



**Water and Wastewater System
Financial Plan**
The Corporation of the City of Markham

Financial Plan No.: 021-301

*Prepared in accordance with
the Safe Drinking Water Act
and its associated regulations.*

BACKGROUND

As of the end of 2022, the City of Markham provided water and wastewater services to approximately 82,195 residential and 2,135 non-residential customers. Development pressures, changing economic conditions, and expectations by the public for a responsible approach to managing water resources requires a detailed evaluation of the planning and financing of water and wastewater operations. In addition, recent changes to maintenance standards and testing practices need to be included in municipal operational plans to conform to provincial health and safety standards.

The legislative framework under which water services are managed in Ontario is the *Safe Drinking Water Act, 2007 (SDWA)*. *Ontario Regulation 453/07* of the *SDWA* requires public providers of water services to submit a Financial Plan to the Ministry of Municipal Affairs and Housing which:

- accounts for the inventory of the tangible capital assets required to provide the services;
- assesses the revenue and expenditures of providing the services; and
- describes how the provider intends to fund the cost of providing the services.

The Financial Plan is intended to provide information relating to the financial stability of the water and wastewater systems. This information forms the basis for a strategy to ensure the safe and reliable delivery of water and wastewater services over the long-term. The Financial Plan must be for a minimum period of six years and should be approved by a resolution that is passed by Council.

To meet requirements under *SDWA* and *O.Reg 453/07*, Markham submitted its first Financial Plan for the water and wastewater systems in June 2010, and subsequently in December 2013 and November 2018. An updated Financial Plan is required to be included in the City's application to renew its drinking water license, which is due by January 21, 2024.

The City's Financial Plan includes information related to wastewater services. Although the current legislation does not require wastewater services to be included, this approach enables a more comprehensive view of the City's full waterworks system serving Markham communities

The Financial Plan is developed based information from the comprehensive water and wastewater Reserve Study (Study) that the City completed in 2022. The Study has been, and will continue, to be updated annually. The Study utilizes full-cost accounting and considers the full cost of providing water and wastewater services. The Study also includes provisions for financing the annual operations, ongoing rehabilitation and eventual replacement of the City's extensive inventory of water and wastewater assets. The Reserve Study incorporates a 25-year planning horizon and establishes a strategy for funding the

water and wastewater services at the City of Markham, ensuring the required funding for the planning period is available and avoids the need for borrowing and use of debentures.

The Financial Plan, which considers and incorporates information derived from the Reserve Study, has considered the financial impacts of the drinking water system, including all ongoing operating and capital requirements. The cash flows projected from operating activities that are based on full-cost accounting, combined with the available provision in the City's Reserves, provides a reasonable assurance of the financial viability of the water and wastewater system operations at the City.

The Financial Plan is prepared for a minimum six-year planning period. This current plan covers the years 2023 to 2029.

The Financial Plan is prepared using the most accurate information available at the time of publication. It utilizes the historical depreciated costs that were compiled in conformance with the Tangible Capital Assets (TCA) policy developed by the Public Sector Accounting Board (PSAB). These and other estimates are based on current financial information and technical requirements and may be subject to change. Actual results could differ from estimates.

**CITY OF MARKHAM
ENVIRONMENTAL SERVICES DEPARTMENT - WATERWORKS DIVISION**

STATEMENT OF FINANCIAL POSITION

<i>As at December 31</i>	Actual	Projection						
<i>(All dollar amounts are in \$000)</i>	2022	2023	2024	2025	2026	2027	2028	2029
Financial Assets								
Cash and Cash Equivalents	90,822	94,912	114,759	90,087	97,314	102,269	107,090	112,139
Unbilled Charges	11,315	12,166	12,778	13,350	13,954	14,538	15,162	15,817
Due to City of Markham	12,960	12,960	12,960	12,960	12,960	12,960	12,960	12,960
Accounts Receivables	9,488	12,195	12,808	13,383	13,988	14,573	15,199	15,855
Total Financial Assets	124,585	132,232	153,304	129,780	138,216	144,340	150,410	156,770
Financial Liabilities								
Accounts Payable	55,930	56,343	58,968	61,745	64,678	67,775	70,768	73,914
Debentures	0	0	0	0	0	0	0	0
Total Financial Liabilities	55,930	56,343	58,968	61,745	64,678	67,775	70,768	73,914
Net Financial Assets / (Debt)	68,655	75,890	94,336	68,035	73,538	76,565	79,642	82,856
Change in Financial Assets		7,235	18,446	(26,301)	5,503	3,027	3,077	3,214
Non-Financial Assets								
Tangible Capital Assets	729,346	714,352	726,835	729,292	773,746	786,568	801,590	818,003
<i>Under Construction</i>	2,830	2,113	613	7,069	2,333	2,729	2,900	3,026
<i>Additions</i>	0	11,973	3,476	40,059	13,221	15,462	16,434	17,146
<i>Donations</i>	0	16,633	17,053	17,492	17,940	18,201	18,659	19,125
<i>Write Downs</i>	0	0	0	0	0	0	0	0
<i>Disposals</i>	0	0	0	0	0	0	0	0
Inventories of Supplies	0	0	0	0	0	0	0	0
Prepaid Expenses	0	0	0	0	0	0	0	0
Total Non-Financial Assets	732,176	745,071	747,977	793,912	807,240	822,960	839,582	857,300
Change in Non-Financial Assets		12,894	2,906	45,935	13,328	15,720	16,622	17,718
Accumulated Surplus	800,831	820,960	842,313	861,947	880,778	899,524	919,224	940,156

Note – in 2025 there is a requirement for a significantly higher cash outlay for capital investment, relating primarily to the Cast Iron Water main Replacement program, whereby work is prioritized in any given year based on physical observation of the infrastructure along with immediate work/replacement being required. This has resulted in the deferral of scheduled work in 2024 (as per the Life Cycle Study) to 2025. This figure is subject to change and is impacted by the annual update of the Life Cycle Reserve Study.

**CITY OF MARKHAM
ENVIRONMENTAL SERVICES DEPARTMENT - WATERWORKS DIVISION**

STATEMENT OF FINANCIAL OPERATIONS

<i>(All dollar amounts are in \$000)</i>	For the years ending December 31,						
	2023	2024	2025	2026	2027	2028	2029
Accumulated Surplus - Beginning of Period	800,831	820,960	842,313	861,947	880,778	899,524	919,224
Revenues							
Water Rates	146,337	153,699	160,591	167,857	174,880	182,385	190,263
User Charges	1,528	1,589	1,621	1,653	1,686	1,720	1,754
Other	2,326	2,981	1,275	527	528	524	531
Donations (Contributions from developers)	16,751	17,174	17,616	18,067	18,330	18,791	19,261
Total Revenues	166,941	175,443	181,102	188,104	195,425	203,419	211,809
Expenses							
Amortization	(17,694)	(18,089)	(19,372)	(20,752)	(21,387)	(21,850)	(22,103)
Interest	0	0	0	0	0	0	0
Operating Costs	(129,118)	(136,001)	(142,096)	(148,521)	(155,291)	(161,870)	(168,773)
Total Expenses	(146,812)	(154,091)	(161,468)	(169,273)	(176,678)	(183,720)	(190,877)
Annual Surplus / (Deficit)	20,129	21,352	19,634	18,831	18,747	19,699	20,932
Accumulated Surplus / (Deficit) - End of Period	820,960	842,313	861,947	880,778	899,524	919,224	940,156

**CITY OF MARKHAM
ENVIRONMENTAL SERVICES DEPARTMENT - WATERWORKS DIVISION**

STATEMENT OF CASH-FLOWS

<i>(All dollar amounts are in \$000)</i>	For the years ending December 31,						
	2023	2024	2025	2026	2027	2028	2029
OPENING CASH & CASH EQUIVALENTS	90,822	94,912	114,759	90,087	97,314	102,269	107,090
OPERATING ACTIVITIES							
Revenues							
Water Rates	146,337	153,699	160,591	167,857	174,880	182,385	190,263
User Charges	1,528	1,589	1,621	1,653	1,686	1,720	1,754
Change in Unbilled Charges	(850)	(612)	(573)	(604)	(584)	(624)	(655)
Change in Accounts Receivables	(2,707)	(614)	(574)	(606)	(585)	(625)	(657)
Total Revenues	144,307	154,063	161,064	168,301	175,397	182,855	190,706
Expenses							
Operating	(129,118)	(136,001)	(142,096)	(148,521)	(155,291)	(161,870)	(168,773)
Finance Charges	0	0	0	0	0	0	0
Change in Accounts Payable	413	2,626	2,776	2,933	3,097	2,993	3,146
Total Expenses	(128,705)	(133,376)	(139,320)	(145,588)	(152,194)	(158,877)	(165,627)
Net Change in Cash from Operating Activities	15,602	20,687	21,745	22,713	23,203	23,979	25,079
INVESTING ACTIVITIES							
Acquisition of Tangible Capital Assets	(14,285)	(4,171)	(48,213)	(16,514)	(19,283)	(20,206)	(21,115)
Surplus Funds from Closed Capital	448	350	521	502	506	525	554
Proceeds from Sales of Tangible Capital Assets	0	0	0	0	0	0	0
Net Change in Cash from Investing Activities	(13,838)	(3,822)	(47,692)	(16,013)	(18,777)	(19,682)	(20,561)
FINANCING ACTIVITIES							
Interest Income	2,326	2,981	1,275	527	528	524	531
Proceeds from Debentures	0	0	0	0	0	0	0
Debenture Repayment	0	0	0	0	0	0	0
Net Change in Cash from Financing Activities	2,326	2,981	1,275	527	528	524	531
Net Change in Cash and Cash Equivalents	4,091	19,846	(24,672)	7,227	4,955	4,821	5,049
CLOSING CASH & CASH EQUIVALENTS	94,912	114,759	90,087	97,314	102,269	107,090	112,139

STATEMENT OF FINANCIAL POSITION

The statement of financial position presents the Environmental Services Department - Waterworks Division's assets, liabilities and equity as at the end of each reporting period.

Financial Assets

Financial Assets are the resources controlled by the organization as a result of past events and from which future economic benefits are expected to flow to the organization. Financial assets include items such as cash and cash equivalents, unbilled charges, and accounts receivables. The opening value of cash and cash equivalents is consistent with the combined opening balances of the Environmental Services Reserves and Reserve Funds for 2023.

Projections of unbilled charges and accounts receivables are based on historical trends. Unbilled charges and accounts receivables are a percentage of annual sales.

Liabilities

Liabilities are financial obligations to outside organizations or individuals that are the result of transactions or events that occurred on or before the end of the accounting period. Liabilities include long-term debentures and accounts payable.

Projections of accounts payable are based on the historic averages. The City of Markham's Environmental Services Department – Waterworks Division does not currently hold any long-term debentures nor is it a consideration within the planning period.

Non-Financial Assets

Tangible Capital Assets

Tangible capital assets (TCA) are non-financial assets having physical substance that:

- are held for use in the production or supply of goods and services, for rental to others, for administrative purposes for the development, construction, maintenance or repair of other tangible capital assets;
- have useful economic lives extending beyond an accounting period;
- are used on a continuing basis; and
- are not for resale in the ordinary course of operations (PS 3150.05).

Assets are categorized as equipment, vehicles or infrastructure related to water and wastewater servicing and then further categorized based on function (see Table 1 below). Recording methods and accounting treatments differ between asset categories as some are

recorded individually as single assets, while the majority of assets are grouped into asset pools. An asset pool is a grouping of many related assets that is recorded as a single asset. The individual assets within each pool usually have like characteristics or are part of a complex network system, and have similar useful lives.

The value for Tangible Capital Assets as at January 1, 2023 is the net book value of all tangible capital assets related to the City of Markham’s water and wastewater system. The tangible capital assets value in each year of the projection includes additions, donations, write downs and disposals from the prior year but not those from the current year.

Depreciation is calculated using the straight-line depreciation method, and assumes a zero residual value. Assets are added to the asset inventory using the “half-year rule”. All assets being put into service within the fiscal year will be recorded in the asset inventory with an in-service date of July 1 regardless of actual service date. Accordingly, in their first year, 6 months depreciation will be charged against new assets.

The net book value of all water and wastewater tangible capital assets is outlined in *Table 1*. The net book value represents the value of all assets (in thousands of dollars) as of January 1, 2023.

Table 1		
Net Book Value of In-Service Tangible Capital Assets		
<i>As at January 1, 2023</i>		
Category 1	Category 2	(\$000)
Equipment	O&M Tools and Equipment	237.6
	Drinking Water Distribution System	420,212.8
Infrastructure	Sanitary Sewage Collection System	307,403.9
	Sanitary Sewage Pumping Stations	3,273.2
	Vehicles	Licensed Vehicles
Total In-Service Tangible Capital		732,176.2

Tangible Capital Assets – Under Construction

Also, referred to as “Work-in-Progress”, this value represents expenditures related to tangible capital assets, which are not yet in service. It is estimated that 15% of all tangible capital assets added through City operations will be under construction at year-end.

Tangible Capital Assets – Additions

The value for tangible capital asset additions represents the value of assets acquired by the City through the capital program net of the half-year depreciation. This includes new assets and also replacements for existing assets which have reached the end of their life cycle. It is estimated that the City will add \$144 million of infrastructure to the water and wastewater system over the planning period.

Tangible Capital Assets – Donations (developer contributions)

Tangible capital asset donations are the infrastructure the City has assumed from developers as part of the subdivision assumption process. The asset value from donations for each year is based on the historical average value of infrastructure required to service a single household, applied incrementally to the growth projection. The estimated value of assets required to service a single household is \$5,000 and \$4,400 for wastewater and water services, respectively.

Tangible Capital Assets – Write Downs

A write down is used to reflect a partial impairment in the value of an asset. An asset may be written-down in instances where they may be stolen, lost, destroyed or become obsolete. Alternatively, if a reduction in the value of an asset is objectively estimated and is expected to be permanent, then the value would also be written down. There are no anticipated write downs within the planning period.

Tangible Capital Assets – Disposals

Disposal costs related to the replacement of water or wastewater infrastructure is captured within the cost of the new asset. There is no gain or loss anticipated from the disposal of tangible capital assets forecast within the planning period.

Inventories of Supplies and Prepaid Expenses

Inventories of supplies and prepaid expenses are accounted for in operating expenditures since all payments are assumed to be current.

STATEMENT OF FINANCIAL OPERATIONS

The statement of financial operations outlines the annual revenues, expenses, income (annual surplus) and accumulated surplus (the total of financial and non-financial assets) of the City of Markham's Environmental Services Department – Waterworks Division.

Revenues

The annual revenues are categorized by their sources: water rates, user charges, donations, and other sources.

Water and Wastewater Rates

Water rate revenues are forecast based rates determined through our annual reserve fund study. The total annual revenue is the product of the applicable rates and the forecast consumption. Water and wastewater rates are updated April 1st of each year.

User Charges

Revenues derived from user charges include payment for services such as water on-off fees, water meter installation fees, and water sampling/testing. Annual projections of these revenues are based on historical averages.

Donations (developer contributions)

Donations from developers take the form of infrastructure assumed by the City through the subdivision process. The value for accounting purposes is equivalent to the value of tangible capital asset donations described under the statement of financial position.

Other Sources

Revenue from other sources is primarily earnings from investments (i.e., revenues resulting from the investment of Reserves and Reserve funds).

Expenses

Amortization

Amortization expenses are the annual depreciation value of tangible capital assets in service. The annual amortization expenses by asset category for the planning period are outlined in *Table 2*.

Table 2
Amortization Expenses by Asset Category
(all dollars amounts are in \$000)

CATEGORY 1	CATEGORY 2	2023	2024	2025	2026	2027	2028	2029
Equipment	O&M Tools and Equipment	88.4	112.2	128.6	146.3	137.6	137.2	159.4
	Drinking Water Distribution System	9,735.1	10,011.7	10,401.9	10,888.4	11,251.9	11,577.2	11,896.3
Infrastructure	Sanitary Sewage Collection System	7,453.5	7,556.1	8,385.2	9,201.9	9,303.9	9,443.7	9,558.8
	Sanitary Sewage Pumping Stations	147.3	143.6	173.3	204.9	365.6	355.5	186.6
	Vehicles	Licensed Vehicles	269.6	265.5	282.9	310.4	328.1	336.4
TOTAL AMORTIZATION EXPENSE		17,694	18,089	19,372	20,752	21,387	21,850	22,103

Interest

Interest expenses are the costs related to borrowing. There are no interest expenses as the Environmental Services Department – Waterworks Division does not currently hold or anticipate any debentures within the planning period.

Operating Costs

Costs related to the operation of the water and wastewater systems include purchases of water, sewerage service, billing and administration, and staffing.

STATEMENT OF CASH-FLOWS

The statement of cash flows provides information about the changes in cash and cash equivalents of the City of Markham's Environmental Services Department – Waterworks Division within each reporting period. The statement outlines changes from operating activities, investing activities and financing activities.

Opening Cash and Cash Equivalents

The opening balance of the statement of cash flows represents the opening balance of the Environmental Services Department's Reserves and Reserve Funds.

Operating Activities - Revenues

Water and Wastewater Rates

Water rate revenues are forecast based rates determined through our annual reserve fund study. The total annual revenue is the product of the applicable rates and the forecast consumption. Water and wastewater rates are updated April 1st of each year.

User Charges

Revenues derived from user charges include payment for services such as water on-off fees, water meter installation fees, and water sampling/testing. Annual projections of these revenues are based on historical averages.

Change in Unbilled Charges/Accounts Receivable

Changes in unbilled charges and accounts receivable is calculated based on the current year unbilled charges/accounts receivable less prior year unbilled charges/accounts receivable and represent changes in cash received.

Operating Activities - Expenses

Operating

All other costs related to providing water and wastewater services are summarized under this heading. Costs related to the operation of the water and wastewater system includes purchases of water, sewerage service, billing and administration, and staffing.

Finance Charges

Finance charges are the costs related to borrowing. There are no finance charges as the Environmental Services Department – Waterworks Division does not currently hold or anticipate any debentures within the planning period.

Change in Accounts Payable

Change in accounts payable is calculated based on the current year accounts payable less prior year accounts payable and represent changes in cash expended.

Capital Activities

Acquisition of Tangible Capital Assets

This value represents the cash applied towards the funding of tangible capital assets. This includes the cost of new assets, and the rehabilitation and replacement of existing assets.

Proceeds from Sales of Tangible Capital Assets

The asset disposal process is controlled by Purchasing by-law 2017-8 Part V, Disposal of Personal Property. There are no sales of tangible capital assets anticipated to occur within the planning period.

Investing Activities

Net investing transactions are the earnings from investment of Reserves and Reserve Funds.

Closing Cash and Cash Equivalents

The closing balance of the statement of cash flows represents the opening balance and all financial transactions throughout the fiscal year. This becomes the opening balance for the subsequent year.