



 **Watson
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ECONOMISTS LTD.

In Association with 

Water and Wastewater Rate Study

Municipality of Port Hope

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List of Acronyms and Abbreviations

Acronym	Full Description of Acronym
D.C.	Development Charges
G.I.S.	Geographic Information System
L.P.A.T.	Local Planning Appeals Tribunal
M.P.A.C.	Municipal Property Assessment Corporation
O.Reg.	Ontario Regulation
P.S.A.B.	Public Sector Accounting Board
Q.S.R.	Quick Score Rating
S.D.W.A.	Safe Drinking Water Act



Report



Chapter 1

Introduction



1. Introduction

1.1 Background

The Municipality of Port Hope (Municipality) has a present population of approximately 16,800 people. There are approximately 4,691 water customers and 4,454 wastewater customers using the municipal systems. The treatment, storage, and distribution/collection of water and wastewater are the responsibility of the Municipality.

All customers are currently charged a quarterly base charge that increases based on meter size and a consumptive rate for both water and wastewater. The Municipality imposes an increasing block rate structure (i.e. a consumptive rate that increases with quarterly consumption within defined thresholds) for consumption. The water and wastewater rates currently imposed are summarized below in Table 1-1.

Table 1-1
Municipality of Port Hope
2020 Water and Wastewater Rates

2020 Rates		
Quarterly Base Charge		
Meter Size	Water	Wastewater
5/8"	\$ 38.25	\$ 52.50
3/4"	\$ 45.89	\$ 63.00
1"	\$ 61.20	\$ 84.00
1 1/4"	\$ 76.50	\$ 105.00
1 1/2"	\$ 91.80	\$ 126.00
2"	\$ 122.39	\$ 168.00
3"	\$ 183.59	\$ 252.00
4"	\$ 244.80	\$ 336.00
6"	\$ 367.19	\$ 504.00
8"	\$ 489.58	\$ 672.00
Volume Charge (per m ³)		
Block	Water	Wastewater
Block 1 (≤ 20 m ³ Quarterly)	\$ 1.68	\$ 2.15
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	\$ 2.10	\$ 2.69
Block 3 (> 60 m ³ Quarterly)	\$ 2.52	\$ 3.23



1.2 Study Process

The Municipality retained Watson & Associates Economists Ltd. (Watson), in partnership with CIMA+, to undertake a water and wastewater rate study and prepare a Water Financial Plan in accordance with Ontario Regulation (O.Reg.) 453/07. This current study is an update to the Municipality's 2014 Water and Wastewater Rate Study (2014 Rate Study). The objectives of the study and the steps involved in carrying out this assignment are summarized below:

- Update water and wastewater service demand assumptions based on analysis of historical consumption and recent trends;
- Estimate future consumption levels by applying revised demand assumptions to forecast growth identified in the Municipality's 2019 Development Charges (D.C.) Background Study report and adjusted to reflect the actual historical growth experienced in recent years;
- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- Build a capital program that addresses specific needs identified by CIMA+ and the Municipality's staff;
- Identify potential methods of cost recovery from the capital needs listing. These recovery methods may include other statutory authorities (e.g. *Development Charges Act, 1997* (D.C.A.), *Municipal Act*, etc.) as an offset to recovery through the water and wastewater rates;
- Forecast annual operating costs and rate-based funding requirements;
- Provide and impact assessment on the rate payers;
- Develop a long-term water and wastewater rate forecast;
- Present findings to staff and Council for their consideration; and
- Prepare a water financial plan that satisfies the requirements of O. Reg. 453/07.

In approaching this study, the following analysis is provided:

- Chapter 2 – Forecast Growth and Service Demands
- Chapter 3 – Capital Infrastructure Needs
- Chapter 4 – Capital Cost Financing Options
- Chapter 5 – Operating Expenditure Forecast



1.3 Legislative Context

Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario. These changes arose as a result of the Walkerton Commission and the 93 recommendations made by the Walkerton Inquiry Part II report. Areas of recommendation included:

- watershed management and source protection;
- quality management;
- preventative maintenance;
- research and development;
- new performance standards;
- sustainable asset management; and
- lifecycle costing.

The following sections describe significant applicable regulatory areas.

1.3.1 *Sustainable Water and Sewage Systems Act*

The *Sustainable Water and Sewage Systems Act* was passed on December 13, 2002. The intent of the Act was to introduce the requirement for municipalities to undertake an assessment of the “full cost” of providing their water and the wastewater services. In total, there were 40 areas within the Act to which the Minister may make Regulations, however regulations were never issued. On December 31, 2012, the *Sustainable Water and Sewage Systems Act* was repealed.

1.3.2 *Safe Drinking Water Act*

The *Safe Drinking Water Act* was passed in December 2002. The *Safe Drinking Water Act* provides for 50 of the 93 Walkerton Part II recommendations. It focuses on the administrative and operational aspects of the provision of water.

The purposes of the *Safe Drinking Water Act* are to “recognize that the people of Ontario are entitled to expect their drinking water to be safe and to provide for the protection of human health and the prevention of drinking water health hazards through



the control and regulation of drinking water systems and drinking water testing. 2002, c. 32, s. 1.”

The following is a brief summary of the key elements included in the *Safe Drinking Water Act*:

- Mandatory licensing and accreditation of testing laboratories;
- New standards for treatment, distribution quality and testing;
- Mandatory operator training and certification;
- Mandatory licensing of municipal water providers;
- Stronger enforcement and compliance provisions; and
- “Standard of care” requirements for municipalities.

This legislation impacts the costs of operating a water system with the need for higher skilled operators including increased training costs, increased reporting protocols and requirements, continuing enhancements to quality standards and the costs to licence each water system.

1.3.3 Financial Plans Regulation

On August 16, 2007, the Ministry of Environment introduced O. Reg. 453/07 which requires the preparation of financial plans for water systems (and municipalities are encouraged to prepare plans for wastewater systems). The Ministry of Environment has also provided a Financial Plan Guideline to assist municipalities with preparing the plans. A brief summary of the key elements of the regulation is provided below:

- The financial plan will represent one of the key elements to obtain a Drinking Water Licence.
- The plan is to be completed, approved by Council Resolution, and submitted to the Ministry of Municipal Affairs and Housing and Housing as part of the application for receiving approval of a water licence.
- The financial plans shall be for a period of at least six years but longer planning horizons are encouraged.
- As the regulation is under the *Safe Drinking Water Act*, the preparation of the plan is mandatory for water services and encouraged for wastewater services.



- The plan is considered a living document (i.e. can be updated if there are significant changes to budgets) but will need to be undertaken at a minimum every five years.
- The plans generally require the forecasting of capital, operating and reserve fund positions, and providing detailed capital inventories. In addition, Public Sector Accounting Board full accrual information on the system must be provided for each year of the forecast (i.e. total non-financial assets, tangible capital asset acquisitions, tangible capital asset construction, betterments, write-downs, disposals, total liabilities, net debt, etc.).
- The financial plans must be made available to the public (at no charge) upon request and be available on the municipality's web site. The availability of this information must also be advertised.

In general, the financial principles of this regulation follow the intent of the *Sustainable Water and Sewage Systems Act*, 2002 to move municipalities towards financial sustainability for water services. However, many of the prescriptive requirements have been removed (e.g. preparation of two separate documents for provincial approval, auditor opinions, engineer certifications, etc.).

A guideline ("Towards Financially Sustainable Drinking-Water and Wastewater Systems") has been developed to assist municipalities in understanding the Province's direction and provides a detailed discussion on possible approaches to sustainability. The Province's Principles of Financially Sustainable Water and Wastewater Services are provided below:

Principle #1: Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.

Principle #2: An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

Principle #3: Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.

Principle #4: Lifecycle planning with mid-course corrections is preferable to planning over the short-term, or not planning at all.



Principle #5: An asset management plan is a key input to the development of a financial plan.

Principle #6: A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.

Principle #7: Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services received.

Principle #8: Financial Plans are “living” documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.

Principle #9: Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council.

1.3.4 *Water Opportunities Act*

The *Water Opportunities Act* received Royal Assent on November 29, 2010. The Act provides for the following elements:

- Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Prepare water conservation plans to achieve water conservation targets established by the regulations; and
- Prepare sustainability plans for municipal water services, municipal wastewater services and municipal stormwater services.

With regard to the sustainability plans:

- The Bill extends from the water financial plan and requires a more detailed review of the water financial plan and requires a full plan for wastewater and stormwater services; and
- Regulations (when issued) will provide performance targets for each service – these targets may vary based on the jurisdiction of the regulated entity or the class of entity.



The Financial Plan shall include:

- An asset management plan for the physical infrastructure;
- Financial Plan;
- For water, a water conservation plan;
- Assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks; and
- Strategies for maintaining and improving the municipal service, including strategies to ensure the municipal service can satisfy future demand, consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and increase co-operation with other municipal service providers.

Performance indicators will be established by service:

- May relate to the financing, operation or maintenance of a municipal service or to any other matter in respect of which information may be required to be included in a plan; and
- May be different for different municipal service providers or for municipal services in different areas of the Province.

Regulations will prescribe:

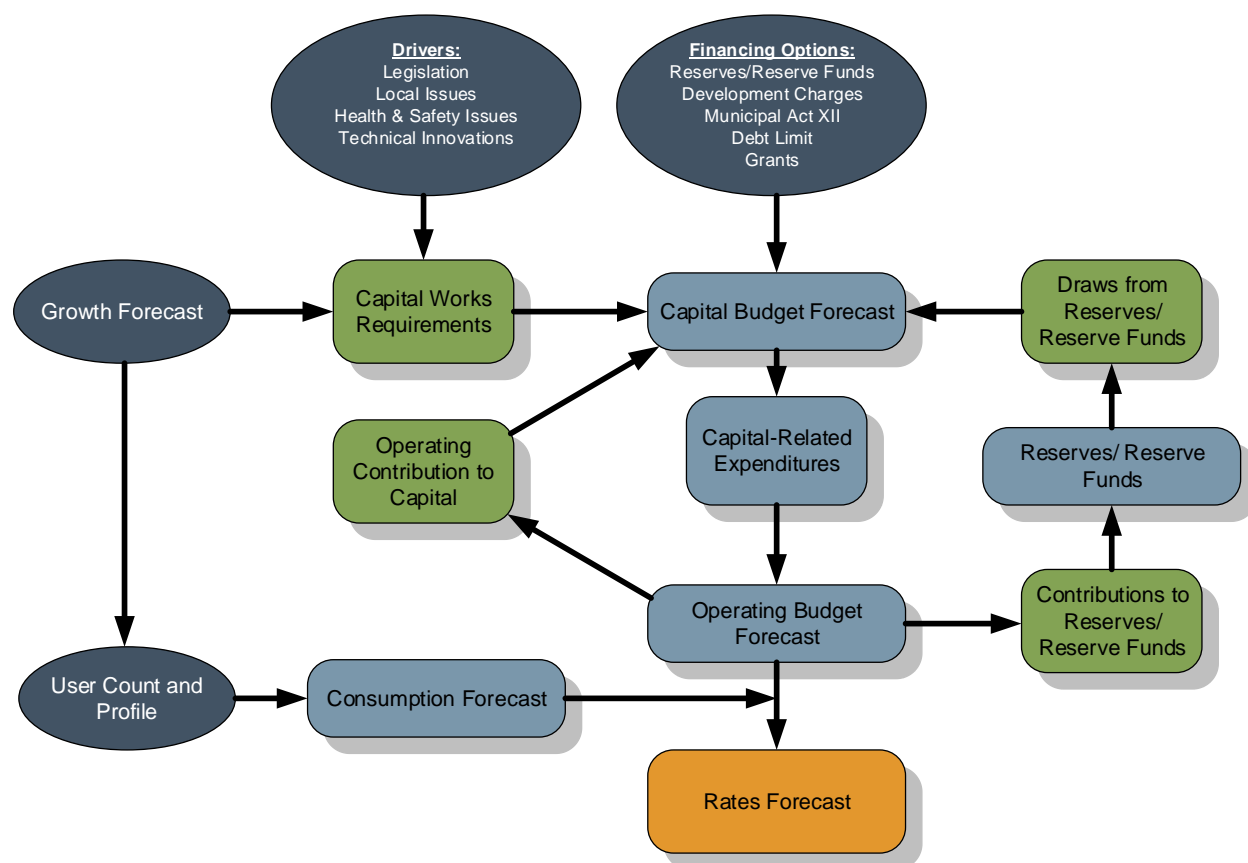
- Timing;
- Contents of the plans;
- Identifying what portions of the plan will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.



1.4 Water and Wastewater Rate Calculation Methodology

Figure 1-1 illustrates the general methodology used in determining the full cost recovery water and wastewater rate forecast.

Figure 1-1
Water and Wastewater Rate Calculation Methodology



The methodology employed generally consists of 5 major elements:

1.4.1 Customer Demands and Consumption Forecast

As noted in Section 1.1, the Municipality employs a rate structure consisting of a quarterly base charge and a consumptive rate. The base charge is imposed based on water meter size with higher charges imposed on larger meters, generally reflective of higher capital infrastructure demands. The consumptive rate is imposed as an increasing block rate based on consumption.



This first step in the analysis is important as it produces the current base revenue by source and assumptions for forecasting purposes. The base charge revenues are forecast with customer growth. The customer profile forecast is modeled based on the Municipality's 2019 Development Charges Background Study growth forecast by type, with adjustments to reflect historical building activity, and applying generally witnessed metered size assumptions by use. Moreover, the customer forecast is modelled for the water and wastewater systems independently to identify differences in service demands.

The water consumption forecast is prepared by applying average annual consumption estimates to future development. Consumption estimates are based on average consumption levels by customer type drawn from four quarters of municipal billing records ranging from Q4-2018 to Q3-2019. The non-residential consumption estimates are generally adjusted to net out large consuming water customers that may skew anticipated consumption levels of future growth. Consistent with the customer forecast, the water consumption forecast used to determine the wastewater consumptive rates is adjusted to reflect differences in service demands.

1.4.2 Capital Needs Forecast

The capital needs forecast is developed to measure program/service level adjustments, lifecycle requirements, and growth-related needs. Analysis conducted by CIMA+ and the Municipality's staff identified capital projects that provided the base capital forecast. Included in the capital forecast are the growth-related needs forecast based on the Municipality's 2019 Development Charges Background Study, consistent with the underlying water and wastewater customer growth forecast assumptions. Capital expenditures are forecast with inflationary adjustments based on capital cost indices.

1.4.3 Capital Funding Plan

The capital funding plan considers the potential funding sources available to address the capital needs forecast. The sources of capital funding include rate-based support, reserves/reserve funds, and debt for program/service level improvements. Growth-related sources of funding include development charges and debt. The use of rate-based funding is measured against the revenue projections and affordability impacts. The reserve/reserve fund sources are measured against the sustainability of these funds, relative to lifecycle demands, revenue projections, and affordability impacts.



Debt financing is considered for significant capital expenditures where funding is required beyond long-term lifecycle needs or to facilitate rate transition policies. Debt financing is measured against the Municipality's debt policies and annual repayment limits to ensure a practical and sustainable funding mix.

1.4.4 Operating Budget Forecast

The operating budget forecast considers adjustments to the Municipality's base budget reflecting program/service level changes, operating fund impacts associated with infrastructure, and financing for capital needs. The operating expenditures are forecast with inflationary adjustments and growth in service demand, based on fixed and variable cost characteristics. The operating budget forecast ties the capital funding plan and reserve/reserve fund continuity forecast to the rate-based revenue projections. This ensures sufficient funding for both the ongoing annual operation and maintenance of water and wastewater services, as well as the capital cost requirements to ensure service sustainability. Operating revenues are projected to identify the base charge and consumptive rate components net of anticipated operating revenues, such as water meter fees, rental fees, and other miscellaneous revenues.

1.4.5 Rate Forecast and Structure

The rate forecast and structure component of the analysis considers various rate structures to recover the forecast rate-based revenue from the projected customer demands. At this stage in the analysis the full costs of service are measured against the customer growth and consumption demands to determine full cost recovery rates. The analysis may consider alternative structures for base charge and consumptive components of the rates, consistent with municipal policies/strategies, industry practice, and customer affordability. Providing context to the rate forecast, the results are quantified to measure the impacts on a range of customer types and in relation to other municipalities.



Chapter 2

Forecast Growth and Service Demands



2. Forecast Growth and Service Demands

2.1 Current Service Demands

In preparing the demands forecast for water and wastewater services, a list of water and wastewater customer accounts was extracted from the Municipality's billing system and integrated with several other datasets to develop a comprehensive profile of existing customers.

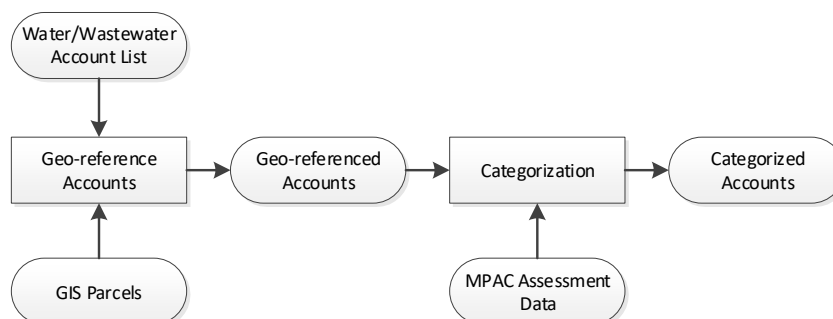
As part of the 2014 Water/Wastewater Rate Study an effort was undertaken to integrate water/wastewater billing account data into a Geographic Information System (G.I.S.) database. This information was then linked to the Municipality's property parcel layer using an automated address matching process followed by manual matching and scrubbing of data to complete the link for all accounts. Once linked to the property parcel layer, Municipal Property Assessment Corporation (M.P.A.C.) property codes were used to categorize each account into one of the following user types:

- Single Residential: typical single-family dwelling
- Multi Residential: duplexes, triplexes and larger multi-unit apartment buildings
- Vacant/Agricultural: properties used for agricultural purposes or with limited development
- Commercial: businesses with a retail or service focus
- Industrial: businesses with a distribution or production focus
- Institutional/Community: schools, places of worship, government offices, long term care

Figure 2-1 illustrates the general process and inputs used to develop the customer profile.



Figure 2-1
Municipality of Port Hope
Water and Wastewater Customer Profile Development Inputs and Process



The customer account information was updated to incorporate account changes and additional accounts as of 2019. Based on analysis of this information there were 4,691 water customers and 4,454 wastewater customers identified in the serviced areas of the Municipality for 2019. The majority of the customers that are serviced by water only (237 customers in total) are residential customers in older portions of the urban area that are not serviced by sanitary sewers or were not serviced at the time of their original development.

The majority of the customers on the Municipal water and wastewater systems are residential. Residential and multi-residential customers account for 88% of all customer accounts.

Compared with projections in the 2014 Rate Study and Financial Plan, the number of water and wastewater connections was lower than projected. Water and wastewater customers were projected to total 5,039 and 4,795 respectively by 2019, with actuals totaling 4,691 and 4,454 for water and wastewater respectively. This is mainly attributable to lower than expected residential development in the Municipality over the past five years.

2.2 Forecast Service Demands

Over the next ten years (i.e. to 2029), the number of water and wastewater system customers is anticipated to increase by 737 and 677, respectively. This results in an increase from 4,691 customers in 2019 to 5,428 by 2029 for the water system. It is expected that all new development will be connected to both water and wastewater



services. However, there are approximately 60 existing homes in the Welcome community which are expected to connect to Municipal water services over the coming years while continuing to rely on private septic systems. Therefore, the projected increase in wastewater system customers is 60 lower than the projected increase in water system customers. Based on the foregoing, the number of municipal wastewater customers is projected to increase from 4,454 in 2019 to 5,131 by 2029. The uptake of growth over the 10-year forecast period has been adjusted to align with the amount of development witnessed in recent years while achieving the same overall growth increment as identified in the Municipality's 2019 Development Charges Background Study. Tables 2-1 and 2-2 provide the detailed customer forecast for the period 2020-2029 for water and wastewater, respectively.

Consumption records from 2015 to the third quarter of 2019 were provided and analyzed to develop a forecast of water demands for the period 2020-2029. Historical average annual consumption levels by customer type were calculated for the Q4-2018 to Q3-2019 period and applied to the Municipality's growth projections for the urban service area to forecast future service demands. For wastewater, the flow estimates are based on each account's water consumption.

Applying the per-customer consumption estimates to the customer forecast identified in Table 2-1 results in an estimated increase in total annual water consumption from 1.32 million cubic meters currently to 1.51 million cubic meters by 2029, or an annualized increase of 1.3%.

Wastewater charges are collected based on the quantity of water consumed, except for certain instances where a sewage meter is installed on a property.¹ The number of wastewater customers is slightly lower than the number of water customers due to the presence of private septic systems. The customer and consumption forecasts for wastewater account for this difference, resulting in lower customer counts and consumption volumes. Annual water consumption of wastewater customers is anticipated to increase from 1.08 million cubic meters currently to 1.21 million cubic

¹ Wastewater flow meters appropriate for use in private residences are currently not available on the market. Furthermore, installing and maintaining separate wastewater flow meters on each property could significantly increase capital and operating costs. For these reasons, most municipalities in Ontario base wastewater charges on metered water consumption.



meters by 2029, or an annualized increase of 1.1%. Tables 2-3 and 2-4 provide the detailed water consumption forecasts by consumption block for water and wastewater customers, respectively.

It is noted that water consumption estimates and associated billing revenue estimates for 2020 have been adjusted with specific regard for distinct circumstances that impacted water usage in the first seven months of the year. The adjustments were made to reflect reductions in non-residential water consumption stemming from temporary closures of businesses due to COVID-19, and increased residential water consumption resulting from a hot and dry summer and people spending more time at home due to COVID-19 restrictions.



Table 2-1
Municipality of Port Hope
Water Customer Forecast

Water Customer Forecast	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Existing	4,691	4,691	4,691	4,691	4,691	4,691	4,691	4,691	4,691	4,691	4,691
New - Extending Service	-	33	36	39	42	45	48	51	54	57	60
New - Growth (new development)	-	23	72	126	186	250	321	398	482	574	677
Total	4,691	4,747	4,799	4,856	4,919	4,986	5,060	5,140	5,227	5,322	5,428

Table 2-2
Municipality of Port Hope
Wastewater Customer Forecast

Wastewater Customer Forecast	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Existing	4,454	4,454	4,454	4,454	4,454	4,454	4,454	4,454	4,454	4,454	4,454
New - Extending Service	-	-	-	-	-	-	-	-	-	-	-
New - Growth (new development)	-	23	72	126	186	250	321	398	482	574	677
Total	4,454	4,477	4,526	4,580	4,640	4,704	4,775	4,852	4,936	5,028	5,131



Table 2-3
Municipality of Port Hope
Water Consumption Forecast (m³) – Water Customers

Water Volume Forecast (m ³)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Block 1 (≤ 20 m ³ Quarterly)	333,563	336,494	342,547	349,329	356,645	364,559	373,152	382,421	392,447	403,298	415,059
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	270,023	272,239	276,899	282,166	287,871	294,025	300,758	308,035	315,950	324,587	334,016
Block 3 (> 60 m ³ Quarterly)	716,911	776,178	718,997	721,315	724,453	727,671	731,836	736,524	742,176	748,909	757,068
Total	1,320,497	1,384,911	1,338,442	1,352,811	1,368,969	1,386,255	1,405,745	1,426,981	1,450,573	1,476,793	1,506,143

Table 2-4
Municipality of Port Hope
Water Consumption Forecast (m³) – Wastewater Customers

Wastewater Flows Forecast (m ³)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Block 1 (≤ 20 m ³ Quarterly)	317,272	318,957	322,518	326,515	330,900	335,589	340,810	346,415	352,630	359,376	366,887
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	256,774	258,064	260,874	264,072	267,599	271,358	275,587	280,142	285,226	290,814	297,086
Block 3 (> 60 m ³ Quarterly)	507,059	555,471	508,779	510,826	513,678	516,580	520,416	524,746	530,025	536,357	544,100
Total	1,081,105	1,132,492	1,092,171	1,101,413	1,112,176	1,123,527	1,136,812	1,151,303	1,167,881	1,186,548	1,208,074

Note: Above flows are water flows on which the wastewater billing will be calculated



Chapter 3

Capital Infrastructure Needs



3. Capital Infrastructure Needs

Ten-year capital forecasts have been developed by CIMA+ and the Municipality's staff for the water and wastewater systems to address capital needs across all areas of the system

3.1 Linear Program Development

3.1.1 *Water Distribution System*

The Municipality's water distribution system consists of 97,100 m (97.1 km) of watermains that supply water to homes and business in two pressure zones. Watermains are a challenging asset to manage as large quantities of watermain cannot be cost effectively inspected either externally or internally and a high degree of reliability is generally required from most watermains.

For purposes of long-term capital planning, watermains are typically assumed to have a 75-year useful life, consistent with the Municipality's Asset Management Plan. While some watermains may fail prior to the 75-year mark and others may remain in service for more than 75 years, this timeframe provides a typical benchmark beyond which the reliability of watermains tends to decline and lifecycle costs for repairs can be expected to increase.

On this basis watermains installed prior to 1950 are considered candidates for replacement in the current capital program, which extends to a horizon year of 2029. Furthermore, cast iron watermains (commonly installed prior to the 1960s) are prone to internal corrosion and the development of tuberculation, which can impact water quality and restrict flows. Finally, watermains having a diameter less than 150 mm (6-inches) typically are not capable of supplying water at flow rates that meet current requirements for fire protection.

Based on the foregoing the following watermains were considered as candidates for inclusion in the capital program.



Table 3-1
Municipality of Port Hope
Summary of Candidate Watermain Projects

Priority	Description	Installed	Diameter	Material	Length (m)
1	Small Diameter Watermains	1920s – 1970s	25mm – 100mm	Cast Iron & Galv.	2,810
2	Watermains Identified in Previous Studies	1930s & 1940s	150mm +	Cast Iron	5,250
3	Beyond Useful Life Pre 1930s Cast Iron Watermains	Pre 1930s	150mm +	Cast Iron	580
4	Beyond Useful Life 1930s Cast Iron Watermains	1930s	150mm +	Cast Iron	1,320
5	Beyond Useful Life 1940s Cast Iron Watermains	1940s	150mm +	Cast Iron	4,270
6	Newer Cast Iron Watermains	1950s +	150mm +	Cast Iron	8,920
Total					23,150

In developing the capital program, the following watermains were eliminated from consideration:

- Most Priority 6 watermains installed after 1950 were eliminated where watermain break records do not justify replacing these assets prior to the end of their anticipated useful life;
- Approximately 4,280 m of watermains installed in the 1940s in locations where the roadway is in acceptable condition, no improvements to parallel sanitary sewers are required, and the consequence of watermain failure is low were deferred until roadway improvements are required; and
- 390 m of small diameter watermain on short side streets where the watermain is not required to provide fire flow as larger watermains on the “main” street supply the necessary fire hydrants.

This results in a 10-year capital program that includes the replacement of approximately 9,700 m of watermain representing 10.0% of the entire distribution system or 1.0% annually over the 10-year period. Figure 3-1 illustrates the Municipality’s entire



watermain inventory by installation decade and highlights the portions that are included in the current 10-year capital plan.

Figure 3-1
Municipality of Port Hope
Watermains by Age



As noted above, the current capital program addresses 10.0% of the entire water distribution system or 1.0% annually over the 10-year period. Based on a 75-year useful life the rate of replacement or other renewal works should average 1.33% (1/75th) of the total system length annually. This would suggest that the program is generally of an appropriate size with respect to long-term targets.

However, because the needs are not evenly distributed over time there is a backlog of existing needs amounting to approximately 6,600 m of watermain that is not included in the current 10-year capital plan. To address this remaining backlog and incorporate the full extent of watermains that will exceed their service life during the next 10-year period (2030 – 2039) it is anticipated that a program of similar size will be required involving approximately 15.7% of the distribution system over that time period.

3.1.2 Wastewater Collection System

3.1.2.1 Gravity Sewers

The Municipality's wastewater collection system consists of approximately 78,600 m (78.6 km) of gravity sanitary sewers. Unlike pressurized watermains, gravity wastewater (sanitary) sewers can be internally inspected using CCTV equipment



mounted on a small crawler vehicle that is introduced into the sewer through maintenance holes.

Prior to the development of the rate study capital program, the Municipality used its CCTV equipment to inspect the majority of the wastewater collection system and assign a Quick Score Rating (Q.S.R.) to each sewer segment based on the NASSCO Pipeline Assessment Certification Program. This methodology assigns each segment of sewer a Q.S.R. based on defects with a Q.S.R. of 1 being the least severe and a Q.S.R. of 5 being the most severe representing sewers with major structural defects and failures.

Sewer segments with a Q.S.R. of 4 or a Q.S.R. of 5 were identified as potential candidates for inclusion in the 10-year capital program as summarized in Table 3-2.

Table 3-2
Municipality of Port Hope
Summary of Candidate Sewer Projects by Q.S.R.

Priority	Description	Length (m)
1	Sewers with 5 series Q.S.R.	7,970
2	Sewers with 4 series Q.S.R.	4,220
Total		12,190

Potential sewer projects (Q.S.R. of 4 or 5 as summarized above) were overlaid with identified watermain projects. Where a watermain project and potential sewer project overlapped on the same street the sewer segment was identified for replacement as part of a coordinated reconstruction project to limit disruption and maximize efficiency. Where a potential sewer project did not overlap with a watermain project the sewer segment was identified for relining using trenchless technology or localized spot repairs.

Sewer relining and other repairs can be completed most cost effectively if organized into large projects involving significant lengths of sewer under a single contract. In this regard, two large sewer relining projects were identified with one project occurring in the first half of the program and one in the second half.

Additionally, regardless of their condition (Q.S.R.) sewer segments parallel to identified watermain projects were reviewed. In instances where sewer segments parallel to watermain projects would exceed their anticipated useful life within the 10-year program or the following 5-years (i.e. 15-years) they were identified for replacement as part of a coordinated reconstruction project.



The resultant capital program included the replacement, relining, or repair of approximately 15,040 m of sewer representing 19.1% of the entire system. This program included approximately 8,780 m of sewer replacement and decommissioning (of redundant parallel sewers) in coordination with watermain projects and 5,160 m of sewer relining and repair. To manage (limit) the overall program, approximately 4,960 m (of the identified sewer relining) was deferred into the future beyond the 2029 time-horizon of the current 10-year program. It is noted that this leaves a remaining backlog of 5,560 m of currently identified sewer needs to be included in future programs.

Figure 3-2 illustrates the Municipality's entire wastewater sewer inventory by installation decade and highlights the portions that are included in the current 10-year capital plan.

Figure 3-1
Municipality of Port Hope
Sewer Mains by Age



3.1.3 Benchmark Cost Estimates

Cost estimates for linear projects have been prepared using per linear benchmark costs established based on typical construction prices from Municipal contracts. The total values for each project type are outlined in Tables 3-3 to 3-5 below.



Table 3-3
Municipality of Port Hope
Benchmark Costs for Watermain Projects

Project Type	Cost per Linear Metre
Install New 200mm WM	\$1,094
Replace Exist. 50mm WM	\$1,014
Replace Exist. 150mm WM	\$1,129
Replace Exist. 200mm WM	\$1,167
Replace Exist. 250mm WM	\$1,295
Replace Exist. 300mm WM	\$1,385
Replace Exist 400mm WM	\$1,788

Table 3-4
Municipality of Port Hope
Benchmark Costs for Sewer Replacement

Project Type	Cost per Linear Metre
Install New 200mm Sewer	\$1,090
Replace Exist. 200mm Sewer	\$1,164
Replace Exist. 250mm Sewer	\$1,230
Replace Exist. 300mm Sewer	\$1,303
Replace Exist. 375mm Sewer	\$1,390
Replace Exist. 450mm Sewer	\$1,556
Replace Exist. 525mm Sewer	\$1,897



Table 3-5
Municipality of Port Hope
Benchmark Costs for Sewer Relining/Repair

Project Type	Cost per Linear Metre
Reline/Repair Exist. 200mm Sewer	\$453
Reline/Repair Exist. 225mm Sewer	\$517
Reline/Repair Exist. 250mm Sewer	\$517
Reline/Repair Exist. 300mm Sewer	\$589
Reline/Repair Exist. 375mm Sewer	\$669
Reline/Repair Exist. 450mm Sewer	\$829
Reline/Repair Exist. 525mm Sewer	\$1,024

3.2 Facilities Program Development

The projects included in the 10-year capital program for water and wastewater facilities have been established with input from three sources:

- Input from Municipal staff with respect to projects that are required to address operational-level items or provide continuity of ongoing maintenance programs such as scheduled filtration membrane replacement at the Water Treatment Plant (WTP) and Aeration Tank Diffuser Replacement at the Wastewater Treatment Plant (WWTP).
- Condition assessments completed to review the condition of the various existing assets and systems at each facility and identify current and longer-term needs based on asset lifecycles (generally in the time 1- to 5-year timeframe).
 - Port Hope Wastewater Treatment Plant Condition Assessment and Needs Study (Finalized January 2020)
 - Mill Street Wastewater Pumping Station Condition Assessment and Needs Study (Finalized December 2019)
 - AON Wastewater Pumping Station Condition Assessment and Needs Study (Finalized December 2019)
 - Hope Street Wastewater Pumping Station Condition Assessment and Needs Study (Finalized December 2019)
 - Dorset Street Standpipe Condition Assessment (August 2019)



- Victoria Street Booster Pumping Station Condition Assessment (January 2018)
- Port Hope Water Treatment Plant Condition Assessment (April 2016)
- Long-term asset planning for facilities that may require major lifecycle rehabilitation within the 10-year planning period.

It is noted that most of the facility condition assessments listed above are the first such assessments completed based on recommendations in the Municipality's Asset Management Plan and plans included in the 2014 Rate Study. Furthermore, several of the facilities including the Mill Street and AON wastewater pumping stations will reach key points in their lifecycle (e.g. 25-years old) during the current planning period. As a result, the scope of the facilities related capital program has generally expanded based on information available from condition assessments and certain facilities reaching an age where major rehabilitation of equipment and systems can be expected.

3.3 Capital Needs Forecast

The total capital forecast includes approximately \$37.85 million in capital needs for water (\$19.38 million) and wastewater (\$18.47 million) services in current dollars. These projects include lifecycle capital needs, major maintenance, and level of service/capacity improvements.

On this basis, the average annual value of the non-growth-related capital program for water and wastewater is approximately \$3.6 million. This level of expenditure is lower than the long-term infrastructure needs and financing requirements presented in the Municipality's 2016 Asset Management Plan, which suggest long-term rate supported capital needs of \$5.20 million (2020 \$) annually. This suggests that longer-term capital funding requirements are higher than the 10-year forecast of specific infrastructure renewal and replacement needs identified in this study.

The listing of water and wastewater capital needs, summarized by asset category, is presented in Tables 3-2 and 3-3, respectively. The full details of the capital program, including an itemization of the individual projects, are included in Appendix C. For rate determination purposes, the capital needs forecast has been indexed by 3.7% annually. This is reflective of the historical annual capital cost inflation witnessed in the Statistics Canada Building Construction Price Index over the past 20 years.



Table 3-2
Municipality of Port Hope
Water Capital Budget Forecast (Uninflated \$)

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Linear Program	8,068,705	712,447	15,000	580,641	200,898	293,764	1,174,801	1,075,325	1,818,813	1,059,568	1,137,447
Water Master Planning & System-Wide Projects	265,000	-	15,000	100,000	150,000	-	-	-	-	-	-
Water Facility Projects	5,259,400	-	70,000	270,800	42,000	3,000,000	50,000	76,600	250,000	-	1,500,000
Water Treatment Plant Projects	3,285,000	640,000	244,000	105,000	458,000	181,000	445,000	502,000	115,000	515,000	80,000
Water Vehicles	395,000	60,000	50,000	-	140,000	50,000	-	-	-	50,000	45,000
Water Trailers	140,000	-	-	-	-	-	-	90,000	50,000	-	-
Growth Related	1,970,063	50,635	38,700	275,717	780,236	-	624,775	200,000	-	-	-
Total Capital Expenditures	19,383,167	1,463,082	432,700	1,332,158	1,771,134	3,524,764	2,294,576	1,943,925	2,233,813	1,624,568	2,762,447

Table 3-3
Municipality of Port Hope
Wastewater Capital Budget Forecast (Uninflated \$)

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Linear Program	10,480,773	660,399	90,000	1,900,098	2,145,018	424,785	1,454,599	722,871	1,283,155	1,197,502	602,346
Wastewater Pumping Station Projects (Non-Growth)	2,116,000	340,000	186,000	125,000	45,000	60,000	-	1,260,000	-	50,000	50,000
Wastewater Treatment Plant Projects	5,269,000	105,000	470,000	1,259,000	820,000	580,000	780,000	150,000	86,000	989,000	30,000
Wastewater Vehicles	317,900	55,000	-	-	53,000	99,900	-	-	-	52,000	58,000
Wastewater Trailers & Portable Equipment	117,000	17,000	-	-	100,000	-	-	-	-	-	-
Growth Related	167,000	-	-	-	60,000	-	12,000	95,000	-	-	-
Total Capital Expenditures	18,467,673	1,177,399	746,000	3,284,098	3,223,018	1,164,685	2,246,599	2,227,871	1,369,155	2,288,502	740,346



Chapter 4

Capital Cost Financing Options



4. Capital Cost Financing Options

Historically, the powers that municipalities have had to raise alternative revenues to taxation to fund capital services have been restrictive. Over the past number of years, legislative reforms have been introduced. Some of these have expanded municipal powers (e.g. Bill 130 providing for natural person powers for fees and charges by-laws); while others appear to restrict them (Bill 98 in 1997 providing amendments to the *Development Charges Act*).

The most recent *Municipal Act* came into force on January 1, 2003, with significant amendments in 2006 through the *Municipal Statute Law Amendment Act*. Part XII of the Act and Ontario Regulation 584/06 govern a municipality's ability to impose fees and charges. This Act provides municipalities with broadly defined powers and provides the ability to impose fees for both operating and capital purposes. Under s.484 of the *Municipal Act*, 2001, the *Local Improvement Act* was repealed with the in-force date of the *Municipal Act* (January 1, 2003). The municipal powers granted under the Local Improvement Act now fall under the jurisdiction of the *Municipal Act*.

The methods of capital cost recovery available to municipalities are provided as follows:

Recovery Methods	Section Reference
<i>Development Charges Act</i> , 1997	4.2
<i>Municipal Act</i> , 2001	
○ Fees and Charge	4.3
○ Local Improvements	
Grant Funding	4.4
Reserves/Reserve Funds	4.5
Debenture Financing	4.6



4.1 Development Charges Act, 1997

The *Development Charges Act* received royal assent on December 8, 1997, replacing the previous act, which had been in-force since November 23, 1989.

The Province's stated intentions were to “create new construction jobs and make home ownership more affordable” by reducing the charges and to “make municipal Council decisions more accountable and more cost effective.” The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality. The *Development Charges Act, 1997* as amended (D.C.A.) provides for limitations and ceilings on services that can be included in the charges.

The Municipality imposes D.C.s on new development and the capital funding plan identifies D.C.s as a source of funding for anticipated capital needs. For water services, \$2.05 million (including \$1.04 million of D.C. funded debentures) and for wastewater services \$153,044 has been identified as funded from D.C.s over the forecast period. In addition to providing funding for future capital projects, D.C. revenues are also utilized to offset some of the debt servicing costs related to previously completed expansions of the Water Treatment Plant and Wastewater Treatment Plant.

4.2 Municipal Act

The *Municipal Act, 2001*, came into force January 1, 2003. Part XII Fees and Charges, gives municipalities the statutory authority to recover the costs of services, including capital costs, through by-law. Municipalities have used these types of charges to recover infrastructure costs associated with the extension of municipal services to private service users, to recover capital improvement costs from existing developments, and to recover growth related costs of service extension. These by-laws are typically used where D.C.s would not be applicable (e.g. recovery from existing developments) or where existing and growth-related cost recovery would be simplified under the administration of one by-law.

The Municipality does not recover capital costs through fees imposed under the *Municipal Act*.



4.3 Grant Funding Availability

Grant funding of \$111,469 combined for water and wastewater has been identified for the Lakeshore Road reconstruction project being completed in 2020. Furthermore, approximately \$52,700 of funding has been included in the water system's share of costs for the Lakeshore Road reconstruction project to account for contributions made by a developer. To the extent that the Municipality is successful in securing additional grant funding for future infrastructure needs and the financial impacts are material, the rate forecast may be revisited.

4.4 Existing Reserves/Reserve Funds

The Municipality has established reserves and reserve funds for water and wastewater capital costs. These reserves have been used in the capital funding forecast for rate-based needs. D.C. reserve funds for water and wastewater have been utilized for growth-related capital purposes. The following table summarizes the water and wastewater reserves/reserve funds utilized in this analysis and the respective December 31, 2019 closing balances.¹

¹ It is noted that these reserve fund balances differ from those reported in the Municipality's audited financial statements. This is because within the rate study, all amounts related to historically under-funded debt repayment associated with growth-related projects have been reflected in the DC reserve fund opening balances.



Table 4-1
Municipality of Port Hope
Water and Wastewater Projected Reserve/Reserve Fund Balances

Reserve/Reserve Fund	Balance as at Dec. 31, 2019
Water	
Capital Reserve	(1,184,980)
Water Services DC Reserve Fund	(1,864,288)
Water Treatment Plant DC Reserve Fund	(2,651,127)
Total - Water	(5,700,395)
Wastewater	
Capital Reserve	1,423,043
Wastewater Services DC Reserve Fund	(966,561)
Wastewater Plant DC Reserve Fund	(3,300,218)
Total - Wastewater	(2,843,736)

4.5 Debenture Financing

Although it is not a direct method of minimizing the overall cost to the ratepayer, debentures are used by municipalities to assist in cash flowing large capital expenditures.

The Ministry of Municipal Affairs and Housing regulates the level of debt incurred by Ontario municipalities through its powers established under the Municipal Act. Ontario Regulations 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue may be allotted for servicing the debt (i.e. debt charges).

The Municipality has outstanding external debt for water and wastewater services relating to the Water Treatment Plant and Sewage Treatment Plant, respectively. The Water Treatment Plant debt was issued in 2006 and has an outstanding principal balance of approximately \$1.56 million. The current outstanding debt balance is scheduled to be fully repaid in 2021. The Sewage Treatment Plant debt was issued in 2011 and has an outstanding principal balance of approximately \$24.01 million. The current outstanding debt balance is scheduled to be fully repaid by 2051.

The capital forecast proposes growth-related and non-growth-related debt financing for both the water and wastewater system. In regard to the water system, non-growth-



related debentures of \$7.55 million and growth-related debentures of \$1.04 million have been proposed throughout the forecast period, with the growth-related debenture principal and interest payments being funded from development charges. Additionally, non-growth-related debentures of \$7.80 million have been proposed throughout the forecast period for the wastewater system. It is noted that construction loan financing has been included for the Walton Street reconstruction project. Construction loan financing would see the Municipality make interest-only payments over the 2022-2024 period until the project is completed and subsequently the construction loan would be converted to a fixed-term loan with principal and interest payments starting in 2025.

4.6 Recommended Approach

The following table summarizes the recommended capital funding sources supporting the capital needs forecast, for consideration by the Municipality:

Table 4-2
Municipality of Port Hope
2020-2029 Water and Wastewater Capital Funding Program (Inflated \$)

Description	Water	Wastewater
Provincial/Federal Grants	\$ 112,032	\$ 52,148
Development Charges Reserve Fund	\$ 1,006,185	\$ 153,044
Non-Growth Related Debenture Requirements	\$ 7,546,148	\$ 7,798,052
Growth Related Debenture Requirements	\$ 1,044,564	\$ -
Reserves/Reserve Funds (non-DC)	\$ 13,738,818	\$ 13,737,845
Total Capital Funding	\$ 23,447,746	\$ 21,741,089

Tables 4-3 and 4-4 provide for the full capital expenditure and funding program by year for water and wastewater services, respectively. These capital funding plans are provided in inflated dollars.



Table 4-3
Municipality of Port Hope
Water Service Capital Budget Forecast – Inflated\$

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Linear Program	10,002,111	712,447	15,555	624,403	224,033	339,714	1,408,829	1,337,249	2,345,522	1,416,965	1,577,394
Water Master Planning & System-Wide Projects	291,000	-	16,000	108,000	167,000	-	-	-	-	-	-
Water Facility Projects	6,436,000	-	73,000	291,000	47,000	3,469,000	60,000	94,000	322,000	-	2,080,000
Water Treatment Plant Projects	3,833,000	640,000	253,000	113,000	511,000	209,000	534,000	624,000	149,000	689,000	111,000
Water Vehicles	455,000	60,000	52,000	-	156,000	58,000	-	-	-	67,000	62,000
Water Trailers	176,000	-	-	-	-	-	-	112,000	64,000	-	-
Growth Related	2,254,635	50,635	41,000	296,000	870,000	-	748,000	249,000	-	-	-
Total Capital Expenditures	23,447,746	1,463,082	450,555	1,432,403	1,975,033	4,075,714	2,750,829	2,416,249	2,880,522	2,172,965	3,830,394
Capital Financing											
Provincial/Federal Grants & Other Contributions	112,032	112,032	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	1,006,185	50,635	16,586	123,773	225,791	182,700	207,500	199,200	-	-	-
Non-Growth Related Debenture Requirements	7,546,148	-	-	466,467	224,033	3,403,641	-	-	1,371,831	-	2,080,176
Growth Related Debenture Requirements	1,044,564	-	-	-	406,349	97,715	540,500	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	13,738,818	1,300,415	433,969	842,163	1,118,860	391,659	2,002,829	2,217,049	1,508,691	2,172,965	1,750,218
Total Capital Financing	23,447,746	1,463,082	450,555	1,432,403	1,975,033	4,075,714	2,750,829	2,416,249	2,880,522	2,172,965	3,830,394



Table 4-4
Municipality of Port Hope
Wastewater Service Capital Budget Forecast – Inflated\$

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Linear Program	12,415,100	660,399	93,330	2,043,308	2,392,034	491,229	1,744,364	898,945	1,654,742	1,601,424	835,325
Wastewater Master Planning & System-Wide Projects	-	-	-	-	-	-	-	-	-	-	-
Wastewater Pumping Station Projects (Non-Growth)	2,489,981	340,000	192,882	134,421	50,182	69,385	-	1,566,907	-	66,865	69,339
Wastewater Treatment Plant Projects	6,128,451	105,000	487,390	1,353,890	914,430	670,723	935,380	186,536	110,905	1,322,593	41,604
Wastewater Vehicles	379,602	55,000	-	-	59,103	115,526	-	-	-	69,540	80,433
Wastewater Trailers & Portable Equipment	128,516	17,000	-	-	111,516	-	-	-	-	-	-
Growth Related	199,439	-	-	-	66,909	-	14,390	118,140	-	-	-
Total Capital Expenditures	21,741,089	1,177,399	773,602	3,531,619	3,594,174	1,346,863	2,694,134	2,770,528	1,765,647	3,060,422	1,026,701
Capital Financing											
Provincial/Federal Grants & Other Contributions	52,148	52,148	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	153,044	-	-	-	40,145	-	7,195	105,704	-	-	-
Non-Growth Related Debenture Requirements	7,798,052	-	-	2,434,384	2,680,533	329,330	-	1,548,253	805,552	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	13,737,845	1,125,251	773,602	1,097,235	873,496	1,017,533	2,686,939	1,116,571	960,095	3,060,422	1,026,701
Total Capital Financing	21,741,089	1,177,399	773,602	3,531,619	3,594,174	1,346,863	2,694,134	2,770,528	1,765,647	3,060,422	1,026,701



Chapter 5

Net Operating Expenditure Forecast



5. Net Operating Expenditure Forecast

5.1 Operating Expenditures

The Municipality provided its draft 2020 Operating Budget which formed the basis for the water and wastewater services net operating expenditure forecast, which was further refined through discussions with the Municipality's staff. The operating expenditure estimates were generally inflated at 2% annually, reflecting historical Consumer Price Index (C.P.I.) rates. Specific inflation factors were used for certain budget items such as insurance (5%), IT Technical Support (5.5%), and Chemicals (3.6%). The inflationary adjustments for these budget items were based on staff experience with how the costs within these categories have been increasing over recent years.

The operating budget forecast generally includes two components – the operating expenditures and capital-related expenditures. The former is based on the Municipality's projected annual spending for ongoing operations and maintenance, while the latter is based on the capital funding plan decisions (i.e. transfers to reserve funds, debt repayment, and capital fund transfers) presented earlier.

Capital-related annual expenditures in the forecast include annual debt repayments and contributions to reserves and reserve funds to support the forecast and future needs. While operating aspects identified above generally increase with inflation over the period (i.e. 2% annually), the capital-related aspects tend to increase more specifically with the increase in capital funding requirements.

As a result, gross operating expenditures for water services are anticipated to increase from \$4.30 million in 2020 to \$7.13 million by 2029. Similarly, for wastewater services annual gross expenditures are forecast to increase from \$4.91 million to \$8.05 million by 2029.

5.2 Operating Revenues

The Municipality has operating revenue sources including interest on accounts, bulk water sales, hydrant and meter fees, rental revenue, certificates, hydro reimbursements, and other miscellaneous revenues that offset some of the annual operating costs.



These operating revenues have been forecast over the period with general inflation of 2% annually. Additionally, transfers from D.C. reserve funds to offset the principal and interest payments for growth-related debentures have been included in the operating revenues.

The annual operating revenues for water services are forecast to decrease from \$429,700 in 2020 to \$162,600 in 2022 and increase thereafter to \$280,749 by 2029. For wastewater services, annual operating revenues are forecast to decrease from \$744,800 in 2020 to \$621,600 in 2029. Declines in operating revenues are a result of decreasing growth-related debt payments over the forecast period.

Furthermore, a significant source of revenue is secured from the quarterly base charge rate for water and wastewater services. Base charge revenues have been forecast based on the underlying system growth assumptions. The base charges were forecast to increase over the 2020-2029 period with the goal of more closely aligning the revenue from these charges with the Municipality's rate-based capital expenditures. In this regard, annual rate-based capital-related expenditures for water currently represent approximately 31% of annual costs, increasing to 51% by 2029. Meanwhile, for wastewater services, rate-based capital-related expenditures will increase from 37% in 2020 to 56% by 2029. Reflecting the fixed costs of service required to sustain water and wastewater operations, the share of base charge revenues relative to total billing revenues has been forecasted to increase over the forecast period, from 20% to 34% for water services and 24% to 33% for wastewater.

The consumptive rate recovery component of the water revenue is anticipated to increase from \$3.09 million in 2020 to \$4.55 million in 2029. The wastewater consumptive billing recovery is anticipated to increase from \$3.17 million in 2020 to \$4.99 million in 2029.

Tables 5-1 to 5-2 provide the water and wastewater operating budget forecasts. The forecast operating budgets are provided in inflated dollars. Detailed breakdowns of the operating expenditures forecast can be found in Appendix A for water services and in Appendix B for wastewater services.



Table 5-1
Municipality of Port Hope
Water Service Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EXPENDITURES										
Operating Costs										
Office Supplies	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
Postage	9,800	10,000	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700
Uniforms	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Office Equipment	11,600	7,800	7,900	8,100	8,200	8,400	8,600	8,700	8,900	9,100
Bank Fees & Interest Chrgs	50	50	50	50	50	60	60	60	60	60
IT Software Licenses	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	6,200	6,300
Tools/Equip	8,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Chemicals	98,000	74,500	76,000	77,500	79,100	80,700	82,300	83,900	85,600	87,300
Pumps	15,000	15,300	15,600	15,900	16,200	16,600	16,900	17,200	17,600	17,900
Meters	10,000	10,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900
Linear Material	138,000	142,300	144,200	266,000	150,700	160,000	157,000	169,000	279,300	179,600
Road Repair Materials	20,000	20,400	20,800	21,200	21,600	22,100	22,500	23,000	23,400	23,900
Fleet Fuel	25,000	25,500	26,000	26,500	27,100	27,600	28,200	28,700	29,300	29,900
Insurance Premium	97,056	101,900	107,000	112,400	118,000	123,900	130,100	136,600	143,400	150,600
Insurance Claims	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Contracted Services	80,000	69,600	83,200	58,400	86,600	71,700	61,900	63,200	64,400	95,600
Legal Fees	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Sampling Program	17,000	17,300	17,600	18,000	18,400	18,800	19,200	19,600	20,000	20,400
Lab Equipment / Testing	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Professional Dues	4,500	4,600	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400
Travel	2,000	2,000	2,100	2,100	2,100	2,200	2,200	2,200	2,300	2,300
Training	20,000	30,000	35,000	30,800	27,100	27,600	28,200	33,300	29,300	29,900
R & M- Vehicle	10,000	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
R & M- Equipment	250,400	249,900	244,500	259,900	254,500	270,500	230,900	281,400	275,400	292,800
R & M- Buildings & Grounds	80,400	167,900	49,900	35,000	46,500	25,400	76,600	43,600	26,900	27,500
Equipment Rentals	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rentals-Property	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Natural Gas	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300
Hydro	280,000	285,600	291,300	297,100	303,000	309,100	315,300	321,600	328,000	334,600
Water & Sewer	57,200	64,500	68,200	69,200	70,100	70,900	71,500	72,000	72,200	72,200
Property Tax	225,000	229,500	234,100	238,800	243,600	248,500	253,500	258,600	263,800	269,100
Telephone	5,500	5,600	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400
Cell Phone	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600



Table 5-1 (continued)
Municipality of Port Hope
Water Service Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Radios	2,000	2,000	2,100	2,100	2,100	2,200	2,200	2,200	2,300	2,300
Internet	14,000	14,300	14,600	14,900	15,200	15,500	15,800	16,100	16,400	16,700
W/O	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Transfer from Other Dept	323,809	330,300	336,900	343,600	350,500	357,500	364,700	372,000	379,400	387,000
Full-Time	624,972	726,716	741,300	756,100	771,200	786,600	802,300	818,300	834,700	851,400
Part-Time	-	9,800	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400
Overtime	49,500	50,500	51,500	52,500	53,600	54,700	55,800	56,900	58,000	59,200
Standby	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Shift Premium	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
Clothing Allowance	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900
Health and Safety	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Benefits	177,024	203,615	207,700	211,900	216,100	220,400	224,800	229,300	233,900	238,600
Retiree Benefits	30,500	31,100	31,700	32,300	32,900	33,600	34,300	35,000	35,700	36,400
Sub-Total Operating Costs	2,833,611	3,068,381	3,048,650	3,194,550	3,163,550	3,208,560	3,263,860	3,356,560	3,499,560	3,508,860
Capital-Related										
Existing Debt (Principal) - Growth Related	263,629	270,261	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	9,772	3,092	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	20,294	25,985	54,018	56,179	58,426	60,763
New Growth Related Debt (Interest)	-	-	-	-	16,254	19,351	39,931	37,771	35,524	33,187
Existing Debt (Principal) - Non-Growth Related	505,767	518,490	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Non-Growth Related	18,748	5,931	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Principal)	-	-	-	-	-	204,466	212,645	221,150	298,507	310,447
New Non-Growth Related Debt (Interest)	-	-	9,329	23,139	31,916	163,766	155,587	147,081	193,108	181,168
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	667,565	526,365	1,324,839	1,452,175	1,784,766	1,743,158	2,057,789	2,370,683	2,549,862	3,033,019
Sub-Total Capital Related	1,465,481	1,324,139	1,334,168	1,475,315	1,853,230	2,156,726	2,519,970	2,832,864	3,135,427	3,618,584
Total Expenditures	4,299,092	4,392,520	4,382,818	4,669,865	5,016,780	5,365,286	5,783,830	6,189,424	6,634,987	7,127,444



Table 5-1 (continued)
Municipality of Port Hope
Water Service Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
REVENUES										
<u>Operating Revenues</u>										
Interest on Accounts	8,500	8,700	8,900	9,100	9,300	9,500	9,700	9,900	10,100	10,300
Certificates	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Service Fees	11,000	11,200	11,400	11,600	11,800	12,000	12,200	12,400	12,600	12,900
Water Meter Fee	16,500	16,800	17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700
Rental Revenue	84,000	85,700	87,400	89,100	90,900	92,700	94,600	96,500	98,400	100,400
Bulk Water Sales	32,000	32,600	33,300	34,000	34,700	35,400	36,100	36,800	37,500	38,300
Misc Revenue	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
Contributions from Development Charges Reserve Fund	273,402	273,353	-	-	36,547	45,336	93,949	93,949	93,949	93,949
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Sub-Total Operating Revenues	429,702	432,753	162,600	165,800	205,647	217,836	269,949	273,449	276,949	280,749
<u>Water Billing Recovery</u>										
Base Charge	776,411	872,448	981,401	1,104,909	1,244,762	1,403,972	1,584,764	1,791,128	2,026,477	2,296,248
Consumptive Charge	3,092,980	3,087,320	3,238,818	3,399,155	3,566,370	3,743,478	3,929,116	4,124,847	4,331,560	4,550,447
Sub-Total Water Billing Recovery	3,869,391	3,959,768	4,220,218	4,504,065	4,811,132	5,147,450	5,513,880	5,915,975	6,358,037	6,846,695
Total Revenues	4,299,092	4,392,520	4,382,818	4,669,865	5,016,780	5,365,286	5,783,830	6,189,424	6,634,987	7,127,444



Table 5-2
Municipality of Port Hope
Wastewater Service Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EXPENDITURES										
Operating Costs										
Office Supplies	7,500	7,600	9,400	7,900	9,700	8,200	10,100	8,600	10,500	8,900
Postage	10,300	10,500	10,700	10,900	11,100	11,400	11,600	11,800	12,100	12,300
Uniforms	1,100	2,300	2,300	2,400	2,400	2,500	2,600	2,600	2,700	2,700
Office Equipment	875	5,800	2,800	2,900	2,900	3,000	3,000	23,800	3,200	3,200
Bank Fees & Interest Charges	50	50	50	50	50	60	60	60	60	60
IT Technical Support	27,300	34,400	29,500	21,700	22,900	24,200	25,500	26,900	28,400	38,900
IT Software Licenses	10,750	20,300	15,300	15,700	16,000	16,300	16,600	16,900	17,300	17,600
Tools/Equip	29,500	54,300	52,800	68,900	50,900	33,100	33,800	34,500	35,100	66,300
Chemicals	70,200	79,600	56,600	42,500	44,000	45,600	47,200	66,100	50,700	52,500
Waste Disposal	10,500	10,800	11,100	11,400	11,700	12,000	12,300	12,700	13,000	13,300
Linear Materials	75,000	75,000	104,000	106,100	108,200	110,400	112,600	114,900	117,200	119,500
PM Flushing	20,000	24,200	24,700	25,200	25,700	12,450	26,700	27,200	27,700	28,300
Road Repair Materials	43,000	44,000	45,000	46,100	47,100	55,200	56,300	57,400	58,600	59,800
Sludge Removal	146,600	149,500	152,500	155,600	158,700	161,900	165,100	168,400	171,800	175,200
Fleet Fuel	16,500	16,800	17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700
Insurance Premium	110,170	115,700	121,500	127,600	134,000	140,700	147,700	155,100	162,900	171,000
Insurance Claims	13,500	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
Contracted Services	230,850	222,600	203,200	199,400	229,800	253,800	187,100	228,300	183,200	223,000
Legal Fees	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
Sampling Program	12,500	12,800	13,000	13,300	13,500	13,800	14,100	14,400	14,600	14,900
Lab Equipment / Testing	14,000	10,700	10,900	11,100	11,400	11,600	11,800	12,100	12,300	12,500
Professional Dues	7,355	7,800	7,500	7,600	7,800	8,000	8,100	8,300	8,400	8,600
Travel	360	370	370	380	390	400	410	410	420	430
Training	23,770	26,600	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900
R & M - Vehicle	20,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
R & M - Equipment	87,300	87,900	89,300	90,800	68,300	69,800	71,300	72,900	74,500	76,200
R & M - Buildings & Grounds	120,000	140,700	160,300	163,900	162,900	153,200	88,700	90,500	100,700	94,300
Equipment Rentals	12,750	21,200	21,600	22,000	22,400	22,800	23,300	23,800	24,300	24,800
Natural Gas	35,700	36,400	37,100	37,800	38,600	39,400	40,200	41,000	41,800	42,600
Hydro	350,000	357,000	364,100	371,400	378,800	386,400	394,100	402,000	410,000	418,200
Water & Sewer	39,900	42,900	44,100	45,300	46,500	47,700	48,900	50,000	51,100	52,100
Property Tax	130,000	132,600	135,300	138,000	140,800	143,600	146,500	149,400	152,400	155,400
Telephone	9,300	9,500	9,700	9,900	10,100	10,300	10,500	10,700	10,900	11,100
Cell Phone	4,800	4,900	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700



Table 5-2 (continued)
Municipality of Port Hope
Wastewater Service Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Internet	14,500	14,800	15,100	15,400	15,700	16,000	16,300	16,600	16,900	17,200
Write-offs	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Transfer from Other Dept	282,658	288,300	294,100	300,000	306,000	312,100	318,300	324,700	331,200	337,800
Full-Time	526,554	605,604	617,700	630,100	642,700	655,600	668,700	682,100	695,700	709,600
Part-Time	-	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
Overtime	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800
Callouts	7,850	8,100	8,350	8,600	8,850	9,100	9,350	9,600	9,850	10,100
Standby	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
Shift Premium	3,500	3,500	3,500	3,500	3,500	3,750	3,750	3,750	3,750	3,750
Clothing Allowance	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550
Health and Safety	12,000	12,200	12,500	12,700	13,000	15,500	13,500	13,800	14,100	14,300
Benefits	142,762	168,075	171,400	174,800	178,300	181,900	185,500	189,200	193,000	196,900
Retiree Benefits	13,075	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Sub-Total Operating Costs	2,746,879	2,957,749	2,999,620	3,045,880	3,092,440	3,142,410	3,085,420	3,227,370	3,220,430	3,356,590
Capital-Related										
Existing Debt (Principal) - Growth Related	257,807	257,807	257,807	257,807	257,807	257,807	257,807	257,807	257,807	257,807
Existing Debt (Interest) - Growth Related	376,524	363,294	351,100	338,906	327,614	314,517	302,323	290,129	278,703	265,740
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	504,443	504,443	504,443	504,443	504,443	504,443	504,443	504,443	504,443	504,443
Existing Debt (Interest) - Non-Growth Related	736,735	710,848	686,988	663,128	641,033	615,408	591,548	567,687	545,331	519,967
New Non-Growth Related Debt (Principal)	-	-	-	90,981	209,922	283,928	295,285	384,418	440,025	457,626
New Non-Growth Related Debt (Interest)	-	-	12,253	104,811	207,544	205,734	194,377	244,495	261,341	243,740
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	290,557	0	411,487	706,893	1,025,434	1,572,907	1,917,230	1,945,473	2,211,452	2,439,532
Sub-Total Capital Related	2,166,066	1,836,393	2,224,078	2,666,969	3,173,797	3,754,743	4,063,013	4,194,453	4,499,101	4,688,855
Total Expenditures	4,912,945	4,794,142	5,223,698	5,712,849	6,266,237	6,897,153	7,148,433	7,421,823	7,719,531	8,045,445



Table 5-2 (continued)
Municipality of Port Hope
Wastewater Service Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
REVENUES										
Operating Revenues										
Interest on Accounts	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Service Fees	8,000	8,200	8,400	8,600	8,800	9,000	9,200	9,400	9,600	9,800
Septage Receiving Billing	80,000	61,200	62,400	63,700	64,900	66,200	67,600	68,900	70,300	71,700
Miscellaneous Revenue	9,500	900	900	900	900	900	900	900	900	900
Contributions from Development Charges Reserve Fund	634,331	621,101	608,907	596,713	585,420	572,324	560,130	547,936	536,510	523,547
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Sub-Total Operating Revenues	744,831	704,701	694,207	683,813	674,220	662,924	652,630	642,236	632,710	621,647
Wastewater Billing Recovery										
Base Charge	997,416	1,054,117	1,166,016	1,290,984	1,430,336	1,586,734	1,761,683	1,958,600	2,179,952	2,430,264
Consumptive Charge	3,170,698	3,035,324	3,363,475	3,738,052	4,161,680	4,647,496	4,734,119	4,820,988	4,906,869	4,993,534
Sub-Total Wastewater Billing Recovery	4,168,114	4,089,441	4,529,491	5,029,036	5,592,016	6,234,229	6,495,803	6,779,587	7,086,822	7,423,798
Total Revenues	4,912,945	4,794,142	5,223,698	5,712,849	6,266,237	6,897,153	7,148,433	7,421,823	7,719,531	8,045,445



Chapter 6

Forecast Water and Wastewater Rates



6. Forecast Water and Wastewater Rates

To summarize the analysis undertaken thus far, Chapter 3 reviewed capital-related issues for all customers within the water and wastewater systems and responds to the lifecycle needs of the Municipality. Chapter 4 provided a review of capital financing options of which internal sources (i.e. reserve fund transfers) and external sources (i.e. debt) will be the predominant basis for financing future capital needs. Chapter 5 established the 10-year operating forecast of expenditures for the Municipality's water and wastewater systems. This chapter presents the calculated rates over the next 10-year period. These calculations are based on the net operating expenditures identified in Chapter 5, divided by the volumes forecast provided in Section 2.2.

6.1 Water Rates

The recommended rate forecasts are provided to address full costs of the municipal systems, including annual operating and capital expenditures from both a lifecycle and growth-related perspective.

To achieve full cost recovery identified above, water base charge rates would be required to increase by approximately 11% annually. These increases would provide the Municipality with greater revenue certainty as they would allow for a greater share of capital-related expenditures to be funded through a more consistent revenue source (i.e. base charge revenues). Furthermore, the consumptive rate would be required to increase by 3.99% in 2021 relative to current rates, with annual percentage increases declining in magnitude over the forecast period, ultimately reaching annual increases of approximately 3.14% by 2029.

The resultant rate forecast is presented in Table 6-1 below. The detailed financial forecast and rate calculations for water services are provided in Appendix A to this report.



Table 6-1
Municipality of Port Hope
Water Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Total Consumptive Charge Recovery	3,092,980	3,087,320	3,238,818	3,399,155	3,566,370	3,743,478	3,929,116	4,124,847	4,331,560	4,550,447
Volume Forecast By Block (m³)										
Block 1 (≤ 20 m ³ Quarterly)	336,494	342,547	349,329	356,645	364,559	373,152	382,421	392,447	403,298	415,059
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	272,239	276,899	282,166	287,871	294,025	300,758	308,035	315,950	324,587	334,016
Block 3 (> 60 m ³ Quarterly)	776,178	718,997	721,315	724,453	727,671	731,836	736,524	742,176	748,909	757,068
Total Volume (m³)	1,384,911	1,338,442	1,352,811	1,368,969	1,386,255	1,405,745	1,426,981	1,450,573	1,476,793	1,506,143
Increasing Block Rates (\$/m³)										
Block 1 (≤ 20 m ³ Quarterly)	1.68	1.75	1.82	1.89	1.96	2.03	2.10	2.17	2.24	2.31
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	2.10	2.18	2.27	2.36	2.44	2.53	2.62	2.71	2.80	2.89
Block 3 (> 60 m ³ Quarterly)	2.52	2.62	2.72	2.83	2.93	3.04	3.15	3.26	3.36	3.47
Annual Percent Increase										
Block 1 (≤ 20 m ³ Quarterly)		3.99%	3.92%	3.84%	3.74%	3.64%	3.54%	3.41%	3.29%	3.14%
Block 2 (> 20 to ≤ 60 m ³ Quarterly)		3.99%	3.92%	3.84%	3.74%	3.64%	3.54%	3.41%	3.29%	3.14%
Block 3 (> 60 m ³ Quarterly)		3.99%	3.92%	3.84%	3.74%	3.64%	3.54%	3.41%	3.29%	3.14%

Meter Size	Quarterly Base Charge									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
5/8"	38.25	42.55	47.33	52.65	58.56	65.15	72.47	80.61	89.67	99.74
3/4"	45.89	51.05	56.78	63.16	70.26	78.16	86.94	96.71	107.58	119.67
1"	61.20	68.08	75.73	84.24	93.70	104.23	115.95	128.98	143.47	159.59
1 1/4"	76.50	85.10	94.66	105.30	117.13	130.29	144.93	161.22	179.34	199.49
1 1/2"	91.80	102.12	113.59	126.36	140.56	156.35	173.92	193.46	215.20	239.39
2"	122.39	136.14	151.44	168.46	187.39	208.45	231.87	257.93	286.92	319.16
3"	183.59	204.22	227.17	252.70	281.10	312.68	347.82	386.91	430.39	478.75
4"	244.80	272.31	302.91	336.95	374.81	416.93	463.79	515.90	573.88	638.37
6"	367.19	408.45	454.35	505.41	562.21	625.38	695.66	773.83	860.79	957.52
8"	489.58	544.60	605.80	673.87	749.60	833.83	927.53	1,031.77	1,147.71	1,276.68



6.2 Wastewater Rates

The recommended rate forecasts are provided to address full costs of the municipal systems, including annual operating and capital expenditures from both a lifecycle and growth-related perspective.

To achieve full cost recovery identified above, wastewater base charge rates would be required to increase by approximately 4.6% in 2021, followed by annual increases of 9.4% for the remainder of the forecast period to 2029. These increases would provide the Municipality with greater revenue certainty as they would allow for a greater share of capital-related expenditures to be funded through a more consistent revenue source (i.e. base charge revenues). Furthermore, the consumptive rate would be held at current levels for 2021, followed by annual increases of around 10% from 2022 to 2025, and then annual increases of less than 1% until 2029.

The resultant rate forecast is presented in Table 6-2 below. The detailed financial forecast and rate calculations for wastewater services are provided in Appendix B to this report.



Table 6-2
Municipality of Port Hope
Wastewater Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Total Consumptive Charge Recovery	3,170,698	3,035,324	3,363,475	3,738,052	4,161,680	4,647,496	4,734,119	4,820,988	4,906,869	4,993,534
Volume Forecast By Block (m³)										
Block 1 (≤ 20 m ³ Quarterly)	318,957	322,518	326,515	330,900	335,589	340,810	346,415	352,630	359,376	366,887
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	258,064	260,874	264,072	267,599	271,358	275,587	280,142	285,226	290,814	297,086
Block 3 (> 60 m ³ Quarterly)	555,471	508,779	510,826	513,678	516,580	520,416	524,746	530,025	536,357	544,100
Total Volume (m³)	1,132,492	1,092,171	1,101,413	1,112,176	1,123,527	1,136,812	1,151,303	1,167,881	1,186,548	1,208,074
Increasing Block Rates (\$/m³)										
Block 1 (≤ 20 m ³ Quarterly)	2.15	2.15	2.36	2.60	2.87	3.17	3.19	3.21	3.21	3.21
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	2.69	2.69	2.95	3.25	3.59	3.96	3.99	4.01	4.02	4.02
Block 3 (> 60 m ³ Quarterly)	3.23	3.23	3.55	3.90	4.31	4.76	4.79	4.81	4.82	4.82
Annual Percent Increase										
Block 1 (≤ 20 m ³ Quarterly)		0.00%	9.95%	10.12%	10.28%	10.43%	0.64%	0.45%	0.23%	0.00%
Block 2 (> 20 to ≤ 60 m ³ Quarterly)		0.00%	9.95%	10.12%	10.28%	10.43%	0.64%	0.45%	0.23%	0.00%
Block 3 (> 60 m ³ Quarterly)		0.00%	9.95%	10.12%	10.28%	10.43%	0.64%	0.45%	0.23%	0.00%

Meter Size	Quarterly Base Charge									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
5/8"	52.50	54.92	60.07	65.70	71.85	78.58	85.95	94.00	102.81	112.44
3/4"	63.00	65.91	72.08	78.84	86.22	94.30	103.14	112.80	123.37	134.93
1"	84.00	87.88	96.11	105.11	114.96	125.74	137.52	150.40	164.50	179.91
1 1/4"	105.00	109.84	120.14	131.39	143.70	157.17	171.90	188.00	205.62	224.89
1 1/2"	126.00	131.81	144.16	157.67	172.45	188.60	206.28	225.60	246.74	269.86
2"	168.00	175.75	192.22	210.23	229.93	251.47	275.03	300.81	328.99	359.82
3"	252.00	263.63	288.33	315.34	344.89	377.21	412.55	451.21	493.49	539.73
4"	336.00	351.50	384.44	420.46	459.86	502.94	550.07	601.61	657.98	719.64
6"	504.00	527.25	576.66	630.69	689.78	754.42	825.10	902.42	986.97	1,079.45
8"	672.00	703.00	768.87	840.92	919.71	1,005.89	1,100.14	1,203.22	1,315.96	1,439.27



6.3 Forecast Water and Wastewater Rate Impacts

Tables 6-3 to 6-5 summarize the impacts of the recommended rates on a typical residential customer with a $\frac{5}{8}$ " meter consuming 135 m³ per year, a typical small non-residential customer with a 1" meter consuming 270 m³ per year, and large non-residential customer with a 2" meter consuming 8,500 m³ per year.

At current rates the annual water and wastewater bill for a typical residential customer would total approximately \$941 (i.e. \$407 for water and \$535 for wastewater). The proposed 2021 annual bill would be approximately \$978 (i.e. \$434 for water and \$572 for wastewater). This represents a \$37 (4%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a typical residential customer would further increase by approximately 8-9% annually from 2022 to 2025, and approximately 5-6% annually over the remainder of the forecast period.

A typical non-residential customer could expect an annual water and wastewater bill of approximately \$1,826 (i.e. \$791 for water and \$1,035 for wastewater) at current rates. The proposed 2021 annual bill would be approximately \$1,890 (i.e. \$840 for water and \$1,050 for wastewater). This represents a \$65 (3.5%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a typical non-residential customer would further increase by approximately 8-9% annually from 2022-2025, and approximately 5% annually over the remainder of the forecast period.

The annual water and wastewater bill for a hypothetical large non-residential customer would total approximately \$49,688 (i.e. \$21,775 for water and \$27,913 for wastewater) at current rates. The proposed 2021 annual bill would be approximately \$50,623 (i.e. \$22,680 for water and \$27,944 for wastewater). This represents a \$935 (1.9%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for this hypothetical large non-residential customer would further increase by approximately 7-8% annually from 2022-2025, and approximately 2% annually over the remainder of the forecast period.



6.4 Recommendations

Based upon the analysis in this report, the following recommendations are provided for Council's consideration:

1. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates and maintain reserve funds for water and wastewater services;
2. That Council approve the 2021 water and wastewater rates as shown in Chapter 6, and direct staff to review Rate Study in five years; and
3. That Council approve the Rate Study and direct staff to prepare the Water Financial Plan in the format required under O.Reg. 453/07 and submit the plan to the Province to maintain the Municipality's Municipal Drinking Water Licence.



Table 6-3
Municipality of Port Hope
Annual Water and Wastewater Bill Impact – Residential

Total Annual Customer Water & Wastewater Bill - Based on 135 m³ of usage and 5/8" meter

Total Annual Bill	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Water	\$407	\$434	\$463	\$495	\$530	\$567	\$607	\$650	\$697	\$748
Wastewater	\$535	\$544	\$597	\$656	\$721	\$793	\$826	\$860	\$896	\$935
Total Water & Wastewater Bill	\$941	\$978	\$1,061	\$1,151	\$1,250	\$1,360	\$1,432	\$1,510	\$1,593	\$1,683
\$ increase - Total Annual Bill		\$37	\$82	\$90	\$99	\$109	\$73	\$78	\$83	\$89
%increase - Total Annual Bill		3.9%	8.4%	8.5%	8.6%	8.7%	5.3%	5.4%	5.5%	5.6%

Table 6-4
Municipality of Port Hope
Annual Water and Wastewater Bill Impact – Small Non-Residential

Total Annual Customer Water & Wastewater Bill - Based on 270 m³ of usage and 1" meter

Total Annual Bill	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Water	\$791	\$840	\$893	\$950	\$1,010	\$1,076	\$1,146	\$1,221	\$1,302	\$1,390
Wastewater	\$1,035	\$1,050	\$1,153	\$1,267	\$1,393	\$1,533	\$1,587	\$1,643	\$1,702	\$1,764
Total Water & Wastewater Bill	\$1,826	\$1,890	\$2,046	\$2,216	\$2,403	\$2,609	\$2,733	\$2,864	\$3,004	\$3,153
\$ increase - Total Annual Bill		\$65	\$155	\$170	\$187	\$206	\$124	\$132	\$140	\$149
%increase - Total Annual Bill		3.5%	8.2%	8.3%	8.4%	8.6%	4.7%	4.8%	4.9%	5.0%

Table 6-5
Municipality of Port Hope
Annual Water and Wastewater Bill Impact – Large Non-Residential

Total Annual Customer Water & Wastewater Bill - Based on 8,500 m³ of usage and 2" meter

Total Annual Bill	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Water	\$21,775	\$22,680	\$23,608	\$24,558	\$25,528	\$26,515	\$27,517	\$28,529	\$29,548	\$30,570
Wastewater	\$27,913	\$27,944	\$30,720	\$33,824	\$37,293	\$41,174	\$41,527	\$41,811	\$42,018	\$42,142
Total Water & Wastewater Bill	\$49,688	\$50,623	\$54,327	\$58,382	\$62,821	\$67,690	\$69,043	\$70,339	\$71,566	\$72,712
\$ increase - Total Annual Bill		\$935	\$3,704	\$4,055	\$4,439	\$4,869	\$1,354	\$1,296	\$1,227	\$1,145
%increase - Total Annual Bill		1.9%	7.3%	7.5%	7.6%	7.8%	2.0%	1.9%	1.7%	1.6%



Appendices



Appendix A

Water Services



Table W-1
Municipality of Port Hope
Water Service
Capital Budget Forecast
 Inflated \$

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Linear Program	10,002,111	712,447	15,555	624,403	224,033	339,714	1,408,829	1,337,249	2,345,522	1,416,965	1,577,394
Water Master Planning & System-Wide Projects	291,000	-	16,000	108,000	167,000	-	-	-	-	-	-
Water Facility Projects	6,436,000	-	73,000	291,000	47,000	3,469,000	60,000	94,000	322,000	-	2,080,000
Water Treatment Plant Projects	3,833,000	640,000	253,000	113,000	511,000	209,000	534,000	624,000	149,000	689,000	111,000
Water Vehicles	455,000	60,000	52,000	-	156,000	58,000	-	-	-	67,000	62,000
Water Trailers	176,000	-	-	-	-	-	-	112,000	64,000	-	-
Growth Related	2,254,635	50,635	41,000	296,000	870,000	-	748,000	249,000	-	-	-
Total Capital Expenditures	23,447,746	1,463,082	450,555	1,432,403	1,975,033	4,075,714	2,750,829	2,416,249	2,880,522	2,172,965	3,830,394
Capital Financing											
Provincial/Federal Grants & Other Contributions	112,032	112,032	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	1,006,185	50,635	16,586	123,773	225,791	182,700	207,500	199,200	-	-	-
Non-Growth Related Debenture Requirements	7,546,148	-	-	466,467	224,033	3,403,641	-	-	1,371,831	-	2,080,176
Growth Related Debenture Requirements	1,044,564	-	-	-	406,349	97,715	540,500	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	13,738,818	1,300,415	433,969	842,163	1,118,860	391,659	2,002,829	2,217,049	1,508,691	2,172,965	1,750,218
Total Capital Financing	23,447,746	1,463,082	450,555	1,432,403	1,975,033	4,075,714	2,750,829	2,416,249	2,880,522	2,172,965	3,830,394



Table W-2
Municipality of Port Hope
Water Service
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	-		-	-	-	-	-	-	-	-	-
2021	-			-	-	-	-	-	-	-	-
2022	-				-	-	-	-	-	-	-
2023	-					-	-	-	-	-	-
2024	4,094,141						368,232	368,232	368,232	368,232	368,232
2025	-							-	-	-	-
2026	-								-	-	-
2027	1,371,831									123,384	123,384
2028	-										-
2029	2,080,176										
Total Annual Debt Charges	7,546,148	-	-	-	-	-	368,232	368,232	368,232	491,616	491,616

Table W-2b
Municipality of Port Hope
Water Service
Schedule of Non-Growth Related Construction Loan Payments (Interest Only)
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	-	-	-	-	-	-	-	-			
2021	-		-	-	-	-	-	-			
2022	466,467			9,329	18,659	18,659	-	-			
2023	224,033				4,481	8,961	-	-			
2024	214,821					4,296	-	-			
2025	-						-	-			
2026	-							-			
2027											
2028											
2029											
Total Annual Debt Charges	905,321	-	-	9,329	23,139	31,916	-	-	-	-	-



Table W-3
Municipality of Port Hope
Water Service
Schedule of Growth Related Debenture Repayments
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	-		-	-	-	-	-	-	-	-	-
2021	-			-	-	-	-	-	-	-	-
2022	-				-	-	-	-	-	-	-
2023	406,349					36,547	36,547	36,547	36,547	36,547	36,547
2024	97,715						8,789	8,789	8,789	8,789	8,789
2025	540,500							48,613	48,613	48,613	48,613
2026	-								-	-	-
2027	-									-	-
2028	-										-
2029	-										
Total Annual Debt Charges	1,044,564	-	-	-	-	36,547	45,336	93,949	93,949	93,949	93,949

Table W-4
Municipality of Port Hope
Water Service
Water Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	(1,184,980)	(1,854,187)	(1,797,027)	(1,340,638)	(1,027,469)	372,951	115,546	(44,589)	833,752	1,234,862
Transfer from Operating	667,565	526,365	1,324,839	1,452,175	1,784,766	1,743,158	2,057,789	2,370,683	2,549,862	3,033,019
Transfer to Capital	1,300,415	433,969	842,163	1,118,860	391,659	2,002,829	2,217,049	1,508,691	2,172,965	1,750,218
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	(1,817,830)	(1,761,791)	(1,314,351)	(1,007,323)	365,638	113,280	(43,715)	817,404	1,210,649	2,517,663
Interest	(36,357)	(35,236)	(26,287)	(20,146)	7,313	2,266	(874)	16,348	24,213	50,353



Table W-5
Municipality of Port Hope
Water Service
Development Charges Reserve Fund Continuity - Water Services
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	(1,864,288)	(1,811,372)	(1,677,868)	(1,605,672)	(1,637,786)	(1,637,134)	(1,637,045)	(1,638,395)	(1,361,349)	(1,052,677)
Development Charge Proceeds	139,068	182,990	227,452	225,791	252,000	285,024	323,925	397,688	423,262	493,894
Transfer to Capital	50,635	16,586	123,773	225,791	182,700	207,500	199,200	-	-	-
Transfer to Operating	-	-	-	-	36,547	45,336	93,949	93,949	93,949	93,949
Closing Balance	(1,775,855)	(1,644,968)	(1,574,188)	(1,605,672)	(1,605,033)	(1,604,946)	(1,606,269)	(1,334,655)	(1,032,036)	(652,732)
Interest	(35,517)	(32,899)	(31,484)	(32,113)	(32,101)	(32,099)	(32,125)	(26,693)	(20,641)	(13,055)
Required from Development Charges	50,635	16,586	123,773	632,140	280,415	748,000	199,200	-	-	-

Table W-6
Municipality of Port Hope
Water Service
Development Charges Reserve Fund Continuity - Water Treatment Plant
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	(2,651,127)	(2,845,317)	(2,999,784)	(2,834,542)	(2,667,583)	(2,471,265)	(2,238,289)	(1,962,042)	(1,607,158)	(1,219,750)
Development Charge Proceeds	135,002	177,705	220,822	219,265	244,774	276,864	314,719	386,397	411,325	479,882
Transfer to Capital										
Transfer to Operating	273,402	273,353	-	-	-	-	-	-	-	-
Closing Balance	(2,789,527)	(2,940,965)	(2,778,963)	(2,615,277)	(2,422,809)	(2,194,401)	(1,923,570)	(1,575,645)	(1,195,833)	(739,869)
Interest	(55,791)	(58,819)	(55,579)	(52,306)	(48,456)	(43,888)	(38,471)	(31,513)	(23,917)	(14,797)



Table W-7
Municipality of Port Hope
Water Services
Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EXPENDITURES										
Operating Costs										
Office Supplies	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
Postage	9,800	10,000	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700
Uniforms	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Office Equipment	11,600	7,800	7,900	8,100	8,200	8,400	8,600	8,700	8,900	9,100
Bank Fees & Interest Chrgs	50	50	50	50	50	60	60	60	60	60
IT Software Licenses	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	6,200	6,300
Tools/Equip	8,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Chemicals	98,000	74,500	76,000	77,500	79,100	80,700	82,300	83,900	85,600	87,300
Pumps	15,000	15,300	15,600	15,900	16,200	16,600	16,900	17,200	17,600	17,900
Meters	10,000	10,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900
Linear Material	138,000	142,300	144,200	266,000	150,700	160,000	157,000	169,000	279,300	179,600
Road Repair Materials	20,000	20,400	20,800	21,200	21,600	22,100	22,500	23,000	23,400	23,900
Fleet Fuel	25,000	25,500	26,000	26,500	27,100	27,600	28,200	28,700	29,300	29,900
Insurance Premium	97,056	101,900	107,000	112,400	118,000	123,900	130,100	136,600	143,400	150,600
Insurance Claims	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Contracted Services	80,000	69,600	83,200	58,400	86,600	71,700	61,900	63,200	64,400	95,600
Legal Fees	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Sampling Program	17,000	17,300	17,600	18,000	18,400	18,800	19,200	19,600	20,000	20,400
Lab Equipment / Testing	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Professional Dues	4,500	4,600	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400
Travel	2,000	2,000	2,100	2,100	2,100	2,200	2,200	2,200	2,300	2,300
Training	20,000	30,000	35,000	30,800	27,100	27,600	28,200	33,300	29,300	29,900
R & M - Vehicle	10,000	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
R & M - Equipment	250,400	249,900	244,500	259,900	254,500	270,500	230,900	281,400	275,400	292,800
R & M - Buildings & Grounds	80,400	167,900	49,900	35,000	46,500	25,400	76,600	43,600	26,900	27,500
Equipment Rentals	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rentals-Property	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Natural Gas	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300
Hydro	280,000	285,600	291,300	297,100	303,000	309,100	315,300	321,600	328,000	334,600
Water & Sewer	57,200	64,500	68,200	69,200	70,100	70,900	71,500	72,000	72,200	72,200
Property Tax	225,000	229,500	234,100	238,800	243,600	248,500	253,500	258,600	263,800	269,100
Telephone	5,500	5,600	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400
Cell Phone	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600
Radios	2,000	2,000	2,100	2,100	2,100	2,200	2,200	2,200	2,300	2,300



Table W-7 (continued)
Municipality of Port Hope
Water Services
Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Internet	14,000	14,300	14,600	14,900	15,200	15,500	15,800	16,100	16,400	16,700
W/O	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Transfer from Other Dept	323,809	330,300	336,900	343,600	350,500	357,500	364,700	372,000	379,400	387,000
Full-Time	624,972	726,716	741,300	756,100	771,200	786,600	802,300	818,300	834,700	851,400
Part-Time	-	9,800	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400
Overtime	49,500	50,500	51,500	52,500	53,600	54,700	55,800	56,900	58,000	59,200
Standby	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Shift Premium	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
Clothing Allowance	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900
Health and Safety	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Benefits	177,024	203,615	207,700	211,900	216,100	220,400	224,800	229,300	233,900	238,600
Retiree Benefits	30,500	31,100	31,700	32,300	32,900	33,600	34,300	35,000	35,700	36,400
Sub-Total Operating Costs	2,833,611	3,068,381	3,048,650	3,194,550	3,163,550	3,208,560	3,263,860	3,356,560	3,499,560	3,508,860
Capital-Related										
Existing Debt (Principal) - Growth Related	263,629	270,261	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	9,772	3,092	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	20,294	25,985	54,018	56,179	58,426	60,763
New Growth Related Debt (Interest)	-	-	-	-	16,254	19,351	39,931	37,771	35,524	33,187
Existing Debt (Principal) - Non-Growth Related	505,767	518,490	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Non-Growth Related	18,748	5,931	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Principal)	-	-	-	-	-	204,466	212,645	221,150	298,507	310,447
New Non-Growth Related Debt (Interest)	-	-	9,329	23,139	31,916	163,766	155,587	147,081	193,108	181,168
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	667,565	526,365	1,324,839	1,452,175	1,784,766	1,743,158	2,057,789	2,370,683	2,549,862	3,033,019
Sub-Total Capital Related	1,465,481	1,324,139	1,334,168	1,475,315	1,853,230	2,156,726	2,519,970	2,832,864	3,135,427	3,618,584
Total Expenditures	4,299,092	4,392,520	4,382,818	4,669,865	5,016,780	5,365,286	5,783,830	6,189,424	6,634,987	7,127,444



Table W-7 (continued)
Municipality of Port Hope
Water Services
Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
REVENUES										
<u>Operating Revenues</u>										
Interest on Accounts	8,500	8,700	8,900	9,100	9,300	9,500	9,700	9,900	10,100	10,300
Certificates	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Service Fees	11,000	11,200	11,400	11,600	11,800	12,000	12,200	12,400	12,600	12,900
Water Meter Fee	16,500	16,800	17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700
Rental Revenue	84,000	85,700	87,400	89,100	90,900	92,700	94,600	96,500	98,400	100,400
Bulk Water Sales	32,000	32,600	33,300	34,000	34,700	35,400	36,100	36,800	37,500	38,300
Misc Revenue	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
Contributions from Development Charges Reserve Fund	273,402	273,353	-	-	36,547	45,336	93,949	93,949	93,949	93,949
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Sub-Total Operating Revenues	429,702	432,753	162,600	165,800	205,647	217,836	269,949	273,449	276,949	280,749
<u>Water Billing Recovery</u>										
Base Charge	776,411	872,448	981,401	1,104,909	1,244,762	1,403,972	1,584,764	1,791,128	2,026,477	2,296,248
Consumptive Charge	3,092,980	3,087,320	3,238,818	3,399,155	3,566,370	3,743,478	3,929,116	4,124,847	4,331,560	4,550,447
Sub-Total Water Billing Recovery	3,869,391	3,959,768	4,220,218	4,504,065	4,811,132	5,147,450	5,513,880	5,915,975	6,358,037	6,846,695
Total Revenues	4,299,092	4,392,520	4,382,818	4,669,865	5,016,780	5,365,286	5,783,830	6,189,424	6,634,987	7,127,444



Table W-8
Municipality of Port Hope
Water Services
Water Rate Forecast
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Total Consumptive Charge Recovery	3,092,980	3,087,320	3,238,818	3,399,155	3,566,370	3,743,478	3,929,116	4,124,847	4,331,560	4,550,447
Volume Forecast By Block (m³)										
Block 1 (≤ 20 m ³ Quarterly)	336,494	342,547	349,329	356,645	364,559	373,152	382,421	392,447	403,298	415,059
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	272,239	276,899	282,166	287,871	294,025	300,758	308,035	315,950	324,587	334,016
Block 3 (> 60 m ³ Quarterly)	776,178	718,997	721,315	724,453	727,671	731,836	736,524	742,176	748,909	757,068
Total Volume (m³)	1,384,911	1,338,442	1,352,811	1,368,969	1,386,255	1,405,745	1,426,981	1,450,573	1,476,793	1,506,143
Increasing Block Rates (\$/m³)										
Block 1 (≤ 20 m ³ Quarterly)	1.68	1.75	1.82	1.89	1.96	2.03	2.10	2.17	2.24	2.31
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	2.10	2.18	2.27	2.36	2.44	2.53	2.62	2.71	2.80	2.89
Block 3 (> 60 m ³ Quarterly)	2.52	2.62	2.72	2.83	2.93	3.04	3.15	3.26	3.36	3.47
Annual Percent Increase										
Block 1 (≤ 20 m ³ Quarterly)		3.99%	3.92%	3.84%	3.74%	3.64%	3.54%	3.41%	3.29%	3.14%
Block 2 (> 20 to ≤ 60 m ³ Quarterly)		3.99%	3.92%	3.84%	3.74%	3.64%	3.54%	3.41%	3.29%	3.14%
Block 3 (> 60 m ³ Quarterly)		3.99%	3.92%	3.84%	3.74%	3.64%	3.54%	3.41%	3.29%	3.14%

Meter Size	Quarterly Base Charge									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
5/8"	38.25	42.55	47.33	52.65	58.56	65.15	72.47	80.61	89.67	99.74
3/4"	45.89	51.05	56.78	63.16	70.26	78.16	86.94	96.71	107.58	119.67
1"	61.20	68.08	75.73	84.24	93.70	104.23	115.95	128.98	143.47	159.59
1 1/4"	76.50	85.10	94.66	105.30	117.13	130.29	144.93	161.22	179.34	199.49
1 1/2"	91.80	102.12	113.59	126.36	140.56	156.35	173.92	193.46	215.20	239.39
2"	122.39	136.14	151.44	168.46	187.39	208.45	231.87	257.93	286.92	319.16
3"	183.59	204.22	227.17	252.70	281.10	312.68	347.82	386.91	430.39	478.75
4"	244.80	272.31	302.91	336.95	374.81	416.93	463.79	515.90	573.88	638.37
6"	367.19	408.45	454.35	505.41	562.21	625.38	695.66	773.83	860.79	957.52
8"	489.58	544.60	605.80	673.87	749.60	833.83	927.53	1,031.77	1,147.71	1,276.68



Appendix B

Wastewater Services



Table WW-1
Municipality of Port Hope
Wastewater Service
Capital Budget Forecast
 Inflated \$

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Linear Program	12,415,100	660,399	93,330	2,043,308	2,392,034	491,229	1,744,364	898,945	1,654,742	1,601,424	835,325
Wastewater Master Planning & System-Wide Projects	-	-	-	-	-	-	-	-	-	-	-
Wastewater Pumping Station Projects (Non-Growth)	2,489,981	340,000	192,882	134,421	50,182	69,385	-	1,566,907	-	66,865	69,339
Wastewater Treatment Plant Projects	6,128,451	105,000	487,390	1,353,890	914,430	670,723	935,380	186,536	110,905	1,322,593	41,604
Wastewater Vehicles	379,602	55,000	-	-	59,103	115,526	-	-	-	69,540	80,433
Wastewater Trailers & Portable Equipment	128,516	17,000	-	-	111,516	-	-	-	-	-	-
Growth Related	199,439	-	-	-	66,909	-	14,390	118,140	-	-	-
Total Capital Expenditures	21,741,089	1,177,399	773,602	3,531,619	3,594,174	1,346,863	2,694,134	2,770,528	1,765,647	3,060,422	1,026,701
Capital Financing											
Provincial/Federal Grants & Other Contributions	52,148	52,148	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	153,044	-	-	-	40,145	-	7,195	105,704	-	-	-
Non-Growth Related Debenture Requirements	7,798,052	-	-	2,434,384	2,680,533	329,330	-	1,548,253	805,552	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	13,737,845	1,125,251	773,602	1,097,235	873,496	1,017,533	2,686,939	1,116,571	960,095	3,060,422	1,026,701
Total Capital Financing	21,741,089	1,177,399	773,602	3,531,619	3,594,174	1,346,863	2,694,134	2,770,528	1,765,647	3,060,422	1,026,701



Table WW-2
Municipality of Port Hope
Wastewater Service
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	-		-	-	-	-	-	-	-	-	-
2021	-			-	-	-	-	-	-	-	-
2022	1,821,758				163,851	163,851	163,851	163,851	163,851	163,851	163,851
2023	2,308,755					207,652	207,652	207,652	207,652	207,652	207,652
2024	1,313,734						118,159	118,159	118,159	118,159	118,159
2025	-							-	-	-	-
2026	1,548,253								139,252	139,252	139,252
2027	805,552									72,452	72,452
2028	-										-
2029	-										-
Total Annual Debt Charges	7,798,052	-	-	-	163,851	371,503	489,662	489,662	628,913	701,365	701,365

Table WW-2b
Municipality of Port Hope
Wastewater Service
Schedule of Non-Growth Related Construction Loan Payments (Interest Only)
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	-	-	-	-	-	-	-	-	-	-	-
2021	-		-	-	-	-	-	-	-	-	-
2022	612,626			12,253	24,505	24,505	-	-	-	-	-
2023	371,778				7,436	14,871	-	-	-	-	-
2024	329,330					6,587	-	-	-	-	-
2025	-						-	-	-	-	-
2026	-							-	-	-	-
2027	-								-	-	-
2028	-									-	-
2029	-										-
Total Annual Debt Charges	1,313,734	-	-	12,253	31,941	45,963	-	-	-	-	-



Table WW-3
Municipality of Port Hope
Wastewater Service
Schedule of Growth Related Debenture Repayments
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	-		-	-	-	-	-	-	-	-	-
2021	-			-	-	-	-	-	-	-	-
2022	-				-	-	-	-	-	-	-
2023	-					-	-	-	-	-	-
2024	-						-	-	-	-	-
2025	-							-	-	-	-
2026	-								-	-	-
2027	-									-	-
2028	-										-
2029	-										
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-

Table WW-4
Municipality of Port Hope
Wastewater Service
Wastewater Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	1,423,043	600,116	(176,956)	(879,959)	(1,067,492)	(1,080,783)	(2,238,712)	(1,466,813)	(491,064)	(1,366,834)
Transfer from Operating	290,557	0	411,487	706,893	1,025,434	1,572,907	1,917,230	1,945,473	2,211,452	2,439,532
Transfer to Capital	1,125,251	773,602	1,097,235	873,496	1,017,533	2,686,939	1,116,571	960,095	3,060,422	1,026,701
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	588,349	(173,486)	(862,705)	(1,046,561)	(1,059,591)	(2,194,815)	(1,438,052)	(481,435)	(1,340,034)	45,997
Interest	11,767	(3,470)	(17,254)	(20,931)	(21,192)	(43,896)	(28,761)	(9,629)	(26,801)	920



Table WW-5
Municipality of Port Hope
Wastewater Service
Development Charges Reserve Fund Continuity - Wastewater Services
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	(966,561)	(785,041)	(496,162)	(143,298)	219,586	694,306	1,253,503	1,821,655	2,636,363	3,594,271
Development Charge Proceeds	196,913	298,607	355,674	398,724	461,106	541,814	638,137	763,015	887,432	1,065,065
Transfer to Capital	-	-	-	40,145	-	7,195	105,704	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	(769,648)	(486,434)	(140,489)	215,281	680,692	1,228,925	1,785,936	2,584,669	3,523,795	4,659,336
Interest	(15,393)	(9,729)	(2,810)	4,306	13,614	24,578	35,719	51,693	70,476	93,187
Required from Development Charges	-	-	-	40,145	-	7,195	105,704	-	-	-

Table WW-6
Municipality of Port Hope
Wastewater Service
Development Charges Reserve Fund Continuity - Wastewater Plant
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	(3,300,218)	(3,453,699)	(3,419,914)	(3,194,251)	(2,958,040)	(2,599,924)	(2,088,336)	(1,397,299)	(383,205)	766,141
Development Charge Proceeds	548,570	721,943	897,202	890,925	994,515	1,124,860	1,278,565	1,569,543	1,670,833	1,949,317
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Operating	634,331	621,101	608,907	596,713	585,420	572,324	560,130	547,936	536,510	523,547
Closing Balance	(3,385,979)	(3,352,857)	(3,131,619)	(2,900,039)	(2,548,945)	(2,047,388)	(1,369,901)	(375,691)	751,118	2,191,911
Interest	(67,720)	(67,057)	(62,632)	(58,001)	(50,979)	(40,948)	(27,398)	(7,514)	15,022	43,838



Table WW-7
Municipality of Port Hope
Wastewater Services
Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EXPENDITURES										
Operating Costs										
Office Supplies	7,500	7,600	9,400	7,900	9,700	8,200	10,100	8,600	10,500	8,900
Postage	10,300	10,500	10,700	10,900	11,100	11,400	11,600	11,800	12,100	12,300
Uniforms	1,100	2,300	2,300	2,400	2,400	2,500	2,600	2,600	2,700	2,700
Office Equipment	875	5,800	2,800	2,900	2,900	3,000	3,000	23,800	3,200	3,200
Bank Fees & Interest Charges	50	50	50	50	50	60	60	60	60	60
IT Technical Support	27,300	34,400	29,500	21,700	22,900	24,200	25,500	26,900	28,400	38,900
IT Software Licenses	10,750	20,300	15,300	15,700	16,000	16,300	16,600	16,900	17,300	17,600
Tools/Equip	29,500	54,300	52,800	68,900	50,900	33,100	33,800	34,500	35,100	66,300
Chemicals	70,200	79,600	56,600	42,500	44,000	45,600	47,200	66,100	50,700	52,500
Waste Disposal	10,500	10,800	11,100	11,400	11,700	12,000	12,300	12,700	13,000	13,300
Linear Materials	75,000	75,000	104,000	106,100	108,200	110,400	112,600	114,900	117,200	119,500
PM Flushing	20,000	24,200	24,700	25,200	25,700	12,450	26,700	27,200	27,700	28,300
Road Repair Materials	43,000	44,000	45,000	46,100	47,100	55,200	56,300	57,400	58,600	59,800
Sludge Removal	146,600	149,500	152,500	155,600	158,700	161,900	165,100	168,400	171,800	175,200
Fleet Fuel	16,500	16,800	17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700
Insurance Premium	110,170	115,700	121,500	127,600	134,000	140,700	147,700	155,100	162,900	171,000
Insurance Claims	13,500	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
Contracted Services	230,850	222,600	203,200	199,400	229,800	253,800	187,100	228,300	183,200	223,000
Legal Fees	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
Sampling Program	12,500	12,800	13,000	13,300	13,500	13,800	14,100	14,400	14,600	14,900
Lab Equipment / Testing	14,000	10,700	10,900	11,100	11,400	11,600	11,800	12,100	12,300	12,500
Professional Dues	7,355	7,800	7,500	7,600	7,800	8,000	8,100	8,300	8,400	8,600
Travel	360	370	370	380	390	400	410	410	420	430
Training	23,770	26,600	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900
R & M - Vehicle	20,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
R & M - Equipment	87,300	87,900	89,300	90,800	68,300	69,800	71,300	72,900	74,500	76,200
R & M - Buildings & Grounds	120,000	140,700	160,300	163,900	162,900	153,200	88,700	90,500	100,700	94,300
Equipment Rentals	12,750	21,200	21,600	22,000	22,400	22,800	23,300	23,800	24,300	24,800
Natural Gas	35,700	36,400	37,100	37,800	38,600	39,400	40,200	41,000	41,800	42,600
Hydro	350,000	357,000	364,100	371,400	378,800	386,400	394,100	402,000	410,000	418,200
Water & Sewer	39,900	42,900	44,100	45,300	46,500	47,700	48,900	50,000	51,100	52,100
Property Tax	130,000	132,600	135,300	138,000	140,800	143,600	146,500	149,400	152,400	155,400
Telephone	9,300	9,500	9,700	9,900	10,100	10,300	10,500	10,700	10,900	11,100
Cell Phone	4,800	4,900	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700
Internet	14,500	14,800	15,100	15,400	15,700	16,000	16,300	16,600	16,900	17,200
Write-offs	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800



Table WW-7 (continued)
Municipality of Port Hope
Wastewater Services
Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Transfer from Other Dept	282,658	288,300	294,100	300,000	306,000	312,100	318,300	324,700	331,200	337,800
Full-Time	526,554	605,604	617,700	630,100	642,700	655,600	668,700	682,100	695,700	709,600
Part-Time	-	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
Overtime	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800
Callouts	7,850	8,100	8,350	8,600	8,850	9,100	9,350	9,600	9,850	10,100
Standby	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
Shift Premium	3,500	3,500	3,500	3,500	3,500	3,750	3,750	3,750	3,750	3,750
Clothing Allowance	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550
Health and Safety	12,000	12,200	12,500	12,700	13,000	15,500	13,500	13,800	14,100	14,300
Benefits	142,762	168,075	171,400	174,800	178,300	181,900	185,500	189,200	193,000	196,900
Retiree Benefits	13,075	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Sub-Total Operating Costs	2,746,879	2,957,749	2,999,620	3,045,880	3,092,440	3,142,410	3,085,420	3,227,370	3,220,430	3,356,590
Capital-Related										
Existing Debt (Principal) - Growth Related	257,807	257,807	257,807	257,807	257,807	257,807	257,807	257,807	257,807	257,807
Existing Debt (Interest) - Growth Related	376,524	363,294	351,100	338,906	327,614	314,517	302,323	290,129	278,703	265,740
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	504,443	504,443	504,443	504,443	504,443	504,443	504,443	504,443	504,443	504,443
Existing Debt (Interest) - Non-Growth Related	736,735	710,848	686,988	663,128	641,033	615,408	591,548	567,687	545,331	519,967
New Non-Growth Related Debt (Principal)	-	-	-	90,981	209,922	283,928	295,285	384,418	440,025	457,626
New Non-Growth Related Debt (Interest)	-	-	12,253	104,811	207,544	205,734	194,377	244,495	261,341	243,740
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	290,557	0	411,487	706,893	1,025,434	1,572,907	1,917,230	1,945,473	2,211,452	2,439,532
Sub-Total Capital Related	2,166,066	1,836,393	2,224,078	2,666,969	3,173,797	3,754,743	4,063,013	4,194,453	4,499,101	4,688,855
Total Expenditures	4,912,945	4,794,142	5,223,698	5,712,849	6,266,237	6,897,153	7,148,433	7,421,823	7,719,531	8,045,445



Table WW-7 (continued)
Municipality of Port Hope
Wastewater Services
Operating Budget Forecast
Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
REVENUES										
<u>Operating Revenues</u>										
Interest on Accounts	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Service Fees	8,000	8,200	8,400	8,600	8,800	9,000	9,200	9,400	9,600	9,800
Septage Receiving Billing	80,000	61,200	62,400	63,700	64,900	66,200	67,600	68,900	70,300	71,700
Miscellaneous Revenue	9,500	900	900	900	900	900	900	900	900	900
Contributions from Development Charges Reserve Fund	634,331	621,101	608,907	596,713	585,420	572,324	560,130	547,936	536,510	523,547
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Sub-Total Operating Revenues	744,831	704,701	694,207	683,813	674,220	662,924	652,630	642,236	632,710	621,647
<u>Wastewater Billing Recovery</u>										
Base Charge	997,416	1,054,117	1,166,016	1,290,984	1,430,336	1,586,734	1,761,683	1,958,600	2,179,952	2,430,264
Consumptive Charge	3,170,698	3,035,324	3,363,475	3,738,052	4,161,680	4,647,496	4,734,119	4,820,988	4,906,869	4,993,534
Sub-Total Wastewater Billing Recovery	4,168,114	4,089,441	4,529,491	5,029,036	5,592,016	6,234,229	6,495,803	6,779,587	7,086,822	7,423,798
Total Revenues	4,912,945	4,794,142	5,223,698	5,712,849	6,266,237	6,897,153	7,148,433	7,421,823	7,719,531	8,045,445



Table WW-8
Municipality of Port Hope
Wastewater Services
Wastewater Rate Forecast
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Total Consumptive Charge Recovery	3,170,698	3,035,324	3,363,475	3,738,052	4,161,680	4,647,496	4,734,119	4,820,988	4,906,869	4,993,534
Volume Forecast By Block (m³)										
Block 1 (≤ 20 m ³ Quarterly)	318,957	322,518	326,515	330,900	335,589	340,810	346,415	352,630	359,376	366,887
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	258,064	260,874	264,072	267,599	271,358	275,587	280,142	285,226	290,814	297,086
Block 3 (> 60 m ³ Quarterly)	555,471	508,779	510,826	513,678	516,580	520,416	524,746	530,025	536,357	544,100
Total Volume (m³)	1,132,492	1,092,171	1,101,413	1,112,176	1,123,527	1,136,812	1,151,303	1,167,881	1,186,548	1,208,074
Increasing Block Rates (\$/m³)										
Block 1 (≤ 20 m ³ Quarterly)	2.15	2.15	2.36	2.60	2.87	3.17	3.19	3.21	3.21	3.21
Block 2 (> 20 to ≤ 60 m ³ Quarterly)	2.69	2.69	2.95	3.25	3.59	3.96	3.99	4.01	4.02	4.02
Block 3 (> 60 m ³ Quarterly)	3.23	3.23	3.55	3.90	4.31	4.76	4.79	4.81	4.82	4.82
Annual Percent Increase										
Block 1 (≤ 20 m ³ Quarterly)		0.00%	9.95%	10.12%	10.28%	10.43%	0.64%	0.45%	0.23%	0.00%
Block 2 (> 20 to ≤ 60 m ³ Quarterly)		0.00%	9.95%	10.12%	10.28%	10.43%	0.64%	0.45%	0.23%	0.00%
Block 3 (> 60 m ³ Quarterly)		0.00%	9.95%	10.12%	10.28%	10.43%	0.64%	0.45%	0.23%	0.00%

Meter Size	Quarterly Base Charge									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
5/8"	52.50	54.92	60.07	65.70	71.85	78.58	85.95	94.00	102.81	112.44
3/4"	63.00	65.91	72.08	78.84	86.22	94.30	103.14	112.80	123.37	134.93
1"	84.00	87.88	96.11	105.11	114.96	125.74	137.52	150.40	164.50	179.91
1 1/4"	105.00	109.84	120.14	131.39	143.70	157.17	171.90	188.00	205.62	224.89
1 1/2"	126.00	131.81	144.16	157.67	172.45	188.60	206.28	225.60	246.74	269.86
2"	168.00	175.75	192.22	210.23	229.93	251.47	275.03	300.81	328.99	359.82
3"	252.00	263.63	288.33	315.34	344.89	377.21	412.55	451.21	493.49	539.73
4"	336.00	351.50	384.44	420.46	459.86	502.94	550.07	601.61	657.98	719.64
6"	504.00	527.25	576.66	630.69	689.78	754.42	825.10	902.42	986.97	1,079.45
8"	672.00	703.00	768.87	840.92	919.71	1,005.89	1,100.14	1,203.22	1,315.96	1,439.27



Appendix C

Expanded Capital Forecasts



Table C-1
Municipality of Port Hope
Water Service
Capital Budget Forecast
Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	<u>Capital Expenditures</u>											
	<u>Linear Program</u>											
	<u>Coordinated Reconstruct</u>											
PB-2019a	Pemberton Drive	127,366	127,366	-	-	-	-	-	-	-	-	-
1006	Ridout Street/Lakeshore Road	510,081	510,081	-	-	-	-	-	-	-	-	-
1020/40	Walton Street	1,219,877	75,000	-	466,467	224,033	214,820	-	-	25,792	213,765	-
1002	North Street	198,688	-	-	-	-	-	-	-	25,792	172,896	-
1005	Bruton Street	654,291	-	-	-	-	-	-	-	654,291	-	-
1017/45	Victoria Street South	173,492	-	15,555	157,937	-	-	-	-	-	-	-
1033	Ellen Street	27,736	-	-	-	-	-	-	-	-	-	27,736
1004	Little Hope Street	204,980	-	-	-	-	-	-	-	19,344	185,636	-
1022	Mill Street North	319,269	-	-	-	-	23,128	296,141	-	-	-	-
1030	Alfred Street	564,548	-	-	-	-	-	35,976	528,572	-	-	-
1021/65	Ontario Street	69,339	-	-	-	-	-	-	-	-	-	69,339
1040	Ridout Street	600,901	-	-	-	-	-	-	-	38,688	-	562,213
1003	Cavan Street	1,458,880	-	-	-	-	-	-	87,050	1,371,830	-	-
1026	Clovelly Street	212,805	-	-	-	-	-	-	-	25,792	187,013	-
1027	Orchard Street	248,126	-	-	-	-	-	-	-	25,792	222,334	-
1028	Brunswick Avenue	187,396	-	-	-	-	-	-	-	25,792	161,604	-
1029	Oxford Street	225,958	-	-	-	-	-	-	-	25,792	200,166	-
	<u>Watermain Replacement</u>											
1016	Robertson Street	124,884	-	-	-	-	11,564	113,320	-	-	-	-
1016	Peter Street	134,780	-	-	-	-	11,564	123,216	-	-	-	-
1005	Bramley Street North	177,445	-	-	-	-	17,346	160,099	-	-	-	-
1008	Julia Lane	56,056	-	-	-	-	9,251	46,805	-	-	-	-
1018	Elias Street/Open Space	109,897	-	-	-	-	17,346	92,551	-	-	-	-
1000/68	Hope Street North	605,821	-	-	-	-	-	47,968	557,853	-	-	-
1021/65	Ontario Street	175,321	-	-	-	-	-	23,984	151,337	-	-	-
1013	Silver Street	119,055	-	-	-	-	-	-	12,436	106,619	-	-
1009	Dorset Street East	537,761	-	-	-	-	-	-	-	-	40,119	497,642
1037	Port Hope Town Hall/Dorset Street West	252,633	-	-	-	-	-	-	-	-	20,060	232,573
1057/48	Harcourt Street	201,264	-	-	-	-	-	-	-	-	13,373	187,891
	<u>Watermain - Minor Works Coupled with Sanitary</u>											
1022	Mill Street North	272,548	-	-	-	-	17,346	255,202	-	-	-	-
1022	Mill Street South	230,912	-	-	-	-	17,346	213,566	-	-	-	-



Table C-1 (continued)
Municipality of Port Hope
Water Service
Capital Budget Forecast
Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Water Master Planning & System-Wide Projects											
W-1	Zone 1 Floating Storage Options and Concept Design Report (for WF-19)	16,000	-	16,000	-	-	-	-	-	-	-	-
W-2	Zone 1 Floating Storage MCEA and Detailed Design (for WF-19)	275,000	-	-	108,000	167,000	-	-	-	-	-	-
	Water Facility Projects											
WF-1	Victoria Street BPS: Upgrade P2503 and Provide Outdoor Stand-by Genset	237,000	-	-	237,000	-	-	-	-	-	-	-
WF-2	Victoria Street BPS: Building Upgrades/Repairs (Electrical and Structural)	47,000	-	-	-	47,000	-	-	-	-	-	-
WF-3	Victoria Street BPS: Upgrades to P2503 and P2504, Coordinated with Gen-set and Growth Works	31,000	-	-	-	-	-	-	31,000	-	-	-
WF-4	Victoria Street BPS: Replace Electrical Systems (Light Fixtures & Unit Heaters)	19,000	-	-	-	-	-	-	19,000	-	-	-
WF-5	Victoria Street BPS: Replace Transformer, Circuit Breaker & Panel Board	22,000	-	-	-	-	-	-	22,000	-	-	-
WF-6	Victoria Street BPS: Repoint Exterior Brick Cladding	22,000	-	-	-	-	-	-	22,000	-	-	-
WF-7	Zone 2 Emergency Pumping Study	21,000	-	21,000	-	-	-	-	-	-	-	-
WF-8	Zone 2 Emergency Pumping Upgrades	52,000	-	52,000	-	-	-	-	-	-	-	-
WF-9	Jocelyn Street Reservoir: Implement Immediate Condition Insp. Recommendations	54,000	-	-	54,000	-	-	-	-	-	-	-
WF-10	Jocelyn Street Reservoir: Implement Other Condition Insp. Recommendations	322,000	-	-	-	-	-	-	-	322,000	-	-
WF-11	Zone 1 Floating Storage Upgrades (New Elevated Tank) - See W-6 & W-7 for EA and Design	3,469,000	-	-	-	-	3,469,000	-	-	-	-	-
WF-12	Fox Road (Zone 2) Elevated Tank: Implement Immediate Recommendations	60,000	-	-	-	-	-	60,000	-	-	-	-
WF-13	Fox Road (Zone 2) Elevated Tank: Recoating and Implement Long Term Recommendations	2,080,000	-	-	-	-	-	-	-	-	-	2,080,000



Table C-1 (continued)
Municipality of Port Hope
Water Service
Capital Budget Forecast
Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Water Treatment Plant Projects											
WTP-1	Membrane Replacement: Train 1 v3 Modules	446,000	-	-	-	446,000	-	-	-	-	-	-
WTP-2	Membrane Replacement: Train 2 v3 Modules	480,000	-	-	-	-	-	480,000	-	-	-	-
WTP-3	Membrane Replacement: Train 3 v3 Modules	497,000	-	-	-	-	-	-	497,000	-	-	-
WTP-4	Membrane Replacement: Train 4 v2 Modules	925,000	390,000	-	-	-	-	-	-	-	535,000	-
WTP-5	550kW WTP Trailer Generator Overhaul	26,000	-	26,000	-	-	-	-	-	-	-	-
WTP-6	Software Upgrades with License Fees	50,000	-	-	-	-	-	-	50,000	-	-	-
WTP-7	Replacement of SCADA Computer/Printer - 5yr Replacement Cycle	25,000	-	-	-	-	-	-	25,000	-	-	-
WTP-8	Zenon HMI Replacement	130,000	130,000	-	-	-	-	-	-	-	-	-
WTP-9	Replacement of 1 Air Blower	67,000	-	-	-	-	-	-	-	-	67,000	-
WTP-10	Replacement of 1 Air Blower	69,000	-	-	-	-	-	-	-	-	-	69,000
WTP-11	Replace Flygt Submersible Pumps - As Needed	15,000	-	-	-	-	-	-	15,000	-	-	-
WTP-12	Replacement of Immersion Heater	25,000	-	-	-	25,000	-	-	-	-	-	-
WTP-13	Replacement of Zebra Mussel Control System	47,000	-	-	-	-	-	-	-	-	47,000	-
WTP-14	Replacement of Air Compressors A & B	22,000	-	-	22,000	-	-	-	-	-	-	-
WTP-15	Refurbish Bulk Water Station (Internal Piping, Backflow Valves)	12,000	-	-	-	-	12,000	-	-	-	-	-
WTP-16	HVAC AHU-1 (McQuay) Replacement	110,000	-	-	-	-	-	-	-	110,000	-	-
WTP-17	Rotork Valve Actuators Replacement	18,000	-	-	-	-	-	18,000	-	-	-	-
WTP-18	Permeate Pumps as Need	46,000	-	-	-	-	46,000	-	-	-	-	-
WTP-19	Backpulse Pumps	22,000	-	-	-	22,000	-	-	-	-	-	-
WTP-20	Drain Recirculation Pumps	18,000	-	-	-	18,000	-	-	-	-	-	-
WTP-21	Membrane Tank Coating Refurbishment/Replacement (20yr Cycle)	69,000	-	-	-	-	69,000	-	-	-	-	-
WTP-22	Plant Engineered Roof	91,000	-	-	91,000	-	-	-	-	-	-	-
WTP-23	Automatic Transfer Switch	58,000	-	-	-	-	58,000	-	-	-	-	-
WTP-24	Chemical Feed System Piping Replacement	17,000	-	-	-	-	17,000	-	-	-	-	-
WTP-25	WTP Potable Water System Replacement of Schedule 40 PVC Pipe	321,000	75,000	52,000	-	-	-	36,000	37,000	39,000	40,000	42,000
WTP-26	Scrubber Media Replacement	26,000	-	26,000	-	-	-	-	-	-	-	-
WTP-27	Electrical Room HVAC Upgrades	45,000	45,000	-	-	-	-	-	-	-	-	-
WTP-28	Generator Fuel System, Exhaust and Air Intake Upgrades	37,000	-	37,000	-	-	-	-	-	-	-	-
WTP-29	Replace Repair Roof Drains and Patch Roof Membrane	37,000	-	37,000	-	-	-	-	-	-	-	-



Table C-1 (continued)
Municipality of Port Hope
Water Service
Capital Budget Forecast
 Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
WTP-30	Upgrade Fall Restraint Ladders	75,000	-	75,000	-	-	-	-	-	-	-	-
WTP-31	Replace Unistrut Chemical Stands	7,000	-	-	-	-	7,000	-	-	-	-	-
WV-1	Water Vehicles Replace Truck #1: 2500 Series Cargo Van (Distribution)	62,000	-	-	-	-	-	-	-	-	-	62,000
WV-2	Replace Truck #2 - Pick-up Truck (Distribution) with New 1-Ton Truck (2019 Capital Carry Forward Project)	60,000	60,000	-	-	-	-	-	-	-	-	-
WV-3	Replace Truck #4 - Cube Van (Distribution)	100,000	-	-	-	100,000	-	-	-	-	-	-
WV-4	Replace Truck #3 - 4WD 1/2-ton Truck Pick-up Truck (Distribution)	52,000	-	52,000	-	-	-	-	-	-	-	-
WV-5	Replace Truck #5 - 2WD 3/4-ton Pick-up Truck (Distribution)	56,000	-	-	-	56,000	-	-	-	-	-	-
WV-6	Replace Truck #6 - 4WD 3/4-ton Pick-up Truck (Treatment)	58,000	-	-	-	-	58,000	-	-	-	-	-
WV-7	Replace Truck #7 - 4WD 3/4-ton Pick-up Truck	67,000	-	-	-	-	-	-	-	-	67,000	-
WT-1	Water Trailers Replace Generator Trailer	32,000	-	-	-	-	-	-	-	32,000	-	-
WT-2	Replace Generator Trailer	32,000	-	-	-	-	-	-	-	32,000	-	-
WT-3	Replace Valve Maintenance Trailer	112,000	-	-	-	-	-	-	112,000	-	-	-
W1 (DC)	Growth Related Victoria Street South (Ridout Street to Strachan Street)	237,000	-	16,000	221,000	-	-	-	-	-	-	-
W2 (DC)	Toronto Road (Fraser Street to Ridout Street)	900,000	-	-	75,000	825,000	-	-	-	-	-	-
W3a (DC)	Strachan Street (West of Victoria Street)	169,000	-	-	-	-	-	169,000	-	-	-	-
W3b (DC)	Strachan Street (South of Lavinia Street Ext.)	169,000	-	-	-	-	-	169,000	-	-	-	-
W3c (DC)	Lakeshore Road (Near Ridout Street)	144,000	-	-	-	-	-	144,000	-	-	-	-
W3d (DC)	Strachan Street (South of Lavinia Street Ext.)	169,000	-	-	-	-	-	169,000	-	-	-	-
W4b (DC)	Pemberton Drive (Fox Road to Henderson Street)	50,635	50,635	-	-	-	-	-	-	-	-	-
W4c (DC)	Pemberton Drive (Henderson Street to 300m East of Henderson Drive)	55,000	-	-	-	-	-	55,000	-	-	-	-
W4d (DC)	Pemberton Drive (300m East of Henderson Drive to Victoria Street North)	42,000	-	-	-	-	-	42,000	-	-	-	-
W7 (DC)	Zone 2 Pumping Upgrades (Victoria Street BPS)	249,000	-	-	-	-	-	-	249,000	-	-	-
W5 (DC)	Meter Reading System Upgrades	25,000	-	25,000	-	-	-	-	-	-	-	-
W6 (DC)	Comprehensive Water/Wastewater Master Plan	45,000	-	-	-	45,000	-	-	-	-	-	-
	Total Capital Expenditures	23,447,745	1,463,082	450,555	1,432,404	1,975,033	4,075,711	2,750,828	2,416,248	2,880,524	2,172,966	3,830,394

Note: Totals may not add up to those in Table W-1 due to rounding.



Table C-2
Municipality of Port Hope
Wastewater Service
Capital Budget Forecast
 Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Capital Expenditures											
	Linear Program											
	Coordinated Reconstruct											
PB-2019a	Pemberton Drive	137,000	137,000	-	-	-	-	-	-	-	-	-
1006	Ridout Street/Lakeshore Road	448,399	448,399	-	-	-	-	-	-	-	-	-
1020	Walton Street	1,649,573	75,000	-	612,625	371,778	329,331	-	-	25,792	235,047	-
1002	North Street	467,562	-	-	-	-	-	-	-	25,792	441,770	-
1005	Bruton Street	636,408	-	-	-	-	-	-	-	636,408	-	-
1017	Victoria Street South	186,930	-	15,555	171,375	-	-	-	-	-	-	-
1033	Ellen Street	41,604	-	-	-	-	-	-	-	-	-	41,604
1022	Mill Street North	640,725	-	-	-	-	46,257	594,468	-	-	-	-
1004	Little Hope Street	207,548	-	-	-	-	-	-	-	19,344	188,204	-
1030	Alfred Street	584,736	-	-	-	-	-	35,976	548,760	-	-	-
1021	Ontario Street	69,339	-	-	-	-	-	-	-	-	-	69,339
1040	Ridout Street	615,079	-	-	-	-	-	-	-	38,688	-	576,391
1003	Cavan Street	867,731	-	-	-	-	-	-	62,179	805,552	-	-
1026	Clovelly Street	193,793	-	-	-	-	-	-	-	25,792	168,001	-
1027	Orchard Street	199,406	-	-	-	-	-	-	-	25,792	173,614	-
1028	Brunswick Avenue	198,626	-	-	-	-	-	-	-	25,792	172,834	-
1029	Oxford Street	227,686	-	-	-	-	-	-	-	25,792	201,894	-
	Sanitary Relining/Repair											
1077	Lake Street	1,071,882	-	67,405	1,004,477	-	-	-	-	-	-	-
1046	Ross Street	69,750	-	-	69,750	-	-	-	-	-	-	-
	Sanitary Forcemain Replacement											
1076	Mill Street/Shuter Street	2,042,817	-	-	68,609	1,974,208	-	-	-	-	-	-
	Sanitary Upsizing											
1022	Mill Street North	334,111	-	-	-	-	34,693	299,418	-	-	-	-
1022	Mill Street South	859,475	-	-	-	-	80,949	778,526	-	-	-	-
	Sanitary - Minor Works Coupled with Watermain											
1017	Victoria Street South	116,087	-	10,370	105,717	-	-	-	-	-	-	-
1017	Toronto Road	56,802	-	-	10,754	46,048	-	-	-	-	-	-
1000	Hope Street North	59,913	-	-	-	-	-	11,992	47,921	-	-	-
1021	Ontario Street	264,069	-	-	-	-	-	23,984	240,085	-	-	-
1037	Port Hope Town Hall/Dorset Street West	168,051	-	-	-	-	-	-	-	-	20,060	147,991
	Wastewater Master Planning & System-Wide Projects											
WW-1	Climate Change I&I Diversion Study (Options and Concept Design Report)	-	-	-	-	-	-	-	-	-	-	-
WW-2	Climate Change I&I Diversion Project Design/Approvals	-	-	-	-	-	-	-	-	-	-	-



Table C-2 (continued)
Municipality of Port Hope
Wastewater Service
Capital Budget Forecast
 Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Wastewater Pumping Station Projects (Non-Growth)											
WWPS-1	Hope Street WWPS: Stand-by Diesel Genset (\$45k 2019 Capital Carry Forward Project)	90,000	90,000	-	-	-	-	-	-	-	-	-
WWPS-2	Hope Street WWPS: Upgrade Yard Piping and By-Pass Connections	25,925	-	25,925	-	-	-	-	-	-	-	-
WWPS-3	Hope Street WWPS: Connect to SCADA System	36,295	-	36,295	-	-	-	-	-	-	-	-
WWPS-4	Hope Street WWPS: Replace Hoist for Trash Basket/Screen Cleaning	31,110	-	31,110	-	-	-	-	-	-	-	-
WWPS-5	Hope Street WWPS: Upgrade Access Hatches and Railing Systems	25,925	-	25,925	-	-	-	-	-	-	-	-
WWPS-6	Hope Street WWPS: Install New Inlet MH to Facilitate By-pass of Wet Well	26,884	-	-	26,884	-	-	-	-	-	-	-
WWPS-7	Hope Street WWPS: Structural Inspection of Wet Well and Minor Repairs	32,261	-	-	32,261	-	-	-	-	-	-	-
WWPS-8	Mill Street WWPS: Replace Intermediate Access Platform for Pump Disconnects	31,110	-	31,110	-	-	-	-	-	-	-	-
WWPS-9	Mill Street WWPS: TSSA Compliance Generator Upgrades (Fuel, Exhaust, Combustion Air)	65,000	65,000	-	-	-	-	-	-	-	-	-
WWPS-10	Mill Street WWPS: Pump 2 Overhaul	32,261	-	-	32,261	-	-	-	-	-	-	-
WWPS-11	Mill Street WWPS: Flow Meter Chamber Inspection (CSE)	5,185	-	5,185	-	-	-	-	-	-	-	-
WWPS-12	Mill Street WWPS: Replace Stand-by Generator with Outdoor Unit in Enclosure	373,073	-	-	-	-	-	-	373,073	-	-	-
WWPS-13	Mill Street WWPS: Long Term Pump Hoisting Upgrades (In Conjunction with Generator)	124,358	-	-	-	-	-	-	124,358	-	-	-
WWPS-14	Mill Street WWPS: 25 Year Rehabilitation of Building and Equipment	783,453	-	-	-	-	-	-	783,453	-	-	-
WWPS-15	Mill Street WWPS: Install Hinged/Removable Safety Grates Under Access Hatches	18,654	-	-	-	-	-	-	18,654	-	-	-
WWPS-16	Mill Street WWPS: Replace Pumps with High-Efficiency Larger Capacity Pumps (2 of 3, 3rd in 2030)	248,715	-	-	-	-	-	-	248,715	-	-	-
WWPS-17	AON WWPS: TSSA Compliance Generator Upgrades (Fuel, Exhaust, Combustion Air)	60,000	60,000	-	-	-	-	-	-	-	-	-
WWPS-18	AON WWPS: Replace PLC	33,455	-	-	-	33,455	-	-	-	-	-	-
WWPS-19	AON WWPS: Replace Existing Magnetic Flow Meter	16,727	-	-	-	16,727	-	-	-	-	-	-
WWPS-20	AON WWPS: Add Perimeter Fencing (Decorative)	-	-	-	-	-	-	-	-	-	-	-
WWPS-21	AON WWPS: Add Hinged/Removable Safety Gates Under Exist. Hatches	18,654	-	-	-	-	-	-	18,654	-	-	-



Table C-2 (continued)
Municipality of Port Hope
Wastewater Service
Capital Budget Forecast
 Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
WWPS-22	AON WWPS: 25 Year Rehabilitation of Building and Equipment	-	-	-	-	-	-	-	-	-	-	-
WWPS-23	WWTP Onsite WWPS: Replace Flow Meter	37,332	-	37,332	-	-	-	-	-	-	-	-
WWPS-24	WWTP Onsite WWPS: Automatic Bar Screen Rake	43,015	-	-	43,015	-	-	-	-	-	-	-
WWPS-25	WWTP Onsite WWPS: Replace Process Piping	66,865	-	-	-	-	-	-	-	-	66,865	-
WWPS-26	WWTP Onsite WWPS: Replace Ultrasonic Level Transmitter	11,564	-	-	-	-	11,564	-	-	-	-	-
WWPS-27	Condition Assessments for WWPS Facilities (4) on 5 Year Cycle	127,160	-	-	-	-	57,821	-	-	-	-	69,339
WWPS-28	Portable Back-up Trash Pump (\$90k 2019 Capital Carry Forward Project)	125,000	125,000	-	-	-	-	-	-	-	-	-
Wastewater Treatment Plant Projects												
WWTP-1	Diffuser Replacement - 2x Digester Tanks	76,297	-	-	-	-	34,693	-	-	-	-	41,604
WWTP-2	Diffuser Replacement - Aeration Tank #3	35,976	-	-	-	-	-	35,976	-	-	-	-
WWTP-3	Diffuser Replacement and Tank Cleaning - Aeration Tank #2	72,565	-	35,258	-	-	-	-	37,307	-	-	-
WWTP-4	Diffuser Replacement and Tank Cleaning - Aeration Tank #1	73,946	-	35,258	-	-	-	-	-	38,688	-	-
WWTP-5	Improve Ventilation in Chemical Room	74,664	-	74,664	-	-	-	-	-	-	-	-
WWTP-6	Alternative Disinfection System Options Report	17,000	17,000	-	-	-	-	-	-	-	-	-
WWTP-7	Install/Commission Alternative Disinfection System	657,158	-	-	322,611	334,547	-	-	-	-	-	-
WWTP-8	Replace Chemical Dosing Panel and Unistrut Stand - Sodium Hypochlorite System (Repair piping only)	15,000	15,000	-	-	-	-	-	-	-	-	-
WWTP-9	WWTP Process Optimization Simulator (Program Build, Install, Training)	26,884	-	-	26,884	-	-	-	-	-	-	-
WWTP-10	Effluent Discharge Flow Meter Replacement	132,537	25,000	-	107,537	-	-	-	-	-	-	-
WWTP-11	Reline On-shore Portion of Treated Effluent Outfall Pipe	546,520	-	51,850	494,670	-	-	-	-	-	-	-
WWTP-12	Off-shore Effluent Outfall Replacement Reserve Allocation	1,002,978	-	-	-	-	-	-	-	-	1,002,978	-
WWTP-13	TSSA Compliance Generator Upgrades	48,000	48,000	-	-	-	-	-	-	-	-	-
WWTP-14	Evaluate Options for Supplying Stand-by Power to Aeration Systems	33,455	-	-	-	33,455	-	-	-	-	-	-
WWTP-15	Generator/Electrical Upgrades to Power Aeration Systems	899,404	-	-	-	-	-	899,404	-	-	-	-
WWTP-16	Replace Chemical Dosing Panel and Unistrut Stand - Alum System	51,850	-	51,850	-	-	-	-	-	-	-	-
WWTP-17	Replace Roofing, Flashing and Insulation on Raw Sewage PS & Headworks Buildings	154,853	-	-	154,853	-	-	-	-	-	-	-
WWTP-18	Replace Fall Restraint Protection Grating at Tanks	138,770	-	-	-	-	138,770	-	-	-	-	-



Table C-2 (continued)
Municipality of Port Hope
Wastewater Service
Capital Budget Forecast
 Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
WWTP-19	Business Case Study for Alternative Clarifier Technology	46,425	-	-	-	-	-	-	-	46,425	-	-
WWTP-20	Pilot Alternative Clarifier/Aeration Technology	226,004	-	-	-	-	-	-	-	-	226,004	-
WWTP-21	Replace Chain and Flight System in Clarifiers or Upgrade to Alternative Tech. - Phase 1	207,400	-	207,400	-	-	-	-	-	-	-	-
WWTP-22	Replace Chain and Flight System in Clarifiers or Upgrade to Alternative Tech. - Phase 2	215,074	-	-	215,074	-	-	-	-	-	-	-
WWTP-23	Replace Chain and Flight System in Clarifiers or Upgrade to Alternative Tech. - Phase 3	223,032	-	-	-	223,032	-	-	-	-	-	-
WWTP-24	Misc. Instrumentation Replacement and Upgrades	149,229	-	-	-	-	-	-	149,229	-	-	-
WWTP-25	Septage Receiving System Rehabilitation	208,155	-	-	-	-	208,155	-	-	-	-	-
WWTP-26	Chemical Pump, Tank and Piping Replacement	93,611	-	-	-	-	-	-	-	-	93,611	-
WWTP-27	Replace Polymer Feed Pump, Flow Metre and Miltronics Level Sensor	40,475	-	-	-	-	40,475	-	-	-	-	-
WWTP-28	Replace Screen Systems	248,630	-	-	-	-	248,630	-	-	-	-	-
WWTP-29	Trenchless Replacement of Existing 100mm Water Service	55,758	-	-	-	55,758	-	-	-	-	-	-
WWTP-30	Engineer/Install Permanent Trolley/Hoist System for Aeration Blower Removal	-	-	-	-	-	-	-	-	-	-	-
WWTP-31	Air Flow Redesign Report to Combine Air Supply to Aeration and Digester Tanks	-	-	-	-	-	-	-	-	-	-	-
WWTP-32	Design/Approvals to Remove 2x Aeration & 2x Digester Blowers w/ 1x HE Turbo Blower	10,754	-	-	10,754	-	-	-	-	-	-	-
WWTP-33	Replace Digester Blower with HE Turbo Blower and Install DO Sensors in Digesters	267,638	-	-	-	267,638	-	-	-	-	-	-
WWTP-34	Upgrade WWTP Washroom/Change Room to Accommodate Staffing Levels	-	-	-	-	-	-	-	-	-	-	-
WWTP-35	SCADA Replacement	47,299	-	-	21,507	-	-	-	-	25,792	-	-
WWTP-35	Concrete Base for Relocation of Garage	31,110	-	31,110	-	-	-	-	-	-	-	-
WWW-1	Wastewater Vehicles Replace 1-ton Dump Truck (Transfer Existing to Urban Roads)	115,526	-	-	-	-	115,526	-	-	-	-	-
WWW-2	Replace Cargo Van with Cube Van on Utility Truck Body	59,103	-	-	-	59,103	-	-	-	-	-	-
WWW-3	Replace 3/4-ton Crew Cab Pick-up Truck	69,540	-	-	-	-	-	-	-	-	69,540	-
WWW-4	Replace 3/4-ton Crew Cab Pick-up Truck with Plow & Lift Gate	80,433	-	-	-	-	-	-	-	-	-	80,433
WWW-5	Replace 16' Cube Van (CCTV Truck)	-	-	-	-	-	-	-	-	-	-	-
WWW-6	Replace 3/4-Regular Cab Pick-up Truck with Plow (2019 Capital Carry Forward Project)	55,000	55,000	-	-	-	-	-	-	-	-	-



Table C-2 (continued)
Municipality of Port Hope
Wastewater Service
Capital Budget Forecast
 Inflated \$

Prj. No.	Description	Total	Forecast									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Wastewater Trailers & Portable Equipment											
WWT-1	Trench Box and Trailer (2019 Capital Carry Forward Project)	17,000	17,000	-	-	-	-	-	-	-	-	-
WWT-2	Replace Sewer Main Rodder Trailer	111,516	-	-	-	111,516	-	-	-	-	-	-
	Growth Related											
S2b (DC)	Henderson Street (MBP Servicing Corridor to Pemberton Drive)	-	-	-	-	-	-	-	-	-	-	-
SP1 (DC)	Pumping Station Access Road (South of Lakeshore Road)	-	-	-	-	-	-	-	-	-	-	-
SP2 (DC)	Mill Street (Mill Street Pumping Station)	93,268	-	-	-	-	-	-	93,268	-	-	-
WW1 (DC)	New 2-ton Truck	-	-	-	-	-	-	-	-	-	-	-
WW2 (DC)	Additional Portable Sewer Camera System	14,390	-	-	-	-	-	14,390	-	-	-	-
WW3 (DC)	Upgraded Vehicle based Sewer Inspection Camera	24,872	-	-	-	-	-	-	24,872	-	-	-
W6 (DC)	Comprehensive Water/Wastewater Master Plan	66,909	-	-	-	66,909	-	-	-	-	-	-
	Total Capital Expenditures	21,741,091	1,177,399	773,602	3,531,618	3,594,174	1,346,864	2,694,134	2,770,528	1,765,649	3,060,422	1,026,701

Note: Totals may not add up to those in Table WW-1 due to rounding.



Appendix D

Expanded Operating Forecasts



Table D-1
Municipality of Port Hope
Water Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EXPENDITURES											
Operating Costs											
Office Supplies	510-500-0000-6001	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
Postage	510-500-0000-6004	9,800	10,000	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700
Uniforms	510-500-0000-6006	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Office Equipment	510-500-0000-6009	11,600	7,800	7,900	8,100	8,200	8,400	8,600	8,700	8,900	9,100
Bank Fees & Interest Chrgs	510-500-0000-6020	50	50	50	50	50	60	60	60	60	60
IT Software Licenses	510-500-0000-6053	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	6,200	6,300
Tools/Equip	510-500-0000-6106										
Tools/Equipment - General Cost		5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Utility Trailer		3,000	-	-	-	-	-	-	-	-	-
Chemicals	510-500-0000-6108										
Chemicals - General Cost		55,000	45,900	46,800	47,700	48,700	49,700	50,700	51,700	52,800	53,800
Chlorine Gas - General Cost		28,000	28,600	29,200	29,800	30,400	31,000	31,600	32,200	32,800	33,500
PaCl (Trial Chemical)		15,000	-	-	-	-	-	-	-	-	-
Pumps	510-500-0000-6151	15,000	15,300	15,600	15,900	16,200	16,600	16,900	17,200	17,600	17,900
Meters	510-500-0000-6152	10,000	10,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900
Linear Material	510-500-0000-6153										
Base		128,000	132,300	134,200	141,000	140,700	150,000	147,000	159,000	154,300	169,600
Cathodic Protection Program		10,000	10,000	10,000	125,000	10,000	10,000	10,000	10,000	125,000	10,000
Road Repair Materials	510-500-0000-6165	20,000	20,400	20,800	21,200	21,600	22,100	22,500	23,000	23,400	23,900
Fleet Fuel	510-500-0000-6180	25,000	25,500	26,000	26,500	27,100	27,600	28,200	28,700	29,300	29,900
Insurance Premium	510-500-0000-6210	97,056	101,900	107,000	112,400	118,000	123,900	130,100	136,600	143,400	150,600
Insurance Claims	510-500-0000-6211	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Contracted Services	510-500-0000-6220										
Contracted Services - General Cost		55,000	56,100	57,200	58,400	59,500	60,700	61,900	63,200	64,400	65,700
Update Watermain Needs Study		-	-	26,000	-	-	-	-	-	-	-
Rate Study Consultation		5,000	-	-	-	27,100	-	-	-	-	29,900
Update Hydraulic Model Demand Data		10,000	-	-	-	-	11,000	-	-	-	-
Surge Chamber Engineering		10,000	-	-	-	-	-	-	-	-	-
Update WTP Operations Manual & Network Drawings		-	13,500	-	-	-	-	-	-	-	-
Legal Fees	510-500-0000-6261	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Sampling Program	510-500-0000-6264	17,000	17,300	17,600	18,000	18,400	18,800	19,200	19,600	20,000	20,400



Table D-1 (continued)
Municipality of Port Hope
Water Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Lab Equipment / Testing	510-500-0000-6280	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Professional Dues	510-500-0000-6291	4,500	4,600	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400
Travel	510-500-0000-6292	2,000	2,000	2,100	2,100	2,100	2,200	2,200	2,200	2,300	2,300
Training	510-500-0000-6294										
Training - General Cost		20,000	30,000	35,000	26,500	27,100	27,600	28,200	28,700	29,300	29,900
Compliance Training for Council		-	-	-	4,300	-	-	-	4,600	-	-
R & M - Vehicle	510-500-0000-6301	10,000	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
R & M - Equipment	510-500-0000-6302										
R & M - Equipment - General Cost		205,000	209,100	213,300	217,600	222,000	226,400	230,900	235,500	240,200	245,000
Ballast Tank		37,000	-	-	-	-	-	-	-	-	-
Exterior Venting of the Chemical Dosing Skid		8,400	-	-	-	-	-	-	-	-	-
Refurbish Low-lift Pump 2		-	-	-	-	-	-	-	-	-	-
Refurbish Low-lift Pump 1		-	-	-	-	32,500	-	-	-	-	-
Refurbish Low-lift Pump 3		-	-	31,200	-	-	-	-	-	-	-
Remove, Inspect and Refurbish High-lift Pump 4303		-	-	-	-	-	-	-	45,900	-	-
Remove, Inspect and Refurbish High-lift Pump 4304		-	-	-	-	-	-	-	-	-	47,800
Remove, Inspect and Refurbish High-lift Pump 4301		-	40,800	-	-	-	-	-	-	-	-
Remove, Inspect and Refurbish High-lift Pump 4302		-	-	-	-	-	44,100	-	-	-	-
Remove, Inspect and Refurbish High-lift Pump 4305		-	-	-	42,300	-	-	-	-	35,200	-



Table D-1 (continued)
Municipality of Port Hope
Water Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
R & M - Buildings & Grounds	510-500-0000-6320										
R & M - Buildings & Grounds - General Cost		23,000	23,500	24,000	24,400	24,900	25,400	26,000	26,500	26,900	27,500
Dorset Street Standpipe End-of-Life Mnce Activities		10,000	10,200	10,400	10,600	-	-	-	-	-	-
Fox Rd Elevated Tank New Climbing/Fall Protection System		10,000	-	-	-	-	-	-	-	-	-
WTP Air Dryer		-	5,100	-	-	-	-	-	-	-	-
WTP Refurbish CIP Pump		-	8,200	-	-	-	-	-	-	-	-
WTP Chlorine Contact Chamber H&S Upgrades		5,400	-	-	-	-	-	-	-	-	-
Replace Light on Water Tower		10,000	-	-	-	-	-	-	-	-	-
Victoria Street BPS: Safety Upgrades		15,000	-	-	-	-	-	-	-	-	-
TSSA Diesel Tank Upgrades at Jocelyn & Victoria St		7,000	-	-	-	-	-	-	-	-	-
Victoria Street BPS: General Maint. Items		-	14,700	-	-	-	-	-	-	-	-
WTP Repair Foundation Walls, Retaining Wall Seals		-	15,900	-	-	-	-	-	-	-	-
WTP Clean and Repaint Lintels, Pilasters, Door Frames		-	19,900	-	-	-	-	-	-	-	-
Re-Inspection and Assessment of Victoria Street BPS		-	-	15,500	-	-	-	-	17,100	-	-
Inspection & Assessment of Jocelyn St Reservoir		-	15,300	-	-	-	-	16,900	-	-	-
Fox Road (Zone 2) Elevated Tank Inspection		-	-	-	-	21,600	-	-	-	-	-
Full Inspection and Assessment of WTP		-	30,600	-	-	-	-	33,700	-	-	-
WTP Inspect Tanks, Chambers and Channels		-	24,500	-	-	-	-	-	-	-	-
Equipment Rentals	510-500-0000-6330	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rentals-Property	510-500-0000-6340	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900
Natural Gas	510-500-0000-6500	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300
Hydro	510-500-0000-6501	280,000	285,600	291,300	297,100	303,000	309,100	315,300	321,600	328,000	334,600
Water & Sewer	510-500-0000-6502	57,200	64,500	68,200	69,200	70,100	70,900	71,500	72,000	72,200	72,200
Property Tax	510-500-0000-6505	225,000	229,500	234,100	238,800	243,600	248,500	253,500	258,600	263,800	269,100
Telephone	510-500-0000-6520	5,500	5,600	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400
Cell Phone	510-500-0000-6522	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600
Radios	510-500-0000-6524	2,000	2,000	2,100	2,100	2,100	2,200	2,200	2,200	2,300	2,300
Internet	510-500-0000-6527	14,000	14,300	14,600	14,900	15,200	15,500	15,800	16,100	16,400	16,700
W/O	510-500-0000-6812	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800



Table D-1 (continued)
Municipality of Port Hope
Water Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Transfer from Other Dept	510-500-0000-6950										
Transfer from Engineering Admin		234,358	239,000	243,800	248,700	253,700	258,800	263,900	269,200	274,600	280,100
Transfer from Finance		48,300	49,300	50,300	51,300	52,300	53,300	54,400	55,500	56,600	57,700
Transfer from JOC		41,151	42,000	42,800	43,600	44,500	45,400	46,400	47,300	48,200	49,200
Full-Time	510-500-0000-9101	624,972	726,716	741,300	756,100	771,200	786,600	802,300	818,300	834,700	851,400
Part-Time	510-500-0000-9102	-	9,800	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400
Overtime	510-500-0000-9104	49,500	50,500	51,500	52,500	53,600	54,700	55,800	56,900	58,000	59,200
Standby	510-500-0000-9107	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Shift Premium	510-500-0000-9110	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
Clothing Allowance	510-500-0000-9123	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900
Health and Safety	510-500-0000-9124	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Benefits	510-500-0000-9201	177,024	203,615	207,700	211,900	216,100	220,400	224,800	229,300	233,900	238,600
Retiree Benefits	510-500-0000-9202	30,500	31,100	31,700	32,300	32,900	33,600	34,300	35,000	35,700	36,400
Total Operating Expenditures		2,833,611	3,068,381	3,048,650	3,194,550	3,163,550	3,208,560	3,263,860	3,356,560	3,499,560	3,508,860



Table D-2
Municipality of Port Hope
Wastewater Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EXPENDITURES											
Operating Costs											
Office Supplies	410-450-0000-6001										
Office Supplies - General Cost		6,300	6,400	6,600	6,600	6,800	6,900	7,000	7,200	7,400	7,500
Water Billing Costs		1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400
Public Education Campaign		-	-	1,600	-	1,600	-	1,700	-	1,700	-
Postage	410-450-0000-6004	10,300	10,500	10,700	10,900	11,100	11,400	11,600	11,800	12,100	12,300
Uniforms	410-450-0000-6006	1,100	2,300	2,300	2,400	2,400	2,500	2,600	2,600	2,700	2,700
Office Equipment	410-450-0000-6009										
Office Equipment - General Cost		875	5,800	2,800	2,900	2,900	3,000	3,000	3,100	3,200	3,200
Replacement of 6 Tablets		-	-	-	-	-	-	-	20,700	-	-
Bank Fees & Interest Charges	410-450-0000-6020	50	50	50	50	50	60	60	60	60	60
IT Technical Support	410-450-0000-6051										
IT Technical Support - General Cost		27,300	27,800	28,400	21,700	22,900	24,200	25,500	26,900	28,400	32,600
SCADA System Upgrades		-	6,600	1,100	-	-	-	-	-	-	6,300
IT Software Licenses	410-450-0000-6053										
IT Software Licenses - General Cost		10,750	11,000	11,200	11,400	11,600	11,900	12,100	12,300	12,600	12,800
e-Logbook Software Implementation		-	9,300	4,100	4,300	4,400	4,400	4,500	4,600	4,700	4,800
Tools/Equip	410-450-0000-6106										
Tools/Equipment - General Cost		29,500	30,100	30,700	31,800	32,500	33,100	33,800	34,500	35,100	35,300
WWTP - Spare Cutter Head for Septage Grinder/Sludge Feed		-	17,300	-	-	-	-	-	-	-	-
WWTP - Dewatering Sludge Feed Inline Cutter Cartridge Replac		-	-	17,700	-	-	-	-	-	-	20,300
WWTP - Septage Grinder Inline Cutter Cartridge Replac		-	-	-	-	18,400	-	-	-	-	-
CCTV/Pipe Repair Equipment		-	-	-	5,300	-	-	-	-	-	-
CCTV Laser Shape Scanner		-	-	-	15,900	-	-	-	-	-	-
CCTV Jet-Scan 2.0 8"		-	-	-	15,900	-	-	-	-	-	-
Additional Security Cameras for PS and WWTP		-	6,900	4,400	-	-	-	-	-	-	10,700



Table D-2 (continued)
Municipality of Port Hope
Wastewater Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Chemicals	410-450-0000-6108										
Chemicals - General Cost		46,200	54,600	41,000	42,500	44,000	45,600	47,200	48,900	50,700	52,500
Sodium Bisulphate		14,000	15,000	-	-	-	-	-	-	-	-
Sodium Hypochlorite		10,000	10,000	-	-	-	-	-	-	-	-
WWTP - Odour Control System Media Replacement		-	-	15,600	-	-	-	-	17,200	-	-
Waste Disposal	410-450-0000-6140	10,500	10,800	11,100	11,400	11,700	12,000	12,300	12,700	13,000	13,300
Linear Materials	410-450-0000-6153										
Base		55,000	75,000	104,000	106,100	108,200	110,400	112,600	114,900	117,200	119,500
Replace MH386 on Dorset Street		20,000	-	-	-	-	-	-	-	-	-
PM Flushing	410-450-0000-6162	20,000	24,200	24,700	25,200	25,700	12,450	26,700	27,200	27,700	28,300
Road Repair Materials	410-450-0000-6165	43,000	44,000	45,000	46,100	47,100	55,200	56,300	57,400	58,600	59,800
Sludge Removal	410-450-0000-6175	146,600	149,500	152,500	155,600	158,700	161,900	165,100	168,400	171,800	175,200
Fleet Fuel	410-450-0000-6180	16,500	16,800	17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700
Insurance Premium	410-450-0000-6210	110,170	115,700	121,500	127,600	134,000	140,700	147,700	155,100	162,900	171,000
Insurance Claims	410-450-0000-6211	13,500	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
Contracted Services	410-450-0000-6220										
Contracted Services - General Cost		138,350	175,300	161,600	194,100	168,600	172,100	175,800	179,500	183,200	187,100
WWC ECA Revision		7,500	-	-	-	-	-	-	-	-	-
Onsite PS Tech memo and tender - Station upgrade		19,000	-	-	-	-	-	-	-	-	-
Mill St PS Upgrade Assessment; (Pump Hoisting & Removal)		10,000	-	-	-	-	-	-	-	-	-
SCADA manual and Process Narrative update		15,000	-	-	-	-	-	-	-	-	-
WWTP Portable Generator to run entire WWTP spec		8,000	-	-	-	-	-	-	-	-	-
I&I Reduction Strategic Plan (IIRSP) Updates		-	-	-	-	-	-	11,300	-	-	-
Rate Study Consultation and Development		5,000	-	-	-	27,100	-	-	-	-	29,900
WWTP - Metering Chemical Pumps - Bi-Annual Service		-	5,100	-	5,300	-	5,500	-	5,700	-	6,000
WWTP - Update Electrical Energy Audit		-	-	-	-	-	-	-	34,500	-	-
Effluent Analyzer Instrumentation (Supply/Install/program)		-	12,200	-	-	-	-	-	-	-	-
WWTP - Roofing Assessment		-	-	41,600	-	-	-	-	-	-	-



Table D-2 (continued)
Municipality of Port Hope
Wastewater Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
WWTP - Recoat Tank Railings & Add CSE Access Gates		28,000	-	-	-	-	43,100	-	-	-	-
WW System Hydraulic Model (Network and Demand Setup)		-	-	-	-	26,000	-	-	-	-	-
O&M and SCADA Manual Update		-	30,000	-	-	-	33,100	-	-	-	-
WWTP Railing Recoating in Chemical Room		-	-	-	-	8,100	-	-	8,600	-	-
Legal Fees	410-450-0000-6261	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
Sampling Program	410-450-0000-6264	12,500	12,800	13,000	13,300	13,500	13,800	14,100	14,400	14,600	14,900
Lab Equipment / Testing	410-450-0000-6280	14,000	10,700	10,900	11,100	11,400	11,600	11,800	12,100	12,300	12,500
Professional Dues	410-450-0000-6291	7,355	7,800	7,500	7,600	7,800	8,000	8,100	8,300	8,400	8,600
Travel	410-450-0000-6292	360	370	370	380	390	400	410	410	420	430
Training	410-450-0000-6294	23,770	26,600	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900
R & M - Vehicle	410-450-0000-6301	20,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000
R & M - Equipment	410-450-0000-6302										
R & M - Equipment - General Cost		87,300	75,900	89,300	90,800	68,300	69,800	71,300	72,900	74,500	76,200
WWTP - Replace Ladders at Effluent Pumping Station and Above Ground MH Structures		-	12,000	-	-	-	-	-	-	-	-
R & M - Buildings & Grounds	410-450-0000-6320										
R & M - Buildings & Grounds - General Cost		31,800	25,400	60,000	61,200	62,400	76,600	78,100	79,700	48,000	71,600
Hope Street WWPS: Fencing Repairs		5,000	-	-	-	-	-	-	-	-	-
Hope Street WWPS: Driveway Repairs		5,000	-	-	-	-	-	-	-	-	-
Hope Street WWPS: Electrical Panel Painting and Latch System		5,000	-	-	-	-	-	-	-	-	-
Mill Street WWPS: Install Kick-plates at Stairway Landings		5,000	-	-	-	-	-	-	-	-	-
Mill Street WWPS: Options Review for Pump Hoisting & Removal System		10,000	-	-	-	-	-	-	-	-	-
WWTP Onsite WWPS Gas Detection System		-	18,400	-	-	-	-	-	-	-	-
WWTP Onsite WWPS UPS and VFD replacement		-	-	-	-	21,300	-	-	-	-	-
Mill Street WWPS: Paint and Repair Doors		-	5,100	-	-	-	-	-	-	-	-
Mill Street WWPS: Short Term Pump Hoisting Upgrades (Work Around Indoor Generator)		-	25,500	-	-	-	-	-	-	-	-
Mill Street WWPS: Painting, Coating and Localized Replacement of Process Piping/Valves		-	15,300	-	-	-	-	-	-	-	-
Mill Street WWPS: Seal Pipe Openings (2) and Parge/Regrade at Exterior Foundation Wall		-	25,500	-	-	-	-	-	-	-	-



Table D-2 (continued)
Municipality of Port Hope
Wastewater Services
Expanded Operating Expenditure Budget Forecast
Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Mill Street WWPS: Replace Ultrasonic Level Detection System		-	10,200	-	-	-	-	-	-	-	-
Mill Street WWPS: Meter Chamber Sealing and Drainage Upgrades		-	-	15,600	-	-	-	-	-	-	-
Mill Street WWPS: Replace Magnetic Flow Meter		-	-	26,000	-	-	-	-	-	-	-
Mill Street WWPS: Detailed Roof System Assessment (by Roofing Specialist)		-	-	-	5,300	-	-	-	-	-	-
AON WWPS: Minor Building Repairs (Roof Leak, Foundation Leak, Door Painting)		15,000	-	-	-	-	-	-	-	-	-
AON WWPS: New Sway Rings for Float Switches in Wet Well Cells 1 & 2		-	-	-	5,300	-	-	-	-	-	-
AON WWPS: Detailed Roof System Assessment (by Roofing Specialist)		-	-	-	5,300	-	-	-	-	-	-
WWTP - Replace Corroded Floor Drain Covers		1,200	-	-	-	-	-	-	-	-	-
WWTP - Upgrade Chemical Storage Containment Areas to Hold Equiv. of 2- Full Tanks		-	15,300	-	-	-	-	-	-	-	-
WWTP - Replace Flashing and Sealants on Storage Building Roof		-	-	6,200	-	-	-	-	-	-	-
WWTP - Replace Failed Coatings in Secondary Containment Areas		-	-	-	31,800	-	-	-	-	-	-
WWTP - Replace Sealants in Windows		-	-	-	31,800	-	-	-	-	-	-
WWTP - Polyurethane Injection of Leaking Cracks in Blower and RAS Gallery		30,000	-	-	-	-	-	-	-	-	-
WWTP - Replace Floor Coatings in Laundry, MCC and Generator Rooms		-	-	-	-	-	-	-	-	-	11,500
WWTP - Repairs to Chain Link Fencing		-	-	-	-	-	26,500	-	-	-	-
WWTP - Emergency By-pass Channel Upgrade Assessment		-	-	-	-	-	39,700	-	-	-	-
WWTP - Aeration Tank Drainage Upgrade Assessment		-	-	-	-	39,000	-	-	-	-	-
WWTP - Full Inspection and Needs Assessment of WWTP		-	-	-	-	-	-	-	-	52,700	-
WWTP - RAS Actuated Valves		-	-	9,200	-	-	-	-	-	-	-
WWTP - Headworks & Digester #1 Actuators		-	-	5,300	-	-	-	-	-	-	-
WWTP - Process Building Roof Railing		-	-	15,000	-	-	-	-	-	-	-



Table D-2 (continued)
Municipality of Port Hope
Wastewater Services
Expanded Operating Expenditure Budget Forecast
 Inflated \$

Description	Account	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
WWTP - Storage Building Roof Railing		-	-	15,000	-	-	-	-	-	-	-
WWTP - Clarifier Algae Reduction Covers		-	-	8,000	8,000	-	-	-	-	-	-
Installation of Performance Monitoring Discs (All pumps and Motors)		-	-	-	5,200	-	-	-	-	-	-
Wetwell, Clarifier trough and Equalization Tanks cleaning		-	-	-	10,000	10,200	10,400	10,600	10,800	-	11,200
Confined Space Entry Davits Installed		12,000	-	-	-	-	-	-	-	-	-
Confined Spaces Assessment and Permitted		-	-	-	-	30,000	-	-	-	-	-
Equipment Rentals	410-450-0000-6330	12,750	21,200	21,600	22,000	22,400	22,800	23,300	23,800	24,300	24,800
Natural Gas	410-450-0000-6500	35,700	36,400	37,100	37,800	38,600	39,400	40,200	41,000	41,800	42,600
Hydro	410-450-0000-6501	350,000	357,000	364,100	371,400	378,800	386,400	394,100	402,000	410,000	418,200
Water & Sewer	410-450-0000-6502	39,900	42,900	44,100	45,300	46,500	47,700	48,900	50,000	51,100	52,100
Property Tax	410-450-0000-6505	130,000	132,600	135,300	138,000	140,800	143,600	146,500	149,400	152,400	155,400
Telephone	410-450-0000-6520	9,300	9,500	9,700	9,900	10,100	10,300	10,500	10,700	10,900	11,100
Cell Phone	410-450-0000-6522	4,800	4,900	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700
Internet	410-450-0000-6527	14,500	14,800	15,100	15,400	15,700	16,000	16,300	16,600	16,900	17,200
Write-offs	410-450-0000-6812	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
Transfer from Other Dept	410-450-0000-6950										
Transfer from Engineering Admin		234,358	239,000	243,800	248,700	253,700	258,800	263,900	269,200	274,600	280,100
Transfer from Finance		48,300	49,300	50,300	51,300	52,300	53,300	54,400	55,500	56,600	57,700
Full-Time	410-450-0000-9101	526,554	605,604	617,700	630,100	642,700	655,600	668,700	682,100	695,700	709,600
Part-Time	410-450-0000-9102	-	10,200	10,400	10,600	10,800	11,000	11,300	11,500	11,700	12,000
Overtime	410-450-0000-9104	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800
Callouts	410-450-0000-9106	7,850	8,100	8,350	8,600	8,850	9,100	9,350	9,600	9,850	10,100
Standby	410-450-0000-9107	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
Shift Premium	410-450-0000-9110	3,500	3,500	3,500	3,500	3,500	3,750	3,750	3,750	3,750	3,750
Clothing Allowance	410-450-0000-9123	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550
Health and Safety	410-450-0000-9124	12,000	12,200	12,500	12,700	13,000	15,500	13,500	13,800	14,100	14,300
Benefits	410-450-0000-9201	142,762	168,075	171,400	174,800	178,300	181,900	185,500	189,200	193,000	196,900
Retiree Benefits	410-450-0000-9202	13,075	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Total Operating Expenditures		2,746,879	2,957,749	2,999,620	3,045,880	3,092,440	3,142,410	3,085,420	3,227,370	3,220,430	3,356,590