 TO HURONTARIO ST BEHIND OLD RIVER RD NORTH OF SOUTH OF QEW
2029	COOK-1500-01 ETOB-0300-01 CRED-2000-01 MULT-1525-01 MULT-1200-01 MULT-2000-01	COOKSVILLE CREEK (WEST BRANCH) EROSION CONTROL ETOBICOKE CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL MULLET CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL	BURNHAMTHORPE RD DIS TO MVB (580M) US AND DIS OF CPR, SOUTH OF DUNDAS ST E VAR. SECTIONS B/W HEALIS RD AND QUEENSWAY W (340M) MEADOWVALE BLVD TO DERRY RD W ERIN MILLS PKWY TO DIVERSION STRUCTURE QUEENSWAY TRIB. US OF ERIN MILLS PKWY TO MIDDLEBURY DR
2030	APPL-0200-01 CRED-2400-01 CRED-2300-01 MULT-1400/1500-01 CRED-0200-01 MULT-2200-01 MULT-2200-02 TECU-0100-01 CRED-1500-01	APPLEWOOD CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL ETOBICOKE CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL MULLET CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL TECUSEH CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL	CNR TO LAKESHORE RD US OF OLD DERRY RD FROM HWY 410 TO TOMKEN RD DERRY RD W TO ARGENTIA RD N OF CN RAIL, BEHIND STAVENBANK RD AND MISS. RD WABUKAYNE TRIBUTARY, DIS OF CP RAIL LAKESHORE RD TO LAKE ONTARIO AMITY RD, DIS OF BRITANNIA RD
2031	MULT-1300-01 MULT-2300-01 CRED-0500-02 CRED-0600-01 ETOB-0100-01 ETOB-0100-02 ETOB-0800-01 CRED-1400-01 MULT-1200-02	MULLET CREEK EROSION CONTROL MULLET CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL CREDIT RIVER EROSION CONTROL ETOBICOKE CREEK EROSION CONTROL ETOBICOKE CREEK EROSION CONTROL ETOBICOKE CREEK EROSION CONTROL CREDIT RIVER EROSION CONTROL MULLET CREEK EROSION CONTROL	ARGENTIA RD TO ERIN MILLS PKWY AQUITANE TRIB. EASTRIDGE RD TO CPR DIS OF DUNDAS ST W, BEHIND BLTHE RD SOUTH OF DUNDAS STREET DIS OF QEW, ADJ. TO TORONTO GOLF CLUB US OF CPR, ADJACENT TO TORONTO GOLF CLUB EGLINTON AVENUE TO HYDRO CORRIDOR STREETSVILLE PUBLIC CEMETERY DIVERSION STRUCTURE TO CPR

STORMWATER MANAGEMENT IMPROVEMENTS

FORECAST YEAR (CONSTRUCTION)	SWMF / PROJECT ID	PROJECT TITLE	PROJECT LOCATION
2022	#2103 #2102 #0602	SWMF NEW CONSTRUCTION (CF) SWMF NEW CONSTRUCTION (CF) SWMF NEW CONSTRUCTION	COOKSVILLE CREEK, MISS. VALLEY BLVD COOKSVILLE CREEK, MCKENZIE PARK, MISS. VALLEY BLVD NINTH LINE CORRIDOR, W OF NINTH LINE & DO LINS BLVD
2023	-	-	-
2024	#2805	SWMF NEW CONSTRUCTION	COOKSVILLE CREEK, HURON HEIGHTS PARK (PARK 273)
2025	#5505 #5506 #5708 #0703	SWMF NEW CONSTRUCTION SWMF NEW CONSTRUCTION SWMF NEW CONSTRUCTION SWMF NEW CONSTRUCTION	NINTH LINE CORRIDOR, W OF NINTH LINE, N OF DERRY RD NINTH LINE CORRIDOR, W OF NINTH LINE, S OF HWY 401 NINTH LINE CORRIDOR, NW EGLINTON AVE W & NINTH LINE BLVD/COOKSVILLE CREEK, GREYSNALE PK, HERITAGE HLS BLVD
2026	#2903	SWMF NEW CONSTRUCTION	COOKSVILLE CREEK, HERITAGE HILLS PK, HUNTINGTON DR
2027	#3602 #4503	SWMF RETROFIT SWMF NEW CONSTRUCTION	ETOBICOKE CREEK, TIMBERLEA BLVD/CREDIT RIVER MEADOWVALE AREA, N OF HWY 401, E OF CREDIT RIVER
2028	SIXT-1100-01 SIXT-1700-01	DRAINAGE DIVERSION SOLUTION DRAINAGE DIVERSION CHANNEL	MDWVALE BUSINESS PK (NORTH 16 DIST.), TENTH LINE MDWVALE BUSINESS PK (NORTH 16 DIST.), HWY 401
2029	#2804 #2902	SWMF NEW CONSTRUCTION SWMF NEW CONSTRUCTION	COOKSVILLE CREEK, HYDRO, NE HWY 403 & HURNSTON ST COOKSVILLE CREEK, HYDRO, NW HWY 403 & HURNSTON ST
2030	-	-	-
2031	CLER-0100-01 NINTH #0101	CREEK CHANNELIZATION HYDRO ONE CROSSING SWMF RETROFIT	CLEARVIEW CREEK, 800M NORTH FROM LAKESHORE RD WEST OF CITY LIMITS (FOR NINTH LINE LANDS) CREDIT RIVER, WELLSBOROUGH PL & TILLYHAM GRNS

NOTES
1. Development Charges are reviewed every 5 years.

Last updated October 19, 2021