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2017 Capital Budget Briefing Note

Basement Flooding Protection Program – Project List: 2017 to 2021

Issue:

City Council directed the General Manager of Toronto Water to submit an updated five year list of Basement Flooding Protection Program capital projects through the annual Capital Budget submission process.

Background:

On September 21, 2011 City Council adopted the recommendations contained within the Wet Weather Flow Master Plan and Basement Flooding Protection Program Update Report. The report, which can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.PW7.6> provides a description of the methodology used to prioritize and plan sewer system improvement projects for the Basement Flooding Protection Program, and contains the following recommendations:

- 1) City Council direct that the prioritization of Basement Flooding Protection Program projects be consistent with the principle that the greatest number of properties are protected as soon as possible within approved funding envelopes and coordinated with other City capital programs;
- 2) City Council direct that projects identified through completed Environmental Assessments in the 32 identified Chronic Basement Flooding Study Areas, proceed to detailed design and construction, if the cost per benefitting property, as determined during the preliminary design phase, is less than or equal to \$32,000; and
- 3) City Council direct the General Manager, Toronto Water to submit an updated five year list of projects, through the annual Capital Budget submission process, where Class Environmental Assessment studies have been completed, and the projects be prioritized in conformance with Recommendations 1 and 2, and where the first two years of projects will be identified for construction (when their preliminary designs are completed) and the following three years of projects will be subject to confirmation for implementation through the preliminary design phases where cost estimates will be refined, and the project scheduling will be coordinated with Transportation Services and other utilities.

As a result of the extreme storm event of July 8, 2013, the Basement Flooding Protection Program was expanded city-wide to include 67 study areas.

The staff report that provides background information for the expansion of the Basement Flooding Protection Program to 67 study areas can be viewed at:

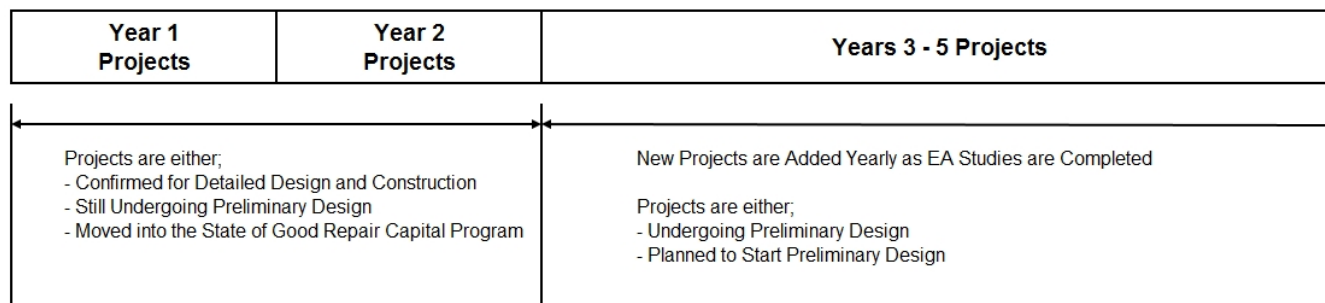
<http://www.toronto.ca/legdocs/mmis/2015/ex/bgrd/backgroundfile-77355.pdf>

Basement Flooding Protection Program projects are identified through Environmental Assessment Studies (EA), which assess an area's drainage system capacity. As of September 30, 2016, EA studies have been completed for 30 Basement Flooding Study Areas. EA studies for eleven study areas are underway, of which one EA study is planned to be completed by the end of 2016 (Study Area 26), eight EA studies are planned for completion in 2017 (Study Areas 20, 27, 34, 35, 36, 37, 38 and 39), and two EA studies are planned for completion in 2018 (Study Areas 40 and 41).

As part of the Environmental Assessment Study process, a construction cost is estimated along with a calculation of the number of benefitting homes for each recommended project. Projects where the EA study cost estimate per benefitting property is less than or equal to the City Council adopted \$32,000 cost per benefitting property threshold value, proceed to the preliminary design stage of the implementation program. These projects first appear in the Year 3 to Year 5 grouping of projects, as highlighted by the following schematic.

Figure 1

**Schematic of Basement Flooding Protection Program
5 Year Capital Planning of Projects**



The goal of the preliminary design stage is to ensure the physical constructability of projects and to better define project cost estimates. Through various field investigations, the design is refined and the full extent of the construction impacts can be understood (e.g. the extent of road works, and adjustments to existing utilities can be better quantified). This design refinement can result in changes to the scope and extent of the EA Study recommendations, and can result in significant project cost increases.

Projects that continue to meet the \$32,000 cost per benefitting property threshold at the completion of the preliminary design stage proceed to the detailed design stage. While it is typical for construction to start within two years following the completion of the preliminary design, projects can sometimes be delayed to allow coordination with the schedules of works being delivered by other City of Toronto divisions and utilities. Only once projects are moved into the detailed design stage, should they be communicated to the public as being projects that will be proceeding to construction.

Projects that do not meet the \$32,000 cost per benefitting property threshold, either at the Environmental Assessment study stage or at the completion of the preliminary design stage, are moved into the State of Good Repair's long-term capital plan (i.e. 'the Infrastructure Backlog'). These projects will be sequenced for detailed design and construction, as the replacement of the existing drainage systems becomes warranted due to poor structural condition or to address land development needs.

This briefing note only lists those projects that have been moved to the State of Good Repair program upon completion of preliminary design.

Key Points:

- Table 1 (attached) contains a 5-year list of projects organized by year and by Ward. This list corresponds to City Council's request contained within the recommended Toronto Water 2016 Capital Budget, and the 2017 to 2020 Capital Budget Plan.
- The projects identified in Table 1 fall into one of 5 categories, namely;

Under Construction Projects: These projects are projects that have already been awarded to a contractor for construction. These works are in various stages of completion.

Projects Confirmed for Construction: Preliminary design for these projects has been completed, and it has been confirmed that the projects preliminary design estimated costs meet the allowable maximum cost of \$32,000 per benefitting property. These projects have been coordinated with the known capital programs of Transportation Services and other utilities.

Projects Undergoing Preliminary Design: Preliminary design for these projects has not yet been completed. For these projects, it has not yet been confirmed that the allowable maximum cost of \$32,000 per benefitting property can be met, and as a result, these projects cannot yet be confirmed for detailed design and construction. These projects are in the process of being coordinated with the capital programs of Transportation Services, other divisions, and utilities.

Projects Planned for Preliminary Design: Preliminary design for these projects has not yet been initiated. These projects are in the process of being assigned to consultants to begin the preliminary design process.

Deferred Projects: Preliminary design for these projects has been completed and the costs exceed the Basement Flooding Protection Program's \$32,000 cost per benefitting property threshold. Due to their elevated costs, these projects are moved into the State of Good Repair's long-term capital plan (i.e. 'the Infrastructure Backlog').

- Many Basement Flooding projects require works to be completed within easements on private property. The time required to negotiate easement agreements with private landowners may affect the construction schedule presented in this briefing note.

- The scheduling of projects in the 2019 to 2021 time frame is subject to change, due to capital coordination issues and regulatory approvals which may be necessary; and this schedule will be further updated in future year Toronto Water Capital Budget submissions.
- The projects in the 5 year list have been identified from the 30 completed Environmental Assessment (EA) studies as of September 30, 2016. Additional projects will be added to the 5 year plan for Area 24 and from EA studies that are scheduled for completion by the end of 2016 and early 2017, namely Areas 26 and 27. Preliminary design efforts for some of these new projects may be initiated prior to appearing in the next annual Basement Flooding Protection Program project list Briefing Note document. This approach will be used to ensure that as many projects as possible are initiated without delay.
- The description of basement flooding protection projects identified in Table 1 are as follows:

New Storm/Combined/Sanitary Sewers: These are new sewers proposed where a sewer does not currently exist or a secondary relief sewer where a sewer does currently exist. These projects can include several elements such as High Capacity Inlets (HCIs) and Inlet Control Devices (ICDs) on the storm sewer system as well as sealing of maintenance hole covers on the sanitary sewer system. Pipes may be designed to provide temporary storage of excess storm or sanitary sewage.

Storm/Combined/Sanitary Sewer Replacements: These are larger or deeper sewers that will replace already existing sewers. These projects can include several elements such as HCIs and ICDs on the storm and combined sewer system as well as the sealing of maintenance hole covers on the sanitary sewer system. Pipes may be designed to provide temporary storage of excess storm, combined or sanitary sewage.

Bridge/Culvert Improvements: These projects involve increasing the size or slope of a bridge or culvert to improve the conveyance capacity of the overland drainage system.

Road Re-Grading: Re-grading a road involves adjusting the elevation of the road to improve overland drainage. This type of project can also include modifications including curb cuts to direct drainage to new outlets.

High Capacity Inlets: High Capacity Inlets (HCIs) are catch basins designed to capture much more flow than standard catch basins and are typically installed to reduce excessive surface ponding at topographic low points.

Inlet Control Devices: Inlet control devices (ICDs) are flow restrictors installed within catch basins to control the flow rate into the storm or combined sewer system.

Storm or Combined or Sanitary Sewer Storage Tanks: Storage tanks temporarily store excess storm, sanitary or combined sewage. These facilities are typically off-line from the sewer system and are drained via pumps.

Dry Stormwater Pond/Wet Stormwater Pond/Engineered Wetland: Stormwater ponds/Engineered Wetlands temporarily store excess stormwater. Wet stormwater ponds and engineered wetlands always contain water whereas a dry stormwater pond is designed to fully drain between rainfall events. Each of these facilities also provide water quality treatment. Dry stormwater ponds are typically located within parks and the land within the pond can be used for recreational activities between rainfall events.

Oil and Grit Separators: Oil and Grit Separators (OGS) are devices that are installed in maintenance holes to provide water quality treatment. These devices are typically installed in-line with the storm sewer system within the road right-of-way.

Bioretention: Bioretention units utilize soil, mulch and plants to remove pollutants from stormwater runoff. These units can take a variety of forms such as swales or depressions where runoff from small storms is temporarily detained and treated. These units are typically installed within the road right-of-way.

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Date: October 21, 2016

Table 1: Basement Flooding Protection Program – Project list: 2017 – 2021

2016 and Earlier Projects

Under Construction Projects - Completion Expected in 2016

Ward	Councillor	Project #	Location	Project Description	Preliminary Design Cost Estimate	Cost Per Benefitting Property
12 / 17	Di Giorgio / Palacio	3-02	Hillary Ave. Old Weston Rd. Rosethorn Ave. Rowntree Ave. Silverthorn Ave.	Storm & Sanitary Sewer Replacements	\$7,892,000	\$13,993
12	Di Giorgio	16-01	North Park Ravine	Sanitary Sewer Replacements	\$1,181,000	N/A ¹
16	Carmichael Greb	18-02	Grey Rd	Storm & Sanitary Sewer Replacements	\$515,600	\$5,926
17	Palacio	3-04	Charles Caccia Park Nairn Ave.	Combined Sewer Storage Tank	\$7,651,124	\$19,770
24	Shiner	29-20	Loganberry Cres. Easement	New Storm Sewers / Storm Sewer Replacements	\$741,000	\$28,500
30	Fletcher	32-03	Ivy Ave.	New Storm Sewers	\$380,000	\$31,666
39	Karygiannis	31-12	Stonebridge Blvd.	Storm Sewer Replacements	\$383,000	\$26,320
40	Kelly	31-18	Bridlewood Blvd. Robintide Crt.	Storm Sewer Replacements	\$677,097	\$29,439

2017 - Year 1 Projects

Under Construction Projects - Construction Started in 2016 or Earlier and Continuing into 2017

Ward	Councillor	Project #	Location	Project Description	Preliminary Design Cost Estimate	Cost Per Benefitting Property
8	Perruzza	14-03	Catford Rd. Conamore Cres. Council Cres. Derrydown Rd. Dundee Dr. Hucknall Rd. Killamarsh Dr. Madron Cres. Sentinel Rd.	New Storm Sewers / Storm Sewer Replacements	\$15,157,000	\$46,925 ²
8	Perruzza	14-05	Artech Crt Easement Fletcherdon Cres. Gosford Blvd. Hullmar (east of Gosford) Jane St. Secroft Cres. Shoreham Dr. York Gate Blvd.	Storm Sewer Replacements	\$7,003,000	\$31,688
8	Perruzza	14-07	Derrydown Rd. Paulvale Cres. Romfield Dr. Romfield Dr. E Villata Gdns.	Storm Sewer Replacements	\$6,466,000	\$28,235
8	Perruzza	14-09	Bamford Cres. Blacksmith Cres. Easement Hissey Cres. Hullmar Dr. Jane St. Skye Crt. Wheelwright Cres.	Storm Sewer Replacements	\$8,415,000	\$23,055
8	Perruzza	14-10	Kennerly Crt.	New Storm Sewers	\$1,540,000	\$66,957 ²
12	Di Giorgio	16-23 B	Alladin Ave. Culford Rd Maple Leaf Dr Rustic Rd. Seabrook Ave.	New Storm Sewers / Storm Sewer Replacements	\$2,431,000	\$18,500
12	Di Giorgio	16-26	Culford Rd Blue Springs Rd. Rustic Rd.	Storm Sewer Replacements	\$1,207,000	\$30,990
12	Di Giorgio	16-27	Blue Springs Rd. Brief Rd. Falstaff Ave.	Storm Sewer Replacements	\$2,928,000	\$28,700
12	Di Giorgio	16-28	Beckett Ave. Falstaff Ave. Fleetwood Ave. Maidstone St.	Storm Sewer Replacements	\$2,672,132	\$31,811
12	Di Giorgio	16-29	Rustic Park.	Dry Stormwater Pond	\$367,000	\$3,248

Ward	Councillor	Project #	Location	Project Description	Preliminary Design Cost Estimate	Cost Per Benefitting Property
12	Di Giorgio	16-30	Maple Leaf Park.	Engineered Wetland	\$820,850	\$21,100
12	Di Giorgio	16-32	Dante Rd. Demarco Blvd.	Storm & Sanitary Sewer Replacements	\$960,000	\$19,200
12	Di Giorgio	16-37	Culford Rd. Dante Rd. Easement Gracefield Park	Storm Sewer Replacements / Dry Stormwater Pond	\$814,000	\$9,465
12	Di Giorgio	16-38	Sorlyn Ave.	Storm Sewer Replacements	\$343,000	\$19,055
24	Shiner	29-07 A	Easement Bestview Dr. Goldenwood Rd. Harrington Cres. Kentland Cres.	Storm Sewer Replacements	\$6,994,826	\$31,508

2017 - Year 1 Projects
Projects Confirmed to Start Construction in 2017

Ward	Councillor	Project #	Location	Project Description	Preliminary Design Cost Estimate	Cost Per Benefitting Property
7	Mammoliti	13-02	Frith Rd. Jane St. Larchwood Rd. Laura Rd. Lomar Dr. Ryewood Dr. Sheppard Ave. W. Snowood Cr.	New Storm Sewers / Storm & Sanitary Sewer Replacements / ICDs / Biorention	\$13,119,000	\$13,100
9	Augimeri	13-01	Friary Cr.	Storm Sewer Replacements	\$158,000	\$7,200
15	Colle	18-01	Prince Charles Dr.	Sanitary Sewer Replacements	\$265,000	\$7,600
16	Carmichael Greb	18-04	Dunblaine Ave.	Storm Sewer Replacements	\$1,786,000	\$19,300
16	Carmichael Greb	18-05	Barse St.	New Storm Sewers / Storm Sewer Replacements	\$166,200	\$8,000
16	Carmichael Greb	18-07	Glengarry Ave.	Storm Sewer Replacements	\$401,400	\$13,000
16	Carmichael Greb	18-09	Fairlawn Ave.	Storm Sewer Replacements	\$146,500	\$4,000
15	Colle	18-11	Ameer Ave. Baycrest Ave. Sultana Ave.	New Storm Sewers / Storm Sewer Replacements	\$7,195,000	\$63,700 ²
16	Carmichael Greb	18-12	Brooke Ave.	Storm Sewer Replacements	\$2,483,500	\$49,700 ²
24	Shiner	30-18	Pineway Blvd. Reiber Cres.	New Storm Sewers / Storm Sewer Replacements	\$591,000	\$5,794

2017 - Year 1 Projects

Projects Undergoing Preliminary Design - Targeted Construction Start Year of 2017

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
10	Pasternak	19-03	Westgate Blvd.	New Storm Sewers / Storm & Sanitary Sewer Replacements	\$12,853,700	\$13,896
10	Pasternak	19-06	Ellison Ave. Garratt Blvd. Timberlane Dr. Westgate Blvd.(not Westgate Ravine)	New Sanitary Sewers / Storm & Sanitary Sewer Replacements	\$11,303,600	\$18,115
10	Pasternak	19-07	Faywood Blvd. King High Ave. Laurelcrest Ave.	Sanitary Sewer Replacements	\$230,400	\$2,916
10	Pasternak	19-11	Beaver Valley Rd. Clifton Ave. Hove St. Maxwell St. Overbrook Pl.	Sanitary Sewer Replacements	\$1,917,600	\$3,938
10	Pasternak	19-16	Bathurst St. Bonnacord Dr. Clanton Park Rd. Collinson Blvd. Delia Crt. Erica Ave. Laurelcrest Ave. Midvale Rd. Palm Dr. Raeburn Ave. Romney Rd.	New Storm Sewers / Storm Sewer Replacements	\$3,876,200	\$14,966
10	Pasternak	19-21	Almore Ave	Storm Sewer Replacements	\$81,100	\$4,055
11	Nunziata	6-01	Weston Rd.	Storm Sewer Replacements	\$190,000	\$3,065
11	Nunziata	6-02	Sykes Ave. Arthur St.	Storm & Sanitary Sewer Replacements / ICDs	\$165,000	\$6,600
11	Nunziata	6-03	Pellatt Ave.	Sanitary Sewer Replacements	\$150,000	\$7,500
11	Nunziata	6-05	Weston Rd.	Storm Sewer Replacements	\$304,000	\$10,483
11	Nunziata	6-06	Centre Rd. Edmund Ave.	Storm Sewer Replacements	\$377,000	\$13,464
11	Nunziata	6-07	Clouston Ave.	New Storm Sewers	\$135,000	\$16,875

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
11	Nunziata	6-08	Gary Dr. Lamont Ave. Langside Ave. Queenslea Ave. Walwyn Ave. Wendell Ave. Woodward Ave.	New Storm Sewers / Storm & Sanitary Sewer Replacements	\$2,199,000	\$21,772
31	Davis	1-01	Amsterdam Ave. Furnival Rd. Glenburn Ave Glenwood Cr. Joanith Dr. Merritt Rd. O'Connor Dr. Peard Rd. Squires Ave. St. Clair Ave E. St. Columba Pl. Taylor Creek Trl. Topham Rd. Valor Blvd. Westview Blvd.	New Storm Sewers / Storm Sewer Replacements / Bioretention	\$15,547,950	\$12,850

2018 - Year 2 Projects

Projects Undergoing Preliminary Design - Targeted Construction Start Year of 2018

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
3	Holyday	8-03	Beaverbrook Ave.	Sanitary Sewer Replacements	\$627,900	\$3,651
4	Campbell	8-04 A & B	Great Oak Dr. Kipling Ave. Thorncrest Rd.	New Sanitary Sewers / Storm & Sanitary Sewer Replacements	\$2,826,100	\$23,165
9	Augimeri	15-01	Tavistock Road. Easement	Storm Sewer Replacements	\$87,091	\$2,720
9	Augimeri	15-02	Calvington Dr. Forthbridge Crs. Lexfield Ave.	Storm Sewer Replacements / ICDs	\$770,027	\$5,969
9	Augimeri	15-05	Buxton Rd. Exbury Rd. Peacham Cres. Troutbrooke Dr.	New Storm Sewers / Storm Sewer Replacements / Bioretention	\$1,276,722	\$12,896
9	Augimeri	15-06	Camborne Ave.	Storm Sewer Replacements	\$658,361	\$6,856
9	Augimeri	15-07	Julian Rd. Victory Dr. Wilson Ave.	Storm Sewer Replacements	\$2,413,387	\$9,972
9	Augimeri	15-08	Clevedon St. Deevale Rd. Heathrow Dr. Letchworth Cres. Lexifield Ave. Richard Clark Dr. Tumpane St.	New Storm Sewers / Storm Sewer Replacements / ICDs Bioretention	\$2,879,643	\$11,427

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
9	Augimeri	15-09	Chappel Hill Rd. Epsom Downs Tumpene St.	Storm Sewer Replacements / ICDs	\$1,475,623	\$11,012
9	Augimeri	15-10	Dana Ave. Palarmar Rd. Redfern Ave. Richard Clark Dr. Smallwood Dr. Tumpene St. Westcliffe Rd. William Cragg Dr.	Storm Sewer Replacements / ICDs / Bioretention	\$2,062,009	\$12,573
9	Augimeri	15-11	Datchet Rd. Heathrow Dr. Jane St.	Storm Sewer Replacements / ICDs / Bioretention	\$546,214	\$12,702
9	Augimeri	15-12	Gatesgill Cres. Jane St. Monclova Rd. Troutbrooke Dr.	Storm Sewer Replacements / ICDs / Bioretention	\$1,374,245	\$10,411
9	Augimeri	15-13	Chalkfarm Dr. Easement Exbury Rd. Jane St. Marlington Cres. Monclova Rd. Neames Cres. Peacham Cres. Rabton Crt.	Storm Sewer Replacements / ICDs / Bioretention	\$6,153,106	\$13,734
10	Pasternak	19-01	Bayhampton Crt. Easement	Storm Sewer Replacements / HCIs	\$466,400	\$9,145
10	Pasternak	19-02	Easement Purdon Dr. Terrydale Dr.	Storm Sewer Replacements / ICDs	\$945,800	\$11,822
10	Pasternak	19-04	Cavotti Cres. Honiton St.	Storm Sewer Replacements	\$936,600	\$22,844
10	Pasternak	19-08	Barksdale Ave. Wilmington Ave.	Storm Sewer Replacements	\$283,100	\$4,718
10	Pasternak	19-12	Blue Forest Dr. Cavotti Cres. Easement Elder St. Maxwell St. Wilmington Ave.	New Storm Sewers / ICDs / HCIs	\$2,051,500	\$12,068

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
10	Pasternak	19-13	Amos Cres. Baintree Crt. Brighton Ave. Bryant St. Cocksfield Ave. Codsell Ave. Easement Goddard St. Hove St. Searle Ave. Shaftesbury St. Tillplain Rd. Tokay Crt. Waterloo Ave. Wilmington Ave. Wilson Heights Blvd.	New Sanitary Sewers / Storm Sewer Replacements	\$12,880,300	\$14,703
12	Di Giorgio	16-12	Gracefield Ave. Keele St.	Storm Sewer Replacements / ICDs	\$229,200	\$22,920
13	Doucette	4-01	Humbercrest Blvd.	New Storm Sewers	\$283,000	\$4,288
13	Doucette	4-02	Watson Ave.	New Storm Sewers	\$317,000	\$4,117
13	Doucette	4-03	Durie St.	New Storm Sewers	\$211,000	\$3,403
15	Colle	16-45	Easement Glencairn Ave. Tycos Dr.	Sanitary Sewer Replacements	N/A	N/A ¹
15	Colle	17-02	Playfair Ave.	Sanitary Sewer Replacements	\$244,000	\$4,436
15	Colle	17-05	Viewmount Park	Sanitary Sewer Replacements	\$994,200	\$4,213
15	Colle	17-06	Coldstream / Glenmount Ave. / Bathurst St.	New Storm Sewers	\$3,077,500	\$25,225
15	Colle	17-10	Glen Long Ave.	New Storm Sewers	\$990,500	\$21,533
15	Colle	17-12	Prue Ave	New Storm Sewers	\$368,100	\$24,540
16	Carmichael Greb	17-04	Cortleigh Blvd. Ruby Cres.	Sanitary Sewer Replacements	\$289,600	\$17,035
16	Carmichael Greb	18-05	Barse St.	New Storm Sewers / Storm Sewer Replacements	\$166,200	\$8,000

2018, 2019, 2020 & 2021 - Year 2, 3, 4 & 5 Projects

Projects Undergoing Preliminary Design - Targeted Construction Start in 2018, 2019, 2020 & 2021

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
12 / 15 / 17	Di Giorgio / Colle / Palacio	03-03	Allenvale St. Blandford St. Bowie Ave. Caledonia Rd. Chamberlain Ave. Chudleigh Rd. Croham Rd. Dufferin St. Dunraven Dr. Dunraven Dr. Dynevor Rd. Dynevor Rd. Easement Eglinton Ave. W. Ennerdale Rd. Genessee Ave. Gilbert Ave. Glenholme Ave. Hanson Rd. Harvie Ave. Holmesdale Rd. Hyde Ave. Kirknewton Rd. Kitchener Ave. Lauder Ave. Little Blvd. Martin St. Nashville Ave. Northcliff Blvd. Rogers Rd. Silverthorn Ave. Snider Ave. Westmount Ave.	New Storm Sewers / Combined Sewer Replacements / ICDs	\$157,000,000	\$60,947 ³

2019, 2020 & 2021 - Year 3, 4, & 5 Projects

Projects Planned for Preliminary Design - Targeted Construction Start in 2019, 2020 & 2021

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
3	Holyday	9-01	Allonsius Dr. Boreal Rd Botley Rd. Burnhamthorpe Rd. Carsbrooke Rd. Crendon Dr. Easements Elderfield Cres. Glos Rd. Renforth Dr. Renforth Dr. Saturn Rd. Tranquil Dr. Windust Gt.	Storm & Sanitary Sewer Replacements / ICDs	\$29,113,900	\$53,518 ⁴
9	Augimeri	16-22	Ianhall Rd. Julian Rd. Nash Dr. Rodding Park Rodding St. Wilson Ave.	New Storm Sewers / Storm & Sanitary Sewer Replacements / Road Re-Grading / ICDs / HClS	\$3,450,000	\$23,469
10	Pasternak	19-14	Brockington Cres. Coreydale Cres. Maxwell St.	New Storm Sewers / ICDs / HClS	\$487,000	\$11,326
10	Pasternak	19-15	Brighton Ave. Easement Hove St. Waterloo Ave. Wild Gingerway	Storm Sewer Replacements / ICDs / HClS	\$83,700	\$1,993
10	Pasternak	19-17	Armour Blvd. Barwick Dr. Bombay Ave. Elderberry Crt. Romney Rd. Sandringham Dr. Tresillian Rd. York Downs Dr.	New Storm Sewers / ICDs	\$1,335,200	\$4,526
10	Pasternak	19-18	Armour Blvd. Ridley Blvd.	Storm Sewer Replacements / ICDs	\$110,700	\$1,419
10	Pasternak	19-19	Bantling Ave. Dufferin St. Reiner Rd. Sheppard Ave. W.	New Storm Sewers / Storm Sewer Replacements / ICDs / HClS	\$2,056,800	\$23,916
10	Pasternak	19-20	Bainbridge Ave. Easement at Dublin Heights Elementary School Faywood Blvd. Harlock Blvd. (at Ellison Park) Reiner Rd.	New Storm Sewers / ICDs / HClS	\$3,094,500	\$25,788

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
10	Pasternak	19-22	Cocksfield Ave. Godsell Ave. Sandale Gardens Tillplain Rd.	Storm Sewer Replacements / ICDs	\$59,600	\$1,923
10	Pasternak	19-23	Alexis Blvd. Bainbridge Ave. Bathurst St. Cocksfield Ave. Easement Godsell Ave. Harlock Blvd. (at Ellison Park) Maxwell St. McAllistar Rd. Reiner Rd. Sandale Gdns. Sheppard Ave. W. Verwood Ave. Wilmington Ave.	New Storm Sewers / Storm & Sanitary Sewer Replacements / ICDs / HClS	\$17,091,500	\$21,717
10	Pasternak	19-24	Goodwill Ave. Model Ave. Tippett Rd. Wilson Ave. Wilson Heights Blvd.	Storm Sewer Replacements / ICDs	\$1,810,600	\$22,080
10	Pasternak	19-25	Carmichael Ave. McGillivray Ave.	Storm Sewer Replacements / ICDs / HClS	\$3,535,000	\$5,245
10	Pasternak	19-30	Brighton Ave. Seario Ave.	ICDs	N/A	N/A ²
10	Pasternak	19-31	Bowring Walk Clanton Park Rd. Gladiola Ct. Joel Swirsky Blvd.	ICDs / HClS	N/A	N/A ²
11	Nunziata	4-13	Hilldale Rd.	New Storm Sewers	\$2,071,000	\$28,370
11	Nunziata	6-04	Boyd Ave. Church St. Easement Elm St. Grattan St. Joseph St. King St. Patika Ave. MacDonald Ave. Pine St. Queens Dr. Robert St. Vimy Ave. Wadsworth Blvd. William St. Wright Ave.	New Storm Sewers / Storm, Sanitary & Combined Sewer Replacements	\$6,886,000	\$9,108
13	Doucette	5-01	Catherine St. Halford Ave. Old Mill Dr. Riverview Gdns.	Storm Sewer Replacements	\$1,299,000	\$8,777

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
15	Colle	17-01	Dufferin St. Mulholland Ave.	Sanitary Sewer Replacements / ICDs	\$320,000	\$13,333
15	Colle	17-03	Dalemount Ave.	Sanitary Sewer Replacements	\$97,100	\$4,222
15	Colle	17-13	Hillhurst Blvd.	Storm Sewer Replacements	\$403,900	\$10,356
15 / 16	Colle / Carmichael Greb	17-15	Bathurst St. Chaplin Cres. Dalemount Ave. Glen Cairn Ave. Glen Park Ave. Glencairn Ave. Hillhurst Blvd. Hillmount Ave. Lawrence Ave. W. Prue Ave. Replin Dr. Shermount Ave. Viewmount Ave.	New Storm & Sanitary Sewers / Storm Sewer Replacements / Storm Sewer Storage Tanks / ICDs	\$40,914,000	\$72,789 ⁵

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
12 / 15	Di Giorgio / Colle	17-23	Apex Rd. Caledonia Rd. Capitol Ave. Claver Ave. Coldstream Ave. Dalemount Ave. Danesbury Ave. Densley Ave. E. Dufferin St. Easement Enid Cres. Ennerdale St. Eugene St. Euphrasia Dr. Glen Belle Cres. Glen Park Ave. Glenbrook Ave. Glencairn Ave. Glengrove Ave. Good Shepped Crt. Gurney Cres. Hillmount Ave. Ingram Dr. Ingram Transfer Station Joyce Pkwy. Keele St. Kincort St. Lansdowne Ave. Lawrence Ave. W. Lilywood Rd. Lois Ave. Marianfield Ave. Marlee Ave. Playfair Ave. Raitherm Rd Risa Blvd. Romar Cres. Sauble St. Sheffield St. Stayner Ave. Steven Ave. Times Rd. Tycos Dr. Wingold Ave.	New Storm Sewers / Storm Sewer Replacements / ICDs / HClIs / Wet Stormwater Pond	\$101,405,400	\$56,118 ⁶
26	Burnside	2-01	Broadway Ave. Rykert Cres.	New Storm Sewers / Storm Sewer Replacements	\$690,120	\$14,084
26	Burnside	2-03	Bessborough Dr. Donlea Dr. Rumsey Rd.	New Storm Sewers	\$2,161,250	\$8,750

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
26	Burnside	2-04	Donegall Dr. Fleming Cr. Hanna Rd. Laird Dr. MacNaughton Rd. Sharron Dr. Sutherland Dr. Vanderhoof Ave.	New Storm Sewers / ICDs	\$1,547,659	\$6,586
26	Burnside	2-05	Commercial Rd. Markham Ave. Sutherland Dr. Sutherland Dr.	New Storm Sewers / ICDs	\$795,825	\$10,202
26	Burnside	2-07	McRae Dr.	New Storm Sewers / Storm Sewer Replacements	\$297,675	\$5,132
26	Burnside	2-08	Hanna Rd. Rumsey Rd.	New Storm Sewers	\$282,488	\$12,282
30	Fletcher	32-04	Easement Eastern Ave. Leslie St. Mosley St. Winnifred Ave.	Storm Sewer Replacements	\$1,886,868	\$11,793
30	Fletcher	32-18	Earl Grey Rd. Hunter St. Ravina Cres. Shudell Ave.	New Storm Sewers	\$998,648	\$14,473
30	Fletcher	32-19	First Ave. Gerrard St E.	New Storm Sewers / Combined Sewer Replacements	\$256,726	\$4,209
30	Fletcher	32-20	Pape Ave.	New Storm Sewers	\$419,438	\$2,330
30	Fletcher	32-21	Queen St. E.	New Storm Sewers / Combined Sewer Replacements	\$2,009,746	\$9,949
30	Fletcher	32-22	Carlaw Ave	Combined Sewer Replacements	\$1,234,913	\$26,845
30	Fletcher	32-23	Morse St.	Storm Sewer Replacements	\$440,166	\$6,379
30	Fletcher	32-24	Booth Ave. Empire Ave	Storm Sewer Replacements	\$647,393	\$4,434
30	Fletcher	32-25	Eastern Ave. Saulter St.	New Storm Sewers	\$613,927	\$11,162
30 / 32	Fletcher / McMahon	32-14	Craven Rd. Queen St E. Rhodes Ave.	New Storm Sewers / Combined Sewer Replacements	\$2,449,387	\$9,568
30 / 32	Fletcher / McMahon	32-17	Alton Ave. Laing St. Queen St. E.	Combined Sewer Replacements	\$532,782	\$8,325
31	Davis	1-02	Bermondsey Rd. O'Connor Dr.	Storm Sewer Replacements	\$1,165,050	\$24,405
32	McMahon	32-05	Glen Manor Dr.	New Storm Sewers	\$178,200	\$4,816

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
32	McMahon	32-06	Rainsford Rd.	Combined Sewer Replacements	\$35,323	\$1,039
32	McMahon	32-07	Elmer Ave.	Storm Sewer Replacements	\$120,815	\$6,041
32	McMahon	32-08	Queen St. E.	New Sanitary Sewers	\$26,680	\$834
32	McMahon	32-09	Hambly Ave.	Storm Sewer Replacements	\$194,666	\$2,949
32	McMahon	32-12	Waverley Rd.	New Storm Sewers	\$215,679	\$6,740
32	McMahon	32-13	Lee Ave.	New Storm Sewers	\$232,706	\$10,118
32	McMahon	32-15	Kerr Rd.	Storm Sewer Replacements	\$103,596	\$2,302
32	McMahon	32-16B	Minto Ave.	New Storm Sewers / Storm & Sanitary Sewer Replacements	\$1,277,274	\$10,555
32	McMahon	32-26	Victoria Park Ave.	Combined Sewer Replacements	\$497,248	\$6,294
32	McMahon	32-27	Kingswood Rd. Neville Park Blvd. Queen St E.	New Storm Sewers / Storm Sewer Replacements	\$989,376	\$17,667
34	Minnan-Wong	21-01	Deepwood Cres.	Storm Sewer Replacement / HCl's	\$847,600	\$24,217
34	Minnan-Wong	21-02	Plateau Cres.	Storm Sewer Replacement	\$291,900	\$8,585
34	Minnan-Wong	21-06	Thorn Ln.	Storm Sewer Replacement	\$56,200	\$5,620
34	Minnan-Wong	21-11	Crossburn Dr. Park Glen Dr.	New Storm Sewers / Storm Sewer Replacements / ICDs	\$1,717,421	\$31,804
34	Minnan-Wong	21-12	Chipping Greenbelt Trl.	Storm Sewer Replacements / ICDs	\$91,400	\$2,770
34	Minnan-Wong	21-13	Farmcote Rd. Yewfield Cres. Hermit Crt.	New Storm Sewers / Storm Sewer Replacements / ICDs	\$2,585,547	\$31,531
34	Minnan-Wong	21-16	Kern Rd.	HCl's	\$4,800	\$4,800
34	Minnan-Wong	21-17	Lesmill Rd.	HCl's	\$9,600	\$2,400
34	Minnan-Wong	22-01	Pitcairn Cres. Wigmore Dr.	Storm Sewer Replacements / ICDs	\$126,506	\$1,040
34	Minnan-Wong	22-02	Daleside Cres. Sundial Cres. Sulkara Crt. Sweeney Dr.	Storm Sewer Replacements / ICDs / Bioretention	\$1,014,543	\$6,855
34	Minnan-Wong	22-04	Rusciaca Dr. Victoria Park Ave.	New Storm Sewers / Storm Sewer Replacements / Bioretention	\$3,826,256	\$18,220

Ward	Councillor	Project #	Location	Project Description	EA Study Cost Estimate	Cost Per Benefitting Property
34	Minnan-Wong	22-07	Draycott Dr. Eccleston Dr. Elvaston Dr. Sloane Ave. Swift Dr. Tinder Cres. Trophy Dr.	Storm Sewer Replacements / ICDs / Bioretention	\$5,020,139	\$20,744
34	Minnan-Wong	22-10	Anewen Dr. Kenewen Ct. Sloane Ave. Woodthorpe Rd.	Storm Sewer Replacements / ICDs	\$1,145,860	\$17,361
34	Minnan-Wong	22-15	Camforth Rd. Daleside Cres. Sweeney Dr. Teak Ave. Wyndcliff Cres.	Storm Sewer Replacements / ICDs / Bioretention	\$4,777,378	\$17,759
34	Minnan-Wong	22-17	Knighton Dr.	Storm Sewer Replacements	\$586,670	\$17,130
34	Minnan-Wong	22-18	Cobham Cres.	Storm Sewer Replacements	\$120,172	\$17,170
34	Minnan-Wong	22-21	Rusciaca Dr. Salvi Crt.	Storm Sewer Replacements	\$589,166	\$17,300
34	Minnan-Wong	22-22	Murellen Cres.	Storm Sewer Replacements / Bioretention	\$246,246	\$17,650
34	Minnan-Wong	23-01	Baltray Cres. Billing Cres. Fortrose Cres. Marbury Cres. Roywood Dr. Skelmore Cres.	New Storm Sewers / Storm Sewer Replacements / ICDs	\$6,244,100	\$11,071
34	Minnan-Wong	23-02	Kestell Ln. Lacewood Cres. Three Valleys Dr.	New Storm Sewers / Storm Sewer Replacement / ICDs / HClS / Bioretention	\$3,444,796	\$31,896
34	Minnan-Wong	23-03	Brookbanks Park Trl. Cannonbury Crt. Combermere Dr. Easement Pintail Cres. Ptarmigan Cres. Pynford Cres. Ravenrock Crt. Rayoak Dr. Treadgold Cres. Wallingford Rd.	New Storm Sewers / Storm Sewer Replacement / Road Re-grading / Culvert Improvements / ICDs / HClS / OGS	\$9,972,200	\$27,247
36	Crawford	33-01	Avalon Blvd.	New Storm Sewers	\$500,000	\$19,231
36	Crawford	33-03	Craiglee Dr. Haslam St. Kennedy Rd. Malta St. Preston St.	New Storm Sewers	\$2,500,000	\$21,739
36	Crawford	33-05	Chine Dr. Montvale Dr. St. Clair Ave. E.	Sanitary Sewer Replacement	\$2,900,000	N/A ⁷

**Projects Moved to the State of Good Repair Program
(i.e. Preliminary Design Costs > \$32,000 per benefitting property)**

Ward	Councillor	Project #	Location	Project Description	Preliminary Design Cost Estimate	Cost Per Benefitting Property
8	Perruzza	14-12	Candlewood Cres. Clayhall Cres. Derrydown Rd. Keegan Cres. Lamberton Blvd.	Storm Sewer Replacements	\$5,744,600	\$34,700
15	Colle	18-10	Wasdale Cres.	Storm Sewer Replacements	\$3,350,800	\$39,500
16	Carmichael Greb	18-06	St. Germain Ave.	Storm Sewer Replacements	\$486,400	\$60,900
24	Shiner	29-12	Easement James Gray Dr.	Storm Sewer Replacements	\$3,900,900	\$48,200
33	Carroll	29-02 C	Ashtead Pl. Deerford Rd. Easement Hobart Dr. Houston Cres. Kempself Cres.	New Storm Sewers / Storm Sewer Replacements	\$16,642,640	\$38,100

Notes:

1. This project was initiated due to the poor structural condition of the existing sewers, and as such the \$32,000 cost per benefitting property threshold is not applicable.
2. Even though this project exceeds the \$32,000 cost per benefitting property threshold, the project is proceeding into detailed design and construction as the existing two year level of service is not being provided by the existing sewer system.
3. As this project will provide both basement flooding protection and combined sewer overflow reduction to Black Creek, it is proceeding through preliminary and detailed design even though it exceeds the \$32,000 cost per benefitting property threshold.
4. A detailed Inflow and Infiltration study, as recommended by the Area 9 EA study, was initiated in 2015 and will be completed in 2016. The goal of this study will be to adjust the scope of construction works required to bring the costs down below the \$32,000 cost per benefitting property threshold.
5. Even though this project exceeds the \$32,000 cost per benefitting property threshold, the project is proceeding into detailed design and construction as the existing two year level of service is not being provided by the existing sewer system and upgrades are required to service the Lawrence-Allen Revitalization Project (LARP). If the timing of servicing required for LARP are such that they must be completed in advance of the basement flooding project, the road moratorium will apply and the basement flooding protection projects will be delayed for 5 years.
6. As this project will provide both basement flooding protection and achieve water quality improvements in conformance with the City's Wet Weather Flow Master Plan, and as there is a need to coordinate long-term planning with Transportation Services' plans to construct an underpass, preliminary design for this project will be undertaken even though the project exceeds the \$32,000 cost per benefitting property threshold. Commitments regarding detailed design and construction will be reviewed upon completion of the preliminary design stage.
7. The number of benefitting homes is not yet available, but based on preliminary information, the cost per benefitting property is expected to be less than \$32,000 cost per benefitting property threshold.