



**Water, Wastewater & Stormwater
Management Services
2021 Draft Budget**

2021 Draft Budget Submitted and Reviewed by:

A handwritten signature in blue ink that reads "Darlene Joslin". The signature is written over a horizontal line.

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Water, Wastewater & Stormwater Management Services 2021 Draft Budget

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Water & Wastewater Services

Overview

Water & Wastewater services for residents and businesses in Richmond Hill are provided in collaboration with the Region of York. The Region of York acquires water from the City of Toronto and the Region of Peel, and distributes it to the Richmond Hill borders from which the City distributes to each household and business. Wastewater is collected and transferred out of the municipality at which point the Region continues the collection process at the municipal border and transfers the wastewater to the Duffin Creek Water Pollution Control Plant in Pickering where it is treated. The Region charges the City a wholesale rate and the City passes on these costs to the residents and businesses at a combined retail rate.

The 2021 Draft Water & Wastewater Operating Budget reflects the principles of the updated 10-year Water & Wastewater Financial Plan adopted by Council in 2018 as a requirement of the *Safe Drinking Water Act, 2002, Ontario Regulation 453/07*. The updated plan indicated that:

- a) The City's Water & Wastewater program is financially sustainable while remaining debt free for the 10 year period (& beyond);
- b) There is sufficient funding available in the 10 year plan for all capital projects;
- c) The Water & Wastewater repair & replacement reserve fund balances provide for the 10 year capital repairs forecast (& beyond);
- d) Projected user rates remain reasonable while providing for full cost recovery plus gradual increases to reserve fund contributions; and
- e) The City's Water & Wastewater supply and resources will remain reliable, safe and sustainable.

This presentation summarizes the Water and Wastewater program that is distributed through three departments:

- **Planning & Infrastructure Department** – major repair and reconstruction of infrastructure (part of Capital program).
- **Community Services** – maintains & operates almost 1225 km of watermain and sanitary sewer infrastructure, along with storm sewers and stormwater ponds.
- **Corporate & Financial Services** – billings, collections, maintains water meters and deals with service enquiries through Access Richmond Hill



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Summary

2021 Budget Highlights

	2019 Actual	Preliminary Actuals at Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Variance (Favourable / Unfavourable)
Expenditures					
Personnel - Full-Time	\$ 3,253,043	\$ 3,118,375	\$ 3,389,700	\$ 3,377,000	\$ (12,700)
Personnel - Casual	97,200	-	151,900	124,900	(27,000)
Water - Regional Charges	23,409,547	17,400,237	26,278,000	25,398,600	(879,400)
Wastewater - Regional Charges	35,789,193	26,499,834	39,869,000	38,509,800	(1,359,200)
Contracts / Services	4,387,011	3,424,057	4,969,100	5,045,300	76,200
Materials / Supplies	888,007	706,435	911,800	903,300	(8,500)
Other Expenditures	68,535	28,689	59,600	59,600	-
Transfers to Other Funds	15,457,631	12,956,950	14,347,700	14,160,500	(187,200)
Total Expenditures	\$ 83,350,167	\$ 64,134,576	\$ 89,976,800	\$ 87,579,000	\$ (2,397, (2.7%)
Revenues					
Water Supply Revenue	(290,156)	(242,484)	(85,200)	(85,200)	-
Water & Wastewater Revenue	(80,389,914)	(70,292,994)	(87,018,700)	(84,692,200)	2,326,500
Transfer from Operating Fund	(389,800)	(457,374)	(423,100)	(404,200)	18,900
User Fees	(2,441,875)	(1,745,774)	(1,875,600)	(1,877,400)	(1,800)
Investment Income	(60,000)	-	(60,000)	(60,000)	-
Reserves and Reserve Funds	(28,421)	(2,152)	(114,200)	(60,000)	54,200
Other Internal Sources	-	(366,700)	(400,000)	(400,000)	-
Total Revenues	\$ (83,600,167)	\$ (73,107,478)	\$ (89,976,800)	\$ (87,579,000)	\$ 2,397, (2.7%)
Net Budget	\$ (250,000)	\$ (8,972,903)	\$ -	\$ -	\$ -

	2020 Approved Budget	Base	Legislated	Growth/Services Enhancement	2021 Draft Budget
Expenditures					
Personnel - Full-Time	\$ 3,389,700	\$ (12,700)	\$ -	\$ -	\$ 3,377,000
Personnel - Casual	151,900	(27,000)	-	-	124,900
Water - Regional Charges	26,278,000	(879,400)	-	-	25,398,600
Wastewater - Regional Charges	39,869,000	(1,359,200)	-	-	38,509,800
Contracts / Services	4,969,100	16,200	-	60,000	5,045,300
Materials / Supplies	911,800	(8,500)	-	-	903,300
Other Expenditures	59,600	-	-	-	59,600
Transfers to Other Funds	14,347,700	(187,200)	-	-	14,160,500
Total Expenditures	\$ 89,976,800	\$ (2,457,	\$ -	\$ 60,000	\$ 87,579,000
Revenues					
Water Supply Revenue	\$ (85,200)	\$ -	\$ -	\$ -	\$ (85,200)
Water & Wastewater Revenue	(87,018,700)	2,326,500	-	-	(84,692,200)
Transfer from Operating Fund	(423,100)	-	-	-	(423,100)
User Fees	(1,875,600)	(1,800)	-	-	(1,877,400)
Investment Income	(60,000)	-	-	-	(60,000)
Reserves and Reserve Funds	(114,200)	54,200	-	-	(60,000)
Other Internal Sources	(400,000)	-	-	-	(400,000)
Total Revenues	\$ (89,976,800)	\$ 2,378,	\$ -	\$ -	\$ (87,597,900)
Net Budget	\$ -	\$ (78,	\$ -	\$ 60,000	\$ (18,900)



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Summary - continued

2021 Budget Summary

	2019 Actual	Preliminary Actuals at Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Variance (Favourable) / Unfavourable
Net Revenues					
Water & Wastewater Revenues	\$ (80,779,714)	\$ (70,750,368)	\$ (87,441,800)	\$ (85,096,400)	\$ 2,345,400
Water Services Supply	23,119,391	17,157,753	26,192,800	25,313,400	(879,400)
Wastewater Services Supply	35,789,193	26,499,834	39,869,000	38,509,800	(1,359,200)
	(21,871,131)	(27,092,781)	(21,380,000)	(21,273,200)	106,800
Maintenance & Operations	8,206,667	8,206,667	9,320,500	9,385,200	64,700
Corporate Allocations					
Financial Services	1,241,401	1,248,715	1,514,400	1,500,100	(14,300)
Corporate Expenditures	2,074,200	2,066,200	2,285,200	2,315,200	30,000
Corporate Revenues	(60,000)	(366,700)	(460,000)	(460,000)	-
Transfer to R&R Reserve Funds	10,158,862	7,993,350	8,719,900	8,532,700	(187,200)
	13,414,464	10,941,565	12,059,500	11,888,000	(171,500)
Net Budget	\$ (250,000)	\$ (7,944,549)	\$ -	\$ -	\$ -

This table reflects proposed net budgets. The total Water & Wastewater net expenditure budget for 2021 is over \$87.6 million (2.7% decrease from 2020). Approximately 73% of the total expenditure budget is for the acquisition of Water & Wastewater services from the Region (\$63.8 million). The remaining 27% is for City Services (i.e. Maintenance & Operations, Revenue billings, collections, meter repairs, reserve fund contributions, and corporate overhead allocations). Also about 97% of the City's total expenditure is funded from the combined retail rate with the remaining 3% coming from reserves, reserve funds, and other user charges.



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Summary – continued

Rate History

A 1% Water & Wastewater rate increase generates \$624,800 greater revenues. The 2021 Draft Water & Wastewater Budget proposes a 0% combined retail rate increase. Although this is not consistent with Council approved Water/Wastewater Financial Plan in 2018, the ongoing uncertainties as a result of this pandemic has created many challenges for our residents and businesses in Richmond Hill. As a result this budget includes the following:

- a) A proposed combined wholesale rate increase of 0% from the Region of York for combined Water & Wastewater services;
- b) Contribution to Repair & Replacement reserve funds to continue to provide for full replacement funding of Water & Wastewater assets.

The following table shows the historical rates:

Year	<u>York Region Wholesale Rates</u>						<u>City Retail Rate</u>					
	Water	% Inc.	Wastewater	% Inc.	Combined	% Inc.	Water	% Inc.	Wastewater	% Inc.	Combined	% Inc.
2013	0.8087	7.7%	0.9910	12.0%	1.7997	10.0%	1.3068	5.7%	1.6006	9.9%	2.9074	8.0%
2014	0.8697	7.5%	1.1099	12.0%	1.9796	10.0%	1.3810	5.7%	1.7590	9.9%	3.1400	8.0%
2015	0.9345	7.5%	1.2431	12.0%	2.1776	10.0%	1.4823	7.3%	1.9717	12.1%	3.4540	10.0%
2016	0.9582	2.5%	1.4158	13.9%	2.3740	9.0%	1.5196	2.5%	2.2453	13.9%	3.7649	9.0%
2017	1.0021	4.6%	1.5855	12.0%	2.5876	9.0%	1.6564	9.0%	2.4474	9.0%	4.1037	9.0%
2018	1.1051	10.3%	1.7154	8.2%	2.8205	9.0%	1.8295	10.5%	2.5820	5.5%	4.4115	7.5%
2019	1.2178	10.2%	1.8565	8.2%	3.0743	9.0%	1.9667	7.5%	2.7757	7.5%	4.7424	7.5%
2020 Budget	1.3274	9.0%	2.0236	9.0%	3.3510	9.0%	2.1140	7.5%	2.9840	7.5%	5.0980	7.5%
2020 Actual	1.2178	0.0%	1.8565	0.0%	3.0743	0.0%	1.9667	0.0%	2.7757	0.0%	4.7424	0.0%
2021	1.2178	0.0%	1.8565	0.0%	3.0743	0.0%	1.9667	0.0%	2.7757	0.0%	4.7424	0.0%

Note: Rates shown are on a per cubic metre basis.



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Services

Water & Wastewater Services Supply & Revenue

This budget program captures the wholesale costs of water supplied by the Region of York and the wholesale costs of wastewater collected for treatment by the Region of York. This budget also captures the combined billing revenues for Water and Wastewater services provided by the City at the combined retail rate.

2021 Budget Highlights

	2019 Actual	Preliminary Actuals at Nov 30, 2020	2020 Approved budget	2021 Draft Budget	Varian (Favourable) / Unfavourable	
Expenditures						
Water - Regional Charges	\$ 23,409,547	\$ 17,400,237	\$ 26,278,000	\$ 25,398,600	\$ (879,400)	
Wastewater - Regional Charges	35,789,193	26,499,834	39,869,000	38,509,800	(1,359,200)	
Total Expenditures	\$ 59,198,740	\$ 43,900,	\$ 66,147,000	\$ 63,908,400	\$ (2,600)	(3.4%)
Revenues						
Transfer from Operating Fund	(389,800)	(457,374)	(423,100)	(404,200)	18,900	
Water Supply Revenue	(290,156)	(242,484)	(85,200)	(85,200)	-	
Water & Wastewater Revenue	(80,389,914)	(70,292,994)	(87,018,700)	(84,692,200)	2,326,500	
Total Revenues	\$ (81,069,870)	\$ (70,992,	\$ (87,527,000)	\$ (85,181,600)	\$ 2,400	(2.7%)
Net Budget	\$ (21,871,131)	\$ (27,092,	\$ (21,380,000)	\$ (21,273,200)	\$ 106,800	(0.5%)

Expenditure

- The Region of York will be passing on a combined 0% wholesale rate increase for provision of water and wastewater treatment services.
- In 2021 the combined Water and Wastewater volumes are forecasted to be 20,660,300 (2020 budget – 20,000,000) cubic metres, based on previous years' experience.

Revenues

- For 2021 the Water & Wastewater Revenue have decreased due to the 2021 retail rates declining vs the 2020 budgeted rates. The 2021 budget proposes a 0% retail rate increase which is consistent with the 2019 & 2020 levels, in order to provide residents rate relief during these ongoing uncertain times created by the pandemic.
- The table below shows historical and projected volumes:

Water Volumes (m³)

Year	Budget	Actual	Variance
2014	21,904,380	20,962,206	(942,174)
2015	20,954,300	21,112,435	158,135
2016	20,954,300	21,558,681	604,381
2017	21,113,340	20,164,709	(948,631)
2018	21,153,222	20,279,343	(873,879)
2019	20,885,505	19,499,844	(1,385,661)
2020	20,000,000	20,705,525 *	705,525
2021	20,660,300	-----	-----

* Estimate



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Services

Water & Wastewater – Transfers to Reserves & Reserve Funds

2021 Budget Highlights

	2019 Actual	Preliminary Actuals at Nov 30, 2020	2020 Approve Budget	2021 Draft Budget	Varian (Favoura) / Unfavourble	
Expenditures						
Transfer to Water Rate Stabilization Reserve	\$ 1,600,731	\$ 366,700	\$ 400,000	\$ -	\$ (400,000)	
Transfer to Repair & Replacement Reserve Funds	8,558,131	7,626,650	8,319,900	8,532,700	212,800	2.6%
Net Budget	\$ 10,158,862	\$ 7,993,350	\$ 8,719,900	\$ 8,532,700	\$ (187,	(2.1%)

Expenditure

- The Transfer to Water & Wastewater Repair and Replacement Reserve Funds is in compliance with the requirements of the Safe Drinking Water Act, which requires 100% funding for life cycle replacement of Water and Wastewater related infrastructure as part of this fund being financially sustainable into the future



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Services

Water & Wastewater – Financial Services Allocations

2021 Budget Highlights

	2019 Actual	Preliminary Actuals at Nov 30, 2020	2020 Approvd Budget	2021 Draft Budget	Varian (Favoura) / Unfavourble	
Expenditures						
Contracts / Services	\$ 112,956	\$ 85,855	\$ 327,600	\$ 260,900	\$ (66,700)	
Materials / Supplies	267,195	206,875	269,000	269,000	-	
Other Expenditures	22,572	16,895	25,000	25,000	-	
Transfers to Other Funds	1,252,900	1,169,000	1,275,300	1,275,300	-	
Total Expenditures	\$ 1,655,623	\$ 1,478,625	\$ 1,896,	\$ 1,830,200	\$ (700)	(3.5%)
Revenues						
User Fees	(385,800)	(227,758)	(268,300)	(270,100)	(1,800)	
Reserves and Reserve Funds	(28,421)	(2,152)	(114,200)	(60,000)	54,200	
Total Revenues	\$ (414,221)	\$ (229,910)	\$ (382,	\$ (330,100)	\$ 52,400	(13.7%)
Net Budget	\$ 1,241,401	\$ 1,248,715	\$ 1,514,	\$ 1,500,100	\$ (300)	(0.9%)

Expenditures

- Contracts / Services decreased \$66,700 mainly due to reduced Meter Repairs required due to the installation of new meters and also include costs for Meter Reading Services, which were reduced as a result of efficiencies achieved from the new meter reading technology.

Revenues

- User Fees increased by \$1,800 due to 2021 Tariff of Fee Update.
- Transfer to the Revenue Fund relates to staff in the Corporate & Financial Services Department providing billing, collection, meter management and customer service. The decrease is due to the reduction in costs for meter repairs which is funded from the Watermeter Reserve & Reserve fund.



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Services

Water & Wastewater – Corporate Allocations

2021 Budget Highlights

	2019 Actuals	Preliminary Actuals at Nov 30, 2020	2020 Approve Budget	2021 Draft Budget	Varice (Favourble) / Unfavourble	
Expenditures						
Personnel - Full-Time		\$ -	\$ 31,200	\$ 61,200	30,000	
Transfers to Other Funds	2,074,200	2,066,200	2,254,000	2,254,000	-	
Total Expenditures	\$ 2,074,200	\$ 2,066,200	\$ 2,285,200	\$ 2,315,200	\$ 30,000	1.3%
Revenues						
Investment Income	(60,000)	-	(60,000)	(60,000)	-	
Other Internal Sources	-	(366,700)	(400,000)	(400,000)	-	
Total Revenues	\$ (60,000)	\$ (366,700)	\$ (460,000)	\$ (460,000)	\$ 0.	0%
Net Budget	\$ 2,014,200	\$ 1,699,500	\$ 1,825,200	\$ 1,855,200	\$ 30,000	1.6%

Expenditures

- Personnel costs of \$30,000 were budgeted to provide for the potential corporate impact of collective bargaining negotiations.



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Services

Water & Wastewater Administration

This budget includes staffing and related costs for the administration of Water and Wastewater Services.

2021 Budget Highlights

	2019 Actual	Preliminary Actuals Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Varice (Favourble) / Unfavourable	
Expenditures						
WWW - Admin	\$ 1,821,261	\$ 1,681,653	\$ 1,977,300	\$ 2,032,100	\$ 54,800	
Net Budget	\$ 1,821,261	\$ 1,681,653	\$ 1,977,300	\$ 2,032,100	\$ 54,800	2.8%

	2019 Actual	Preliminary Actuals Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Varice (Favourble) / Unfavourable	
Expenditures						
Personnel - Full-Time	\$ 1,161,658	\$ 1,068,274	\$ 1,160,000	\$ 1,160,300	\$ 300	
Personnel - Casual	50	-	16,400	16,400	-	
Contracts / Services	60,559	43,924	83,100	138,600	55,500	
Materials / Supplies	14,508	4,655	13,000	12,000	(1,000)	
Transfers to Other Funds	584,486	564,800	704,800	704,800	-	
Total Expenditures	\$ 1,821,261	\$ 1,681,653	\$ 1,977,300	\$ 2,032,100	\$ 54,800	2.8%
Net Budget	\$ 1,821,261	\$ 1,681,653	\$ 1,977,300	\$ 2,032,100	\$ 54,800	2.8%

Contract/Services

- The Contracts/Services of \$138,600 are composed of the following:

	2020 Approved Budget	2021 Draft Budget	Variance (Favourable) / Unfavourable
Backwater Valve Subsidy		\$ 60,000	\$ 60,000
Consulting Contract	14,000	12,000	(2,000)
Consulting/Benchmarking Init	30,000	27,500	(2,500)
Environmental Compliance C	15,000	15,000	-
Vehicle/Equipment Rental	24,100	24,100	-
	\$ 83,100	\$ 138,600	\$ 55,500

- The \$55,500 increase is mainly due to the Backwater Valve Subsidy program to assist property owners who chooses to participate in the program to install a backwater valve in order to reduce the risk of basement flooding in their home offset against a reduction in consulting contract costs and benchmarking initiatives.

Materials/Supplies

- The \$1,000 decrease is due to the reduction of mileage and tuition budgets based on historical trend.



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Water & Wastewater Services

Water & Wastewater Operations

This program area includes staffing, supplies and contracted services related to the maintenance and operation of approximately 1225 km of watermain and sanitary sewer infrastructure.

2021 Budget Highlights

	2019 Actual	Preliminary Actuals Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Varice (Favourable) / Unfavourable	
Expenditures						
WWW Operations	\$ 8,441,481	\$ 7,014,677	\$ 8,950,500	\$ 8,960,400	\$ 9,900	
Total Expenditures	\$ 8,441,481	\$ 7,014,677	\$ 8,950,500	\$ 8,960,400	\$ 9,900	0.1%
Revenues						
WWW Operations	(2,056,075)	(1,518,016)	(1,607,300)	(1,607,300)	-	
Total Revenue	\$ (2,056,075)	\$ (1,518,016)	\$ (1,607,300)	\$ (1,607,300)	\$ -	0.0%
Net Budget						
WWW Operations	\$ 6,385,406	\$ 5,496,660	7,343,200	7,353,100	9,900	
Net Budget	\$ 6,385,406	\$ 5,496,660	\$ 7,343,200	\$ 7,353,100	\$ 9,900	0.1%

	2019 Actual	Preliminary Actuals Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Variance (Favourable) / Unfavourable	
Expenditures						
Personnel - Full-Time	\$ 2,091,385	\$ 2,050,101	\$ 2,198,500	\$ 2,155,500	\$ (43,000)	
Personnel - Casual	97,150	-	135,500	108,500	(27,000)	
Contracts / Services	4,213,496	3,294,278	4,558,400	4,645,800	87,400	
Materials / Supplies	606,305	494,904	629,800	622,300	(7,500)	
Other Expenditures	45,963	11,794	34,600	34,600	-	
Transfers to Other Funds	1,387,183	1,163,600	1,393,700	1,393,700	-	
Total Expenditures	\$ 8,441,481	\$ 7,014,677	\$ 8,950,500	\$ 8,960,400	\$ 9,900	0.1%
Revenue						
User Fees	(2,056,075)	(1,518,016)	(1,607,300)	(1,607,300)	-	
Other Internal Sources	-	-	-	-	-	
Total Revenue	\$ (2,056,075)	\$ (1,518,016)	\$ (1,607,300)	\$ (1,607,300)	\$ -	0.0%
Net Budget	\$ 6,385,406	\$ 5,496,660	\$ 7,343,200	\$ 7,353,100	\$ 9,900	0.1%

Water & Wastewater Operations - continued

Personnel Cost

- The Full-Time salaries and benefits budget decreased \$43,000 due to reduction in health benefits coverage rates and step level changes, partially offset by the approved COLA rate increases.
- The Casual wages and benefits budget decreased \$27,000 by adjusting workplan targets.

Contract/Services

- The Contracts/Services of \$4,645,800 are composed of the following:

	2020 Approve Budget	2021 Draft Budget	Variance (Favourable) / Unfavourable
Contracts	\$ 100	\$ -	\$ (100)
Insurance	572,600	660,100	87,500
Infill Connections	1,100,000	1,100,000	-
Ontario 1 Call Locates	20,000	20,000	-
Water	1,136,200	1,136,200	-
Sewer	1,729,500	1,729,500	-
	\$ 4,558,	\$ 4,645,800	\$ 87,400

- Contracts/services increased \$87,400 from fleet and vehicle deductibles and property insurance premiums rates rising due to the ongoing uncertainties created by the pandemic.

Materials/Supplies

- The Materials/Supplies of \$622,300 are comprised of the following:

	2020 Approvd Budget	2021 Draft Budget	Variance (Favourable) / Unfavourable
Water	\$ 294,600	\$ 294,600	\$ -
Sewer	196,500	196,500	-
Hydro	33,300	33,300	-
Training & Tuition	78,200	73,200	(5,000)
Uniforms/ Clothing	23,800	21,800	(2,000)
Other	3,400	2,900	(500)
	\$ 629,	\$ 622,300	\$ (7,500)

- Material/Supplies decreased \$7,500 due to the reduction of mandatory training by re-arranging the delivery format as well a reduction in the uniform/clothing budget from a reduction in casual staff and a decrease in printing costs.



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Water & Wastewater Operations - continued

User Fees

- The user fees are composed of the following:

	2020 Approved Budget	2021 Draft Budget	Variance (Favourable) / Unfavourable
Water Service On/Off Charges	\$ (70,000)	\$ (70,000)	\$ -
Water Service Contract - Res.	(723,900)	(723,900)	-
Sewer Blocked Lateral Fees	(30,000)	(30,000)	-
WWW Sundries Recovery	(6,000)	(6,000)	-
Sewer Service Contract - Res.	(484,200)	(484,200)	-
Storm Sewer Serv. Contract - Res	(293,200)	(293,200)	-
	\$ (1,607,300)	\$ (1,607,300)	\$ -

Stormwater Management Services

Overview

Depending on the season, stormwater comes from rain and from melting snow. It flows into storm sewers, and in some areas to stormwater management ponds. Ponds hold back stormwater and release it slowly into natural streams and rivers. Richmond Hill currently owns and operates more than 96 Storm Water Facilities, 542 kilometres of storm sewers and 17,228 catch basins, and manages more than 150 kilometres of streams and rivers. This program area includes both internal resources and contracted services to perform preventative and corrective maintenance on 542 kilometres of storm sewer and 115 oil and grit separators. Stormwater is different from wastewater, which flows into sanitary sewers from household drains. By managing stormwater, Richmond Hill reduces erosion and flooding, protecting both the community and municipal infrastructure, like roads, sidewalks and trails.

Richmond Hill's stormwater system requires ongoing maintenance, including periodic repair and replacement. Ponds, storm sewers and catch basins are more likely to perform poorly if they are not maintained properly. Planning for repair and replacement will help to avoid costly and inconvenient situations like washed-out roads and trails, stream erosion or flooding. This is a problem faced not only in Richmond Hill but in other municipalities across Canada.

This section summarizes the Stormwater program that is distributed through three departments:

- Planning & Infrastructure Department – major repair and reconstruction of infrastructure (part of Capital program).
- Community Services – maintains & operates almost 1225 km of watermain and sanitary sewer infrastructure, along with storm sewers and stormwater ponds.
- Corporate & Financial Services – billings, collections, and deals with enquiries through Access Richmond Hill



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Stormwater Management Services

Overview - Continued

The Stormwater Management rate provides dedicated funding for stormwater management in Richmond Hill, and is used to plan for long-term upkeep of the stormwater system. Richmond Hill's stormwater system (ponds, storm sewers, catch basins, etc.) requires ongoing maintenance, including periodic repair and replacement. Ponds, storm sewers and catch basins are more likely to perform poorly if they are not maintained properly. Planning for repair and replacement will help to avoid costly and inconvenient situations like washed-out roads and trails, stream erosion or flooding. The Stormwater Management Financial Plan, completed in 2018, identified greater staff efforts towards the stormwater system than was previously noted in 2013 when the service review was first completed in establishing dedicated rates.

The municipality must ensure the stormwater system is operating in accordance with various acts, regulations and approvals provided by federal, provincial and local authorities including the Ontario Ministry of Environment and Toronto and Region Conservation Authority

2021 Budget Highlights

	2019 Actuals	Preliminary Actuals at Nov 30, 2020	2020 Approve Budget	2021 Draft Budget	Varian (Favoura) / Unfavourble	
Expenditures						
Contracts / Services	\$ 434,971	\$ 530,027	\$ 765,200	\$ 765,200	\$ -	
Materials / Supplies	46,605	43,016	102,400	102,400	-	
Transfers to Other Funds	3,905,458	3,422,217	3,727,500	3,538,400	(189,100)	
Total Expenditures	\$ 4,387,034	\$ 3,995,259	\$ 4,595,100	\$ 4,406,000	\$ (189,	(4.1%)
Revenues						
User Fees	(4,387,034)	(3,359,299)	(4,370,100)	(4,181,000)	189,100	
Reserves and Reserve Funds	-	(180,000)	(225,000)	(225,000)	-	
Total Revenues	\$ (4,387,034)	\$ (3,539,299)	\$ (4,595,100)	\$ (4,406,000)	\$ 189,	(4.1%)
Net Budget	\$ -	\$ 455,960	\$ -	\$ -	\$ -	



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Stormwater Management Services - continued

Rate History

The Stormwater Management rate was initially adopted by Council in 2013. The basis of the rate was presented in the *Stormwater Management Financing Feasibility Study (SRCFS.13.007)*. This study was updated in 2018 and it was determined that stormwater services required greater staffing efforts and increased capital and infrastructure needs. However, until a more equitable and sustainable rate structure is implemented, the proposed 2021 budget reflects a 0% rate increase from prior year, consistent with rate increases in Water & Wastewater Services. As a result of the ongoing Covid-19 situation, the City is maintaining 2019 stormwater, water & wastewater rates throughout 2021. Staff will be implementing a new, more equitable rate structure for billing effective 2022.

The following table shows the historical annualized rates:

Year	Residential		Non-Res., Multi-Res. & Condominiums		
	Annual Rate (billed quarterly)	% Inc.	Annual Rate (billed bi-monthly)	% Inc.	
2017	\$ 62.24	9.0%	\$ 180.82	9.0%	
2018	\$ 67.84	9.0%	\$ 197.10	9.0%	
2019	\$ 73.95	9.0%	\$ 214.83	9.0%	
2020 Budget	\$ 79.50	7.5%	\$ 230.95	7.5%	
2020 Actual	\$ 73.95	0.0%	\$ 214.83	0.0%	
2021	\$ 73.95	0.0%	\$ 214.83	0.0%	



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Stormwater Management Services

Stormwater Management

The Stormwater Management Rate is a charge that applies to developed and undeveloped land as stormwater runs off both types of land. For residents and businesses on City water, the stormwater rate is applied directly to the water bill. Residents and businesses who are not on City water will receive an annual bill for the Stormwater Management Rate. The funds provide a dedicated sustainable funding source for long-term upkeep of the stormwater system in Richmond Hill.

2021 Budget Highlights

	2019 Actuals	Preliminary Actuals at Nov 30, 2020	2020 Approve Budget	2021 Draft Budget	Variance (Favourable) Unfavourable	
Expenditures						
Contribution to Operating Fund	\$ 1,503,600	\$ 1,671,900	\$ 1,823,800	\$ 1,823,800	\$ -	
Transfers to Water Quality Reserve Fund	2,397,898	1,378,450	1,503,700	1,314,600	(189,100)	
Transfer to Water & Wastewater Fund	-	366,700	400,000	400,000	-	
Write-off Storm Water Fee Res	3,960	4,428	-	-	-	
Write-off Storm Water Fee Non-Res	-	739	-	-	-	
Total Expenditures	\$ 3,905,458	\$ 3,422,217	\$ 3,727,500	\$ 3,538,400	\$ (189,100)	-5.1%
Revenues						
User Fees	(4,387,034)	(3,359,299)	(4,370,100)	(4,181,000)	189,100	
Total Revenues	\$ (4,387,034)	\$ (3,359,299)	\$ (4,370,100)	\$ (4,181,000)	\$ 189,100	-4.3%
Net Budget	\$ (481,576)	\$ 62,918	\$ (642,600)	\$ (642,600)	\$ -	0.0%

Expenditures

- Transfers to the Water Quality Protection Reserve Fund is the net amount available to allocate to the Reserve Fund after factoring in stormwater related revenues and expenditures. There was a decrease to the transfer to reflect the reduction in revenues.

Revenues

- For 2021, stormwater revenues decreased \$189,100, this is due to the capping of 2021 rates at the 2020 level. The 2021 budget proposes a 0% retail rate increase which is consistent to the 2019 & 2020 levels in order to provide residents rate relief during these ongoing uncertain times created by the pandemic.



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Stormwater Management Services

Stormwater Operations

This program area includes staffing, supplies and contracted services required to support the maintenance and operation of 542 km of storm sewer, 115 oil and grit separators and 96 stormwater management facilities

2021 Budget Highlights

	2019 Actual	Preliminary Actuals Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Variance (Favable)/ Unfavourable	
Expenditures						
Stormwater Management	\$ 481,576	\$ 573,042	\$ 867,600	\$ 867,600	\$ -	
Total Expenditures	\$ 481,576	\$ 573,042	\$ 867,600	\$ 867,600	\$ -	0.0%
Revenue						
Stormwater Management	-	(180,000)	(225,000)	(225,000)	-	
Total Revenue	\$ -	\$ (180,000)	\$ (225,000)	\$ (225,000)	\$ -	0.0%
Net Budget						
Stormwater Management	\$ 481,576	\$ 393,042	\$ 642,600	\$ 642,600	\$ -	
Net Budget	\$ 481,576	\$ 393,042	\$ 642,600	\$ 642,600	\$ -	0.0%

	2019 Actual	Preliminary Actuals Nov 30, 2020	2020 Approved Budget	2021 Draft Budget	Variance (Favourable)/ Unfavourable	
Expenditures						
Contracts / Services	\$ 434,971	\$ 530,027	\$ 765,200	\$ 765,200	\$ -	
Materials / Supplies	46,605	43,016	102,400	102,400	-	
Total Expenditures	\$ 481,576	\$ 573,042	\$ 867,600	\$ 867,600	\$ -	0.0%
Revenue						
Reserves and Reserve Funds	-	(180,000)	(225,000)	(225,000)	-	
Total Revenue	\$ -	\$ (180,000)	\$ (225,000)	\$ (225,000)	\$ -	0.0%
Net Budget	\$ 481,576	\$ 393,042	\$ 642,600	\$ 642,600	\$ -	0.0%



Water, Wastewater & Stormwater Management Services 2021 Draft Budget

Stormwater Operations -continued

Contract/Services

- The Contracts/Services of \$765,200 are composed of the following:

	2020 Approved Budget	2021 Draft Budget	Variance (Favourable)/ Unfavourable
Consulting Benchmarking Initiatives	\$ 10,000	\$ 10,000	\$ -
Stormsewer	290,000	290,000	-
Stormwater - OGS	24,200	24,200	-
Stormwater ponds	47,500	47,500	-
Drainage	393,500	393,500	-
	\$ 765,200	\$ 765,200	\$ -

Materials/Supplies

- The Material/Supplies of \$102,400 are composed of the following:

	2020 Approved Budget	2021 Draft Budget	Variance (Favourable)/ Unfavourable
Drainage	\$ 57,400	\$ 57,400	\$ -
Stormsewer	45,000	45,000	-
	\$ 102,400	\$ 102,400	\$ -

Reserve & Reserve Funds

- The \$225,000 Storm Sewer Preventative Maintenance Program is fully funded from the Water Quality Protection Reserve Fund.

New Initiative - Backwater Valve Subsidy Program

Overview/Background

On January 11, 2020, the City of Richmond Hill experienced a significant rainfall event, with some areas within the City receiving up to 93mm of rain in a 24-hour period (see Appendix 1). Environment Canada issued a heavy rainfall advisory and the Toronto and Regional Conservation Authority issued a flood warning. The amount of rainfall, coupled with mild temperatures, caused snow to thaw, the ground to become saturated, and rivers within the area experienced higher flows and water levels, resulting in flooding. This combination resulted in inflow and infiltration to occur within the regional and municipal sanitary sewer systems causing surcharged conditions.

The neighborhood known as Beverley Acres was the most impacted by the January 11 event. Within Beverley Acres, two distinct areas were impacted; between Elgin Mills, Major Mackenzie, Bayview Ave and Newkirk Road, and the area between Major Mackenzie, 16th Avenue, CN Rail corridor and Yonge Street.

The City of Richmond Hill received approximately 100 calls during the storm event and attended to 67 residential properties that weekend (see Appendix 2). Public Works staff responding to properties provided as much information as was available to homeowner's in addition to providing advice for insurance company notification and submitting a claim with the City.

Maintenance Programs

The operation and maintenance of water and wastewater systems is a core responsibility of the City of Richmond Hill.

Richmond Hill's responsibility is to collect wastewater from properties and convey effluent to the distribution system that ends up at the treatment plant. Most of the City's wastewater network consists of local sanitary sewer collection pipes that carry sewage to York Region's transmission system; this includes sanitary lateral pipes, which connects each property to Richmond Hill's collection system.

The Water and Wastewater Section within Public Works Operations has an extensive and proactive sanitary sewer preventative maintenance and rehabilitation program. The preventative maintenance program includes flushing and cleaning the sanitary sewer system on a five-year cycle, areas that are prone to increased debris accumulation have an increased frequency of maintenance. There is also a CCTV (closed circuit television) inspection program performed at a similar interval as with the flushing and cleaning programs. The data collected from the CCTV inspection provides the city with a pipe integrity assessment and alerts staff to any operational issues or deficiencies. The combination of both maintenance programs permits for the scheduling of the annual rehabilitation program, which consists of dig-up and trenchless repairs.

The City of Richmond Hill has also been actively participating in the Inflow and Infiltration reduction program in collaboration with York Region. The purpose of the program is to identify sources or extraneous flows entering the sanitary sewer. Information is gathered through flow monitoring in conjunction with historical records, and modelling. Inflow is the term used when rainwater enters the sanitary sewer system through holes in maintenance hole covers, catch basins connected to the sanitary system, or improper plumbing connections, also termed 'cross connection'. Infiltration is the term used when groundwater seeps into sanitary sewer pipes through cracks or defective joints. Appendix 3 Diagram 1 depicts Inflow and Infiltration.

The ongoing maintenance and rehabilitation of the sanitary sewer system along with other initiatives provide the City with a reduced risk of sanitary sewer failures.

Proposed Backwater Valve Subsidy Program

The backwater valve is a device installed in the sanitary lateral (the connection between the mainline sewer and the house) that allows sewage to flow out but prevents it from coming back into the house should the sanitary system become surcharged during a significant storm event. The backwater valve is located within the basement plumbing system prior to exiting the home. These devices are installed with easy access so that they can be maintained by the property owner to ensure they are clean and free of accumulating debris. Appendix 3 Diagram 2 shows a pictorial of how a backwater valve works and a typical installation.

The proposed Backwater Valve Subsidy Program would significantly reduce the possibility of a basement backup for property owners who choose to participate in the program. The backwater valve would reduce the risk of basement flooding if sanitary sewer surcharge conditions occurred during extreme weather event. The subsidy program would be offered citywide, but would not apply to homes under construction or in the planning stages of construction. Recent costs of backwater valve installations by contractors within the past year range between \$2,000 and \$4,000. Based on the cost of installation, the subsidy amount should be high enough to encourage property owners to apply but not low enough to discourage participation. Staff are recommending the subsidy amount be set at \$1,500 per property.

The application process to access the Backwater Valve Subsidy Program would follow these six steps:

1. The City of Richmond Hill's website would direct homeowners to the subsidy program page and program requirements (see Appendix 4)
2. The property owner would obtain a plumbing permit from the City of Richmond Hill.
3. The property owner would retain a licensed plumbing contractor to install the backwater valve.
4. City of Richmond Hill plumbing inspector would inspect and approve the backwater valve installation.
5. The Property owner would submit the subsidy application and required documentation for approval of the subsidy (see Appendix 5)
6. City of Richmond Hill would review the application and issue the subsidy.

Resources Requirements/Project Costs

The total cost of the program will vary depending on uptake by the community. The City of Vaughan averages seven subsidy applications annually; the City of Markham averages 30, and the Town of Newmarket averages four.

The City of Richmond Hill receives approximately 10 inquiries annually from property owners. The initial uptake, especially subsequent to the January 11, 2020 event, is expected to be high. The estimated number of residents affected, based on claims filed from that event was 32 and the staff anticipate that these residents will apply for the subsidy.

Staff project the number of applicants during the initial uptake will be approximately 40, at an approximate cost of \$60,000. This will include residents within the affected areas that may have already installed a backwater valve, at their own expense. In subsequent years, application rates are expected to fall to 10 annually; a yearly subsidy cost of \$15,000.

The Backwater Subsidy Program will be managed by staff within the Water and Wastewater Section and is to be funded from the Water and Wastewater operating budget. In 2021 and future years, these subsidy funding requirements will be considered with the Water/Wastewater rate adjustments.

Strategic Alignment

This report aligns with Richmond Hill’s Strategic Plan, Goal #4, Wise Management of Resources by providing property owners with viable measures to reduce the risk of basement flooding and safeguarding properties.

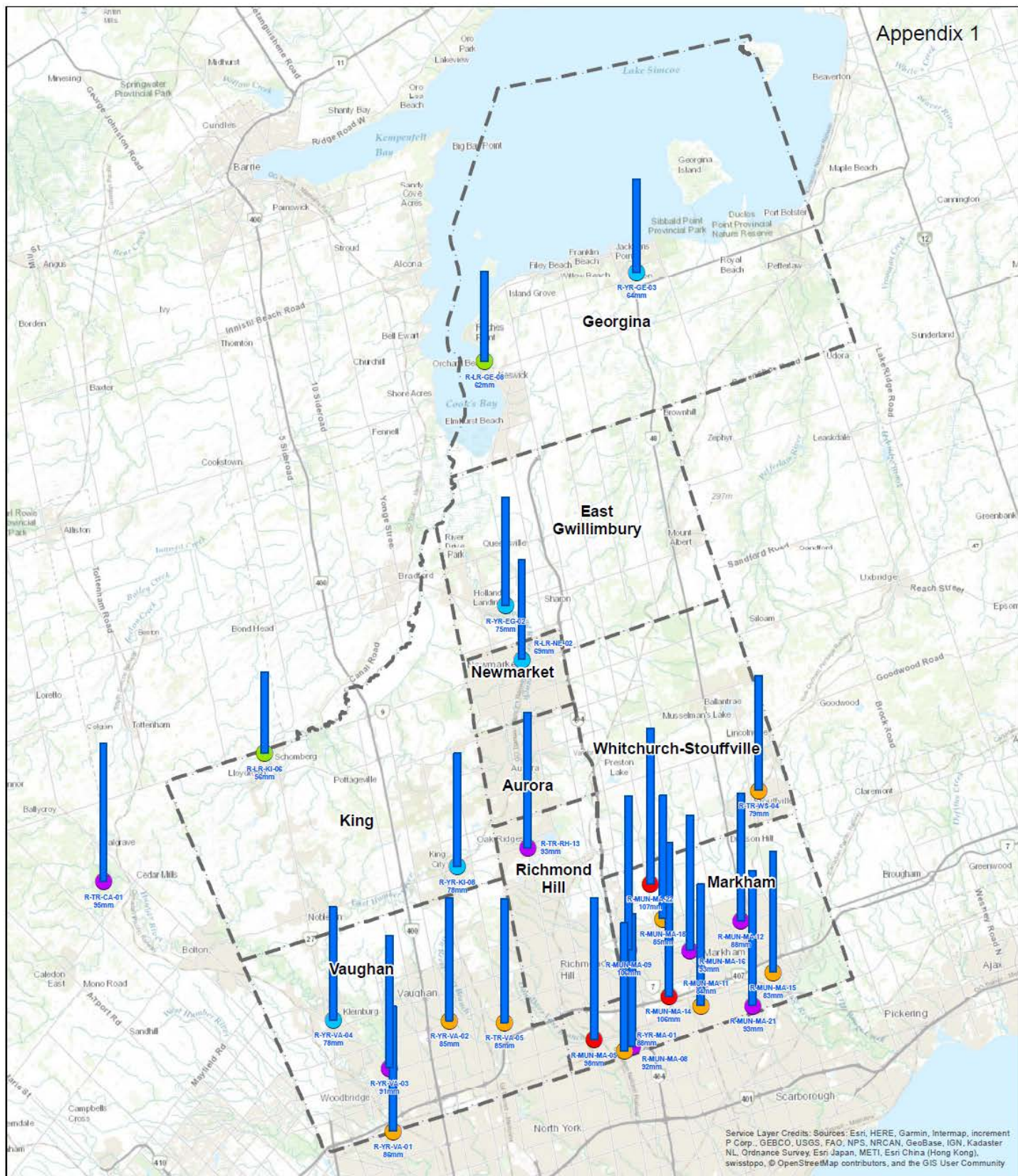
Comparative Analysis

Other municipalities have similar subsidy programs that assist property owners with the cost of installing a backwater valve. The subsidy amount ranges significantly across municipalities but the essence of the program is the same. The table below provides benchmarking of municipalities with current programs and subsidy amounts per property. The market cost to install a backwater valve is \$2000 - \$4000

Municipality	Program Name	Subsidy Amount
City of Vaughan	Backwater Valve Subsidy Installation Program	\$750.00
City of Markham	Private Plumbing Protection Program	\$1,750.00
City of Toronto	Basement Flooding Protection Subsidy Program	\$1,250.00
City of Thunder Bay	Residential Drainage Rebate Program	\$1,750.00
Town of Newmarket	Sanitary Backwater Valve Subsidy Program	\$500.00
City of London	Basement Flooding Grant Program	\$1,300.00
City of Windsor	Basement Flooding Protection Subsidy Program	\$1,000.00
City of Ottawa	Residential Protective Plumbing Program	\$750.00

Conclusions and Recommendations

The City recognizes the importance of infrastructure investment and initiatives that support the longevity of the City’s infrastructure. The Backwater Valve Subsidy Program will complement the City of Richmond Hill’s preventative maintenance programs and initiatives. Staff recommends that Council endorse the Backwater Valve Subsidy.



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SHEET SIZE: 8.5" x 11"

LEGEND

Rainfall (mm)

Return Period



Field Operation, Maintenance & Support for the I/I Audit Program

Storm Event - Total Accumulation and Maximum Return Frequency

Event Start: January 10, 2020 at 23:15 EST
Event End: January 12, 2020 at 06:40 EST

NAD 1983 UTM Zone 17N	
DATE	2020-01-13
SCALE	1:350,000
DRAWING NUMBER	SHEET: 1 OF 1
PROJECT NUMBER	60532734

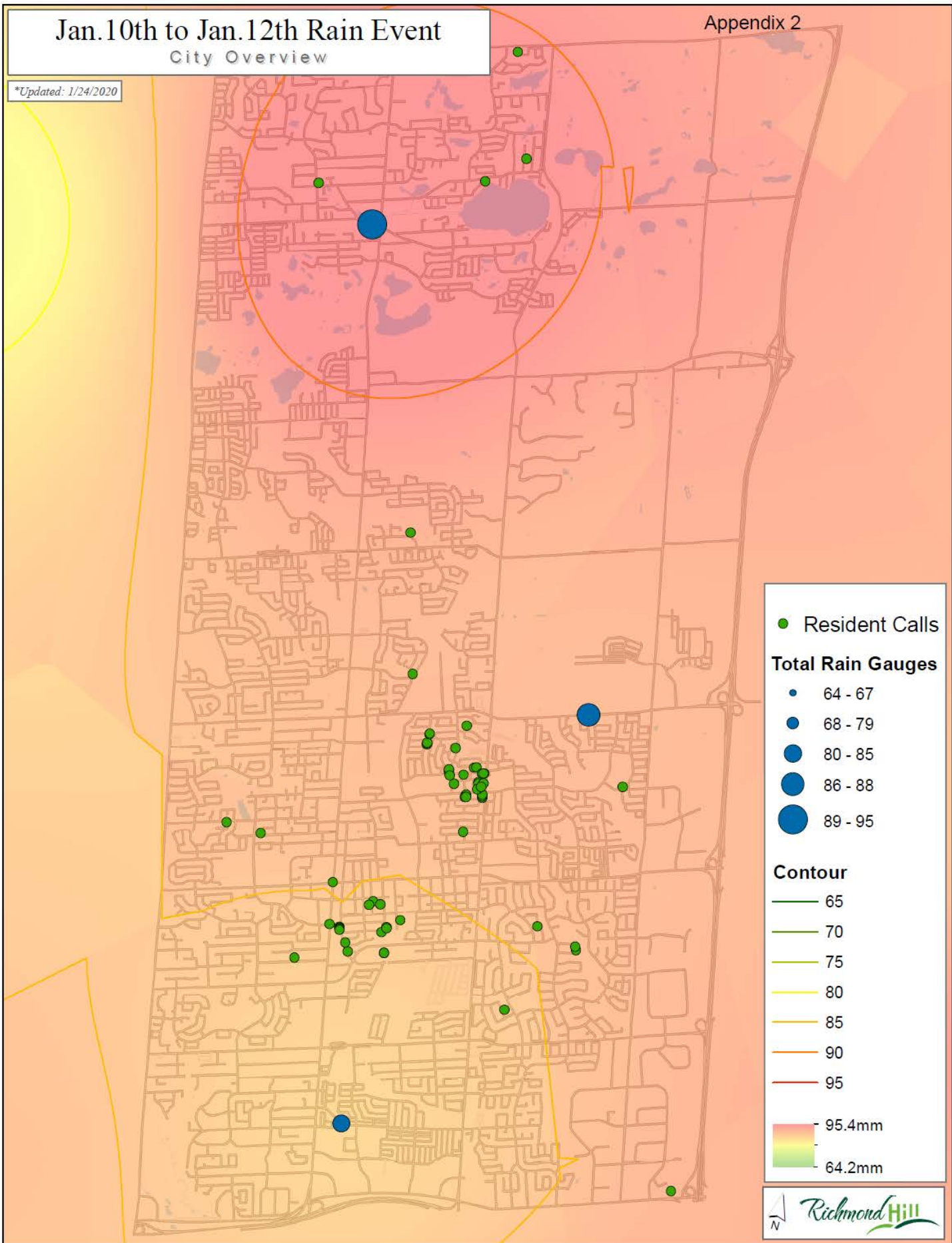


Diagram 1



Diagram 2



Backwater flow valve with plastic viewing cover.



Floor plate cover for backwater valve.

BACKWATER VALVE SUBSIDY PROGRAM

The Backwater Valve Subsidy Program was developed to assist homeowners in protecting their basements from flooding caused by surcharged sewers during severe weather events. Homeowners are required to have a plumber or drain contractor licensed by the Ontario College of Trades carry out a site assessment to determine the suitability of installing a backwater valve.



ELIGIBILITY

Eligible properties must meet the following requirements:

- The property must be registered as a single-family residential, duplex or triplex property within the City of Richmond Hill.
- The subsidy is available only to existing homes, not new homes in the planning stages or currently under construction.
- Eavestrough downspouts must be properly disconnected from the City sewer system, wherever possible, to the satisfaction of the City.
- Complete the installation before applying for the subsidy.
- Invoice(s) must show a cost breakdown of all charges, the contractor's Ontario College of Trades registry, the Total amount paid, and clearly marked as 'paid-in-full'.
- The backwater valve must be approved as per the building code.
- Labour provided by the homeowner is not eligible for reimbursement under this program.
- All documents, must be originals, no photocopies will be accepted.
- Subsidies are provided one time only, per property.



KEY STEPS

1. A plumber or drain contractor, currently licensed by the Ontario College of Trades must be hired to perform the installation of all devices.
2. If a backwater valve is to be installed, you must first obtain a plumbing permit from the City of Richmond Hill. To obtain a permit, you must go to Richmond Hill City Hall, located at 225 East Beaver Creek Road.
3. Backwater valve installations require an inspection by a City of Richmond Hill Plumbing Inspector. Please be sure to schedule an inspection before enclosing or covering the installation work. This will ensure the building inspector is able to see if the installation meets the applicable Building Code requirements.
4. Subsidy Application and supporting documentation must be received by the City of Richmond Hill Public Works Operations Division within six months of the date of completion of the work.
5. Applications that are incomplete or missing documentation will be returned with a request for the outstanding information and will not be processed until the information is received.



HOW TO APPLY FOR A SUBSIDY

- Complete the backwater valve Subsidy Program application form.
- Mail or email the completed application form with all the required documentation to the City of Richmond Hill.

Note: The Public Works Operations Division will review your application and determine your eligibility.

City of Richmond Hill, 225 East Beaver Creek Road, Richmond Hill, ON L4B 3P4

Backwater Valve Subsidy Program Application

Section 1: Applicant and Property Information

Property owner's name:

Property assessment roll number:

Address of property that subsidy applies to

Street number:

Street name:

City:

Province:

Postal Code:

Have you disconnected your home's downspouts from the sewer system: Yes No

Daytime phone number:

Evening phone number:

Email:

Date(s) work was completed: Days:

Month:

Year:

Section 2: Backwater Valve Permit and Inspection Information

Plumbing permit number:

Date of inspection:

Inspector's Name:

Section 3: Company / Plumber's Information

Company name and/or plumber:

Ontario College of Trades registry number:

Section 4: Financial Information

Charges as itemized on your invoice (as applicable): Backwater valve installation cost: \$

Total amount paid (clearly shown as "paid in full" on your invoice): \$

Section 5: Document Checklist

Please check off the documents you are including with this application:

- This application, completed and signed by the property owner or Authorized Legal Representative.
- Invoice(s) marked "paid in full" and itemized with cost breakdown of all charges, and clearly showing plumber's Ontario College of Trades registry number.
- All sections of this application form are completed in full.
- Copy of the signed Building Permit

Note: Keep photocopies of all documents submitted for your personal records.

I understand that the City of Richmond Hill makes no representation or warranty, express or implied, relating to the backwater valve in any manner whatsoever, and by submitting this Application Form I, my heirs, executors, administrators, successors and assigns, hereby fully and completely release, waive and forever discharge the City of Richmond Hill from all liabilities, claims, actions, demands, costs, damages and losses of any kind whatsoever with respect to the back-water valve, whether direct, special, consequential, indirect, or of any other nature.

I acknowledge that while the installation of a backwater valve may help reduce wastewater back-ups, the extent of such reduction cannot be guaranteed and the back-water valve will not totally prevent future basement flooding from occurring.

I hereby certify that the backwater valve has been installed in the house located on the property listed on this Application Form, that I am the owner of the house and the property, that I live in the house located on the property, and that all information provided on this Application Form is true and correct.

Property owner's signature:

Date:

City of Richmond Hill

225 East Beaver Creek Road

Richmond Hill, ON L4B 3P4

Attention: Public Work Operations Division, Backwater Valve Subsidy Program

The personal information in this form and any attachments is collected under the authority of the Municipal Act, 2001 (S.O. 2001, c.25) and will be used to process this application, to determine eligibility for and administer the City of Richmond Hill Backwater Valve Subsidy Program, and for statistical reporting.