



Water & Wastewater Rate Study & Ontario Regulation 453/07 Water Financial Plan

Town of Cobourg

Final Report

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Water and Wastewater Rates Study Report



Chapter 1

Introduction



1. Introduction

1.1 Background

The Town of Cobourg (Town) currently provides water and wastewater services to 10,949 customers. Water services are provided by Lakefront Utility Services Inc. (L.U.S.I.). Hereafter, “Town” will be used to refer to either L.U.S.I. or the Town of Cobourg regarding the provision of water and wastewater services, respectively. The Town imposes water and wastewater rates through monthly base charges reflective of customers’ meter size plus an increasing block volumetric rate (\$ per cubic metre of usage). Current base charges and volumetric rates are presented in Table 1-1. As shown in Table 1-1, the volumetric rate increases for monthly consumption greater than 22.73 m³ and again for consumption greater than 35 m³.

Table 1-1
Town of Cobourg
2020 Monthly Water and Wastewater Rates

Description	Water Rates	Wastewater Rates
Base Charge		
<i>Meter Size</i>		
Up to ¾"	\$13.75	\$15.01
1"	\$52.72	\$57.57
1 ½"	\$75.63	\$82.60
2"	\$98.55	\$107.63
3"	\$152.24	\$166.27
4"	\$212.33	\$231.89
6"	\$331.55	\$362.10
8"	\$451.61	\$493.24
Volumetric Charge		
Block 1 per m ³ (up to 22.73 m ³)	\$1.37	\$1.48
Block 2 per m ³ (22.73 m ³ to 35 m ³)	\$1.71	\$1.84
Block 3 per m ³ (over 35 m ³) ¹	\$2.15	\$1.84

¹ The increase for the third block rate for water service will apply to residential water rates only

Owners of municipal drinking water systems in Ontario are required to have a municipal drinking water licence. Municipalities are required to submit their water licence renewal



application to the Province every five years. One of the mandatory licensing requirements under the Safe Drinking Water Act is for a financial plan to be prepared and submitted to the Province. Ontario Regulation (O.Reg.) 453/07 outlines the required information, reporting structure and deadlines for the financial plan. Regarding the deadlines, municipalities are mandated to finalize, approve, and submit these financial plans six months prior to their water licence expiry (along with all other water licence application requirements). The Town's water licence will expire in August 2021 and as such, the Town is required to submit their financial plan as part of the water licence renewal application by February 2021.

1.2 Study Process

Watson & Associates Economists Ltd. (Watson) was retained by the Town to undertake a comprehensive water and wastewater rate study (Rate Study) and to prepare a Water Financial Plan as part of the five year submission requirements for the purposes of obtaining a municipal drinking water licence as per the Safe Drinking Water Act, 2002. The Water Financial Plan, meeting the requirements of O.Reg. 453/07, is included as Appendix C to this report.

The objectives of the Rate Study and 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 Town based on the growth forecasts in the Town's 2016 Development Charges (D.C.) Background Study, the Town's draft 2020 Drinking Water Master Plan, and historical growth patterns;
- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- Build a capital program that blends lifecycle needs arising from the Town's water and wastewater asset inventory with the expansionary, replacement, and maintenance capital needs identified in the Town's capital budget forecasts, the 2016 D.C. Background Study, and the 2020 Water Master Plan draft findings;
- 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; and
- Develop a long-term water and wastewater rate forecast and present findings to staff, LUSI Board, and Council for their consideration;

In approaching this study, the following analysis is provided herein:

Chapter 1 – Introduction

Chapter 2 – Forecast Growth and Service Demands

Chapter 3 – Capital Infrastructure Needs

Chapter 4 – Capital Cost Financing Options

Chapter 5 – Operating Expenditure Forecast

Chapter 6 – Forecast Water and Wastewater Rates and Customer Impacts

1.3 Regulatory Changes in Ontario

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.



1.4 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.

1.5 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.



1.6 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 License.
- The plan is to be completed, approved by Council Resolution and submitted to the Ministry of Municipal Affairs and Housing as part of the application for receiving approval of a water license.
- 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.



1.7 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;
- 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;
- 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;
- 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;
- May be different for different municipal service providers or for municipal services in different areas of the Province.

Regulations will prescribe:

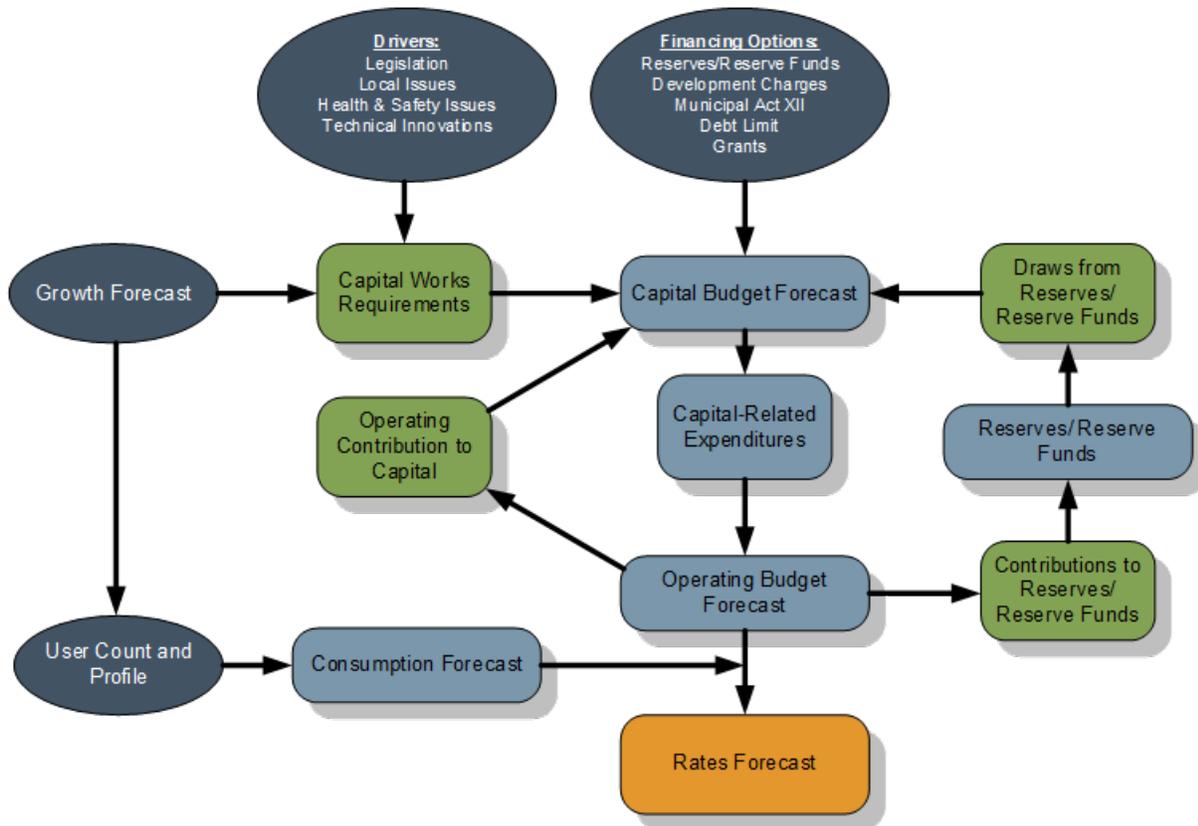
- Timing;
- Contents of the plans;
- Identifying what portions of the plan will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.

1.8 Water and Wastewater Rate Calculation Methodology

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



Figure 1-1
Water and Wastewater Rate Calculation Methodology



The methodology employed generally consists of 5 major elements:

1. Customer Demands and Consumption Forecast

As noted in Section 1.1, the Town employs rate structures consisting of monthly base charges and volumetric rates for both water and wastewater. The volumetric rates are imposed on an increasing block rate based on consumption.

The first step in the analysis is important as it produces the current base revenue by source and assumptions for forecasting purposes. The customer profile forecast is modeled based on the Town's 2016 D.C. Background Study which was further supplemented using the Town's 2020 Water Master Plan Technical Memo and historical growth patterns.



The water consumption forecast is prepared by applying average annual consumption estimates to future development. The forecast may adjust the base consumption levels for anticipated water conservation based on historical trends and industry witnessed practices. Consumption estimates are based on average consumption levels drawn from the Town's billing records. These same assumptions have been applied during the preparation of the wastewater forecasts.

2. Capital Needs Forecast

The capital needs forecast is developed to measure program/service level adjustments, lifecycle requirements and growth-related needs. The Town's capital budget forecast provided the base for the capital forecast utilized herein. Adjustments to the water capital budget were made to reflect infrastructure needs that had been identified in the Town's draft 2020 Drinking Water Master Plan. Capital expenditures are forecast with inflationary adjustments based on capital costs indices.

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, developer contribution agreements, and debt for program/service level improvements. 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 and use of D.C. credits is typically considered for significant capital expenditures, where funding is required beyond long-term lifecycle needs or to facilitate rate transition policies. Debt financing, when required, is measured in against the Town's debt policies and annual repayment limits to ensure a practical and sustainable funding mix.

4. Operating Budget Forecast

The operating budget forecast considers adjustments to the Town'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 services, as well as the capital cost requirements to ensure service sustainability. Operating revenues are projected to identify the rate components net of anticipated operating revenues, such as other miscellaneous revenues.

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, information of the number of customers and water consumption volumes was obtained from the Town for the period 2015-2019. As of 2019, the number of metered water customers in the Town was 10,949 and the number of wastewater customers was 10,633. Within the Town's current rate structures, customers are charged a monthly base charge, differentiated by meter size, plus an increasing block volumetric rate (\$ per m³ of water consumed) for both water and wastewater services. Total water consumption across the system is estimated at 2.1 million m³ annually. This level of demand equates to average annual consumption of 138 m³ per single residential customer, 92 m³ per multi-unit residential customer, and 406 m³ per non-residential customer (excluding large volume users (i.e. customers consuming more than 5,000 m³ annually)).

2.2 Forecast Service Demand

The growth forecast estimates have been undertaken separately for the Existing Urban Serviced Area (EUSA) and the Cobourg East Community (CEC). Furthermore, residential growth has been identified for both single residential and multi-unit connections.

Through discussion with Town staff, residential growth within the EUSA has been based on the anticipated growth identified in the Town's 2016 D.C. Background Study (i.e. 53 single and 35 multi-unit connections per year). Based on the anticipated timing of development in the CEC, new residential connections within the CEC are anticipated to begin in 2024 at the pace of development identified in the 2016 D.C. Background Study for the 2017-2027 period (i.e. 68 units per year). Non-residential growth in the CEC has been extrapolated from Town's draft 2020 Drinking Water Master Plan and the 2015-2019 historical pace of new non-residential connections (i.e. 5 new connections per year in the EUSA and 5 new connections per year in the CEC commencing in 2024).

The timing and amount of growth provided herein has been review with Town staff to assess the reasonableness of these assumptions. Average annual residential water consumption for each type of customer has been based on the annual consumption per



customer in 2019 (i.e. 138 m³ per single residential connection and 92 m³ per multi-unit residential connection. Non-residential consumption per customer has been based on the 2019 consumption per non-residential customer, excluding customers consuming greater than 5,000 m³ of water annually so as not to skew anticipated consumption levels of new connections. This average level of consumption was then applied to the growth assumptions for each type of customer to provide an estimate of total water and wastewater demands for the systems. This results in an estimated increase in total water consumption from 2.1 million m³ currently to 2.3 million m³ by 2030 (+10.0%). Total wastewater flows are anticipated to increase from 1.7 million m³ currently to 1.9 million m³ by 2030 (+11.2%)¹. Forecast water and wastewater demand is based on billed water usage and excludes unbilled treated water due to maintenance activities and system leaks

Water and wastewater customer growth and demand forecasts are summarized in Table 2-1 and 2-2. Water and wastewater demands are presented in aggregate and by billing block in alignment with the monthly consumption thresholds presented in Table 1-1.

¹ Note: It is anticipated that all new water customers in the Town will also have municipal wastewater services. The same customer growth for water over the forecast period (i.e. 1,459 total new customers) has also been used in the forecast of wastewater service demands.



Table 2-1
Town of Cobourg
Water and Wastewater Customer Forecasts

Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential Growth (Cumulative)											
<i>Existing Urban Serviced Area</i>											
Multi-Unit	20	60	99	139	179	220	260	293	318	344	370
All Other	24	71	119	166	215	263	312	368	431	495	558
Total - Existing Urban Serviced Area	44	131	218	305	393	483	572	661	750	839	928
<i>Cobourg East Area Community</i>											
Multi-Unit	-	-	-	-	4	13	22	31	40	49	58
All Other	-	-	-	-	29	89	148	207	266	325	384
Total - Cobourg East Area Community	-	-	-	-	34	102	170	239	306	374	442
Total Residential Growth	44	131	218	305	427	585	742	899	1,056	1,213	1,370
Non-Residential Growth (Cumulative)											
<i>Existing Urban Serviced Area</i>											
All	3	9	15	21	27	33	39	45	51	57	63
Total - Existing Urban Serviced Area	3	9	15	21	27	33	39	45	51	57	63
<i>Cobourg East Community</i>											
All	-	-	-	-	2	6	10	14	18	22	26
Total - Cobourg East Community	-	-	-	-	2	6	10	14	18	22	26
Total Non-Residential Growth	3	9	15	21	29	39	49	59	69	79	89
Total Water Customers											
Existing	10,949	10,949	10,949	10,949	10,949	10,949	10,949	10,949	10,949	10,949	10,949
New (Cumulative)	47	140	233	326	456	624	791	958	1,125	1,292	1,459
Total	10,996	11,089	11,182	11,275	11,405	11,573	11,740	11,907	12,074	12,241	12,408
Total Wastewater Customers											
Existing	10,633	10,633	10,633	10,633	10,633	10,633	10,633	10,633	10,633	10,633	10,633
New (Cumulative)	47	140	233	326	456	624	791	958	1,125	1,292	1,459
Total	10,680	10,773	10,866	10,959	11,089	11,257	11,424	11,591	11,758	11,925	12,092



Table 2-2
Town of Cobourg
Water and Wastewater Demand Forecasts

Water Volume Forecast (m ³)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Block 1 (up to 22.73 m³)											
Existing	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652	1,202,652
New	5,967	17,630	29,292	40,954	57,756	79,970	102,092	124,580	147,388	170,195	193,003
Subtotal Block 1	1,208,619	1,220,281	1,231,944	1,243,606	1,260,408	1,282,622	1,304,744	1,327,232	1,350,040	1,372,847	1,395,655
Block 2 (22.73 m³ to 35 m³)											
Existing	902,099	902,099	902,099	902,099	902,099	902,099	902,099	902,099	902,099	902,099	902,099
New	400	1,066	1,732	2,397	3,330	4,662	5,994	7,326	8,658	9,990	11,322
Subtotal Block 2	902,499	903,165	903,831	904,497	905,429	906,761	908,093	909,425	910,757	912,089	913,421
Block 3 (over 35 m³)											
Existing	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Block 3	40,664										
Total	2,151,782	2,164,110	2,176,438	2,188,766	2,206,501	2,230,047	2,253,501	2,277,321	2,301,461	2,325,600	2,349,740
Wastewater Flows Forecast (m³)											
Block 1 (up to 22.73 m³)											
Existing	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620	1,161,620
New	5,852	17,283	28,714	40,145	56,545	78,187	99,736	121,592	143,718	165,844	187,970
Subtotal Block 1	1,167,472	1,178,903	1,190,334	1,201,765	1,218,165	1,239,807	1,261,356	1,283,212	1,305,338	1,327,464	1,349,590
Block 2 (over 22.73 m³)											
Existing	558,871	558,871	558,871	558,871	558,871	558,871	558,871	558,871	558,871	558,871	558,871
New	411	1,095	1,780	2,464	3,423	4,792	6,161	7,530	8,900	10,269	11,638
Subtotal Block 2	559,281	559,966	560,651	561,335	562,294	563,663	565,032	566,401	567,770	569,139	570,509
Total	1,726,753	1,738,869	1,750,984	1,763,100	1,780,459	1,803,470	1,826,388	1,849,613	1,873,108	1,896,603	1,920,099



Chapter 3

Capital Infrastructure Needs



3. Capital Infrastructure Needs

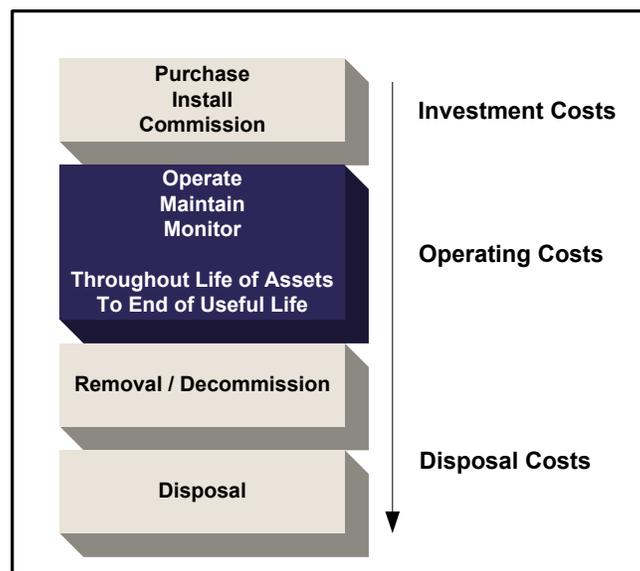
3.1 Overview of Lifecycle Costing

3.1.1 Definition

For many years, lifecycle costing has been used in the field of maintenance engineering and to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use in the areas of industrial decision-making and the management of physical assets.

By definition, lifecycle costs are all the costs which are incurred during the lifecycle of a physical asset, from the time its acquisition is first considered, to the time it is taken out of service for disposal or redeployment. The stages which the asset goes through in its lifecycle are specification, design, manufacture (or build), installation, commissioning, operation, maintenance and disposal. Figure 3-1 depicts these stages in a schematic form.

Figure 3-1
Lifecycle Costing





3.1.2 Financing Costs

This section will focus on financing mechanisms in place to fund the costs incurred throughout the asset's life.

In a municipal context, services are provided to benefit tax/rate payers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the municipality. Over the past few decades, new financing techniques such as development charges and *Municipal Act* capital charges have been employed based on the underlying principle of having tax/rate payers who benefit directly from the service paying for that service. Operating costs which reflect the cost of the service for that year are charged directly to all existing tax/rate payers who have received the benefit. Operating costs are normally charged through the tax base or user rates.

Capital expenditures are recouped through several methods, the most common being operating budget contributions, development charges, reserves, developer contributions and debentures.

New construction related to growth could produce development charges, capital charges, and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are being acquired to allow growth within the municipality to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

However, capital construction to replace existing infrastructure is largely not growth-related and will therefore not yield development charges or developer contributions to assist in financing these works. Hence, a municipality will be dependent upon debentures, reserves and contributions from the operating budget to fund these works.

Figure 3-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

As referred to earlier, growth-related financing methods such as development charges, connection charges, and developer contributions could be utilized to finance the growth-

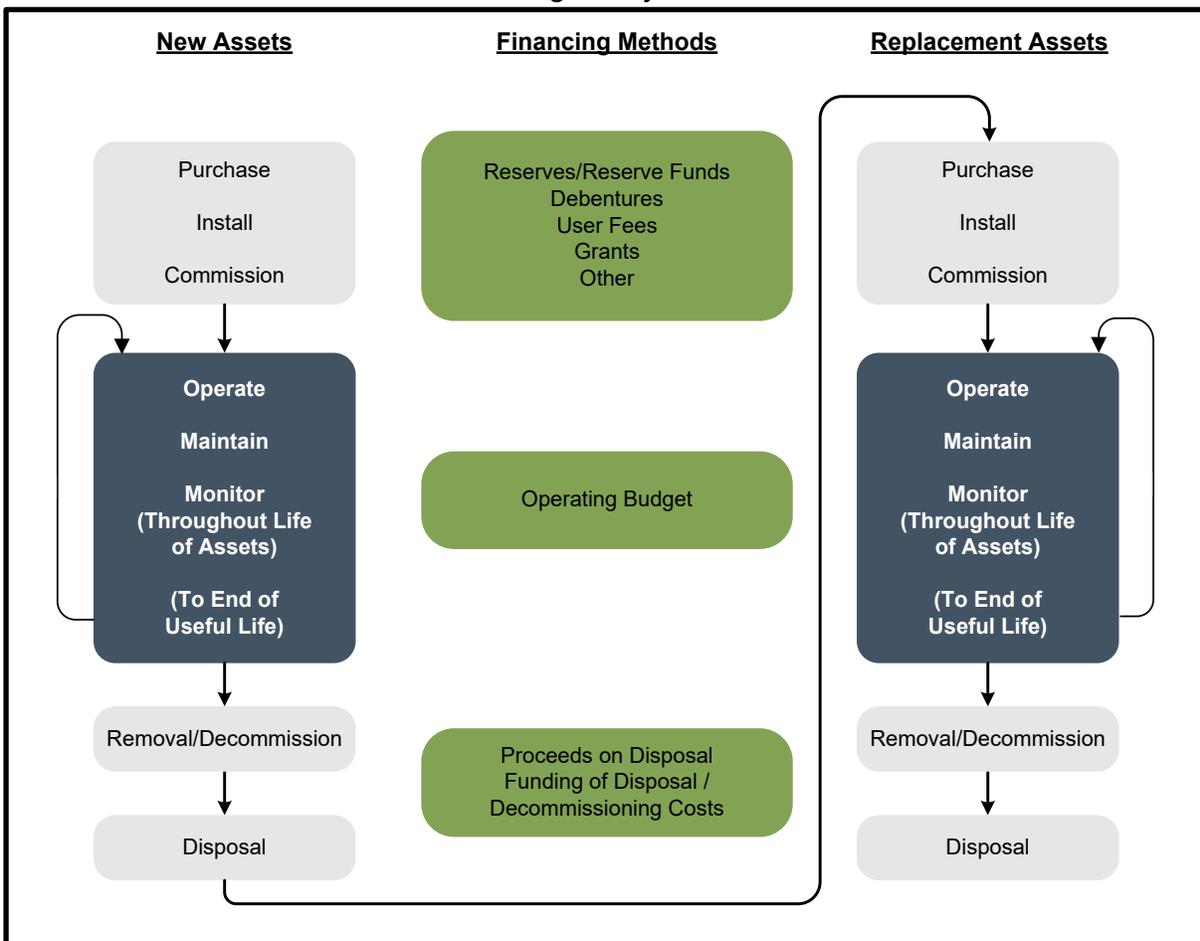


related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of this asset. Other financing methods may be used as well to finance the non-growth-related component of this project; reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers and debenturing which will be carried by future tax/rate payers. Ongoing costs for monitoring, operating and maintaining the asset will be charged annually to the existing tax/rate payer.

When the asset requires replacement, the sources of financing will be limited to reserves, debentures and contributions from the operating budget. At this point, the question is raised; "If the cost of replacement is to be assessed against the tax/rate payer who benefits from the replacement of the asset, should the past tax/rate payer pay for this cost or should future rate payers assume this cost?" If the position is taken that the past user has used up the asset, hence they should pay for the cost of replacement, then a charge should be assessed annually, through the life of the asset to have funds available to replace it when the time comes. If the position is taken that the future tax/rate payer should assume this cost, then debenturing and, possibly, a contribution from the operating budget should be used to fund this work.



Figure 3-2
Financing Lifecycle Costs



Charging for the cost of using up of an asset is the fundamental concept behind amortization methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms part of the product's selling price and hence end users are charged for the asset's amortization. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.

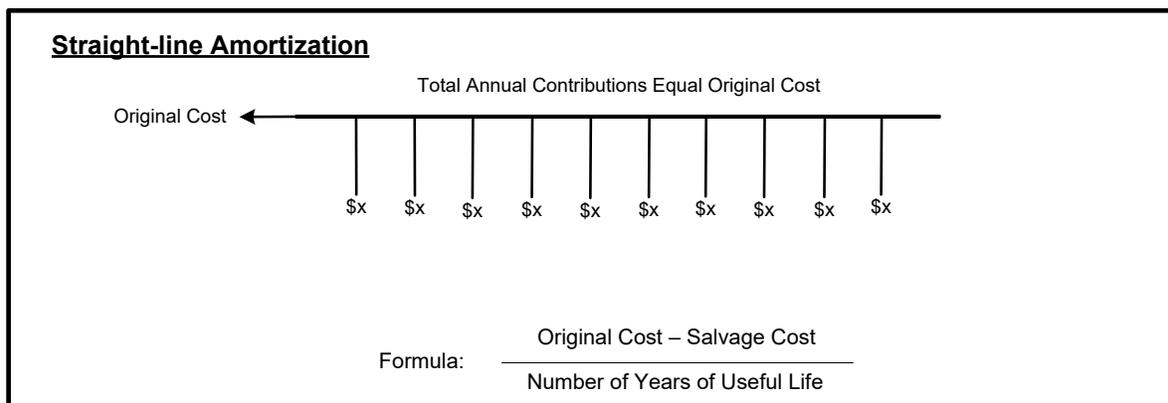
3.1.3 Costing Methods

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Amortization Method. This method recognizes the reduction in

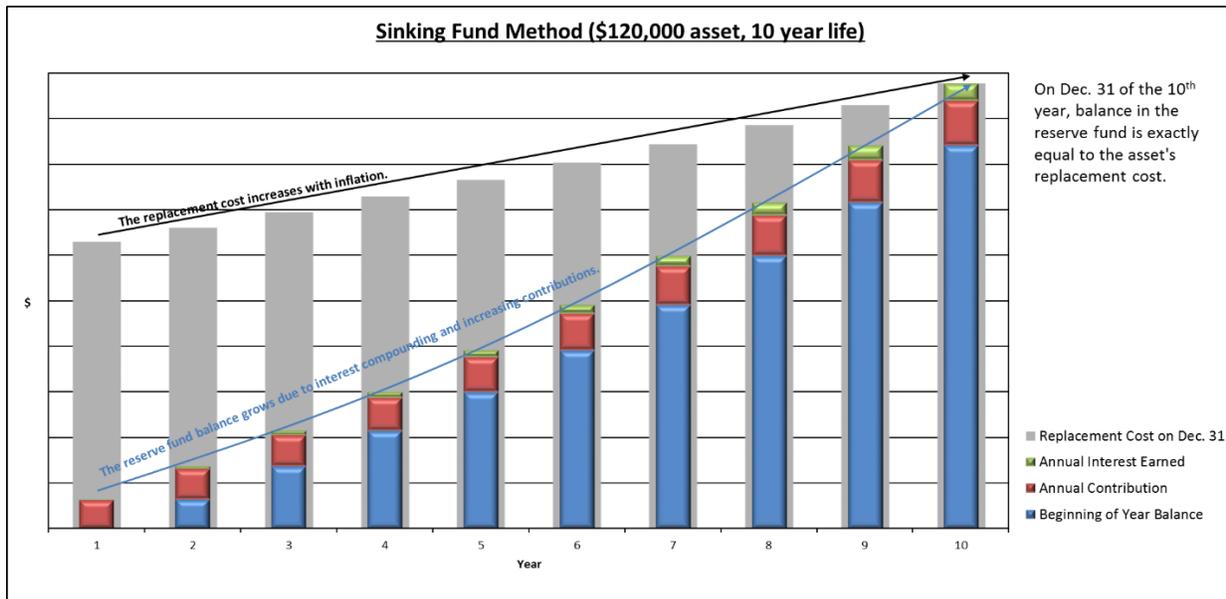


the value of the asset through wear and tear, and aging. There are two commonly used forms of amortization: the straight-line method and the sinking fund method.

The straight-line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing a fixed percentage rate and this rate is applied annually to the undepreciated balance of the asset value.



The second method of lifecycle costing is the sinking fund method. This method first estimates the future value of the asset at the time of replacement. This is done by inflating the original cost of the asset at an assumed annual inflation rate. A calculation is then performed to determine annual contributions (equal or otherwise) which, when invested, will grow with interest to equal the future replacement cost.



The preferred method used herein is the sinking fund method of lifecycle costing.

3.2 Asset Inventory

Lifecycle “sinking fund” contribution amounts for the infrastructure have been calculated to determine the level of capital investment to be included in the full cost assessment and rate forecast. Table 3-1 summarizes the current asset replacement value and long-term annual lifecycle replacement needs, in 2020 dollars. These values were calculated based on detailed water and wastewater capital asset inventory information obtained from the Town’s 2014 Asset Management Plan and supplemented using staff provided tangible capital asset inventories. In aggregate across both the water and wastewater systems, the annual lifecycle replacement costs \$4.9 million compared to total asset replacement costs of \$184.8 million. The annual lifecycle replacement costs of \$4.9 million (i.e. \$2.8 million for water and \$2.1 million for wastewater) informs the long-term capital costs that should be considered in the full cost assessment.



Table 3-1
Town of Cobourg
Summary of Water and Wastewater Infrastructure (2020\$)

Description	Replacement Cost	Lifecycle Replacement Cost
Water		
Water Mains	75,516,117	1,978,270
Water Facilities and Equipment	17,922,469	702,849
Water Meters	4,914,974	163,848
Water Total	98,353,559	2,844,967
Wastewater		
Wastewater Mains	42,330,783	908,204
Wastewater Facilities and	36,078,656	1,027,448
Wastewater Manholes	8,012,051	171,820
Wastewater Total	86,421,490	2,107,473
Grand Total	184,775,049	4,952,440

3.3 Capital Forecast

10-year capital forecasts have been developed for the water and wastewater systems to address capital maintenance, replacement, and expansionary needs across the systems. The forecasts are based on the Town's multi-year capital plans (7-years for water and 3-years for wastewater) supplemented with needs identified in the draft 2020 Drinking Water Master Plan, 2016 D.C. Background Study, and capital provisions.

The capital forecasts are summarized in Tables 3-2 and 3-3 for the water and wastewater systems, respectively. These capital needs are forecast in 2020\$ valuations. The water capital plan totals \$72.8 million. For wastewater services, the capital plan totals \$63.5 million for the forecast period.

Of the forecast needs for water services, \$36.0 million has been identified as being growth related and potentially D.C. recoverable in the draft 2020 Drinking Water Master Plan. For wastewater services, \$28.5 million (or 45%) of the forecast costs are D.C. recoverable based on the 2016 D.C. Background Study. The capital funding implications of the growth-related needs are discussed further in Chapter 4.



For rate determination purposes, the capital needs forecast will be indexed by 3.0% annually. This is reflective of the annual capital cost inflation witnessed in the Statistics Canada Non-Residential Building Construction Price Index over the past 10-years.



Table 3-2
Town of Cobourg
Water Service
Capital Forecast – Uninflated (2020\$)

Description	Budget 2020	Total	Forecast																	
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030								
Capital Expenditures																				
Water Master Plan (including Clarifier engineering study)	150,000	-																		
Booster Station Generator	10,000	-																		
Tower 2 (Strathy Rd.) Generator	20,000	-																		
Rebuild WTP Surge Relief Valve - Included in Master Plan	-	-																		
Raw Water Intake - clean and repairs	15,000	-																		
Raw Water Actuator Valve	11,000	-																		
ROV CCC	6,000	-																		
Wachs hydraulic water pump	5,000	-																		
Work Order Management	26,000	-																		
Matthew Street	1,050,000	-																		
Watermain Design	50,000	300,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000											
IT Hardware and Software	81,000	225,000	37,500	37,500	37,500	37,500	37,500	37,500	37,500											
Tools	15,000	90,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000											
New Distribution Truck	100,000	-																		
WTP Driveway	40,000	-																		
Level Sensors Reservoirs		10,000	10,000																	
LLP Valve Replacement - Included in Master Plan		-	-																	
Correlator		25,000	25,000																	
HLP#1 VFD - Included in Master Plan		-	-																	
Clean Raw Water Wetwell/Pumphouse		20,000	20,000																	
Harden St. plus Harden Cres		717,000	717,000																	
Albert St.		277,500	277,500																	
Burke, Blake, and Victoria		1,146,960	1,146,960																	
WTP Truck		47,000	47,000																	
Monroe St. Watermain Replacement		300,000		300,000																
Walton St. Renovations		1,225,000		1,225,000																
Sinclair St.		720,000		720,000																
GAC Replacement - Included in Master Plan		-			-															
Spencer St. West (Division St. to George St.)		420,000			420,000															
Burnham St. (King St. to Kerr St.)		1,460,000			1,460,000															
University St. West (William St. to Cobourg Creek)		360,000			360,000															
Victoria St. (University to North limit)		1,156,650					1,156,650													
Margaret and University Ave. East		525,000					525,000													
Clarifier Replacement - Included in Master Plan		-						-												
Campbell St. Watermain Replacement		540,000						540,000												
Perry Street (D'Arcy St. to Church St.)		835,000						835,000												
Watermain replacement		1,500,000							1,500,000											
Provision		7,702,349										1,925,587	1,925,587	1,925,587	1,925,587	1,925,587	1,925,587	1,925,587	1,925,587	1,925,587



Table 3-2 (Cont'd)
Town of Cobourg
Water Service
Capital Forecast – Uninflated (2020\$)

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Linear Watermain Projects		-												
1a - Brook Road North	-	258,885	-	64,721	64,721	64,721	64,721	-	-	-	-	-	-	-
1b - Fut. Kerr Street	-	1,599,828	-	399,957	399,957	399,957	399,957	-	-	-	-	-	-	-
1c - D'Arcy Street	-	335,027	-	83,757	83,757	83,757	83,757	-	-	-	-	-	-	-
2a - D'Arcy Street	-	580,545	-	145,136	145,136	145,136	145,136	-	-	-	-	-	-	-
2b - Fut. Kerr Street	-	876,138	-	-	-	125,163	125,163	125,163	125,163	125,163	125,163	125,163	125,163	125,163
2c - Brook Road North	-	2,162,447	-	-	-	308,921	308,921	308,921	308,921	308,921	308,921	308,921	308,921	308,921
2d - Fut. Brook Road North	-	684,453	-	-	-	684,453	-	-	-	-	-	-	-	-
2e - Elgin Street East	-	822,339	-	-	-	822,339	-	-	-	-	-	-	-	-
2f - Fut. Road Internal to Rondeau Dev.	-	1,010,135	-	-	-	1,010,135	-	-	-	-	-	-	-	-
2g - Danforth Road	-	700,511	-	-	-	100,073	100,073	100,073	100,073	100,073	100,073	100,073	100,073	100,073
2h - Fut. Kerr Street	-	2,477,958	-	-	-	353,994	353,994	353,994	353,994	353,994	353,994	353,994	353,994	353,994
2i - Fut. Kerr Street	-	639,065	-	-	-	91,295	91,295	91,295	91,295	91,295	91,295	91,295	91,295	91,295
2j - Cobourg East - Fut. Mid-block Connection	-	853,860	-	-	-	121,980	121,980	121,980	121,980	121,980	121,980	121,980	121,980	121,980
2k - Cobourg East - South East Loop	-	1,372,560	-	-	-	196,080	196,080	196,080	196,080	196,080	196,080	196,080	196,080	196,080
2l - Fut. Brook Road North	-	566,580	-	-	-	80,940	80,940	80,940	80,940	80,940	80,940	80,940	80,940	80,940
2m - Danforth Road	-	864,367	-	-	-	123,481	123,481	123,481	123,481	123,481	123,481	123,481	123,481	123,481
2o - White Street at Cobourg Creek E. Branch	-	1,217,950	-	-	405,983	405,983	405,983	-	-	-	-	-	-	-
2p - White Street at Cobourg Creek W. Branch	-	769,075	-	-	256,358	256,358	256,358	-	-	-	-	-	-	-
2q - Cobourg East - North East Loop	-	1,625,526	-	-	-	232,218	232,218	232,218	232,218	232,218	232,218	232,218	232,218	232,218
2r - Cobourg East - Fut. Mid-block Connection	-	734,160	-	-	-	104,880	104,880	104,880	104,880	104,880	104,880	104,880	104,880	104,880
3a - West Sub-Trunk	-	1,077,300	-	-	-	153,900	153,900	153,900	153,900	153,900	153,900	153,900	153,900	153,900
3b - East Sub-Trunk	-	734,160	-	-	-	104,880	104,880	104,880	104,880	104,880	104,880	104,880	104,880	104,880
Pumping and Storage Facility Projects		-												
Ewart Street BPS Building Maintenance	32,500	-	-	-	-	-	-	-	-	-	-	-	-	-
Replace Ewart Street BPS Stand-By Power System	-	400,000	-	-	-	-	66,667	66,667	66,667	66,667	66,667	66,667	66,667	66,667
New 5,000 m3 Zone 1 Elevated Tank	-	7,150,000	-	1,787,500	1,787,500	1,787,500	1,787,500	-	-	-	-	-	-	-
Decommission Existing Zone 1 Victoria Street Elevated Tank	-	325,000	-	81,250	81,250	81,250	81,250	-	-	-	-	-	-	-
Provide Full Size Irrigated Soccer Field	-	455,000	-	113,750	113,750	113,750	113,750	-	-	-	-	-	-	-
New Zone 2 BPS with a 120 L/s Firm Rated Capacity at Same Site as New Zone 1 Elevated Tank	-	1,560,000	-	-	-	-	260,000	260,000	260,000	260,000	260,000	260,000	260,000	260,000
Expand the Existing Ewart Street BPS to Firm Rated Capacity of 312 L/s	-	1,560,000	-	-	-	-	260,000	260,000	260,000	260,000	260,000	260,000	260,000	260,000
First of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	487,500	-	-	-	-	-	-	-	-	-	-	-	487,500
New Booster Pumping Station to Supply Future Zone 3	-	3,445,000	-	-	-	-	574,167	574,167	574,167	574,167	574,167	574,167	574,167	574,167
1,360 m3 of New In-Ground Storage at the WTP	-	520,000	-	-	-	-	-	-	-	-	-	-	-	520,000



Table 3-2 (Cont'd)
Town of Cobourg
Water Service
Capital Forecast – Uninflated (2020\$)

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Water Treatment Projects		-												
Intake Pipe Cleaning, Inspection and Upgrades	-	130,000	26,000	26,000	26,000	26,000	26,000	26,000	-	-	-	-	-	-
Repair Leaking Pumphouse Roof	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Provide Railing System on Retaining Walls at Shoreline	-	13,000	2,600	2,600	2,600	2,600	2,600	2,600	-	-	-	-	-	-
Replace GAC Filter Media	-	520,000	104,000	104,000	104,000	104,000	104,000	104,000	-	-	-	-	-	-
Improve Ventilation/Dehumidification in Backwash Pump Room	-	65,000	13,000	13,000	13,000	13,000	13,000	13,000	-	-	-	-	-	-
Replace/Repair Sections of Backwash Piping	-	195,000	39,000	39,000	39,000	39,000	39,000	39,000	-	-	-	-	-	-
Replace Wastewater Transfer Pumps and Provide Flow Meter on Discharge	-	97,500	19,500	19,500	19,500	19,500	19,500	19,500	-	-	-	-	-	-
Upgrade Wastewater Discharge System (On-Site SPS)	-	650,000	130,000	130,000	130,000	130,000	130,000	130,000	-	-	-	-	-	-
Replace Chlorine Storage Room Monorail and Hoist	-	65,000	13,000	13,000	13,000	13,000	13,000	13,000	-	-	-	-	-	-
Replace Surge Valve on Highlift Pumping Station Discharge	-	39,000	7,800	7,800	7,800	7,800	7,800	7,800	-	-	-	-	-	-
Relocate Chlorine Residual Sampling Points	-	32,500	6,500	6,500	6,500	6,500	6,500	6,500	-	-	-	-	-	-
Replace WTP SCADA Computers	-	32,500	6,500	6,500	6,500	6,500	6,500	6,500	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Ewart Street BPS	-	97,500	19,500	19,500	19,500	19,500	19,500	19,500	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Zone 2 (Strathy Road) Elevated Tank	-	65,000	13,000	13,000	13,000	13,000	13,000	13,000	-	-	-	-	-	-
Replace Low Lift Pump Discharge Valves	-	156,000	-	-	-	-	-	26,000	26,000	26,000	26,000	26,000	26,000	26,000
Refurbish Low Lift Pumps	-	130,000	-	-	-	-	-	21,667	21,667	21,667	21,667	21,667	21,667	21,667
Replace Alum Tanks (2)	-	260,000	-	-	-	-	-	43,333	43,333	43,333	43,333	43,333	43,333	43,333
Replace Turbidimeters	-	78,000	-	-	-	-	-	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Provide Redundant Dissolved Air Flootation Clarification System - Option C5	-	8,320,000	-	-	-	-	-	1,386,667	1,386,667	1,386,667	1,386,667	1,386,667	1,386,667	1,386,667
Provide Third Filter Train - Option C5	-	3,510,000	-	-	-	-	-	585,000	585,000	585,000	585,000	585,000	585,000	585,000
Replace Supernatant Discharge Pumps	-	26,000	-	-	-	-	-	4,333	4,333	4,333	4,333	4,333	4,333	4,333
Equip High-lift Pumps HLP #1 & HLP #2 with VFDs	-	130,000	-	-	-	-	-	21,667	21,667	21,667	21,667	21,667	21,667	21,667
Replace High-lift Pump Discharge Butterfly Valves & Controls	-	260,000	-	-	-	-	-	43,333	43,333	43,333	43,333	43,333	43,333	43,333
Refurbish High-Lift Pumps	-	156,000	-	-	-	-	-	26,000	26,000	26,000	26,000	26,000	26,000	26,000
Replace Low-Lift and High-Lift Pump Level Transmitters	-	260,000	-	-	-	-	-	43,333	43,333	43,333	43,333	43,333	43,333	43,333
Studies:		-												
Water Rate Study and Financial Plan	16,000	16,000						16,000						
		-												
Total Capital Expenditures	1,627,500	72,771,825	2,746,360	5,423,971	6,081,313	10,137,694	10,705,284	7,075,471	7,398,558	7,398,558	7,398,558	7,398,558	7,398,558	8,406,058



Table 3-3
Town of Cobourg
Wastewater Service
Capital Forecast – Uninflated (2020\$)

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Capital Expenditures													
Sequence Batch Reactor Expansion	3,000,000	-											
WPCP Plant #1 SCADA Phase II	260,000	-											
Biosolids Holding Tank Repairs	85,000	-											
Sanitary Sewer Line for Scum Trough	200,000	-											
Standby Return Pump - Plant #2	30,000	-											
Tertiary Filter Media Replacement	50,000	-											
Solvent Shed Replacement - Plant #1	15,000	-											
Replacement Pump McGill Pump Station	150,000	-											
Channel Grinder Cartridge McGill Pump Station	35,000	-											
Pump Hoist - Plant #1	15,000	-											
Headworks Ventilation System - Plant #1	75,000	-											
Contact Chamber Engineering Design		2,050,000	50,000	2,000,000									
Co-Gen System		1,000,000	1,000,000										
Forth St Pump Station		2,000,000	1,000,000	1,000,000									
Heat Exchanger - Plant #1		75,000	75,000										
King St Pump Station Upgrade		510,000	10,000	500,000									
Provision		25,466,667			3,183,333	3,183,333	3,183,333	3,183,333	3,183,333	3,183,333	3,183,333	3,183,333	3,183,333
Growth Related Projects:		-											
Pumping Station		1,840,046						368,009	368,009	368,009	368,009	368,009	368,009
Forcemain		220,760						44,152	44,152	44,152	44,152	44,152	44,152
SPS and Forcemain		1,125,897						225,179	225,179	225,179	225,179	225,179	225,179
250 mm dia. and Greater Sewer Network		10,133,190						2,026,638	2,026,638	2,026,638	2,026,638	2,026,638	2,026,638
Wastewater Treatment Plant Improvements (Plant #2)		18,400,686						3,680,137	3,680,137	3,680,137	3,680,137	3,680,137	3,680,137
Aerator Improvements (Plant #2)		680,828						136,166	136,166	136,166	136,166	136,166	136,166
Studies:		-											
Wastewater Rate Study	16,000	16,000					16,000						
		-											
Total Capital Expenditures	3,931,000	63,519,073	2,135,000	3,500,000	3,183,333	3,183,333	3,199,333	9,663,615	9,663,615	9,663,615	9,663,615	9,663,615	9,663,615



Chapter 4

Capital Cost Financing Options



4. Capital Cost Financing Options

4.1 Summary of Capital Cost Financing Alternatives

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* (D.C.A.)).

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 O.Reg. 584/06, govern the Town'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
• D.C.A., 1997	4.2
• <i>Municipal Act</i> <ul style="list-style-type: none">○ Fees and Charge○ Local Improvements	4.3
• Grant Funding	4.4
• Reserves/Reserve Funds	4.5
• Debenture Financing	4.6



4.2 Development Charges Act, 1997

The D.C.A. 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 D.C.A. provides for limitations and ceilings on services that can be included in the charges.

The Town currently imposes D.C.s on new development for water and wastewater services and as such D.C.s have been included as a source of capital financing in the financial plan. The Town has established D.C. reserve funds for both water and wastewater services which are both currently in an asset position of \$677,800 and \$2.7 million, respectively. However, the Town is expecting to have significant growth-related spending within the forecast period (i.e. 2021-2030) relating to expansion of the water and wastewater systems. The analysis provided herein has been developed under the assumption that the Town will enter into D.C. credit (or similar "front-ending") agreements with developers to assist in financing the emplacement of much of these growth-related projects. In exchange for the construction of these assets, developers would receive credits against future D.C. payments. By 2030 it is forecast that the Town will have received a total of \$74.8 million in contributions from developers for which D.C. credits would be outstanding.

4.3 Municipal Act

Part XII of the *Municipal Act* provides municipalities with broad powers to impose fees and charges via passage of a by-law. These powers, as presented in s. 391 (1), include imposing fees or charges:

- "for services or activities provided or done by or on behalf of it;
- for costs payable by it for services or activities provided or done by or on behalf of any other municipality or local board; and
- for the use of its property including property under its control."



Restrictions are provided to ensure that the form of the charge is not akin to a poll tax. Any charges not paid under this authority may be added to the tax roll and collected in a like manner. The fees and charges imposed under this part are not appealable to the Ontario Municipal Board.

s. 391 (2) of the *Municipal Act* permits municipalities to impose charges to recover capital costs, by by-law, from owners or occupants of land who receive an immediate benefit or a benefit at some later point in time. For a by-law imposed under this section of the Act:

- A variety of different means could be used to establish the rate, and recovery of the costs could be imposed by a number of methods at the discretion of Council (i.e. lot size, frontage, number of benefiting properties, etc.);
- Rates could be imposed in respect to costs of major capital works, even though an immediate benefit is not enjoyed;
- Non-abutting owners could be charged;
- Recovery could be authorized against existing works, where new infrastructure was added to such works, "notwithstanding that the capital costs of existing works has in whole or in part been paid";
- Charges on individual parcels could be deferred;
- Exemptions could be established; and
- Ontario Municipal Board approval is not required.

Under the previous *Local Improvement Act*:

- A variety of different types of works could be undertaken, such as watermain, storm and sanitary sewer projects, supply of electrical light or power, bridge construction, sidewalks, road widening and paving;
- Council could pass a by-law for undertaking such work on petition of a majority of benefiting taxpayers, on a 2/3 vote of Council and on sanitary grounds, based on the recommendation of the Minister of Health. The by-law was required to go to the Ontario Municipal Board, which might hold hearings and alter the by-law, particularly if there were objections;
- The entire cost of a work was assessed only upon the lots abutting directly on the work, according to the extent of their respective frontages, using an equal special rate per metre of frontage; and



- As noted, this Act was repealed as of April 1, 2003; however, Ontario Reg. 119/03 was enacted on April 19, 2003 which restores many of the previous *Local Improvement Act* provisions; however, the authority is now provided under the *Municipal Act*.

The Town currently does not impose *Municipal Act* charges and their use has not been considered in this analysis.

4.4 Grant Funding Availability

In August 2012, the Province of Ontario initiated the Municipal Infrastructure Investment Initiative. In supporting the efforts of communities to restore and revitalize their public infrastructure, this initiative provides one-time provincial funding to improve asset management planning in small municipalities and local service boards. In addition, funding will be made available for municipal infrastructure projects under this initiative. Any municipality or local service board seeking capital funding in the future must demonstrate how its proposed project fits within a detailed asset management plan. To assist in defining the components of an asset management plan, the Province produced a document entitled, “Building Together: Guide for Municipal Asset Management Plans.” This guide documents the components, information and analysis that are required to be included in a municipality’s asset management plan under this initiative.

The Town does not anticipate receiving grant funding during the forecast period. To the extent that the Town is successful in achieving grant funding for future infrastructure needs and the financial impacts are material, the rate forecast may be revisited.

4.5 Existing Reserves/Reserve Funds

The Town has established reserve funds for water and wastewater capital costs. The established water and wastewater reserve funds have been used in the capital funding forecast for rate-based needs.

The 2020 water and wastewater reserve fund balances are estimated at \$248,900 and \$3.5 million, respectively.



4.6 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 regulates the level of debt incurred by Ontario municipalities, through its powers established under the *Municipal Act*. Ontario Reg. 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 source revenue may be allotted for servicing the debt (i.e. annual debt charges).

The Town currently has outstanding debt for water and wastewater services. Including \$9.5 million in debt that anticipated to be issued in 2020 for past projects, the total outstanding principal balance is \$10.1 million. Some of the outstanding debt balance is scheduled to be fully paid off during the forecast period.

The capital financing plan anticipates the issuance of \$36.9 million in additional debt over the forecast period (\$13.1 million water and \$23.9 million wastewater. Based on the Town's 2018 Financial Information Return, the Town is currently utilizing 18.4% of their legislated debt servicing capacity (i.e. 4.6% of net own source revenues) for outstanding municipal debt payments (rate and non-rate based). With forecast growth in own source revenues based on the rate forecast presented herein, the anticipated debt for the water and wastewater systems would increase the Town's debt capacity utilization from 4.6% of own source revenues currently to 9.6% by the end of the forecast period. This would place the Town well within the legislated limit of 25% of own source revenues and preserve debt funding capacity for other municipal services. This assessment does not consider growth in own-source revenues from non-rate-based sources to preserve funding capacity for the issuance of future tax-based debt.

4.7 Recommended Approach

In undertaking the Rate Study, multiple scenarios were assessed that considered maintaining the separate management and funding of the water and wastewater systems within the current rate structure.



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

Table 4-1
Town of Cobourg
2020-2030 Water and Wastewater Capital Funding Program (Inflated \$)

Capital Funding	Water	Wastewater	Total
Development Charges Reserve Fund	2,074,276	2,613,000	4,687,276
Developer Contributions	41,960,120	33,569,700	75,529,820
Non-Growth Related Debenture Requirements	13,038,869	23,866,190	36,905,059
Growth Related Debenture Requirements	-	-	-
Reserves	31,472,235	21,828,110	53,300,345
Total	88,545,500	81,877,000	170,422,500

Tables 4-2 and 4-3 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.

Based on the capital funding plans identified in Tables 4-2 and 4-3 and the 2020 estimated water and wastewater reserve fund balances identified in Section 4.5, the water and wastewater reserve fund continuity schedules are presented in Tables 4-4 and 4-5, respectively. Water and wastewater reserves are expected to be fully utilized over the forecast period, evidenced by the amount of non-growth-related debt being required. Water reserve funds are anticipated to decrease from \$248,900 to \$0 in 2023 and is expected to remain fully utilized throughout the remainder of the forecast period. Wastewater reserves are anticipated to decrease from \$3.5 million to \$0 in 2023 and remain fully utilized throughout the remainder of the forecast period. In addition, Tables 4-6 and 4-7 identify the anticipated water and wastewater D.C. reserve fund balances throughout the forecast period. The water D.C. reserve fund is expected to be fully utilized by 2023 and remain in that state for the duration of the forecast period while the wastewater D.C. reserve fund is expected to decrease from \$2.7 million in 2020 to \$0 by 2030.



Table 4-2
Town of Cobourg
Water Service
Capital Budget Forecast – Inflated \$

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Capital Budget Forecast Projects														
<i>Capital Expenditures</i>														
Water Master Plan (including Clarifier engineering study)	150,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Booster Station Generator	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Tower 2 (Strathy Rd.) Generator	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Rebuild WTP Surge Relief Valve - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raw Water Intake - clean and repairs	15,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Raw Water Actuator Valve	11,000	-	-	-	-	-	-	-	-	-	-	-	-	-
ROV CCC	6,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Wachs hydraulic water pump	5,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Work Order Management	26,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Matthew Street	1,050,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Watermain Design	50,000	334,000	52,000	53,000	55,000	56,000	58,000	60,000	-	-	-	-	-	-
IT Hardware and Software	81,000	250,000	39,000	40,000	41,000	42,000	43,000	45,000	-	-	-	-	-	-
Tools	15,000	99,000	15,000	16,000	16,000	17,000	17,000	18,000	-	-	-	-	-	-
New Distribution Truck	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-
WTP Driveway	40,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Level Sensors Reservoirs	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-
LLP Valve Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Correlator	-	26,000	26,000	-	-	-	-	-	-	-	-	-	-	-
HLP#1 VFD - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Raw Water Wetwell/Pumphouse	-	21,000	21,000	-	-	-	-	-	-	-	-	-	-	-
Harden St. plus Harden Cres	-	739,000	739,000	-	-	-	-	-	-	-	-	-	-	-
Albert St.	-	286,000	286,000	-	-	-	-	-	-	-	-	-	-	-
Burke, Blake, and Victoria	-	1,181,000	1,181,000	-	-	-	-	-	-	-	-	-	-	-
WTP Truck	-	48,000	48,000	-	-	-	-	-	-	-	-	-	-	-
Monroe St. Watermain Replacement	-	318,000	-	318,000	-	-	-	-	-	-	-	-	-	-
Walton St. Renovations	-	1,300,000	-	1,300,000	-	-	-	-	-	-	-	-	-	-
Sinclair St.	-	764,000	-	764,000	-	-	-	-	-	-	-	-	-	-
GAC Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spencer St. West (Division St. to George St.)	-	459,000	-	-	459,000	-	-	-	-	-	-	-	-	-
Burnham St. (King St. to Kerr St)	-	1,595,000	-	-	1,595,000	-	-	-	-	-	-	-	-	-
University St. West (William St. to Cobourg Creek)	-	393,000	-	-	393,000	-	-	-	-	-	-	-	-	-
Victoria St. (University to North limit)	-	1,302,000	-	-	-	1,302,000	-	-	-	-	-	-	-	-
Margaret and University Ave. East	-	591,000	-	-	-	591,000	-	-	-	-	-	-	-	-
Clarifier Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Campbell St. Watermain Replacement	-	626,000	-	-	-	-	626,000	-	-	-	-	-	-	-
Perry Street (D'Arcy St. to Church St.)	-	968,000	-	-	-	-	968,000	-	-	-	-	-	-	-
Watermain replacement	-	1,791,000	-	-	-	-	-	1,791,000	-	-	-	-	-	-
Provision	-	9,907,000	-	-	-	-	-	-	-	2,368,000	2,439,000	2,512,000	2,588,000	-



Table 4-2 (Cont'd)
Town of Cobourg
Water Service
Capital Budget Forecast – Inflated \$

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Master Plan Capital Projects														
<i>Linear Watermain Projects</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1a - Brook Road North	-	288,000	-	69,000	71,000	73,000	75,000	-	-	-	-	-	-	-
1b - Fut. Kerr Street	-	1,775,000	-	424,000	437,000	450,000	464,000	-	-	-	-	-	-	-
1c - D'Arcy Street	-	372,000	-	89,000	92,000	94,000	97,000	-	-	-	-	-	-	-
2a - D'Arcy Street	-	644,000	-	154,000	159,000	163,000	168,000	-	-	-	-	-	-	-
2b - Fut. Kerr Street	-	1,079,000	-	-	-	141,000	145,000	149,000	154,000	159,000	163,000	168,000	168,000	168,000
2c - Brook Road North	-	2,664,000	-	-	-	348,000	358,000	369,000	380,000	391,000	403,000	403,000	415,000	415,000
2d - Fut. Brook Road North	-	770,000	-	-	-	770,000	-	-	-	-	-	-	-	-
2e - Elgin Street East	-	926,000	-	-	-	926,000	-	-	-	-	-	-	-	-
2f - Fut. Road Internal to Rondeau Dev.	-	1,137,000	-	-	-	1,137,000	-	-	-	-	-	-	-	-
2g - Danforth Road	-	863,000	-	-	-	113,000	116,000	119,000	123,000	127,000	131,000	131,000	134,000	134,000
2h - Fut. Kerr Street	-	3,052,000	-	-	-	398,000	410,000	423,000	435,000	448,000	462,000	462,000	476,000	476,000
2i - Fut. Kerr Street	-	788,000	-	-	-	103,000	106,000	109,000	112,000	116,000	119,000	119,000	123,000	123,000
2j - Cobourg East - Fut. Mid-block Connection	-	1,052,000	-	-	-	137,000	141,000	146,000	150,000	155,000	159,000	159,000	164,000	164,000
2k - Cobourg East - South East Loop	-	1,691,000	-	-	-	221,000	227,000	234,000	241,000	248,000	256,000	256,000	264,000	264,000
2l - Fut. Brook Road North	-	700,000	-	-	-	91,000	94,000	97,000	100,000	103,000	106,000	106,000	109,000	109,000
2m - Danforth Road	-	1,064,000	-	-	-	139,000	143,000	147,000	152,000	156,000	161,000	161,000	166,000	166,000
2o - White Street at Cobourg Creek E. Branch	-	1,372,000	-	-	444,000	457,000	471,000	-	-	-	-	-	-	-
2p - White Street at Cobourg Creek W. Branch	-	866,000	-	-	280,000	289,000	297,000	-	-	-	-	-	-	-
2q - Cobourg East - North East Loop	-	2,002,000	-	-	-	261,000	269,000	277,000	286,000	294,000	303,000	303,000	312,000	312,000
2r - Cobourg East - Fut. Mid-block Connection	-	905,000	-	-	-	118,000	122,000	125,000	129,000	133,000	137,000	137,000	141,000	141,000
3a - West Sub-Trunk	-	1,327,000	-	-	-	173,000	178,000	184,000	189,000	195,000	201,000	201,000	207,000	207,000
3b - East Sub-Trunk	-	905,000	-	-	-	118,000	122,000	125,000	129,000	133,000	137,000	137,000	141,000	141,000
<i>Pumping and Storage Facility Projects</i>														
Ewart Street BPS Building Maintenance	32,500	-	-	-	-	-	-	-	-	-	-	-	-	-
Replace Ewart Street BPS Stand-By Power System	-	500,000	-	-	-	-	77,000	80,000	82,000	84,000	87,000	87,000	90,000	90,000
New 5,000 m3 Zone 1 Elevated Tank	-	7,933,000	-	1,896,000	1,953,000	2,012,000	2,072,000	-	-	-	-	-	-	-
Decommission Existing Zone 1 Victoria Street Elevated Tank	-	360,000	-	86,000	89,000	91,000	94,000	-	-	-	-	-	-	-
Provide Full Size Irrigated Soccer Field	-	505,000	-	121,000	124,000	128,000	132,000	-	-	-	-	-	-	-
New Zone 2 BPS with a 120 L/s Firm Rated Capacity at Same Site as New Zone 1 Elevated Tank	-	1,948,000	-	-	-	-	301,000	310,000	320,000	329,000	339,000	339,000	349,000	349,000
Expand the Existing Ewart Street BPS to Firm Rated Capacity of 312 L/s	-	1,948,000	-	-	-	-	301,000	310,000	320,000	329,000	339,000	339,000	349,000	349,000
First of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	655,000	-	-	-	-	-	-	-	-	-	-	-	655,000
Second of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Booster Pumping Station to Supply Future Zone 3	-	4,306,000	-	-	-	-	666,000	686,000	706,000	727,000	749,000	749,000	772,000	772,000
1,360 m3 of New In-Ground Storage at the WTP	-	699,000	-	-	-	-	-	-	-	-	-	-	-	699,000



Table 4-2 (Cont'd)
Town of Cobourg
Water Service
Capital Budget Forecast – Inflated \$

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<i>Water Treatment Projects</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
Intake Pipe Cleaning, Inspection and Upgrades	-	142,000	27,000	28,000	28,000	29,000	30,000	-	-	-	-	-	-
Repair Leaking Pumphouse Roof	-	-	-	-	-	-	-	-	-	-	-	-	-
Provide Railing System on Retaining Walls at Shoreline	-	15,000	3,000	3,000	3,000	3,000	3,000	-	-	-	-	-	-
Replace GAC Filter Media	-	569,000	107,000	110,000	114,000	117,000	121,000	-	-	-	-	-	-
Improve Ventilation/Dehumidification in Backwash Pump Room	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-
Replace/Repair Sections of Backwash Piping	-	213,000	40,000	41,000	43,000	44,000	45,000	-	-	-	-	-	-
Replace Wastewater Transfer Pumps and Provide Flow Meter on Discharge	-	107,000	20,000	21,000	21,000	22,000	23,000	-	-	-	-	-	-
Upgrade Wastewater Discharge System (On-Site SPS)	-	711,000	134,000	138,000	142,000	146,000	151,000	-	-	-	-	-	-
Replace Chlorine Storage Room Monorail and Hoist	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-
Replace Surge Valve on Highlift Pumping Station Discharge	-	43,000	8,000	8,000	9,000	9,000	9,000	-	-	-	-	-	-
Relocate Chlorine Residual Sampling Points	-	36,000	7,000	7,000	7,000	7,000	8,000	-	-	-	-	-	-
Replace WTP SCADA Computers	-	36,000	7,000	7,000	7,000	7,000	8,000	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Ewart Street BPS	-	107,000	20,000	21,000	21,000	22,000	23,000	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Zone 2 (Strathy Road) Elevated Tank	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-
Replace Low Lift Pump Discharge Valves	-	195,000	-	-	-	-	30,000	31,000	32,000	33,000	34,000	35,000	
Refurbish Low Lift Pumps	-	162,000	-	-	-	-	25,000	26,000	27,000	27,000	28,000	29,000	
Replace Alum Tanks (2)	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	
Replace Turbidimeters	-	97,000	-	-	-	-	15,000	16,000	16,000	16,000	17,000	17,000	
Provide Redundant Dissolved Air Floatation Clarification System - Option C5	-	10,399,000	-	-	-	-	1,608,000	1,656,000	1,705,000	1,757,000	1,809,000	1,864,000	
Provide Third Filter Train - Option C5	-	4,386,000	-	-	-	-	678,000	699,000	719,000	741,000	763,000	786,000	
Replace Supernatant Discharge Pumps	-	32,000	-	-	-	-	5,000	5,000	5,000	5,000	6,000	6,000	
Equip High-lift Pumps HLP #1 & HLP #2 with VFDs	-	162,000	-	-	-	-	25,000	26,000	27,000	27,000	28,000	29,000	
Replace High-lift Pump Discharge Butterfly Valves & Controls	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	
Refurbish High-Lift Pumps	-	195,000	-	-	-	-	30,000	31,000	32,000	33,000	34,000	35,000	
Replace Low-Lift and High-Lift Pump Level Transmitters	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	
Studies:													
Water Rate Study and Financial Plan	16,000	19,000	-	-	-	-	19,000	-	-	-	-	-	-
Total Capital Expenditures	1,627,500	86,918,000	2,829,000	5,756,000	6,645,000	11,410,000	12,409,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000	
Capital Financing													
Provincial/Federal Grants		-											
Development Charges Reserve Fund	-	44,034,396	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000	
Non-Growth Related Debenture Requirements	-	13,038,869	-	1,576,235	2,945,557	2,402,366	3,153,912	259,270	753,557	505,590	645,610	796,772	



Table 4-2 (Cont'd)
Town of Cobourg
Water Service
Capital Budget Forecast – Inflated \$

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	1,627,500	29,844,735	2,829,000	3,398,045	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228	
Total Capital Financing	1,627,500	86,918,000	2,829,000	5,756,000	6,645,000	11,410,000	12,409,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000	



Table 4-3
Town of Cobourg
Wastewater Service
Capital Budget Forecast – Inflated \$

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Sequence Batch Reactor Expansion	3,000,000	-	-	-	-	-	-	-	-	-	-	-
WPCP Plant #1 SCADA Phase II	260,000	-	-	-	-	-	-	-	-	-	-	-
Biosolids Holding Tank Repairs	85,000	-	-	-	-	-	-	-	-	-	-	-
Sanitary Sewer Line for Scum Trough	200,000	-	-	-	-	-	-	-	-	-	-	-
Standby Return Pump - Plant #2	30,000	-	-	-	-	-	-	-	-	-	-	-
Tertiary Filter Media Replacement	50,000	-	-	-	-	-	-	-	-	-	-	-
Solvent Shed Replacement - Plant #1	15,000	-	-	-	-	-	-	-	-	-	-	-
Replacement Pump McGill Pump Station	150,000	-	-	-	-	-	-	-	-	-	-	-
Channel Grinder Cartridge McGill Pump Station	35,000	-	-	-	-	-	-	-	-	-	-	-
Pump Hoist - Plant #1	15,000	-	-	-	-	-	-	-	-	-	-	-
Headworks Ventilation System - Plant #1	75,000	-	-	-	-	-	-	-	-	-	-	-
Contact Chamber Engineering Design	-	2,174,000	52,000	2,122,000	-	-	-	-	-	-	-	-
Co-Gen System	-	1,030,000	1,030,000	-	-	-	-	-	-	-	-	-
Forth St Pump Station	-	2,091,000	1,030,000	1,061,000	-	-	-	-	-	-	-	-
Heat Exchanger - Plant #1	-	77,000	77,000	-	-	-	-	-	-	-	-	-
King St Pump Station Upgrade	-	540,000	10,000	530,000	-	-	-	-	-	-	-	-
Provision	-	30,933,000	-	-	3,479,000	3,583,000	3,690,000	3,801,000	3,915,000	4,033,000	4,154,000	4,278,000
Growth Related Projects:												
Pumping Station	-	2,333,000	-	-	-	-	-	439,000	453,000	466,000	480,000	495,000
Forcemain	-	280,000	-	-	-	-	-	53,000	54,000	56,000	58,000	59,000
SPS and Forcemain	-	1,428,000	-	-	-	-	-	269,000	277,000	285,000	294,000	303,000
250 mm dia. and Greater Sewer Network	-	12,848,000	-	-	-	-	-	2,420,000	2,493,000	2,567,000	2,644,000	2,724,000
Wastewater Treatment Plant Improvements (Plant #2)	-	23,330,000	-	-	-	-	-	4,394,000	4,526,000	4,662,000	4,802,000	4,946,000
Aerator Improvements (Plant #2)	-	863,000	-	-	-	-	-	163,000	167,000	172,000	178,000	183,000
Studies:												
Wastewater Rate Study	16,000	19,000	-	-	-	-	19,000	-	-	-	-	-
Total Capital Expenditures	3,931,000	77,946,000	2,199,000	3,713,000	3,479,000	3,583,000	3,709,000	11,539,000	11,885,000	12,241,000	12,610,000	12,988,000
Capital Financing												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	-	36,182,700	-	-	-	-	-	6,815,260	7,019,540	7,228,980	7,447,580	7,671,340
Non-Growth Related Debenture Requirements	-	23,866,190	-	698,968	1,642,151	1,579,863	1,684,070	2,840,216	3,212,148	3,615,561	4,056,905	4,536,307
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	3,931,000	17,897,110	2,199,000	3,014,032	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353
Total Capital Financing	3,931,000	77,946,000	2,199,000	3,713,000	3,479,000	3,583,000	3,709,000	11,539,000	11,885,000	12,241,000	12,610,000	12,988,000



Table 4-4
Town of Cobourg
Water Reserve Fund Continuity– Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	248,916	1,219,567	786,469	-	-	-	-	-	-	-	-
Transfer from Operating	2,586,076	2,388,115	2,611,577	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228
Transfer to Capital	1,627,500	2,829,000	3,398,045	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	1,207,492	778,682	-	-	-	-	-	-	-	-	-
Interest	12,075	7,787	-	-	-	-	-	-	-	-	-

Table 4-5
Town of Cobourg
Wastewater Reserve Fund Continuity– Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	677,846	712,088	747,513	-	-	-	-	-	-	-	-
Development Charge Proceeds	27,192	28,024	28,856	29,696	165,492	170,482	175,564	180,885	186,298	191,879	197,611
Developer Contributions	-	-	5,351	920,902	6,006,569	6,056,535	5,201,436	5,357,615	5,518,202	5,684,121	7,209,389
Transfer to Capital	-	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	705,038	740,112	-	-	-	-	-	-	-	-	-
Interest	7,050	7,401	-	-	-	-	-	-	-	-	-
Required from Development Charges	-	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000

Table 4-6
Town of Cobourg
Water Development Charges Reserve Fund Continuity– Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	3,548,656	1,701,746	1,219,298	-	-	-	-	-	-	-	-
Transfer from Operating	2,067,241	1,704,480	1,794,734	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353
Transfer to Capital	3,931,000	2,199,000	3,014,032	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	1,684,897	1,207,225	-	-	-	-	-	-	-	-	-
Interest	16,849	12,072	-	-	-	-	-	-	-	-	-



Table 4-7
Town of Cobourg
Wastewater Development Charges Reserve Fund Continuity– Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	2,718,655	2,769,176	2,820,866	2,873,815	2,928,046	2,983,570	3,040,401	5,203,442	4,772,082	4,322,107	3,852,321
Development Charge Proceeds	23,104	23,760	24,496	25,240	25,984	26,728	27,560	28,392	29,232	30,072	31,000
Developer Contributions	-	-	-	-	-	-	8,899,221	6,512,540	6,706,980	6,909,580	3,788,019
Transfer to Capital	-	-	-	-	-	-	6,815,260	7,019,540	7,228,980	7,447,580	7,671,340
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	2,741,759	2,792,936	2,845,362	2,899,055	2,954,030	3,010,298	5,151,922	4,724,834	4,279,314	3,814,179	-
Interest	27,418	27,929	28,454	28,991	29,540	30,103	51,519	47,248	42,793	38,142	-
Required from Development Charges	-	-	-	-	-	-	6,815,260	7,019,540	7,228,980	7,447,580	7,671,340



Chapter 5

Operating Expenditure Forecast



5. Operating Expenditure Forecast

5.1 Operating Expenditures

In this report the forecasted operating budget figures for water and wastewater services are based on the Town's 2020 operating budgets. The expenditures for each component of the operating budget have been reviewed with staff to establish inflationary adjustments. Within the operating budget, fixed and variable costs have been identified. The fixed costs have been increased to account for 2.0% annual inflation. Variable costs have been forecast to increase with the increase in water and wastewater demands plus 2.0% annual inflation.

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

As a result of the inflationary, growth, and capital-related expenditure increases, the water and wastewater operating expenditures are anticipated to increase over the forecast period.

5.1.1 Water Services

Debt repayment costs are expected to increase from \$0 in 2020 to \$900,800 by 2030 as the Town takes on more debt. Reserve transfers are projected to increase from \$2.6 million to \$3.1 million over the same period. Fixed operating expenditures are expected to increase from \$2.3 million in 2020 to \$2.8 million by the end of the forecast period, while variable operating costs are anticipated to increase from \$668,800 to \$890,400 over the same time period.

Overall, gross operating expenditures for water services are anticipated to increase from \$5.5 million in 2020 to \$7.6 million by 2030 (+39%).

5.1.2 Wastewater Services

For wastewater services, debt repayment costs are expected to increase from \$175,400 in 2020 to \$2.1 million by 2030 as additional debt is utilized as a source of capital



funding. Reserve transfers are projected to decrease from \$2.1 million to \$780,400 over the same period as annual debt financing costs make up a greater share of the capital funding capacity. Fixed operating expenditures are expected to increase from \$3.0 million in 2020 to \$3.6 million by the end of the forecast period, while variable operating costs are anticipated to increase from \$814,900 to \$1.1 million over the same time period.

Overall, gross operating expenditures for wastewater services are anticipated to increase from \$6.0 million in 2020 to \$7.6 million by 2030 (+25%)

5.2 Operating Revenues

5.2.1 Water Services

The Town's water services non-rate revenue is collected via interest and other miscellaneous revenues both of which are forecast to increase with annual inflation. Interest is forecast to increase from \$21,000 to \$28,200 and other revenues are forecast to increase from \$185,300 to \$223,700 over the forecast period.

The greatest source of revenue is secured from the consumptive water rates (i.e. \$/m³ of water consumption) and base charges. The consumptive rate and base charge revenues have been forecast based on the underlying system growth assumptions and the Town's forecast consumptive rates and base charges for the 2020-2030 period (see Chapter 6).

The total annual operating revenues (including billing revenues) are forecast to increase from \$5.5 million in 2020 to \$7.6 million by 2030.

5.2.2 Wastewater Services

The Town's wastewater service revenue is collected from surcharges, septic waste processing, leachate processing, Bell tower rentals and NRG curtailments. All of these non-rate-based revenue sources have been held constant over the forecast period and total \$1.2 million in 2030.

Revenue secured from the consumptive wastewater rates (i.e. \$/m³ of water consumption) and base charges represents the greatest share of the annual wastewater revenue. The consumptive rate and base charge revenues have been forecast based



on the underlying system growth assumptions and the Town's forecast consumptive rates for the period 2020-2030.

The total annual operating revenues (including consumptive rate revenue) are forecast to increase from \$6.0 million in 2020 to \$7.6 million by 2030

Tables 5-1 to 5-2 provide the water and wastewater operating budget forecasts, respectively, which are presented in inflated dollars.



**Table 5-1
Water Service
Operating Budget Forecast – Inflated \$**

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Expenditures												
Operating Costs (Fixed Costs)												
Wages	1,465,824	1,495,100	1,525,000	1,555,500	1,586,600	1,618,300	1,650,700	1,683,700	1,717,400	1,751,700	1,786,700	
Management fees	73,339	74,800	76,300	77,800	79,400	81,000	82,600	84,300	86,000	87,700	89,500	
Training	44,747	45,600	46,500	47,400	48,300	49,300	50,300	51,300	52,300	53,300	54,400	
Billing and collecting	124,446	126,900	129,400	132,000	134,600	137,300	140,000	142,800	145,700	148,600	151,600	
Professional fees and dues	60,047	61,200	62,400	63,600	64,900	66,200	67,500	68,900	70,300	71,700	73,100	
Rent	54,064	55,100	56,200	57,300	58,400	59,600	60,800	62,000	63,200	64,500	65,800	
Vehicle maintenance and gas	38,474	39,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900	46,800	
Property taxes	83,000	84,700	86,400	88,100	89,900	91,700	93,500	95,400	97,300	99,200	101,200	
Insurance	96,555	98,500	100,500	102,500	104,600	106,700	108,800	111,000	113,200	115,500	117,800	
IT maintenance	91,206	93,000	94,900	96,800	98,700	100,700	102,700	104,800	106,900	109,000	111,200	
Misellaneous	19,340	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500	23,000	23,500	
Office supplies and telecommunications	107,133	109,300	111,500	113,700	116,000	118,300	120,700	123,100	125,600	128,100	130,700	
Subtotal - Fixed Costs	2,258,175	2,303,100	2,349,200	2,396,000	2,443,900	2,492,800	2,542,500	2,593,500	2,645,400	2,698,200	2,752,300	
Operating Costs (Variable Costs)												
Water operations and maintenance	279,052	286,300	293,700	301,200	309,700	319,300	329,100	339,200	349,700	360,400	371,500	
Chemicals purchased	50,750	52,100	53,400	54,800	56,300	58,100	59,900	61,700	63,600	65,600	67,600	
Distribution	274,453	281,500	288,800	296,300	304,600	314,000	323,700	333,700	343,900	354,500	365,300	
Building utilities and maintenance	64,572	66,200	68,000	69,700	71,700	73,900	76,200	78,500	80,900	83,400	86,000	
Subtotal - Variable Costs	668,827	686,100	703,900	722,000	742,300	765,300	788,900	813,100	838,100	863,900	890,400	
Sub Total Operating	2,927,002	2,989,200	3,053,100	3,118,000	3,186,200	3,258,100	3,331,400	3,406,600	3,483,500	3,562,100	3,642,700	
Capital-Related												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)		-	-	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
New Growth Related Debt (Interest)		-	-	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
Existing Debt (Principal) - Non-Growth Related		326,363	336,121	346,172	356,524	367,184	378,164	389,391				
Existing Debt (Interest) - Non-Growth Related		69,361	59,602	49,551	39,200	28,539	17,559	6,251				
New Non-Growth Related Debt (Principal)		-	-	52,933	153,967	240,801	356,347	379,308	419,786	453,556	493,379	
New Non-Growth Related Debt (Interest)		-	-	63,049	178,754	268,690	385,215	381,332	396,302	399,734	407,416	
Transfer to Capital		-	-	-	-	-	-	-	-	-	-	
Transfer to Capital Reserve	2,586,076	2,388,115	2,611,577	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228	
Sub Total Capital Related	2,586,076	2,783,839	3,007,300	3,260,551	3,564,018	3,933,285	3,951,015	3,962,224	3,975,998	3,985,679	3,994,023	
Total Expenditures	5,513,078	5,773,039	6,060,400	6,378,551	6,750,218	7,191,385	7,282,415	7,368,824	7,459,498	7,547,779	7,636,723	
Revenues												
Base Charge	2,020,244	2,259,918	2,526,924	2,824,650	3,168,322	3,570,195	3,621,860	3,670,572	3,723,021	3,772,979	3,823,398	
Other Revenue	185,301	187,631	189,995	192,395	194,831	200,676	206,696	210,800	215,000	219,300	223,700	
Interest	21,024	21,865	22,740	23,649	24,595	25,333	26,093	26,600	27,100	27,600	28,200	
Contributions from Development Charges Reserve Fund	-	-	-	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
Contributions from Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	2,226,569	2,469,414	2,739,659	3,040,694	3,387,748	3,796,204	3,854,649	3,907,972	3,965,121	4,019,879	4,075,298	
Water Billing Recovery - Operating	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424	
Water Billing Recovery - Total	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424	



**Table 5-2
Wastewater Service
Operating Budget Forecast – Inflated \$**

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Expenditures												
<u>Administration and General Overhead Expenditures (Fixed Costs)</u>												
WPCP #1	1,419,470	1,447,900	1,476,900	1,506,400	1,536,500	1,567,200	1,598,500	1,630,500	1,663,100	1,696,400	1,730,300	
WPCP #2	1,271,769	1,297,200	1,323,100	1,349,600	1,376,600	1,404,100	1,432,200	1,460,800	1,490,000	1,519,800	1,550,200	
SANITARY SEWERS	288,874	294,700	300,600	306,600	312,700	319,000	325,400	331,900	338,500	345,300	352,200	
Subtotal - Fixed Costs	2,980,114	3,039,800	3,100,600	3,162,600	3,225,800	3,290,300	3,356,100	3,423,200	3,491,600	3,561,500	3,632,700	
<u>Operations Expenditures (Variable Costs)</u>												
WPCP #1	322,850	331,600	340,600	349,800	360,300	372,300	384,600	397,200	410,300	423,800	437,600	
WPCP #2	172,082	176,800	181,500	186,500	192,100	198,400	205,000	211,700	218,700	225,900	233,300	
SANITARY SEWERS	320,005	328,700	337,600	346,700	357,200	369,000	381,200	393,700	406,700	420,100	433,800	
Subtotal - Variable Costs	814,936	837,100	859,700	883,000	909,600	939,700	970,800	1,002,600	1,035,700	1,069,800	1,104,700	
Sub Total Operating	3,795,050	3,876,900	3,960,300	4,045,600	4,135,400	4,230,000	4,326,900	4,425,800	4,527,300	4,631,300	4,737,400	
<u>Capital-Related</u>												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-	
New Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-	
Existing Debt (Principal) - Non-Growth Related	156,144	510,340	529,068	548,496	393,239	408,968	425,327	442,340	460,034	478,435	497,572	
Existing Debt (Interest) - Non-Growth Related	19,266	293,382	274,654	255,227	236,349	220,620	204,261	187,248	169,554	151,153	132,015	
New Non-Growth Related Debt (Principal)		-	-	23,473	79,558	135,795	197,781	301,071	420,984	559,240	717,847	
New Non-Growth Related Debt (Interest)		-	-	27,959	92,706	152,718	214,649	320,347	436,790	564,573	704,479	
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-	
Transfer to Capital Reserve	2,067,241	1,704,480	1,794,734	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353	
Sub Total Capital Related	2,242,652	2,508,202	2,598,457	2,692,003	2,804,988	2,943,030	2,925,541	2,904,318	2,883,820	2,858,915	2,832,267	
Total Expenditures	6,037,702	6,385,102	6,558,757	6,737,603	6,940,388	7,173,030	7,252,441	7,330,118	7,411,120	7,490,215	7,569,667	
Revenues												
Base Charge	2,123,225	2,213,289	2,306,129	2,402,131	2,511,066	2,637,489	2,677,224	2,714,699	2,755,041	2,793,476	2,832,267	
87024 Industrial Surcharge	200,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	
87058 Septic Waste Processing	210,000	214,200	214,200	214,200	214,200	214,200	214,200	214,200	214,200	214,200	214,200	
87059 Leachate Processing	600,000	734,400	734,400	734,400	734,400	734,400	734,400	734,400	734,400	734,400	734,400	
87066 WPCP #2 - Bell Tower Rental	12,750	12,750	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	
87093 NRG Curtailment	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	
Contributions from Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	3,165,975	3,434,639	3,527,529	3,623,531	3,732,466	3,858,889	3,898,624	3,936,099	3,976,441	4,014,876	4,053,667	
Wastewater Billing Recovery - Operating	2,871,727	2,950,463	3,031,227	3,114,071	3,207,922	3,314,141	3,353,817	3,394,018	3,434,679	3,475,339	3,516,000	
Wastewater Billing Recovery - Total	2,871,727	2,950,463	3,031,227	3,114,071	3,207,922	3,314,141	3,353,817	3,394,018	3,434,679	3,475,339	3,516,000	



Figures 5-1 and 5-2 illustrate the annual net operating budget increase for water and wastewater services respectively over the forecast period by component, illustrating the increase in annual revenues for increased capital funding purposes (transfers to reserves and debt).

Figure 5-1
Town of Cobourg
2020-2030 Water Annual Operating Cost Forecast by Major Component

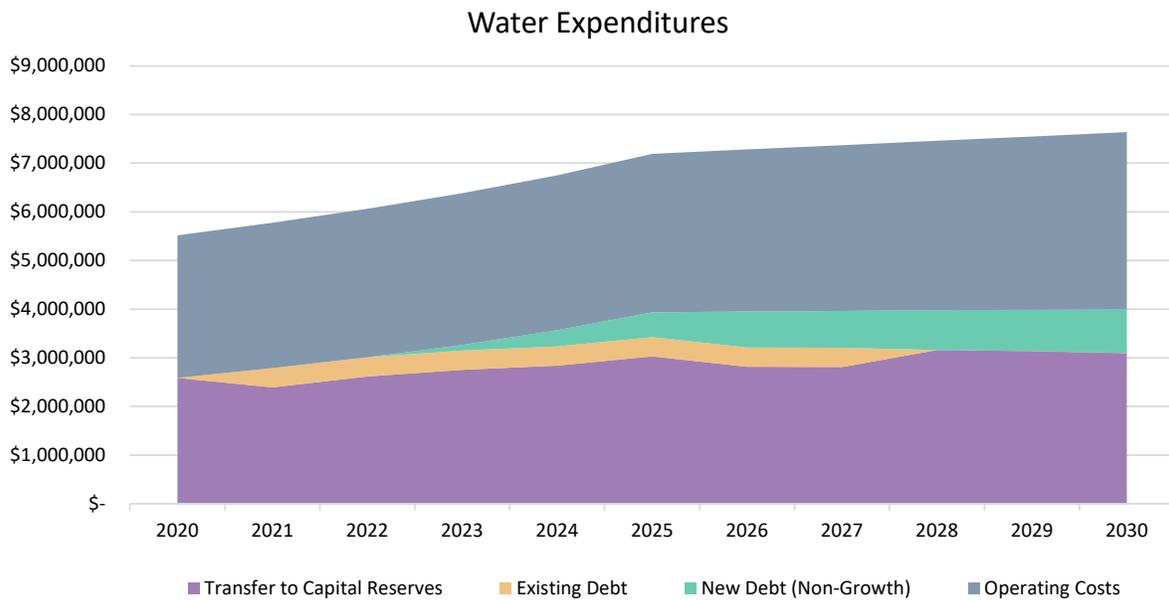
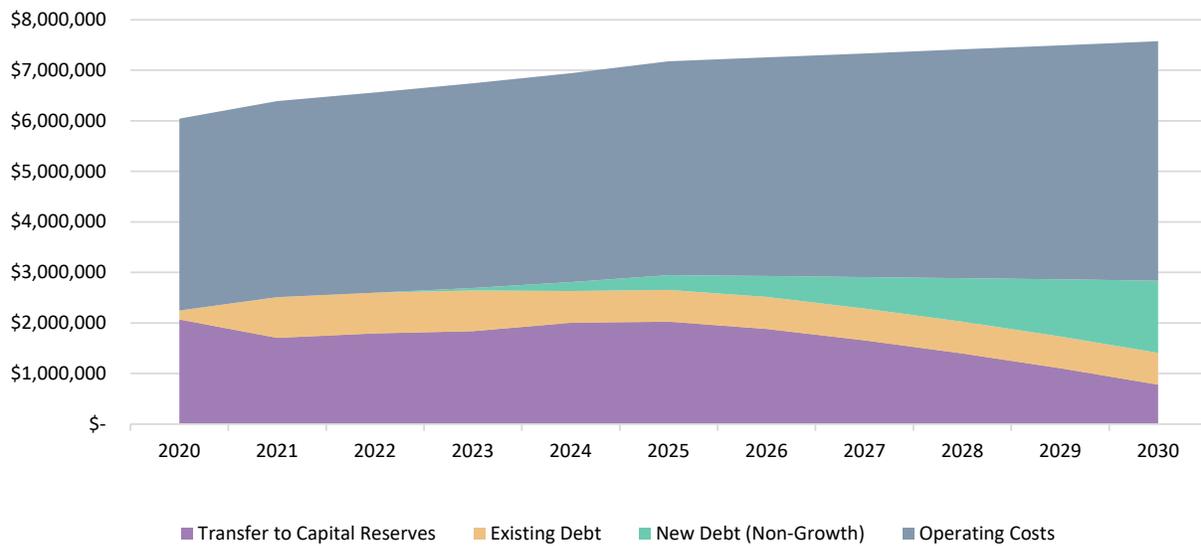




Figure 5-2
Town of Cobourg
2020-2030 Wastewater Annual Operating Cost Forecast by Major Component
Wastewater Expenditures





Chapter 6

Forecast Water and Wastewater Rates and Customer Impacts



6. Forecast Water and Wastewater Rates and Customer Impacts

6.1 Introduction

To summarize the analysis undertaken thus far, Chapter 3 reviewed capital infrastructure needs within the water and wastewater systems and responds to the lifecycle needs of the Town. Chapter 4 provided a review of capital financing options of which internal sources (i.e. reserve fund transfers) and external sources (i.e. debt and developer contributions) will be the predominant basis for financing future capital needs. Chapter 5 established the 10-year operating forecast of expenditures for the water and wastewater systems. The following calculations will be based on the net operating expenditures provided in Chapter 5, divided by the customers and demand forecast provided in Chapter 2.

The water and wastewater rates have been forecast such that they will be sufficient to fund the long-term capital needs of the systems by 2030, providing for the sustainable replacement of infrastructure and ongoing operation and maintenance of the systems. Furthermore, rates are forecast to increase over the 2021 to 2025 period and then be held constant thereafter for both water and wastewater services. This approach has been recommended to mitigate additional debt financing requirements and greater rate increases in the latter part of the forecast period as the Town gains a better understanding of their long-term asset management plan needs.

The forecast water and wastewater rates are discussed in Section 6.2 and 6.3, with further analysis of the customer billing impacts in Section 6.4.

6.2 Water Rates

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

To achieve full cost recovery identified above, no increases in the water consumptive rates are proposed. The monthly base charges would increase at a rate of 10.9% per year for the first 5 years of the forecast period with no anticipated increases thereafter.



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.

6.3 Wastewater Rates

To achieve full cost recovery identified in the report, monthly base charges would need to be increased by 3.3% annually and consumptive rates would need to be increased 2.1% annually for the first five years of the forecast period. These increases would allow the Town to increase rate revenue such that the annual operating and long-term lifecycle funding obligations can be met by the end of the forecast.

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.

6.4 Customer Impact Assessment

Table 6-3 presents the impacts of the recommended rates and rate structure for an average residential customer (defined as consuming 138 m³ of water annually and having a 3/4" meter). The average residential customer would currently pay a combined annual water and wastewater bill of \$747. Over the first five years of the forecast period, under the recommended rate structure these customers would experience annual increases of 3.8% to 4.4% in their total annual bill. By 2025, their annual water and wastewater bill would be approximately \$913. Under the current rate forecast, that annual bill would remain unchanged over the remainder of the forecast period to 2030



Table 6-1
Town of Cobourg
Water Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Base Charge											
<i>Meter Size</i>											
Up to ¾"	\$13.75	\$15.25	\$16.91	\$18.75	\$20.80	\$23.06	\$23.06	\$23.06	\$23.06	\$23.06	\$23.06
1"	\$52.72	\$58.47	\$64.84	\$71.90	\$79.74	\$88.43	\$88.43	\$88.43	\$88.43	\$88.43	\$88.43
1 ½"	\$75.63	\$83.87	\$93.01	\$103.15	\$114.39	\$126.86	\$126.86	\$126.86	\$126.86	\$126.86	\$126.86
2"	\$98.55	\$109.29	\$121.20	\$134.41	\$149.06	\$165.31	\$165.31	\$165.31	\$165.31	\$165.31	\$165.31
3"	\$152.24	\$168.83	\$187.23	\$207.64	\$230.27	\$255.37	\$255.37	\$255.37	\$255.37	\$255.37	\$255.37
4"	\$212.33	\$235.47	\$261.14	\$289.60	\$321.16	\$356.16	\$356.16	\$356.16	\$356.16	\$356.16	\$356.16
6"	\$331.55	\$367.69	\$407.76	\$452.20	\$501.49	\$556.14	\$556.14	\$556.14	\$556.14	\$556.14	\$556.14
8"	\$451.61	\$500.83	\$555.42	\$615.95	\$683.08	\$757.53	\$757.53	\$757.53	\$757.53	\$757.53	\$757.53
Volumetric Charge											
Block 1 per m ³ (up to 22.73 m ³)	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37	\$1.37
Block 2 per m ³ (22.73 m ³ to 35 m ³)	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71
Block 3 per m ³ (over 35 m ³) ¹	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15

¹ The increase for the third block rate for water service will apply to residential water rates only



**Table 6-2
Town of Cobourg
Wastewater Rate Forecast**

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Base Charge											
<i>Meter Size</i>											
Up to ¾"	\$15.01	\$15.51	\$16.02	\$16.55	\$17.10	\$17.67	\$17.67	\$17.67	\$17.67	\$17.67	\$17.67
1"	\$57.57	\$59.48	\$61.45	\$63.49	\$65.59	\$67.77	\$67.77	\$67.77	\$67.77	\$67.77	\$67.77
1 ½"	\$82.60	\$85.34	\$88.17	\$91.09	\$94.11	\$97.23	\$97.23	\$97.23	\$97.23	\$97.23	\$97.23
2"	\$107.63	\$111.20	\$114.88	\$118.69	\$122.63	\$126.69	\$126.69	\$126.69	\$126.69	\$126.69	\$126.69
3"	\$166.27	\$171.78	\$177.48	\$183.36	\$189.44	\$195.72	\$195.72	\$195.72	\$195.72	\$195.72	\$195.72
4"	\$231.89	\$239.58	\$247.52	\$255.73	\$264.20	\$272.96	\$272.96	\$272.96	\$272.96	\$272.96	\$272.96
6"	\$362.10	\$368.05	\$374.10	\$380.26	\$386.51	\$392.86	\$399.32	\$405.89	\$412.56	\$419.34	\$426.24
8"	\$493.24	\$509.59	\$526.49	\$543.94	\$561.97	\$580.60	\$580.60	\$580.60	\$580.60	\$580.60	\$580.60
Volumetric Charge											
Block 1 per m ³ (up to 22.73 m ³)	\$1.54	\$1.57	\$1.60	\$1.64	\$1.67	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71	\$1.71
Block 2 per m ³ (over 35 m ³) ¹	\$1.92	\$1.96	\$2.00	\$2.04	\$2.08	\$2.13	\$2.13	\$2.13	\$2.13	\$2.13	\$2.13

**Table 6-3
Town of Cobourg
Average Residential Customer Impact Assessment (138 m³ annual water consumption and ¾" meter)**

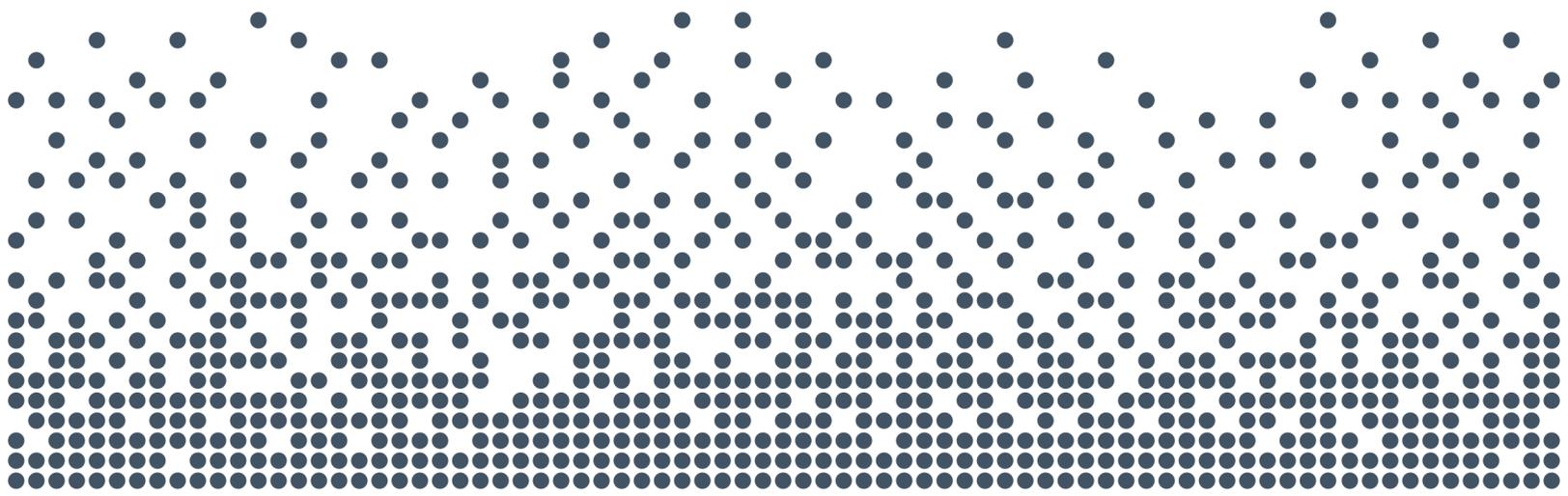
Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water											
Annual Base Rate Bill	\$165	\$183	\$203	\$225	\$250	\$277	\$277	\$277	\$277	\$277	\$277
Annual Volume Bill	\$189	\$189	\$189	\$189	\$189	\$189	\$189	\$189	\$189	\$189	\$189
Wastewater											
Annual Base Rate Bill	\$180	\$186	\$192	\$199	\$205	\$212	\$212	\$212	\$212	\$212	\$212
Annual Volume Bill	\$213	\$217	\$221	\$226	\$231	\$235	\$235	\$235	\$235	\$235	\$235
Total Annual Bill	\$747	\$775	\$806	\$839	\$875	\$913	\$913	\$913	\$913	\$913	\$913
% Increase - Total Annual Bill		3.8%	3.9%	4.1%	4.3%	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%



6.5 Recommendations

Based upon the above analysis, the following recommendations are put forth for Council's consideration:

1. That Council approve the financial plan contained in this Rate Study;
2. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates;
3. That Council consider the recommended water and wastewater rates as shown in Chapter 6 for adoption;
4. That Council maintain the Capital (lifecycle) Reserve Funds for water and wastewater as discussed in Section 4.5; and
5. That Council direct staff to review Rate Study in five years to validate Study results and make any necessary rate adjustments.



Appendices



Appendix A

Water Rate Forecast Calculations



Table 1
Town of Cobourg
Water Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Capital Budget Forecast Projects													
<i>Capital Expenditures</i>													
Water Master Plan (including Clarifier engineering study)	150,000	-	-	-	-	-	-	-	-	-	-	-	-
Booster Station Generator	10,000	-	-	-	-	-	-	-	-	-	-	-	-
Tower 2 (Strathy Rd.) Generator	20,000	-	-	-	-	-	-	-	-	-	-	-	-
Rebuild WTP Surge Relief Valve - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Raw Water Intake - clean and repairs	15,000	-	-	-	-	-	-	-	-	-	-	-	-
Raw Water Actuator Valve	11,000	-	-	-	-	-	-	-	-	-	-	-	-
ROV CCC	6,000	-	-	-	-	-	-	-	-	-	-	-	-
Wachs hydraulic water pump	5,000	-	-	-	-	-	-	-	-	-	-	-	-
Work Order Management	26,000	-	-	-	-	-	-	-	-	-	-	-	-
Matthew Street	1,050,000	-	-	-	-	-	-	-	-	-	-	-	-
Watermain Design	50,000	334,000	52,000	53,000	55,000	56,000	58,000	60,000	-	-	-	-	-
IT Hardware and Software	81,000	250,000	39,000	40,000	41,000	42,000	43,000	45,000	-	-	-	-	-
Tools	15,000	99,000	15,000	16,000	16,000	17,000	17,000	18,000	-	-	-	-	-
New Distribution Truck	100,000	-	-	-	-	-	-	-	-	-	-	-	-
WTP Driveway	40,000	-	-	-	-	-	-	-	-	-	-	-	-
Level Sensors Reservoirs	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-
LLP Valve Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Correlator	-	26,000	26,000	-	-	-	-	-	-	-	-	-	-
HLP#1 VFD - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Raw Water Wetwell/Pumphouse	-	21,000	21,000	-	-	-	-	-	-	-	-	-	-
Harden St. plus Harden Cres	-	739,000	739,000	-	-	-	-	-	-	-	-	-	-
Albert St.	-	286,000	286,000	-	-	-	-	-	-	-	-	-	-
Burke, Blake, and Victoria	-	1,181,000	1,181,000	-	-	-	-	-	-	-	-	-	-
WTP Truck	-	48,000	48,000	-	-	-	-	-	-	-	-	-	-
Monroe St. Watermain Replacement	-	318,000	-	318,000	-	-	-	-	-	-	-	-	-
Walton St. Renovations	-	1,300,000	-	1,300,000	-	-	-	-	-	-	-	-	-
Sinclair St.	-	764,000	-	764,000	-	-	-	-	-	-	-	-	-
GAC Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Spencer St. West (Division St. to George St.)	-	459,000	-	-	459,000	-	-	-	-	-	-	-	-
Burnham St. (King St. to Kerr St)	-	1,595,000	-	-	1,595,000	-	-	-	-	-	-	-	-
University St. West (William St. to Cobourg Creek)	-	393,000	-	-	393,000	-	-	-	-	-	-	-	-
Victoria St. (University to North limit)	-	1,302,000	-	-	-	1,302,000	-	-	-	-	-	-	-
Margaret and University Ave. East	-	591,000	-	-	-	591,000	-	-	-	-	-	-	-
Clarifier Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Campbell St. Watermain Replacement	-	626,000	-	-	-	-	626,000	-	-	-	-	-	-
Perry Street (D'Arcy St. to Church St.)	-	968,000	-	-	-	-	968,000	-	-	-	-	-	-
Watermain replacement	-	1,791,000	-	-	-	-	-	1,791,000	-	-	-	-	-
Provision	-	9,907,000	-	-	-	-	-	-	2,368,000	2,439,000	2,512,000	2,588,000	-



Table 1 Cont'd
Town of Cobourg
Water Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Master Plan Capital Projects														
<i>Linear Watermain Projects</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1a - Brook Road North	-	288,000	-	69,000	71,000	73,000	75,000	-	-	-	-	-	-	-
1b - Fut. Kerr Street	-	1,775,000	-	424,000	437,000	450,000	464,000	-	-	-	-	-	-	-
1c - D'Arcy Street	-	372,000	-	89,000	92,000	94,000	97,000	-	-	-	-	-	-	-
2a - D'Arcy Street	-	644,000	-	154,000	159,000	163,000	168,000	-	-	-	-	-	-	-
2b - Fut. Kerr Street	-	1,079,000	-	-	-	141,000	145,000	149,000	154,000	159,000	163,000	168,000	-	-
2c - Brook Road North	-	2,664,000	-	-	-	348,000	358,000	369,000	380,000	391,000	403,000	415,000	-	-
2d - Fut. Brook Road North	-	770,000	-	-	-	770,000	-	-	-	-	-	-	-	-
2e - Elgin Street East	-	926,000	-	-	-	926,000	-	-	-	-	-	-	-	-
2f - Fut. Road Internal to Rondeau Dev.	-	1,137,000	-	-	-	1,137,000	-	-	-	-	-	-	-	-
2g - Danforth Road	-	863,000	-	-	-	113,000	116,000	119,000	123,000	127,000	131,000	134,000	-	-
2h - Fut. Kerr Street	-	3,052,000	-	-	-	398,000	410,000	423,000	435,000	448,000	462,000	476,000	-	-
2i - Fut. Kerr Street	-	788,000	-	-	-	103,000	106,000	109,000	112,000	116,000	119,000	123,000	-	-
2j - Cobourg East - Fut. Mid-block Connection	-	1,052,000	-	-	-	137,000	141,000	146,000	150,000	155,000	159,000	164,000	-	-
2k - Cobourg East - South East Loop	-	1,691,000	-	-	-	221,000	227,000	234,000	241,000	248,000	256,000	264,000	-	-
2l - Fut. Brook Road North	-	700,000	-	-	-	91,000	94,000	97,000	100,000	103,000	106,000	109,000	-	-
2m - Danforth Road	-	1,064,000	-	-	-	139,000	143,000	147,000	152,000	156,000	161,000	166,000	-	-
2o - White Street at Cobourg Creek E. Branch	-	1,372,000	-	-	444,000	457,000	471,000	-	-	-	-	-	-	-
2p - White Street at Cobourg Creek W. Branch	-	866,000	-	-	280,000	289,000	297,000	-	-	-	-	-	-	-
2q - Cobourg East - North East Loop	-	2,002,000	-	-	-	261,000	269,000	277,000	286,000	294,000	303,000	312,000	-	-
2r - Cobourg East - Fut. Mid-block Connection	-	905,000	-	-	-	118,000	122,000	125,000	129,000	133,000	137,000	141,000	-	-
3a - West Sub-Trunk	-	1,327,000	-	-	-	173,000	178,000	184,000	189,000	195,000	201,000	207,000	-	-
3b - East Sub-Trunk	-	905,000	-	-	-	118,000	122,000	125,000	129,000	133,000	137,000	141,000	-	-
<i>Pumping and Storage Facility Projects</i>														
Ewart Street BPS Building Maintenance	32,500	-	-	-	-	-	-	-	-	-	-	-	-	-
Replace Ewart Street BPS Stand-By Power System	-	500,000	-	-	-	-	77,000	80,000	82,000	84,000	87,000	90,000	-	-
New 5,000 m3 Zone 1 Elevated Tank	-	7,933,000	-	1,896,000	1,953,000	2,012,000	2,072,000	-	-	-	-	-	-	-
Decommission Existing Zone 1 Victoria Street Elevated Tank	-	360,000	-	86,000	89,000	91,000	94,000	-	-	-	-	-	-	-
Provide Full Size Irrigated Soccer Field	-	505,000	-	121,000	124,000	128,000	132,000	-	-	-	-	-	-	-
New Zone 2 BPS with a 120 L/s Firm Rated Capacity at Same Site as New Zone 1 Elevated Tank	-	1,948,000	-	-	-	-	301,000	310,000	320,000	329,000	339,000	349,000	-	-
Expand the Existing Ewart Street BPS to Firm Rated Capacity of 312 L/s	-	1,948,000	-	-	-	-	301,000	310,000	320,000	329,000	339,000	349,000	-	-
First of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	655,000	-	-	-	-	-	-	-	-	-	-	655,000	-
Second of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Booster Pumping Station to Supply Future Zone 3	-	4,306,000	-	-	-	-	666,000	686,000	706,000	727,000	749,000	772,000	-	-
1,360 m3 of New In-Ground Storage at the WTP	-	699,000	-	-	-	-	-	-	-	-	-	-	699,000	-



Table 1 Cont'd
Town of Cobourg
Water Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<i>Water Treatment Projects</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
Intake Pipe Cleaning, Inspection and Upgrades	-	142,000	27,000	28,000	28,000	29,000	30,000	-	-	-	-	-	-
Repair Leaking Pumphouse Roof	-	-	-	-	-	-	-	-	-	-	-	-	-
Provide Railing System on Retaining Walls at Shoreline	-	15,000	3,000	3,000	3,000	3,000	3,000	-	-	-	-	-	-
Replace GAC Filter Media	-	569,000	107,000	110,000	114,000	117,000	121,000	-	-	-	-	-	-
Improve Ventilation/Dehumidification in Backwash Pump Room	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-
Replace/Repair Sections of Backwash Piping	-	213,000	40,000	41,000	43,000	44,000	45,000	-	-	-	-	-	-
Replace Wastewater Transfer Pumps and Provide Flow Meter on Discharge	-	107,000	20,000	21,000	21,000	22,000	23,000	-	-	-	-	-	-
Upgrade Wastewater Discharge System (On-Site SPS)	-	711,000	134,000	138,000	142,000	146,000	151,000	-	-	-	-	-	-
Replace Chlorine Storage Room Monorail and Hoist	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-
Replace Surge Valve on Highlift Pumping Station Discharge	-	43,000	8,000	8,000	9,000	9,000	9,000	-	-	-	-	-	-
Relocate Chlorine Residual Sampling Points	-	36,000	7,000	7,000	7,000	7,000	8,000	-	-	-	-	-	-
Replace WTP SCADA Computers	-	36,000	7,000	7,000	7,000	7,000	8,000	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Ewart Street BPS	-	107,000	20,000	21,000	21,000	22,000	23,000	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Zone 2 (Strathy Road) Elevated Tank	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-
Replace Low Lift Pump Discharge Valves	-	195,000	-	-	-	-	30,000	31,000	32,000	33,000	34,000	35,000	
Refurbish Low Lift Pumps	-	162,000	-	-	-	-	25,000	26,000	27,000	27,000	28,000	29,000	
Replace Alum Tanks (2)	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	
Replace Turbidimeters	-	97,000	-	-	-	-	15,000	16,000	16,000	16,000	17,000	17,000	
Provide Redundant Dissolved Air Floatation Clarification System - Option C5	-	10,399,000	-	-	-	-	1,608,000	1,656,000	1,705,000	1,757,000	1,809,000	1,864,000	
Provide Third Filter Train - Option C5	-	4,386,000	-	-	-	-	678,000	699,000	719,000	741,000	763,000	786,000	
Replace Supernatant Discharge Pumps	-	32,000	-	-	-	-	5,000	5,000	5,000	5,000	6,000	6,000	
Equip High-lift Pumps HLP #1 & HLP #2 with VFDs	-	162,000	-	-	-	-	25,000	26,000	27,000	27,000	28,000	29,000	
Replace High-lift Pump Discharge Butterfly Valves & Controls	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	
Refurbish High-Lift Pumps	-	195,000	-	-	-	-	30,000	31,000	32,000	33,000	34,000	35,000	
Replace Low-Lift and High-Lift Pump Level Transmitters	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	
Studies:	-	-	-	-	-	-	-	-	-	-	-	-	
Water Rate Study and Financial Plan	16,000	19,000	-	-	-	-	19,000	-	-	-	-	-	
Total Capital Expenditures	1,627,500	86,918,000	2,829,000	5,756,000	6,645,000	11,410,000	12,409,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000	
Capital Financing													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	
Development Charges Reserve Fund	-	44,034,396	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000	
Non-Growth Related Debenture Requirements	-	13,038,869	-	1,576,235	2,945,557	2,402,366	3,153,912	259,270	753,557	505,590	645,610	796,772	
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	
Water Reserve	1,627,500	29,844,735	2,829,000	3,398,045	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228	
Total Capital Financing	1,627,500	86,918,000	2,829,000	5,756,000	6,645,000	11,410,000	12,409,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000	



Table 2
Town of Cobourg
Water Service
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2020	Principal (Inflated)	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
2021		-		-	-	-	-	-	-	-	-	-	-
2022		1,576,235			115,982	115,982	115,982	115,982	115,982	115,982	115,982	115,982	115,982
2023		2,945,557				216,739	216,739	216,739	216,739	216,739	216,739	216,739	216,739
2024		2,402,366					176,770	176,770	176,770	176,770	176,770	176,770	176,770
2025		3,153,912						232,070	232,070	232,070	232,070	232,070	232,070
2026		259,270							19,078	19,078	19,078	19,078	19,078
2027		753,557								55,448	55,448	55,448	55,448
2028		505,590									37,202	37,202	37,202
2029		645,610										47,505	47,505
2030		796,772											
Total Annual Debt Charges	-	13,038,869	-	-	115,982	332,721	509,492	741,562	760,639	816,088	853,290	900,795	

Table 3
Town of Cobourg
Water Service
Schedule of Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2020	Principal (Inflated)	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
2021		-		-	-	-	-	-	-	-	-	-	-
2022		-			-	-	-	-	-	-	-	-	-
2023		-				-	-	-	-	-	-	-	-
2024		-					-	-	-	-	-	-	-
2025		-						-	-	-	-	-	-
2026		-							-	-	-	-	-
2027		-								-	-	-	-
2028		-									-	-	-
2029		-										-	-
2030		-											-
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-	-	-



Table 4
Town of Cobourg
Water Service
Water Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	248,916	1,219,567	786,469	-	-	-	-	-	-	-	-
Transfer from Operating	2,586,076	2,388,115	2,611,577	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228
Transfer to Capital	1,627,500	2,829,000	3,398,045	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	1,207,492	778,682	-	-	-	-	-	-	-	-	-
Interest	12,075	7,787	-	-	-	-	-	-	-	-	-

Table 5
Town of Cobourg
Water Service
Water Development Charges Reserve Fund Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	677,846	712,088	747,513	-	-	-	-	-	-	-	-
Development Charge Proceeds	27,192	28,024	28,856	29,696	165,492	170,482	175,564	180,885	186,298	191,879	197,611
Developer Contributions	-	-	5,351	920,902	6,006,569	6,056,535	5,201,436	5,357,615	5,518,202	5,684,121	7,209,389
Transfer to Capital	-	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	705,038	740,112	-	-	-	-	-	-	-	-	-
Interest	7,050	7,401	-	-	-	-	-	-	-	-	-



Table 6
Town of Cobourg
Water Services
Operating Budget Forecast
 Inflated \$

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Expenditures												
<u>Operating Costs (Fixed Costs)</u>												
Wages	1,465,824	1,495,100	1,525,000	1,555,500	1,586,600	1,618,300	1,650,700	1,683,700	1,717,400	1,751,700	1,786,700	
Management fees	73,339	74,800	76,300	77,800	79,400	81,000	82,600	84,300	86,000	87,700	89,500	
Training	44,747	45,600	46,500	47,400	48,300	49,300	50,300	51,300	52,300	53,300	54,400	
Billing and collecting	124,446	126,900	129,400	132,000	134,600	137,300	140,000	142,800	145,700	148,600	151,600	
Professional fees and dues	60,047	61,200	62,400	63,600	64,900	66,200	67,500	68,900	70,300	71,700	73,100	
Rent	54,064	55,100	56,200	57,300	58,400	59,600	60,800	62,000	63,200	64,500	65,800	
Vehicle maintenance and gas	38,474	39,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900	46,800	
Property taxes	83,000	84,700	86,400	88,100	89,900	91,700	93,500	95,400	97,300	99,200	101,200	
Insurance	96,555	98,500	100,500	102,500	104,600	106,700	108,800	111,000	113,200	115,500	117,800	
IT maintenance	91,206	93,000	94,900	96,800	98,700	100,700	102,700	104,800	106,900	109,000	111,200	
Misellaneous	19,340	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500	23,000	23,500	
Office supplies and telecommunications	107,133	109,300	111,500	113,700	116,000	118,300	120,700	123,100	125,600	128,100	130,700	
Subtotal - Fixed Costs	2,258,175	2,303,100	2,349,200	2,396,000	2,443,900	2,492,800	2,542,500	2,593,500	2,645,400	2,698,200	2,752,300	
<u>Operating Costs (Variable Costs)</u>												
Water operations and maintenance	279,052	286,300	293,700	301,200	309,700	319,300	329,100	339,200	349,700	360,400	371,500	
Chemicals purchased	50,750	52,100	53,400	54,800	56,300	58,100	59,900	61,700	63,600	65,600	67,600	
Distribution	274,453	281,500	288,800	296,300	304,600	314,000	323,700	333,700	343,900	354,500	365,300	
Building utilities and maintenance	64,572	66,200	68,000	69,700	71,700	73,900	76,200	78,500	80,900	83,400	86,000	
Subtotal - Variable Costs	668,827	686,100	703,900	722,000	742,300	765,300	788,900	813,100	838,100	863,900	890,400	
Sub Total Operating	2,927,002	2,989,200	3,053,100	3,118,000	3,186,200	3,258,100	3,331,400	3,406,600	3,483,500	3,562,100	3,642,700	
<u>Capital-Related</u>												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-	
New Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-	
Existing Debt (Principal) - Non-Growth Related		326,363	336,121	346,172	356,524	367,184	378,164	389,391				
Existing Debt (Interest) - Non-Growth Related		69,361	59,602	49,551	39,200	28,539	17,559	6,251				
New Non-Growth Related Debt (Principal)		-	-	52,933	153,967	240,801	356,347	379,308	419,786	453,556	493,379	
New Non-Growth Related Debt (Interest)		-	-	63,049	178,754	268,690	385,215	381,332	396,302	399,734	407,416	
Transfer to Capital		-	-	-	-	-	-	-	-	-	-	
Transfer to Capital Reserve	2,586,076	2,388,115	2,611,577	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228	
Sub Total Capital Related	2,586,076	2,783,839	3,007,300	3,260,551	3,564,018	3,933,285	3,951,015	3,962,224	3,975,998	3,985,679	3,994,023	
Total Expenditures	5,513,078	5,773,039	6,060,400	6,378,551	6,750,218	7,191,385	7,282,415	7,368,824	7,459,498	7,547,779	7,636,723	
<u>Revenues</u>												
Base Charge	2,020,244	2,259,918	2,526,924	2,824,650	3,168,322	3,570,195	3,621,860	3,670,572	3,723,021	3,772,979	3,823,398	
Other Revenue	185,301	187,631	189,995	192,395	194,831	200,676	206,696	210,800	215,000	219,300	223,700	
Interest	21,024	21,865	22,740	23,649	24,595	25,333	26,093	26,600	27,100	27,600	28,200	
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	
Contributions from Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	2,226,569	2,469,414	2,739,659	3,040,694	3,387,748	3,796,204	3,854,649	3,907,972	3,965,121	4,019,879	4,075,298	
Water Billing Recovery - Operating	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424	
Water Billing Recovery - Total	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424	



Table 7
Town of Cobourg
Water Services
Water Rate Forecast
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<i>Increasing Block Structure</i>											
<i>Volume Forecast By Block (m3)</i>											
Block 1	1,208,619	1,220,281	1,231,944	1,243,606	1,260,408	1,282,622	1,304,744	1,327,232	1,350,040	1,372,847	1,395,655
Block 2	902,499	903,165	903,831	904,497	905,429	906,761	908,093	909,425	910,757	912,089	913,421
Block 3	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664
Total Volume	2,151,782	2,164,110	2,176,438	2,188,766	2,206,501	2,230,047	2,253,501	2,277,321	2,301,461	2,325,600	2,349,740
<i>Increasing Block Rates (\$/m³)</i>											
Block 1	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Block 2	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71
Block 3	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
<i>Revenue</i>											
Block 1	1,655,808	1,671,786	1,687,763	1,703,740	1,726,758	1,757,192	1,787,500	1,818,308	1,849,554	1,880,801	1,912,047
Block 2	1,543,273	1,544,412	1,545,551	1,546,690	1,548,284	1,550,562	1,552,839	1,555,117	1,557,395	1,559,672	1,561,950
Block 3	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427
Total Revenue	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424



Appendix B

Wastewater Rate Forecast Calculations



Table 1
Town of Cobourg
Wastewater Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Capital Expenditures													
Sequence Batch Reactor Expansion	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-
WPCP Plant #1 SCADA Phase II	260,000	-	-	-	-	-	-	-	-	-	-	-	-
Biosolids Holding Tank Repairs	85,000	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary Sewer Line for Scum Trough	200,000	-	-	-	-	-	-	-	-	-	-	-	-
Standby Return Pump - Plant #2	30,000	-	-	-	-	-	-	-	-	-	-	-	-
Tertiary Filter Media Replacement	50,000	-	-	-	-	-	-	-	-	-	-	-	-
Solvent Shed Replacement - Plant #1	15,000	-	-	-	-	-	-	-	-	-	-	-	-
Replacement Pump McGill Pump Station	150,000	-	-	-	-	-	-	-	-	-	-	-	-
Channel Grinder Cartridge McGill Pump Station	35,000	-	-	-	-	-	-	-	-	-	-	-	-
Pump Hoist - Plant #1	15,000	-	-	-	-	-	-	-	-	-	-	-	-
Headworks Ventilation System - Plant #1	75,000	-	-	-	-	-	-	-	-	-	-	-	-
Contact Chamber Engineering Design	-	2,174,000	52,000	2,122,000	-	-	-	-	-	-	-	-	-
Co-Gen System	-	1,030,000	1,030,000	-	-	-	-	-	-	-	-	-	-
Forth St Pump Station	-	2,091,000	1,030,000	1,061,000	-	-	-	-	-	-	-	-	-
Heat Exchanger - Plant #1	-	77,000	77,000	-	-	-	-	-	-	-	-	-	-
King St Pump Station Upgrade	-	540,000	10,000	530,000	-	-	-	-	-	-	-	-	-
Provision	-	30,933,000	-	-	3,479,000	3,583,000	3,690,000	3,801,000	3,915,000	4,033,000	4,154,000	4,278,000	-
Growth Related Projects:													
Pumping Station	-	2,333,000	-	-	-	-	-	439,000	453,000	466,000	480,000	495,000	-
Forcemain	-	280,000	-	-	-	-	-	53,000	54,000	56,000	58,000	59,000	-
SPS and Forcemain	-	1,428,000	-	-	-	-	-	269,000	277,000	285,000	294,000	303,000	-
250 mm dia. and Greater Sewer Network	-	12,848,000	-	-	-	-	-	2,420,000	2,493,000	2,567,000	2,644,000	2,724,000	-
Wastewater Treatment Plant Improvements (Plant #2)	-	23,330,000	-	-	-	-	-	4,394,000	4,526,000	4,662,000	4,802,000	4,946,000	-
Aerator Improvements (Plant #2)	-	863,000	-	-	-	-	-	163,000	167,000	172,000	178,000	183,000	-
Studies:													
Wastewater Rate Study	16,000	19,000	-	-	-	-	19,000	-	-	-	-	-	-
Total Capital Expenditures	3,931,000	77,946,000	2,199,000	3,713,000	3,479,000	3,583,000	3,709,000	11,539,000	11,885,000	12,241,000	12,610,000	12,988,000	
Capital Financing													
Provincial/Federal Grants		-											
Development Charges Reserve Fund	-	36,182,700	-	-	-	-	-	6,815,260	7,019,540	7,228,980	7,447,580	7,671,340	-
Non-Growth Related Debenture Requirements	-	23,866,190	-	698,968	1,642,151	1,579,863	1,684,070	2,840,216	3,212,148	3,615,561	4,056,905	4,536,307	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	3,931,000	17,897,110	2,199,000	3,014,032	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353	-
Total Capital Financing	3,931,000	77,946,000	2,199,000	3,713,000	3,479,000	3,583,000	3,709,000	11,539,000	11,885,000	12,241,000	12,610,000	12,988,000	



Table 2
Town of Cobourg
Wastewater Service
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2020	Principal (Inflated)	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
2021		-		-	-	-	-	-	-	-	-	-	-
2022		698,968			51,431	51,431	51,431	51,431	51,431	51,431	51,431	51,431	51,431
2023		1,642,151				120,832	120,832	120,832	120,832	120,832	120,832	120,832	120,832
2024		1,579,863					116,249	116,249	116,249	116,249	116,249	116,249	116,249
2025		1,684,070						123,917	123,917	123,917	123,917	123,917	123,917
2026		2,840,216							208,988	208,988	208,988	208,988	208,988
2027		3,212,148								236,355	236,355	236,355	236,355
2028		3,615,561									266,039	266,039	266,039
2029		4,056,905										298,514	298,514
2030		4,536,307											
Total Annual Debt Charges	-	23,866,190	-	-	51,431	172,264	288,513	412,430	621,418	857,773	1,123,812	1,422,327	

Table 3
Town of Cobourg
Wastewater Service
Schedule of Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2020	Principal (Inflated)	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
2021		-		-	-	-	-	-	-	-	-	-	-
2022		-		-	-	-	-	-	-	-	-	-	-
2023		-		-	-	-	-	-	-	-	-	-	-
2024		-		-	-	-	-	-	-	-	-	-	-
2025		-		-	-	-	-	-	-	-	-	-	-
2026		-		-	-	-	-	-	-	-	-	-	-
2027		-		-	-	-	-	-	-	-	-	-	-
2028		-		-	-	-	-	-	-	-	-	-	-
2029		-		-	-	-	-	-	-	-	-	-	-
2030		-		-	-	-	-	-	-	-	-	-	-
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 4
Town of Cobourg
Wastewater Service
Wastewater Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	3,548,656	1,701,746	1,219,298	-	-	-	-	-	-	-	-
Transfer from Operating	2,067,241	1,704,480	1,794,734	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353
Transfer to Capital	3,931,000	2,199,000	3,014,032	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	1,684,897	1,207,225	-	-	-	-	-	-	-	-	-
Interest	16,849	12,072	-	-	-	-	-	-	-	-	-



Table 5
Town of Cobourg
Wastewater Service
Wastewater Development Charges Reserve Fund Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	2,718,655	2,769,176	2,820,866	2,873,815	2,928,046	2,983,570	3,040,401	5,203,442	4,772,082	4,322,107	3,852,321
Development Charge Proceeds	23,104	23,760	24,496	25,240	25,984	26,728	27,560	28,392	29,232	30,072	31,000
Developer Contributions	-	-	-	-	-	-	8,899,221	6,512,540	6,706,980	6,909,580	3,788,019
Transfer to Capital	-	-	-	-	-	-	6,815,260	7,019,540	7,228,980	7,447,580	7,671,340
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	2,741,759	2,792,936	2,845,362	2,899,055	2,954,030	3,010,298	5,151,922	4,724,834	4,279,314	3,814,179	-
Interest	27,418	27,929	28,454	28,991	29,540	30,103	51,519	47,248	42,793	38,142	-
Required from Development Charges	-	-	-	-	-	-	6,815,260	7,019,540	7,228,980	7,447,580	7,671,340



**Table 6
Town of Cobourg
Wastewater Services
Operating Budget Forecast
Inflated \$**

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Expenditures												
<u>Administration and General Overhead Expenditures (Fixed Costs)</u>												
WPCP #1	1,419,470	1,447,900	1,476,900	1,506,400	1,536,500	1,567,200	1,598,500	1,630,500	1,663,100	1,696,400	1,730,300	
WPCP #2	1,271,769	1,297,200	1,323,100	1,349,600	1,376,600	1,404,100	1,432,200	1,460,800	1,490,000	1,519,800	1,550,200	
SANITARY SEWERS	288,874	294,700	300,600	306,600	312,700	319,000	325,400	331,900	338,500	345,300	352,200	
Subtotal - Fixed Costs	2,980,114	3,039,800	3,100,600	3,162,600	3,225,800	3,290,300	3,356,100	3,423,200	3,491,600	3,561,500	3,632,700	
<u>Operations Expenditures (Variable Costs)</u>												
WPCP #1	322,850	331,600	340,600	349,800	360,300	372,300	384,600	397,200	410,300	423,800	437,600	
WPCP #2	172,082	176,800	181,500	186,500	192,100	198,400	205,000	211,700	218,700	225,900	233,300	
SANITARY SEWERS	320,005	328,700	337,600	346,700	357,200	369,000	381,200	393,700	406,700	420,100	433,800	
Subtotal - Variable Costs	814,936	837,100	859,700	883,000	909,600	939,700	970,800	1,002,600	1,035,700	1,069,800	1,104,700	
Sub Total Operating	3,795,050	3,876,900	3,960,300	4,045,600	4,135,400	4,230,000	4,326,900	4,425,800	4,527,300	4,631,300	4,737,400	
<u>Capital-Related</u>												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-	
New Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-	
Existing Debt (Principal) - Non-Growth Related	156,144	510,340	529,068	548,496	393,239	408,968	425,327	442,340	460,034	478,435	497,572	
Existing Debt (Interest) - Non-Growth Related	19,266	293,382	274,654	255,227	236,349	220,620	204,261	187,248	169,554	151,153	132,015	
New Non-Growth Related Debt (Principal)		-	-	23,473	79,558	135,795	197,781	301,071	420,984	559,240	717,847	
New Non-Growth Related Debt (Interest)		-	-	27,959	92,706	152,718	214,649	320,347	436,790	564,573	704,479	
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-	
Transfer to Capital Reserve	2,067,241	1,704,480	1,794,734	1,836,849	2,003,137	2,024,930	1,883,524	1,653,312	1,396,459	1,105,515	780,353	
Sub Total Capital Related	2,242,652	2,508,202	2,598,457	2,692,003	2,804,988	2,943,030	2,925,541	2,904,318	2,883,820	2,858,915	2,832,267	
Total Expenditures	6,037,702	6,385,102	6,558,757	6,737,603	6,940,388	7,173,030	7,252,441	7,330,118	7,411,120	7,490,215	7,569,667	
Revenues												
Base Charge	2,123,225	2,213,289	2,306,129	2,402,131	2,511,066	2,637,489	2,677,224	2,714,699	2,755,041	2,793,476	2,832,267	
87024 Industrial Surcharge	200,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	
87058 Septic Waste Processing	210,000	214,200	214,200	214,200	214,200	214,200	214,200	214,200	214,200	214,200	214,200	
87059 Leachate Processing	600,000	734,400	734,400	734,400	734,400	734,400	734,400	734,400	734,400	734,400	734,400	
87066 WPCP #2 - Bell Tower Rental	12,750	12,750	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	
87093 NRG Curtailment	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	
Contributions from Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	3,165,975	3,434,639	3,527,529	3,623,531	3,732,466	3,858,889	3,898,624	3,936,099	3,976,441	4,014,876	4,053,667	
Wastewater Billing Recovery - Operating	2,871,727	2,950,463	3,031,227	3,114,071	3,207,922	3,314,141	3,353,817	3,394,018	3,434,679	3,475,339	3,516,000	
Wastewater Billing Recovery - Total	2,871,727	2,950,463	3,031,227	3,114,071	3,207,922	3,314,141	3,353,817	3,394,018	3,434,679	3,475,339	3,516,000	



Table 7
Town of Cobourg
Wastewater Services
Wastewater Rate Forecast
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<u>Increasing Block Structure</u>											
<i>Volume Forecast By Block (m3)</i>											
Block 1	1,167,472	1,178,903	1,190,334	1,201,765	1,218,165	1,239,807	1,261,356	1,283,212	1,305,338	1,327,464	1,349,590
Block 2	559,281	559,966	560,651	561,335	562,294	563,663	565,032	566,401	567,770	569,139	570,509
Total Volume	1,726,753	1,738,869	1,750,984	1,763,100	1,780,459	1,803,470	1,826,388	1,849,613	1,873,108	1,896,603	1,920,099
<u>Increasing Block Rates (\$/m³)</u>											
Block 1	1.54	1.57	1.60	1.64	1.67	1.71	1.71	1.71	1.71	1.71	1.71
Block 2	1.92	1.96	2.00	2.04	2.08	2.13	2.13	2.13	2.13	2.13	2.13
Revenue											
Block 1	1,797,907	1,853,080	1,909,766	1,968,005	2,036,143	2,115,201	2,151,965	2,189,254	2,227,002	2,264,750	2,302,499
Block 2	1,073,820	1,097,383	1,121,461	1,146,066	1,171,779	1,198,940	1,201,852	1,204,764	1,207,677	1,210,589	1,213,501
Total Revenue	2,871,727	2,950,463	3,031,227	3,114,071	3,207,922	3,314,141	3,353,817	3,394,018	3,434,679	3,475,339	3,516,000



Appendix C

Town of Cobourg – Ontario Regulation 453/07 Water Financial Plan



Water Ontario Regulation 453/07
Financial Plan
Town of Cobourg

Financial Plan #137-301

November 18, 2020

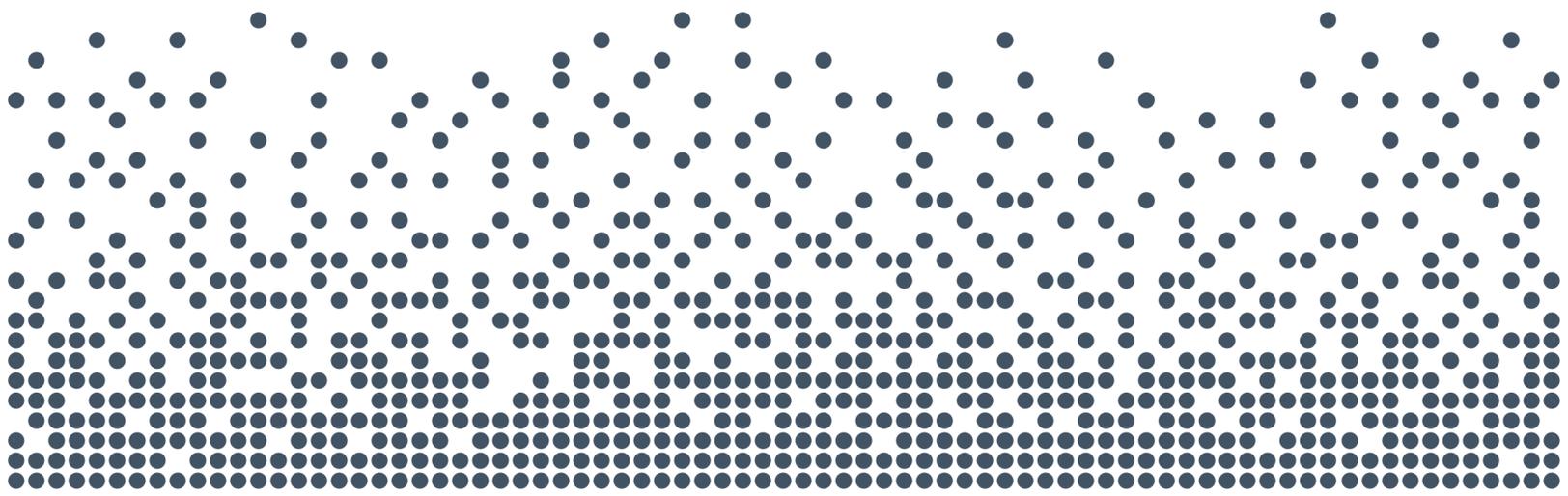
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Report



Chapter 1

Introduction



1. Introduction

1.1 Study Purpose

The Town of Cobourg and Lakefront Utility Services Inc.(hereafter referred to as the “Town”) retained Watson & Associates Economists Ltd. (Watson) to prepare a water financial plan as part of the five submission requirements for the purposes of obtaining a municipal drinking water license as per the *Safe Drinking Water Act, 2002*.. In general, a financial plan requires an in-depth analysis of capital and operating needs, a review of current and future demand versus supply, and consideration of available funding sources. The detailed financial planning and forecasting regarding the Town’s water systems has been completed based on the Town’s 2020 Water Rate Study, dated November 18, 2020 (2020 Rate Study). The objective of the report provided herein is to convert the findings of the 2020 Rate Study into the prescribed reporting requirements for a financial plan as defined by Ontario Regulation 453/07 (O. Reg. 453/07).

1.2 Background

The Safe Drinking Water Act (S.D.W.A.), “the Act,” was passed in December 2002 in order to address the recommendations made by the Walkerton Inquiry Part II report. Note that S.D.W.A. has been amended several times since 2002. One of the main requirements of the Act is the mandatory licensing of municipal water providers. Section 31 (1) specifically states:

“No person shall,

- a) establish a new municipal drinking water system or replace or carry out an alteration to a municipal drinking water system except under the authority of and in accordance with an approval under this Part or a drinking water works permit; or
- b) use or operate a municipal drinking water system that was established before or after this section comes into force except under the authority of and in accordance with an approval under this Part or municipal drinking water licence.”

In order to become licensed, a municipality must satisfy five key requirements as per section 44(1):



1. Obtain a drinking water works permit.
2. Acceptance of the operational plan for the system based on the Drinking Water Quality Management Standard.
3. Accreditation of the Operating Authority.
4. Prepare and provide a financial plan.
5. Obtain permit to take water.

For licence renewals, the application must be accompanied by proof that the financial plan meets the prescribed requirements as per the Act s. 32 (5) 2.ii.

The preparation of a financial plan is a key requirement for licensing and as such, must be undertaken by all municipal water providers.

1.2.1 Financial Plan Defined

Subsection 30 of the Act provides the following definition of financial plans:

"financial plans" means financial plans that satisfy the requirements prescribed by the Minister. 2017, c. 2, Sched. 11, s. 6 (3).

As of time of writing, the Sustainable Water and Sewage Systems Act, 2002 has been repealed (see section 2.2 of this report); however, the standards that it directs underpin the specific requirements of s. 30 as they are outlined in O. Reg. 453/07 and which will be examined in detail below.

1.2.2 Financial Plan Requirements – Existing System

The O. Reg. 453/07 provides details with regards to the financial plans for existing water systems. The requirements for existing systems are summarized as follows:

- Financial plans must be approved by resolution of Council (or governing body);
- Financial plans must include a statement that the financial impacts have been considered and apply for a minimum six-year period (commencing in the year of licence expiry);
- Financial plans must include detail regarding proposed or projected financial operations itemized by total revenues, total expenses, annual surplus/deficit and



accumulated surplus/deficit (i.e. the components of a “Statement of Operations” as per the PSAB) for each year in which the financial plans apply;

- Financial plans must present financial position itemized by total financial assets, total liabilities, net debt, non-financial assets, and tangible capital assets (i.e. the components of a “Statement of Financial Position” as per PSAB) for each year in which the financial plans apply;
- Gross cash receipts/payments itemized by operating transactions, capital transactions, investing transactions and financial transactions (i.e. the components of a “Statement of Cash Flow” as per PSAB) for each year in which the financial plans apply;
- Financial plans applicable to two or more solely-owned drinking water systems can be prepared as if they are for one drinking water system;
- Financial plans are to be made available to the public upon request and at no charge;
- If a website is maintained, financial plans are to be made available to the public through publication on the Internet at no charge;
- Notice of the availability of the financial plans is to be given to the public;
- Financial plan is to be submitted to the Ministry of Municipal Affairs and Housing; and
- The resolution of Council approving the Financial Plan be submitted to the Ministry of the Environment, Conservation and Parks (MECP).

1.2.3 Financial Plan Requirements – General

Given that the requirements for a financial plan is legislated under the Act, a financial plan is mandatory for water systems. The financial plans shall be for a forecast period of at least six years but longer planning horizons are encouraged. The ten-year forecast (2021-2030) goes above and beyond the minimum requirement. The financial plan is to be completed and approved by resolution of Council or the governing body in accordance with subsection 3(1)1 of O. Reg. 453/07. Confirmation of approval of the financial plan must be submitted at the time of municipal drinking water license renewal (i.e. six months prior to license expiry).

A copy of the financial plan will be submitted to the Ministry of Municipal Affairs and Housing (MMAH) and not the MECP; however, MECP may request it in the course of review of the licence renewal. Financial plans may be amended and additional



information beyond what is prescribed can be included if deemed necessary. The financial plan must contain on the front page, the appropriate financial plan number as set out in Schedule A of the Municipal Drinking Water Licence.

1.2.4 Public Sector Accounting Board (PSAB) Requirements

The components of the financial plans indicated by the regulation are consistent with the requirements for financial statement presentation as set out in section PS1200 of the Canadian Institute of Chartered Accountants Public Sector Accounting Handbook:

“Financial statements should include a Statement of Financial Position, a Statement of Operations, a Statement of Change in Net Debt, and a Statement of Cash Flow.”

The format required is to conform to the requirements of PS1200 and PS3150. The financial statements are to be reported on a full accrual accounting basis. The accrual accounting method recognizes revenues and expenses in the same period as the activities that give rise to them regardless of when they are actually paid for. Since an exchange of cash is not necessary to report a financial transaction, the accrual method is meant to provide a more accurate picture of financial position.

The accounting treatment of tangible capital assets is prescribed under section PS3150. Tangible capital assets are to be capitalized to ensure an inventory of the assets owned are recorded and to account for their ability to provide future benefits.

The Statement of Cash Flow and the Statement of Change in Net Financial Assets/Debt are required statements. The Statement of Change in Net Financial Assets/Debt reports on whether enough revenue was generated in a period to cover the expenses in the period and whether sufficient resources have been generated to support current and future activities. The Statement of Cash Flow reports on how activities were financed for a given period providing a measure of the changes in cash for that period.

1.2.5 The Town's Financial Plan

The Town is currently in the process of renewing their drinking water licence (licence number 137-301) and the previous version of the financial plan no longer meets the requirements as it must apply to a period of a least six years beginning in the year that the licence would otherwise expire. Although the Act requires at least six years to be



included, this financial plan provides for a ten-year forecast period (2021 to 2030). The Town's application renewal deadline is in February 2021.



Chapter 2

Sustainable Financial Planning



2. Sustainable Financial Planning

2.1 Introduction

In general, sustainability refers to the ability to maintain a certain position over time. While the Act requires a declaration of the financial plan's sustainability, it does not give a clear definition of what would be considered sustainable. Instead, MECP released a guideline ("Towards Financially Sustainable Drinking-Water and Wastewater Systems") that provides possible approaches to achieving 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: Life-cycle 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.

2.2 Sustainable Water and Sewage Systems Act

The *Sustainable Water and Sewage Systems Act* (S.W.S.S.A.) 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 could have made Regulations. It is noted that, the regulations, which accompany the Act, were not issued and the Act was repealed on December 31, 2012.

2.3 Water Opportunities Act, 2010

Since the passage of the *Safe Drinking Water Act*, changes and refinements to the legislation have been introduced, including the *Water Opportunities Act* (W.O.A). W.O.A. was introduced into legislation on May 18, 2010 and received Royal Assent on November 29, 2010, as the *Water Opportunities Act*.

The purposes of the *Water Opportunities Act* are to: foster innovative water, wastewater and storm water technologies, services and practices; create opportunities for economic development and clean-technology jobs; and conserve and sustain water resources. To achieve this W.O.A. provides for the creation of performance targets (financial, operational and maintenance related), which will vary by service type and location and the required submission of conservation and sustainability plans for water, wastewater and stormwater.

The sustainability plan in W.O.A. expands on interim legislation for financial plans included in O. Reg. 453/07, to include the following:

- an asset management plan for the physical infrastructure;
- financial plan;
- water conservation plan (for water service only);
- a risk assessment;
- a strategy for maintaining and improving the services; and



- additional information considered advisable.

Where a Board has jurisdiction over a service, the plan (and any plan amendments) must be approved by the municipality in which the municipal service is provided, before submission to the Minister. The Minister may also direct preparation of joint or partially joint plans.

Regulations (still forthcoming) will prescribe details in regard to any time periods or time limits, contents of the plans, identifying which portions of the plan will require certification, the public consultation process (if required), limitations updates and refinements.

2.4 Infrastructure for Jobs and Prosperity Act (I.J.P.A.), 2015

On June 4, 2015, the Province passed the Infrastructure for Jobs and Prosperity Act (I.J.P.A.) which, over time, will require municipalities to undertake and implement asset management plans for all infrastructure they own. On December 27, 2017, the Province of Ontario released Ontario Regulation 588/17 under I.J.P.A. which has 3 phases that municipalities must meet.

Every municipality in Ontario will have to prepare a strategic asset management policy by July 1, 2019. Municipalities will be required to review their strategic asset management policies at least every five years and make updates as necessary. The subsequent phases are as follows:

- Phase 1 – Asset Management Plan (by July 1, 2021):
 - For core assets – Municipalities must have the following:
 - Inventory of assets;
 - Current levels of service measured by standard metrics; and
 - Costs to maintain levels of service.
- Phase 2 – Asset Management Plan (by July 1, 2023):
 - Same steps as Phase 1 but for all assets.
- Phase 3 – Asset Management Plan (by July 1, 2024):
 - Builds on Phase 1 and 2 by adding:
 - Proposed levels of service; and
 - Lifecycle management and Financial strategy.



In relation to water (which is considered a core asset), municipalities will need to have an asset management plan that addresses the related infrastructure by July 1, 2021 (Phase 1). O. Reg. 588/17 specifies that the municipality's asset management plan must include the following for each asset category:

- the current levels of service being provided;
 - determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan.
- the current performance of each asset category;
- a summary of the assets in the category;
- the replacement cost of the assets in the category;
- the average age of the assets in the category, determined by assessing the average age of the components of the assets;
- the information available on the condition of the assets in the category;
- a description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate; and
- the lifecycle activities that would need to be undertaken to maintain the current levels of service.

Upon completion of the asset management plan for water, the Town will need to consider the impacts during the annual budget and forecast process.

2.5 Water Forecast

As noted earlier, the Town has already completed their 2020 Rate Study in November of 2020. The 2020 Rate Study process is designed to address “full cost” principles and reflect the guiding principles toward sustainable financial planning.

As a result of employing this process, the 2020 water budget and ten-year forecast (2021 to 2030), included in the 2020 Rate Study, provides the basis for a sound financial plan for the Town's water system by assessing:

- A detailed assessment of current and future capital needs including an analysis of potential funding sources;



- An analysis of operating costs in order to determine how they will be impacted by evolving infrastructure needs;
- A review and recommendation on rates that ensure revenues are equitable and sufficient to meet system needs; and
- A public process that involved consultation with the Town staff and Council, with the aim of gaining input and collaboration on the sustainability of the water systems.



Chapter 3

Approach



3. Approach

3.1 Overview

The 2020 Rate Study (along with additional detailed information provided by Town Staff) has been used as a starting point to prepare the water financial plan. The 2020 Rate Study forecast is prepared on a modified cash basis; therefore, a conversion is required in order to present a full accrual financial plan for the purposes of this report. The conversion process used will help to establish the structure of the financial plan along with the opening balances that will underpin the forecast. This chapter outlines the conversion process utilized and summarizes the adjustments made to prepare the water financial plan.

3.2 Conversion Process

The conversion from the existing modified cash basis found in the 2020 Rate Study to the full accrual reporting format required under O. Reg. 453/07 can be summarized in the following steps:

1. Calculate Tangible Capital Asset Balances
2. Convert Statement of Operations
3. Convert Statement of Financial Position
4. Convert Statement of Cash Flow and Net Assets/Debt
5. Verification and Note Preparation

3.2.1 Calculate Tangible Capital Asset Balances

In calculating tangible capital asset balances, existing and future purchased, developed, and/or contributed assets will need to be considered. For existing water assets, an inventory has already been compiled and summarized by the Town for the purposes of their annual PSAB 3150 compliance process. As required, for PSAB 3150 reporting purposes, the asset inventory listing included historical cost (which is the original cost to purchase, develop, or construct each asset) along with an estimated useful life for each



asset and any anticipated salvage value is recorded. The following calculations are made to determine net book value:

- Accumulated amortization up to the year prior to the first forecast year.
- Amortization expense on existing assets for each year of the forecast period.
- Acquisition of new assets for each year of the forecast period.
- Disposals and related gains or losses for each year of forecast period.

Future water capital needs have also been determined and summarized within the 2020 Rate Study. These estimates, however, only represent future assets that the Town anticipates purchasing or constructing without consideration for future assets that are contributed by developers and other parties (at no or partial cost to the Town). These contributed assets will form part of the infrastructure going forward in terms of the sustainability of the system and despite their non-monetary nature; future financial plans may need to be adjusted in order to properly account for these transactions. Once the sequence and total asset acquisition has been determined for the forecast period, annual amortization of these assets for each year is calculated in a similar manner as that used for existing assets.

Once the historical cost, accumulated amortization, and amortization expenses are calculated as described above, the total net book value of the tangible capital assets can be determined and recorded on the Statement of Financial Position.

3.2.2 Convert Statement of Operations

A wide range of adjustments will be considered, dependent on the size and complexity of the systems, in order to convert from the cash to full accrual basis (see Figure 3-1). For example, debt repayment costs relating to the principal payment portion only needs to be removed under the accrual basis, as they no longer qualify as an expense for reporting purposes. Principal payments are reported as a decrease in debt liability on the Statement of Financial Position. Transfers to and from reserves are removed as these transactions are represented by changes in cash and accumulated surplus. Finally, expenses relating to tangible capital assets, such as amortization, write-offs, and (gain)/loss on disposal of assets are reported on the Statement of Operations in order to capture the allocation of the cost of these assets to operating activities over their useful lives and therefore are added in under the accrual basis.



Table 3-1
Conversion Adjustments
Statement of Operations

Modified Cash Basis	Budget 2021	Adjustments		Full Accrual Budget 2021	Accrual Basis
		DR	CR		
Revenues					Revenues
Base Charge Revenue	2,259,918			2,259,918	Base Charge Revenue
Rate Based Revenue	3,303,625			3,303,625	Rate Based Revenue
Transfers from Reserves	-	-			
			-	-	Earned Development Charges and Gas Tax Revenue
			-	-	Developer Contributions
Other Revenue	209,496		7,786	217,282	Other Revenue
Total Revenues	5,773,039			5,780,825	Total Revenues
Expenditures					Expenses
Operating	2,989,200	-		2,989,200	Operating Expenses
Capital					
Transfers to Reserves	2,388,115		2,388,115		
Transfers to Capital	-		-		
Debt Repayment (Principal & Interest)	395,724		326,363	69,361	Interest on Debt
		1,420,335		1,420,335	Amortization
		-		-	Loss on Disposal of Tangible Capital Assets
Total Expenditures	5,773,039			4,478,896	Total Expenses
Net Expenditures	(0)			1,301,929	Annual Surplus/(Deficit)
Increase (decrease) in amounts to be recovered	-			32,383,104	Accumulated Surplus/(Deficit), beginning of year
Change in Fund Balances	-	1,301,929	-	33,685,033	Accumulated Surplus/(Deficit), end of year
TOTAL ADJUSTMENTS		2,722,264	2,722,264		



3.2.3 Convert Statement of Financial Position

Once the Statement of Operations has been converted and the net book value of tangible capital assets has been recorded, balances for the remaining items on the Statement of Financial Position are determined and recorded (see Figure 3-2). The opening/actual balances for the remaining accounts such as accounts receivable, inventory, accounts payable, outstanding debt (principal only), are recorded and classified according to the structure of the Statement of Financial Position as outlined in PS1200.

It is acknowledged that some of the balances required on the Statement of Financial Position will be consolidated across the Town and as such, will be difficult to isolate the information that is relevant to water. An example of this is accounts receivable, which may be administered centrally by the Finance Department. Ontario Regulation 453/07 allows for the exclusion of these numbers if they are not known at the time of preparing the financial plan. Please refer to the Financial Plan Notes in Chapter 4 for more details.

3.2.4 Convert Statement of Cash Flow and Net Financial Assets/Debt

The Statement of Cash Flow summarizes how the Town financed its activities or in other words, how the costs of providing services were recovered. The statement is derived using comparative Statement of Financial Position, the current Statement of Operations and other available transaction data.

The Statement of Change in Net Financial Assets/Debt is a statement which reconciles the difference between the surplus or deficit from current operations and the change in net financial assets/debt for the year. This is significant, as net debt provides an indication of future revenue requirements. In order to complete the Statement of Net Financial Assets/Debt, information regarding any gains/losses on disposals of assets, asset write-downs, acquisition/use of supplies inventory, and the acquisition use of prepaid expenses is necessary (if applicable). Although the Statement of Change in Net Financial Assets/Debt is not required under O. Reg. 453/07, it has been included in this report as a further indicator of financial viability.



**Table 3-2
Conversion Adjustments
Statement of Financial Position**

Modified Cash Basis	Budget 2021	Adjustments		Full Accrual Budget 2021	Accrual Basis
		DR	CR		
ASSETS					ASSETS
Financial Assets					Financial Assets
Cash	1,040,034			1,040,034	Cash
Accounts Receivable	1,026,600			1,026,600	Accounts Receivable
				-	Investments
				-	Inventory for resale
Total Financial Assets	2,066,634			2,066,634	Total Financial Assets
Non-Financial Assets					
Inventory of Supplies	-		-		
Prepaid Expenses	-		-		
Total Non-Financial Assets	-				
LIABILITIES					Liabilities
Accounts Payable & Accrued Liabilities	532,652			532,652	Accounts Payable & Accrued Liabilities
Gross Long-term Liabilities	2,173,557			2,173,557	Debt (Principal only)
Deferred Revenue	747,513			747,513	Deferred Revenue
Bank Indebtedness	-			-	Bank Indebtedness
Other	-			-	Other
Total Liabilities	3,453,722			3,453,722	Total Liabilities
Net Assets/(Debt)	(1,387,088)			(1,387,088)	Net Financial Assets/(Debt)
		35,072,121	-	35,072,121	Non-Financial Assets
		-		-	Tangible Capital Assets
		-		-	Inventory of Supplies
				-	Prepaid Expenses
				35,072,121	Total Non-Financial Assets
Municipal Position					
Water Reserves	786,469	786,469	-		
Gas Tax Reserve Fund	-	-	-		
Development Charge Reserve Fund	747,513	747,513	-		
Amounts to be Recovered	(2,921,070)	-	2,921,070		
Total Municipal Position	(1,387,088)		33,685,033	33,685,033	Accumulated Surplus/(Deficit), end of year
TOTAL ADJUSTMENTS		36,606,103	36,606,103		



3.2.5 Verification and Note Preparation

The final step in the conversion process is to ensure that all the statements created by the previous steps are in balance. The Statement of Financial Position summarizes the resources and obligations of the Town at a set point in time. The Statement of Operations summarizes how these resources and obligations changed over the reporting period. To this end, the accumulated surplus/deficit reported on the Statement of Financial Position should equal the accumulated surplus/deficit reported on the Statement of Operations.

The Statement of Change in Net Financial Assets/Debt and the Statement of Financial Position are also linked in terms of reporting on net financial assets/debt. On the Statement of Financial Position, net financial assets/debt is equal to the difference between financial assets and liabilities and should equal net financial assets/debt as calculated on the Statement of Net Financial Assets/Debt.

While not part of the financial plan, the accompanying notes are important to summarize the assumptions and estimates made in preparing the financial plan. Some of the significant assumptions that need to be addressed within the financial plan are as follows:

- a) Opening cash balances – Opening cash balances are necessary to complete the Statement of Cash Flows and balance the Statement of Financial Position. Preferably, opening cash balances should be derived from actual information contained within the Town’s ledgers. It may not be possible, however, to extract this information from the ledgers for water alone; therefore, a reasonable proxy will be needed. One approach is to assume that opening cash balances equal ending reserve and reserve fund balances from the previous year adjusted for accrual-based transactions reflected by accounts receivable/payable balances. The following equation outlines this approach:

$$\begin{aligned} & \text{Ending Reserve/Reserve Fund Balance} \\ & \text{Plus: Ending Accounts Payable Balance} \\ & \underline{\text{Less: Ending Accounts Receivable Balance}} \\ & \text{Equals: Approximate Ending Cash Balance} \end{aligned}$$



- b) Amortization Expense – The method and timing of amortization should be based on the Town’s amortization policy.
- c) Accumulated Amortization – Will be based on the culmination of accumulated amortization expenses throughout the life of each asset however derived, along with information on construction/acquisition date and useful life obtained from the 2020 Rate Study.
- d) Contributed Assets – As noted earlier, contributed assets could represent a significant part of the Town’s infrastructure acquisitions. As such, a reasonable estimate of value and timing of acquisition/donation may be required in order to adequately capture these assets. In the case where contributed assets are deemed to be insignificant or unknown, an assumption of “no contributed assets within the forecast period” will be made.
- e) Accumulated Surplus – The magnitude of the surplus in this area may precipitate the need for additional explanation especially in the first year of reporting. This Accumulated Surplus captures the historical infrastructure investment which has not been reported in the past but has accumulated to significant levels. It also includes all water reserve and reserve fund balances.
- f) Other Revenues – Will represent the recognition of revenues previously deferred (i.e. development charge revenues) and/or accrued revenues (developer contributions), and/or other minor miscellaneous revenues.



Chapter 4

Financial Plan



4. Financial Plan

4.1 Introduction

The following tables provide the complete financial plan for the Town's water system. A brief description and analysis of each table is provided below. It is important to note that the financial plan that follows is a forward look at the financial position of the Town's water system. It is not an audited document¹ and it contains various estimates as detailed in the "Notes to the Financial Plan" section below.

4.2 Water Financial Plan

4.2.1 *Statement of Financial Position (Table 4-1)*

The Statement of Financial Position provides information that describes the assets, liabilities, and accumulated surplus of the Town's water system. The first important indicator is net financial assets/(debt), which is defined as the difference between financial assets and liabilities. This indicator provides an indication of the system's "future revenue requirement." A net financial asset position is where financial assets are greater than liabilities and implies that the system has the resources to finance future operations. Conversely, a net debt position implies that the future revenues generated by the system will be needed to finance past transactions, as well as future operations. Table 4-1 indicates that in 2020, the Town's water system was in a net financial deficit position of \$1.4 million. The financial plan forecasts a net financial debt position for each year of the forecast period, decreasing to a net financial debt position of \$52.5 million by 2030 as the Town takes on more debt to finance capital works and issues D.C. credits to developers for the emplacement of growth-related projects.

Another important indicator on the Statement of Financial Position is the tangible capital asset balance under section PS3150. As noted earlier, providing this information is a requirement for municipalities as part of PS3150 compliance and is significant from a financial planning perspective for the following reasons:

- Tangible capital assets such as watermains and treatment facilities are imperative to water service delivery.

¹ O. Reg. 453/07 does not require an audited financial plan.



- These assets represent significant economic resources in terms of their historical and replacement costs. Therefore, ongoing capital asset management is essential to managing significant replacements and repairs.
- The annual maintenance required by these assets has an enduring impact on water operational budgets.

In general terms, an increase in the tangible capital asset balance indicates that assets may have been acquired either through purchase by the municipality or donation/contribution by a third party. A decrease in the tangible capital asset balance can indicate a disposal, write down, or use of assets. A use of assets is usually represented by an increase in accumulated amortization due to annual amortization expenses arising as a result of allocating the cost of the asset to operations over the asset's useful life. Table 4-1 shows tangible capital assets net book value is expected to increase to approximately \$99.0 million from \$35.0 million over the 10-year forecast period. This is reflective of the emplacement of new capital infrastructure assets over the forecast period needed to service current populations and new developments in the Cobourg East Community.

4.2.2 Statement of Operations (Table 4-2)

The Statement of Operations summarizes the revenues and expenses generated by the water system for a given period. The annual surplus/deficit measures whether the revenues generated were sufficient to cover the expenses incurred and in turn, whether net financial assets have been maintained or depleted. Table 4-2 illustrates the ratio of expenses to revenues increase from 77% to 91% over the forecast period. As a result, annual surplus/(deficit) decreases from a surplus of \$1.3 million to a surplus of \$743,500 over the forecast period. It is important to note that an annual surplus is beneficial to ensure funding is available to non-expense costs such as tangible capital asset acquisitions and reserve/reserve fund transfers.

Another important indicator on this statement is accumulated surplus/deficit. An accumulated surplus indicates that the available net resources are sufficient to provide future capital water services. An accumulated deficit indicates that resources are insufficient to provide future services and that borrowing or rate increases are required to finance annual deficits. From Table 4-2, the financial plan proposes to increase a 2020 accumulated surplus of \$32.4 million to approximately \$46.6 million over the



forecast period. The accumulated surplus, as indicated in Table 4-2, is predominantly made up of additional tangible capital assets.

4.2.3 Statement of Change in Net Financial Assets/Debt (Table 4-3)

The Statement of Change in Net Financial Assets/Debt indicates whether revenue generated was sufficient to cover operating and non-financial asset costs (i.e. inventory supplies, prepaid expenses, tangible capital assets, etc.) and in so doing, explains the difference between the annual surplus/deficit and the change in net financial assets/debt for the period. Table 4-3 indicates that forecasted tangible capital asset acquisitions (net of amortization for the year) exceed the forecasted annual surplus/deficit for all years of the forecast period, resulting in a decrease in net financial assets. Therefore, an overall decrease to net financial assets is anticipated over the forecast period. This is due to the planned use of debt to construct non-growth tangible capital assets in all years of the forecast and D.C. credits obligations in exchange for the construction of growth-related tangible capital assets in all years except 2021. Based on the foregoing, the ratio of cumulative annual surplus before amortization to the cumulative tangible capital asset acquisitions decreases throughout the forecast period, decreasing from a value of 0.96 in 2021 to 0.41 in 2030.¹

4.2.4 Statement of Cash Flow (Table 4-4)

The Statement of Cash Flow summarizes how water systems are expected to generate and use cash resources during the forecast period. The transactions that provide/use cash are classified as operating, capital, investing, and financing activities as shown in Table 4-4. This statement focuses on the cash aspect of these transactions and thus is the link between cash-based and accrual-based reporting. Table 4-4 indicates that cash from operations will be used to fund capital transactions (i.e. tangible capital asset acquisitions) and build internal reserves and reserve funds over the forecast period. The financial plan projects the cash position of the Town's water systems to worsen from a balance of approximately \$1.9 million at the beginning of 2021, to a deficit of \$757,300 by the end of 2030. The deficit cash position reflects forecast accounts receivable exceeding accounts payable at 20230 and the large amount of Tangible Capital Asset acquisition required and reserve funds being fully utilized in all years of

¹ A desirable ratio is 1:1 or better.



the forecast. For further discussions on projected cash balances please refer to the Notes to the Financial Plan.



Table 4-1
Statement of Financial Position: Water Services
UNAUDITED: For Financial Planning Purposes Only
2021-2030

	Notes	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Financial Assets												
Cash	1	1,040,034	-	-	-	-	-	-	-	-	-	-
Accounts Receivable	1	1,026,600	1,075,008	1,128,518	1,187,762	1,256,971	1,339,121	1,356,072	1,372,163	1,389,047	1,405,486	
Total Financial Assets		2,066,634	1,075,008	1,128,518	1,187,762	1,256,971	1,339,121	1,356,072	1,372,163	1,389,047	1,405,486	
Liabilities												
Bank Indebtedness		-	531,037	572,919	620,352	677,150	746,216	749,828	752,234	755,124	757,260	
Accounts Payable & Accrued Liabilities	1	532,652	543,971	555,599	567,410	579,821	592,905	606,244	619,929	633,923	648,226	
Debt (Principal only)	2	2,173,557	3,413,670	5,960,121	7,851,996	10,397,923	9,922,682	9,907,540	9,993,344	10,185,399	10,488,792	
Deferred Revenue	3	747,513	-	-	-	-	-	-	-	-	-	
DC Credits	3	-	5,351	926,253	6,932,822	12,989,357	18,190,793	23,548,408	29,066,610	34,750,731	41,960,120	
Total Liabilities		3,453,722	4,494,029	8,014,892	15,972,580	24,644,251	29,452,596	34,812,020	40,432,117	46,325,177	53,854,398	
Net Financial Assets/(Debt)		(1,387,088)	(3,419,021)	(6,886,374)	(14,784,818)	(23,387,280)	(28,113,475)	(33,455,948)	(39,059,954)	(44,936,130)	(52,448,912)	
Non-Financial Assets												
Tangible Capital Assets	4	35,072,121	39,343,590	44,391,350	54,067,964	64,448,604	70,575,839	77,185,148	83,939,184	90,770,154	99,026,417	
Total Non-Financial Assets		35,072,121	39,343,590	44,391,350	54,067,964	64,448,604	70,575,839	77,185,148	83,939,184	90,770,154	99,026,417	
Accumulated Surplus/(Deficit)	5	33,685,033	35,924,569	37,504,976	39,283,146	41,061,324	42,462,364	43,729,200	44,879,230	45,834,024	46,577,505	
Financial Indicators												
	Total Change	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
1) Increase/(Decrease) in Net Financial Assets	(51,168,560)	(106,736)	(2,031,933)	(3,467,353)	(7,898,444)	(8,602,462)	(4,726,195)	(5,342,473)	(5,604,006)	(5,876,176)	(7,512,782)	
2) Increase/(Decrease) in Tangible Capital Assets	65,362,961	1,408,665	4,271,469	5,047,760	9,676,614	10,380,640	6,127,235	6,609,309	6,754,036	6,830,970	8,256,263	
3) Increase/(Decrease) in Accumulated Surplus	14,194,401	1,301,929	2,239,536	1,580,407	1,778,170	1,778,178	1,401,040	1,266,836	1,150,030	954,794	743,481	



Table 4-2
Statement of Operations: Water Services
UNAUDITED: For Financial Planning Purposes Only
2021-2030

	Notes	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water Revenue											
Base Charge Revenue		2,259,918	2,526,924	2,824,650	3,168,322	3,570,195	3,621,860	3,670,572	3,723,021	3,772,979	3,823,398
Rate Based Revenue		3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424
Earned Development Charges Revenue	3	-	776,369	29,696	165,492	170,482	175,564	180,885	186,298	191,879	197,611
Developer Contributions	4	-	-	-	-	-	-	-	-	-	-
Other Revenue	6	217,282	212,735	216,044	219,426	226,009	232,789	237,401	242,101	246,900	251,901
Total Revenues		5,780,825	6,836,769	6,408,247	6,915,710	7,361,867	7,457,979	7,549,710	7,645,796	7,739,658	7,834,334
Water Expenses											
Operating Expenses	Sch. 4-1	2,989,200	3,053,100	3,118,000	3,186,200	3,277,100	3,331,400	3,406,600	3,483,500	3,562,100	3,642,700
Interest on Debt	2	69,361	59,602	112,600	217,954	297,229	402,774	387,583	396,302	399,734	407,416
Amortization	4	1,420,335	1,484,531	1,597,240	1,733,386	2,009,360	2,322,765	2,488,691	2,615,964	2,823,030	3,040,737
Loss on Disposal of Tangible Capital Assets		-	-	-	-	-	-	-	-	-	-
Total Expenses		4,478,896	4,597,233	4,827,840	5,137,540	5,583,689	6,056,939	6,282,874	6,495,766	6,784,864	7,090,853
Annual Surplus/(Deficit)		1,301,929	2,239,536	1,580,407	1,778,170	1,778,178	1,401,040	1,266,836	1,150,030	954,794	743,481
Accumulated Surplus/(Deficit), beginning of year	5	32,383,104	33,685,033	35,924,569	37,504,976	39,283,146	41,061,324	42,462,364	43,729,200	44,879,230	45,834,024
Accumulated Surplus/(Deficit), end of year		33,685,033	35,924,569	37,504,976	39,283,146	41,061,324	42,462,364	43,729,200	44,879,230	45,834,024	46,577,505
Note 5:											
Accumulated Surplus/(Deficit) Reconciliation:		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Reserve Balances											
Reserves: Development Charges		747,513	-	-	-	-	-	-	-	-	-
Reserves: Gas Tax		-	-	-	-	-	-	-	-	-	-
Reserves: Capital/Other		786,469	-	-	-	-	-	-	-	-	-
Total Reserves Balance		1,533,982	-								
Less: Debt Obligations and Deferred Revenue		(2,921,070)	(3,413,670)	(5,960,121)	(7,851,996)	(10,397,923)	(9,922,682)	(9,907,540)	(9,993,344)	(10,185,399)	(10,488,792)
Less: DC Credits Outstanding	3	-	(5,351)	(926,253)	(6,932,822)	(12,989,357)	(18,190,793)	(23,548,408)	(29,066,610)	(34,750,731)	(41,960,120)
Add: Tangible Capital Assets	4	35,072,121	39,343,590	44,391,350	54,067,964	64,448,604	70,575,839	77,185,148	83,939,184	90,770,154	99,026,417
Total Ending Balance		33,685,033	35,924,569	37,504,976	39,283,146	41,061,324	42,462,364	43,729,200	44,879,230	45,834,024	46,577,505
Financial Indicators											
1) Expense to Revenue Ratio	Total Change	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
		77%	67%	75%	74%	76%	81%	83%	85%	88%	91%
2) Increase/(Decrease) in Accumulated Surplus	14,194,401	1,301,929	2,239,536	1,580,407	1,778,170	1,778,178	1,401,040	1,266,836	1,150,030	954,794	743,481



Schedule 4-1
Statement of Operating Expenses: Water Services
UNAUDITED: For Financial Planning Purposes Only
2021-2030

	Notes	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operating Expenses											
Wages		1,495,100	1,525,000	1,555,500	1,586,600	1,618,300	1,650,700	1,683,700	1,717,400	1,751,700	1,786,700
Management fees		74,800	76,300	77,800	79,400	81,000	82,600	84,300	86,000	87,700	89,500
Training		45,600	46,500	47,400	48,300	49,300	50,300	51,300	52,300	53,300	54,400
Billing and collecting		126,900	129,400	132,000	134,600	137,300	140,000	142,800	145,700	148,600	151,600
Professional fees and dues		61,200	62,400	63,600	64,900	66,200	67,500	68,900	70,300	71,700	73,100
Rent		55,100	56,200	57,300	58,400	59,600	60,800	62,000	63,200	64,500	65,800
Vehicle maintenance and gas		39,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900	46,800
Property taxes		84,700	86,400	88,100	89,900	91,700	93,500	95,400	97,300	99,200	101,200
Insurance		98,500	100,500	102,500	104,600	106,700	108,800	111,000	113,200	115,500	117,800
IT maintenance		93,000	94,900	96,800	98,700	100,700	102,700	104,800	106,900	109,000	111,200
Misellaneous		19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500	23,000	23,500
Office supplies and telecommunications		109,300	111,500	113,700	116,000	118,300	120,700	123,100	125,600	128,100	130,700
Water operations and maintenance		286,300	293,700	301,200	309,700	319,300	329,100	339,200	349,700	360,400	371,500
Chemicals purchased		52,100	53,400	54,800	56,300	58,100	59,900	61,700	63,600	65,600	67,600
Distribution		281,500	288,800	296,300	304,600	314,000	323,700	333,700	343,900	354,500	365,300
Building utilities and maintenance		66,200	68,000	69,700	71,700	73,900	76,200	78,500	80,900	83,400	86,000
Non TCA - Expenses from Capital Budget	7	-	-	-	-	19,000	-	-	-	-	-
TOTAL OPERATING EXPENSES		2,989,200	3,053,100	3,118,000	3,186,200	3,277,100	3,331,400	3,406,600	3,483,500	3,562,100	3,642,700



Table 4-3
Statement of Changes in Net Financial Assets/Debt: Water Services
UNAUDITED: For Financial Planning Purposes Only
2021-2030

	Notes	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Annual Surplus/(Deficit)		1,301,929	2,239,536	1,580,407	1,778,170	1,778,178	1,401,040	1,266,836	1,150,030	954,794	743,481
Less: Acquisition of Tangible Capital Assets	4	(2,829,000)	(5,756,000)	(6,645,000)	(11,410,000)	(12,390,000)	(8,450,000)	(9,098,000)	(9,370,000)	(9,654,000)	(11,297,000)
Add: Amortization of Tangible Capital Assets	4	1,420,335	1,484,531	1,597,240	1,733,386	2,009,360	2,322,765	2,488,691	2,615,964	2,823,030	3,040,737
(Gain)/Loss on disposal of Tangible Capital Assets		-	-	-	-	-	-	-	-	-	-
Add: Proceeds on Sale of Tangible Capital Assets		-	-	-	-	-	-	-	-	-	-
Add: Write-downs of Tangible Capital Assets		-	-	-	-	-	-	-	-	-	-
		(1,408,665)	(4,271,469)	(5,047,760)	(9,676,614)	(10,380,640)	(6,127,235)	(6,609,309)	(6,754,036)	(6,830,970)	(8,256,263)
Less: Acquisition of Supplies Inventory		-	-	-	-	-	-	-	-	-	-
Less: Acquisition of Prepaid Expenses		-	-	-	-	-	-	-	-	-	-
Add: Consumption of Supplies Inventory		-	-	-	-	-	-	-	-	-	-
Add: Use of Prepaid Expenses		-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-
Increase/(Decrease) in Net Financial Assets/(Net Debt)		(106,736)	(2,031,933)	(3,467,353)	(7,898,444)	(8,602,462)	(4,726,195)	(5,342,473)	(5,604,006)	(5,876,176)	(7,512,782)
Net Financial Assets/(Net Debt), beginning of year		(1,280,352)	(1,387,088)	(3,419,021)	(6,886,374)	(14,784,818)	(23,387,280)	(28,113,475)	(33,455,948)	(39,059,954)	(44,936,130)
Net Financial Assets/(Net Debt), end of year		(1,387,088)	(3,419,021)	(6,886,374)	(14,784,818)	(23,387,280)	(28,113,475)	(33,455,948)	(39,059,954)	(44,936,130)	(52,448,912)
Financial Indicators											
1) Acquisition of Tangible Capital Assets (Cumulative)		2,829,000	8,585,000	15,230,000	26,640,000	39,030,000	47,480,000	56,578,000	65,948,000	75,602,000	86,899,000
2) Annual Surplus/Deficit before Amortization (Cumulative)		2,722,264	6,446,331	9,623,978	13,135,534	16,923,072	20,646,877	24,402,404	28,168,398	31,946,222	35,730,440
3) Ratio of Annual Surplus before Amortization to Acquisition of TCA's (Cumulative)		0.96	0.75	0.63	0.49	0.43	0.43	0.43	0.43	0.42	0.41



Table 4-4
Statement of Cash Flow – Indirect Method: Water Services
UNAUDITED: For Financial Planning Purposes Only
2021-2030

	Notes	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operating Transactions											
Annual Surplus/Deficit		1,301,929	2,239,536	1,580,407	1,778,170	1,778,178	1,401,040	1,266,836	1,150,030	954,794	743,481
Add: Amortization of TCA's	4	1,420,335	1,484,531	1,597,240	1,733,386	2,009,360	2,322,765	2,488,691	2,615,964	2,823,030	3,040,737
(Gain)/Loss on disposal of Tangible Capital Assets		-	-	-	-	-	-	-	-	-	-
Less: Earned Deferred Revenue	3	-	(776,369)	(29,696)	(165,492)	(170,482)	(175,564)	(180,885)	(186,298)	(191,879)	(197,611)
Less: Developer Contributions		-	-	-	-	-	-	-	-	-	-
Add: Deferred Revenue Proceeds		35,425	28,856	29,696	165,492	170,482	175,564	180,885	186,298	191,879	197,611
Change in A/R (Increase)/Decrease		(1,026,599)	(48,409)	(53,511)	(59,244)	(69,208)	(82,150)	(16,951)	(16,091)	(16,883)	(16,439)
Change in A/P Increase/(Decrease)		532,652	11,319	11,628	11,811	12,411	13,084	13,339	13,685	13,994	14,303
Less: Interest Proceeds		(7,787)	-	-	-	-	-	-	-	-	-
Cash Provided by Operating Transactions		2,255,955	2,939,464	3,135,764	3,464,123	3,730,741	3,654,739	3,751,915	3,763,588	3,774,935	3,782,082
Capital Transactions											
Proceeds on sale of Tangible Capital Assets		-	-	-	-	-	-	-	-	-	-
Less: Cash Used to acquire Tangible Capital Assets	4	(2,829,000)	(5,756,000)	(6,645,000)	(11,410,000)	(12,390,000)	(8,450,000)	(9,098,000)	(9,370,000)	(9,654,000)	(11,297,000)
Cash Applied to Capital Transactions		(2,829,000)	(5,756,000)	(6,645,000)	(11,410,000)	(12,390,000)	(8,450,000)	(9,098,000)	(9,370,000)	(9,654,000)	(11,297,000)
Investing Transactions											
Proceeds from Investments		7,787	-	-	-	-	-	-	-	-	-
Less: Cash Used to Acquire Investments		-	-	-	-	-	-	-	-	-	-
Cash Provided by (applied to) Investing Transactions		7,787	-	-	-	-	-	-	-	-	-
Financing Transactions											
Proceeds from Debt Issue	2	-	1,576,235	2,945,557	2,402,366	3,153,912	259,270	753,557	505,590	645,610	796,772
Proceeds from D.C. Credit Issuance	3	-	5,351	920,902	6,006,569	6,056,535	5,201,436	5,357,615	5,518,202	5,684,121	7,209,389
Less: Debt Repayment (Principal only)	2	(326,363)	(336,121)	(399,105)	(510,491)	(607,986)	(734,511)	(768,699)	(419,786)	(453,556)	(493,379)
Cash Applied to Financing Transactions		(326,363)	1,245,465	3,467,354	7,898,444	8,602,461	4,726,195	5,342,473	5,604,006	5,876,175	7,512,782
Increase in Cash and Cash Equivalents		(891,621)	(1,571,071)	(41,882)	(47,433)	(56,798)	(69,066)	(3,612)	(2,406)	(2,890)	(2,136)
Cash and Cash Equivalents, beginning of year	1	1,931,655	1,040,034	(531,037)	(572,919)	(620,352)	(677,150)	(746,216)	(749,828)	(752,234)	(755,124)
Cash and Cash Equivalents, end of year	1	1,040,034	(531,037)	(572,919)	(620,352)	(677,150)	(746,216)	(749,828)	(752,234)	(755,124)	(757,260)



Notes to Financial Plan

The financial plan format as outlined in Chapter 4 closely approximates the full accrual format used by municipalities on their audited financial statements. However, the financial plan is not an audited document and contains various estimates. In this regard, section 3 (2) of O. Reg. 453/07 states the following:

“Each of the following sub-subparagraphs applies only if the information referred to in the sub-subparagraph is known to the owner at the time the financial plans are prepared:

1. Sub-subparagraphs 4 i A, B and C of subsection (1)
2. Sub-subparagraphs 4 iii A, C, E and F of subsection (1).”

The information referred to in sub-subparagraphs 4 i A, B and C of subsection (1) includes:

- A. Total financial assets (i.e. cash and receivables);
- B. Total liabilities (i.e. payables, debt and deferred revenue);
- C. Net debt (i.e. the difference between A and B above).

The information referred to in sub-subparagraphs 4 iii A, C, E and F of subsection (1) includes:

- A. Operating transactions that are cash received from revenues, cash paid for operating expenses and finance charges
- B. Investing transactions that are acquisitions and disposal of investments
- C. Change in cash and cash equivalents during the year
- D. Cash and cash equivalents at the beginning and end of the year

In order to show a balanced financial plan in a full accrual format for the Town, some of the items listed above have been estimated given that the Town does not maintain all financial asset and liability data separately for water. Usually, this type of data is combined with the financial assets and liabilities of other departments and services



given that there is not a current obligation to disclose this data separately (as there is with revenue and expenses).

The assumptions used have been documented below:

1. Cash, Receivables and Payables

It is assumed that the opening cash balances required to complete the financial plan are equal to:

Ending Reserve/Reserve Fund Balance
Plus: Ending Accounts Payable Balance
Less: Ending Accounts Receivable Balance
Equals: *Approximate Ending Cash Balance*

Receivable and payable balances were estimated for each year of the forecast based on the following factors:

- a) Receivables: Based on historical levels of water receivables as a percentage of annual water revenue earned (source: 2018 and 2019 Town provided water accounts receivable balances); and
- b) Payables: Based on historical levels of water payables as a percentage of annual water expenses incurred (source: 2018 and 2019 Town provided water accounts payable balances).

2. Debt

The Town will be issuing \$2.5 million in water related debt in 2020 and is anticipating the need to issue debt over the forecast period to fund non-growth-related expenditures. *Principal* repayments for the debt over the forecast period are scheduled as follows:



Year	Principal Payments
2021	326,363
2022	336,121
2023	399,105
2024	510,491
2025	607,986
2026	734,511
2027	768,699
2028	419,786
2029	453,556
2030	493,379
Total	5,049,997

3. Deferred Revenue

Deferred revenue is typically made up of water development charge reserve fund and gas tax balances which are considered to be a liability for financial reporting purposes until the funds are used to emplace the works for which they have been collected. The Development Charge reserve fund is anticipated to be fully utilized in starting in 2022 which is shown as earned development charge revenues for reporting purposes. After 2022, growth-related expenditures are anticipated to be undertaken in part by developers who will receive D.C. credits in exchange for the emplaced capital works.

These D.C. credits have been accounted for as a liability under the Statement of Financial Position. In the Statement of Operations, outstanding D.C. credits can be seen in the Accumulated Surplus/(Deficit) reconciliation and are treated similarly to outstanding debt obligations. Finally, we see the proceeds from developer contributions in the Statement of Cash Flow calculations, similar to proceeds from the issuance of debt.

4. Tangible Capital Assets

- Opening net book value of tangible capital assets includes water related assets in the following categories:
 - i. Infrastructure (equipment, infrastructure and contributed capital)
 - ii. Facilities (buildings)
- Amortization is calculated based on using the straight-line approach with no amortization in the year of acquisition or construction.



- Given the planned asset replacement forecast in the 2020 Rate Study, useful life on acquisitions is assumed to be equal to the weighted average useful life for all assets on hand in each respective asset category.
- Write-offs are assumed to equal \$0 for each year in the forecast period.
- Tangible capital assets are shown on a net basis. It is assumed that disposals occur when the asset is being replaced, unless the asset is documented as a new asset. The value of each asset disposal is calculated by estimating the original purchase/construction date and deflating current replacement cost values to those estimated dates in order to calculate original historical cost.
- Gains/losses on disposal are assumed to be \$0 (it is assumed that historical cost is equal to accumulated amortization for all disposals).
- Residual value is assumed to be \$0 for all assets contained within the forecast period.
- The Town is unaware of any specific lead service piping in the municipal water system.

The balance of tangible capital assets is summarized as follows:

Asset Historical Cost	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Tangible Capital Asset Balance	60,378,875	62,364,125	67,172,409	72,817,263	83,365,002	94,851,838	102,509,764	110,598,260	118,851,628	127,283,674
Acquisitions	2,829,000	5,756,000	6,645,000	11,410,000	12,390,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000
Disposals	843,750	947,716	1,000,146	862,261	903,164	792,074	1,009,504	1,116,632	1,221,954	1,284,662
Closing Tangible Capital Asset Balance	62,364,125	67,172,409	72,817,263	83,365,002	94,851,838	102,509,764	110,598,260	118,851,628	127,283,674	137,296,012
Opening Accumulated Amortization	26,715,419	27,292,004	27,828,819	28,425,913	29,297,038	30,403,234	31,933,925	33,413,112	34,912,444	36,513,520
Amortization Expense	1,420,335	1,484,531	1,597,240	1,733,386	2,009,360	2,322,765	2,488,691	2,615,964	2,823,030	3,040,737
Amortization on Disposal	843,750	947,716	1,000,146	862,261	903,164	792,074	1,009,504	1,116,632	1,221,954	1,284,662
Ending Accumulated Amortization	27,292,004	27,828,819	28,425,913	29,297,038	30,403,234	31,933,925	33,413,112	34,912,444	36,513,520	38,269,595
Net Book Value	35,072,121	39,343,590	44,391,350	54,067,964	64,448,604	70,575,839	77,185,148	83,939,184	90,770,154	99,026,417

5. Accumulated Surplus

Opening accumulated surplus for the forecast period is reconciled as follows:

Water	2021 Opening Accumulated Surplus
Reserve Balances	
Reserves: Development Charges	712,088
Reserves: Capital/Other	1,219,567
Total Reserves Balance	1,931,655
Less: Debt Obligations and Deferred Revenue	(3,212,007)
Less: Unfinanced Capital	-
Add: Tangible Capital Assets	33,663,456
Total Opening Balance	32,383,104



The accumulated surplus reconciliation for all years within the forecast period is contained in Table 4-2.

6. Other Revenue

Other revenues include interest and miscellaneous fees and charges.

7. Operating Expenses

Capital expenditures for items not meeting the definition of tangible capital assets have been reclassified as operating expenses and have been expensed in the year in which they occur.



Chapter 5

Process for Financial Plan Approval and Submission to the Province



5. Process for Financial Plan Approval and Submission to the Province

As mentioned in section 1.2, preparation of and approval of a financial plan for water assets that meets the requirements of the Act is mandatory for municipal water providers. Proof of the plan preparation and approval is a key submission requirement for municipal drinking water licensing and, upon completion, must be submitted to the MECP. The process established for plan approval, public circulation and filing is set out in O. Reg. 453/07 and can be summarized as follows:

1. The financial plan must be approved by resolution of Council of the municipality who owns the drinking water system or the governing body of the owner. (O. Reg. 453/07, section 3 (1) 1.)
2. The owner of the drinking water system must provide notice advertising the availability of the financial plan. The plans will be made available to the public upon request and without charge. The plans must also be made available to the public on the municipality's website. (O. Reg. 453/07, section 3 (1) 5.)
3. The owner of the drinking water system must provide a copy of the financial plan to the Director of Policy Branch, Ministry of Municipal Affairs and Housing. (O. Reg. 453/07, section 3 (1) 6.)
4. The owner of the drinking water system must provide proof satisfactory to the Director that the financial plans for the system satisfy the requirements under the Safe Drinking Water Act. (S.D.W.A. section 32 (5) 2.ii.)



Chapter 6

Recommendations

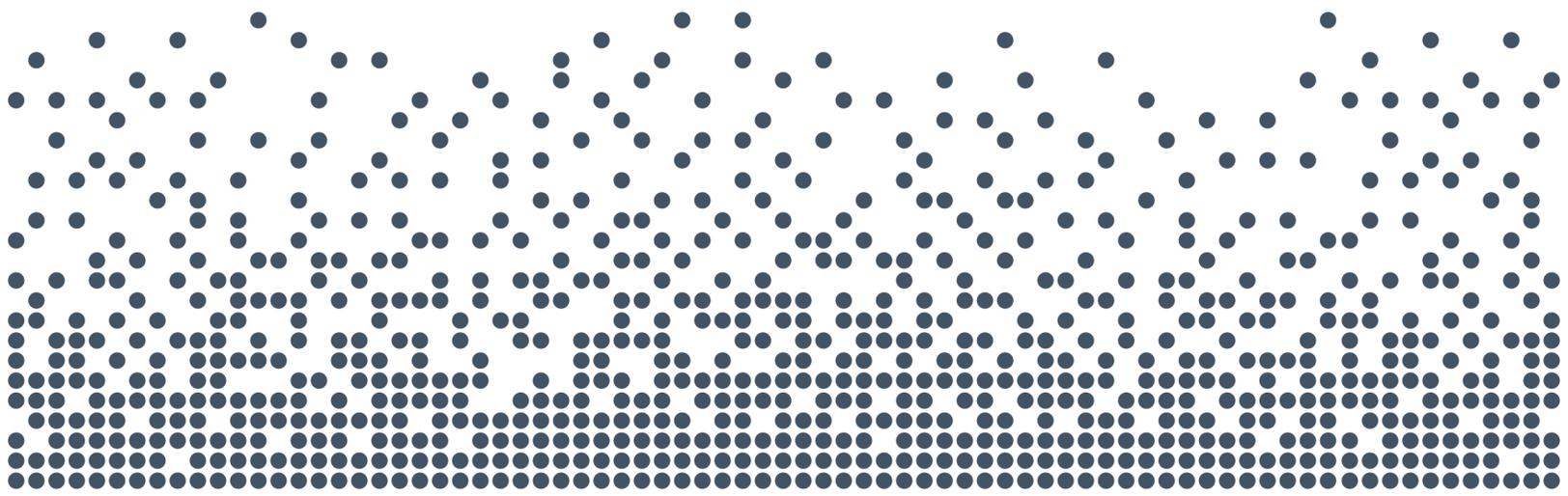


6. Recommendations

This report presents the water financial plan for the Town of Cobourg in accordance with the mandatory reporting formats for water systems as detailed in O. Reg. 453/07. It is important to note that while mandatory, the financial plan is provided for Council's interest and approval, however, for decision making purposes, it may be more informative to rely on the information contained within the 2020 Water Rate Study, dated November 18, 2020. Nevertheless, Council is required to pass certain resolutions with regard to this plan and regulations and it is recommended that:

1. The Town of Cobourg's Water Financial Plan prepared by Watson & Associates Economists Ltd. dated November 18, 2020 be approved.
2. Notice of availability of the Financial Plan be advertised.
3. The Financial Plan dated November 18, 2020 be submitted to the Ministry of Municipal Affairs and Housing. (O. Reg. 453/07, section 3 (1) 6).
4. The resolution of Council approving the Financial Plan be submitted to the MECP, satisfying the requirements under the Safe Drinking Water Act. (S.D.W.A. section 32 (5) 2.ii.).¹

¹ Note: The Ministry of the Environment does not require the Council Resolution for the initial financial plan submission. We encourage the municipality to contact the Ministry of the Environment to verify all requirements have been met.



Appendices



Appendix A

2020 Water Rate Study – Water Summary Tables



Table 1
Town of Cobourg
Water Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Capital Budget Forecast Projects													
<i>Capital Expenditures</i>													
Water Master Plan (including Clarifier engineering study)	150,000	-	-	-	-	-	-	-	-	-	-	-	-
Booster Station Generator	10,000	-	-	-	-	-	-	-	-	-	-	-	-
Tower 2 (Strathy Rd.) Generator	20,000	-	-	-	-	-	-	-	-	-	-	-	-
Rebuild WTP Surge Relief Valve - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Raw Water Intake - clean and repairs	15,000	-	-	-	-	-	-	-	-	-	-	-	-
Raw Water Actuator Valve	11,000	-	-	-	-	-	-	-	-	-	-	-	-
ROV CCC	6,000	-	-	-	-	-	-	-	-	-	-	-	-
Wachs hydraulic water pump	5,000	-	-	-	-	-	-	-	-	-	-	-	-
Work Order Management	26,000	-	-	-	-	-	-	-	-	-	-	-	-
Matthew Street	1,050,000	-	-	-	-	-	-	-	-	-	-	-	-
Watermain Design	50,000	334,000	52,000	53,000	55,000	56,000	58,000	60,000	-	-	-	-	-
IT Hardware and Software	81,000	250,000	39,000	40,000	41,000	42,000	43,000	45,000	-	-	-	-	-
Tools	15,000	99,000	15,000	16,000	16,000	17,000	17,000	18,000	-	-	-	-	-
New Distribution Truck	100,000	-	-	-	-	-	-	-	-	-	-	-	-
WTP Driveway	40,000	-	-	-	-	-	-	-	-	-	-	-	-
Level Sensors Reservoirs	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-
LLP Valve Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Correlator	-	26,000	26,000	-	-	-	-	-	-	-	-	-	-
HLP#1 VFD - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Raw Water Wetwell/Pumphouse	-	21,000	21,000	-	-	-	-	-	-	-	-	-	-
Harden St. plus Harden Cres	-	739,000	739,000	-	-	-	-	-	-	-	-	-	-
Albert St.	-	286,000	286,000	-	-	-	-	-	-	-	-	-	-
Burke, Blake, and Victoria	-	1,181,000	1,181,000	-	-	-	-	-	-	-	-	-	-
WTP Truck	-	48,000	48,000	-	-	-	-	-	-	-	-	-	-
Monroe St. Watermain Replacement	-	318,000	-	318,000	-	-	-	-	-	-	-	-	-
Walton St. Renovations	-	1,300,000	-	1,300,000	-	-	-	-	-	-	-	-	-
Sinclair St.	-	764,000	-	764,000	-	-	-	-	-	-	-	-	-
GAC Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Spencer St. West (Division St. to George St.)	-	459,000	-	-	459,000	-	-	-	-	-	-	-	-
Burnham St. (King St. to Kerr St)	-	1,595,000	-	-	1,595,000	-	-	-	-	-	-	-	-
University St. West (William St. to Cobourg Creek)	-	393,000	-	-	393,000	-	-	-	-	-	-	-	-
Victoria St. (University to North limit)	-	1,302,000	-	-	-	1,302,000	-	-	-	-	-	-	-
Margaret and University Ave. East	-	591,000	-	-	-	591,000	-	-	-	-	-	-	-
Clarifier Replacement - Included in Master Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Campbell St. Watermain Replacement	-	626,000	-	-	-	-	626,000	-	-	-	-	-	-
Perry Street (D'Arcy St. to Church St.)	-	968,000	-	-	-	-	968,000	-	-	-	-	-	-
Watermain replacement	-	1,791,000	-	-	-	-	-	1,791,000	-	-	-	-	-
Provision	-	9,907,000	-	-	-	-	-	-	2,368,000	2,439,000	2,512,000	2,588,000	-



Table 1 Cont'd
Town of Cobourg
Water Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Master Plan Capital Projects														
<i>Linear Watermain Projects</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1a - Brook Road North	-	288,000	-	69,000	71,000	73,000	75,000	-	-	-	-	-	-	-
1b - Fut. Kerr Street	-	1,775,000	-	424,000	437,000	450,000	464,000	-	-	-	-	-	-	-
1c - D'Arcy Street	-	372,000	-	89,000	92,000	94,000	97,000	-	-	-	-	-	-	-
2a - D'Arcy Street	-	644,000	-	154,000	159,000	163,000	168,000	-	-	-	-	-	-	-
2b - Fut. Kerr Street	-	1,079,000	-	-	-	141,000	145,000	149,000	154,000	159,000	163,000	168,000	-	-
2c - Brook Road North	-	2,664,000	-	-	-	348,000	358,000	369,000	380,000	391,000	403,000	415,000	-	-
2d - Fut. Brook Road North	-	770,000	-	-	-	770,000	-	-	-	-	-	-	-	-
2e - Elgin Street East	-	926,000	-	-	-	926,000	-	-	-	-	-	-	-	-
2f - Fut. Road Internal to Rondeau Dev.	-	1,137,000	-	-	-	1,137,000	-	-	-	-	-	-	-	-
2g - Danforth Road	-	863,000	-	-	-	113,000	116,000	119,000	123,000	127,000	131,000	134,000	-	-
2h - Fut. Kerr Street	-	3,052,000	-	-	-	398,000	410,000	423,000	435,000	448,000	462,000	476,000	-	-
2i - Fut. Kerr Street	-	788,000	-	-	-	103,000	106,000	109,000	112,000	116,000	119,000	123,000	-	-
2j - Cobourg East - Fut. Mid-block Connection	-	1,052,000	-	-	-	137,000	141,000	146,000	150,000	155,000	159,000	164,000	-	-
2k - Cobourg East - South East Loop	-	1,691,000	-	-	-	221,000	227,000	234,000	241,000	248,000	256,000	264,000	-	-
2l - Fut. Brook Road North	-	700,000	-	-	-	91,000	94,000	97,000	100,000	103,000	106,000	109,000	-	-
2m - Danforth Road	-	1,064,000	-	-	-	139,000	143,000	147,000	152,000	156,000	161,000	166,000	-	-
2o - White Street at Cobourg Creek E. Branch	-	1,372,000	-	-	444,000	457,000	471,000	-	-	-	-	-	-	-
2p - White Street at Cobourg Creek W. Branch	-	866,000	-	-	280,000	289,000	297,000	-	-	-	-	-	-	-
2q - Cobourg East - North East Loop	-	2,002,000	-	-	-	261,000	269,000	277,000	286,000	294,000	303,000	312,000	-	-
2r - Cobourg East - Fut. Mid-block Connection	-	905,000	-	-	-	118,000	122,000	125,000	129,000	133,000	137,000	141,000	-	-
3a - West Sub-Trunk	-	1,327,000	-	-	-	173,000	178,000	184,000	189,000	195,000	201,000	207,000	-	-
3b - East Sub-Trunk	-	905,000	-	-	-	118,000	122,000	125,000	129,000	133,000	137,000	141,000	-	-
<i>Pumping and Storage Facility Projects</i>														
Ewart Street BPS Building Maintenance	32,500	-	-	-	-	-	-	-	-	-	-	-	-	-
Replace Ewart Street BPS Stand-By Power System	-	500,000	-	-	-	-	77,000	80,000	82,000	84,000	87,000	90,000	-	-
New 5,000 m3 Zone 1 Elevated Tank	-	7,933,000	-	1,896,000	1,953,000	2,012,000	2,072,000	-	-	-	-	-	-	-
Decommission Existing Zone 1 Victoria Street Elevated Tank	-	360,000	-	86,000	89,000	91,000	94,000	-	-	-	-	-	-	-
Provide Full Size Irrigated Soccer Field	-	505,000	-	121,000	124,000	128,000	132,000	-	-	-	-	-	-	-
New Zone 2 BPS with a 120 L/s Firm Rated Capacity at Same Site as New Zone 1 Elevated Tank	-	1,948,000	-	-	-	-	301,000	310,000	320,000	329,000	339,000	349,000	-	-
Expand the Existing Ewart Street BPS to Firm Rated Capacity of 312 L/s	-	1,948,000	-	-	-	-	301,000	310,000	320,000	329,000	339,000	349,000	-	-
First of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	655,000	-	-	-	-	-	-	-	-	-	-	655,000	-
Second of Two (Twin) 2,000 m3 Zone 2 at Grade Tanks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Booster Pumping Station to Supply Future Zone 3	-	4,306,000	-	-	-	-	666,000	686,000	706,000	727,000	749,000	772,000	-	-
1,360 m3 of New In-Ground Storage at the WTP	-	699,000	-	-	-	-	-	-	-	-	-	-	699,000	-



Table 1 Cont'd
Town of Cobourg
Water Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2020	Total	Forecast											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
<i>Water Treatment Projects</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Intake Pipe Cleaning, Inspection and Upgrades	-	142,000	27,000	28,000	28,000	29,000	30,000	-	-	-	-	-	-	-
Repair Leaking Pumphouse Roof	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Provide Railing System on Retaining Walls at Shoreline	-	15,000	3,000	3,000	3,000	3,000	3,000	-	-	-	-	-	-	-
Replace GAC Filter Media	-	569,000	107,000	110,000	114,000	117,000	121,000	-	-	-	-	-	-	-
Improve Ventilation/Dehumidification in Backwash Pump Room	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-	-
Replace/Repair Sections of Backwash Piping	-	213,000	40,000	41,000	43,000	44,000	45,000	-	-	-	-	-	-	-
Replace Wastewater Transfer Pumps and Provide Flow Meter on Discharge	-	107,000	20,000	21,000	21,000	22,000	23,000	-	-	-	-	-	-	-
Upgrade Wastewater Discharge System (On-Site SPS)	-	711,000	134,000	138,000	142,000	146,000	151,000	-	-	-	-	-	-	-
Replace Chlorine Storage Room Monorail and Hoist	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-	-
Replace Surge Valve on Highlift Pumping Station Discharge	-	43,000	8,000	8,000	9,000	9,000	9,000	-	-	-	-	-	-	-
Relocate Chlorine Residual Sampling Points	-	36,000	7,000	7,000	7,000	7,000	8,000	-	-	-	-	-	-	-
Replace WTP SCADA Computers	-	36,000	7,000	7,000	7,000	7,000	8,000	-	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Ewart Street BPS	-	107,000	20,000	21,000	21,000	22,000	23,000	-	-	-	-	-	-	-
Replace SCADAPack 32 PLCs at Zone 2 (Strathy Road) Elevated Tank	-	71,000	13,000	14,000	14,000	15,000	15,000	-	-	-	-	-	-	-
Replace Low Lift Pump Discharge Valves	-	195,000	-	-	-	-	30,000	31,000	32,000	33,000	34,000	35,000	-	-
Refurbish Low Lift Pumps	-	162,000	-	-	-	-	25,000	26,000	27,000	27,000	28,000	29,000	-	-
Replace Alum Tanks (2)	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	-	-
Replace Turbidimeters	-	97,000	-	-	-	-	15,000	16,000	16,000	16,000	17,000	17,000	-	-
Provide Redundant Dissolved Air Floatation Clarification System - Option C5	-	10,399,000	-	-	-	-	1,608,000	1,656,000	1,705,000	1,757,000	1,809,000	1,864,000	-	-
Provide Third Filter Train - Option C5	-	4,386,000	-	-	-	-	678,000	699,000	719,000	741,000	763,000	786,000	-	-
Replace Supernatant Discharge Pumps	-	32,000	-	-	-	-	5,000	5,000	5,000	5,000	6,000	6,000	-	-
Equip High-lift Pumps HLP #1 & HLP #2 with VFDs	-	162,000	-	-	-	-	25,000	26,000	27,000	27,000	28,000	29,000	-	-
Replace High-lift Pump Discharge Butterfly Valves & Controls	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	-	-
Refurbish High-Lift Pumps	-	195,000	-	-	-	-	30,000	31,000	32,000	33,000	34,000	35,000	-	-
Replace Low-Lift and High-Lift Pump Level Transmitters	-	325,000	-	-	-	-	50,000	52,000	53,000	55,000	57,000	58,000	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Rate Study and Financial Plan	16,000	19,000	-	-	-	-	19,000	-	-	-	-	-	-	-
Total Capital Expenditures	1,627,500	86,918,000	2,829,000	5,756,000	6,645,000	11,410,000	12,409,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000		
Capital Financing														
Provincial/Federal Grants		-												
Development Charges Reserve Fund	-	44,034,396	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000		
Non-Growth Related Debenture Requirements	-	13,038,869	-	1,576,235	2,945,557	2,402,366	3,153,912	259,270	753,557	505,590	645,610	796,772		
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-		
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-		
Water Reserve	1,627,500	29,844,735	2,829,000	3,398,045	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228		
Total Capital Financing	1,627,500	86,918,000	2,829,000	5,756,000	6,645,000	11,410,000	12,409,000	8,450,000	9,098,000	9,370,000	9,654,000	11,297,000		



Table 2
Town of Cobourg
Water Service
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2020	Principal (Inflated)	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
2021		-		-	-	-	-	-	-	-	-	-	-
2022		1,576,235			115,982	115,982	115,982	115,982	115,982	115,982	115,982	115,982	115,982
2023		2,945,557				216,739	216,739	216,739	216,739	216,739	216,739	216,739	216,739
2024		2,402,366					176,770	176,770	176,770	176,770	176,770	176,770	176,770
2025		3,153,912						232,070	232,070	232,070	232,070	232,070	232,070
2026		259,270							19,078	19,078	19,078	19,078	19,078
2027		753,557								55,448	55,448	55,448	55,448
2028		505,590									37,202	37,202	37,202
2029		645,610										47,505	47,505
2030		796,772											
Total Annual Debt Charges	-	13,038,869	-	-	115,982	332,721	509,492	741,562	760,639	816,088	853,290	900,795	

Table 3
Town of Cobourg
Water Service
Schedule of Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2020	Principal (Inflated)	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
2021		-		-	-	-	-	-	-	-	-	-	-
2022		-			-	-	-	-	-	-	-	-	-
2023		-				-	-	-	-	-	-	-	-
2024		-					-	-	-	-	-	-	-
2025		-						-	-	-	-	-	-
2026		-							-	-	-	-	-
2027		-								-	-	-	-
2028		-									-	-	-
2029		-										-	-
2030		-											-
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-	-	-



Table 4
Town of Cobourg
Water Service
Water Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	248,916	1,219,567	786,469	-	-	-	-	-	-	-	-
Transfer from Operating	2,586,076	2,388,115	2,611,577	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228
Transfer to Capital	1,627,500	2,829,000	3,398,045	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	1,207,492	778,682	-	-	-	-	-	-	-	-	-
Interest	12,075	7,787	-	-	-	-	-	-	-	-	-

Table 5
Town of Cobourg
Water Service
Water Development Charges Reserve Fund Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	677,846	712,088	747,513	-	-	-	-	-	-	-	-
Development Charge Proceeds	27,192	28,024	28,856	29,696	165,492	170,482	175,564	180,885	186,298	191,879	197,611
Developer Contributions	-	-	5,351	920,902	6,006,569	6,056,535	5,201,436	5,357,615	5,518,202	5,684,121	7,209,389
Transfer to Capital	-	-	781,720	950,598	6,172,061	6,227,017	5,377,000	5,538,500	5,704,500	5,876,000	7,407,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	705,038	740,112	-	-	-	-	-	-	-	-	-
Interest	7,050	7,401	-	-	-	-	-	-	-	-	-



Table 6
Town of Cobourg
Water Services
Operating Budget Forecast
 Inflated \$

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Expenditures												
<u>Operating Costs (Fixed Costs)</u>												
Wages	1,465,824	1,495,100	1,525,000	1,555,500	1,586,600	1,618,300	1,650,700	1,683,700	1,717,400	1,751,700	1,786,700	
Management fees	73,339	74,800	76,300	77,800	79,400	81,000	82,600	84,300	86,000	87,700	89,500	
Training	44,747	45,600	46,500	47,400	48,300	49,300	50,300	51,300	52,300	53,300	54,400	
Billing and collecting	124,446	126,900	129,400	132,000	134,600	137,300	140,000	142,800	145,700	148,600	151,600	
Professional fees and dues	60,047	61,200	62,400	63,600	64,900	66,200	67,500	68,900	70,300	71,700	73,100	
Rent	54,064	55,100	56,200	57,300	58,400	59,600	60,800	62,000	63,200	64,500	65,800	
Vehicle maintenance and gas	38,474	39,200	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900	46,800	
Property taxes	83,000	84,700	86,400	88,100	89,900	91,700	93,500	95,400	97,300	99,200	101,200	
Insurance	96,555	98,500	100,500	102,500	104,600	106,700	108,800	111,000	113,200	115,500	117,800	
IT maintenance	91,206	93,000	94,900	96,800	98,700	100,700	102,700	104,800	106,900	109,000	111,200	
Misellaneous	19,340	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500	23,000	23,500	
Office supplies and telecommunications	107,133	109,300	111,500	113,700	116,000	118,300	120,700	123,100	125,600	128,100	130,700	
Subtotal - Fixed Costs	2,258,175	2,303,100	2,349,200	2,396,000	2,443,900	2,492,800	2,542,500	2,593,500	2,645,400	2,698,200	2,752,300	
<u>Operating Costs (Variable Costs)</u>												
Water operations and maintenance	279,052	286,300	293,700	301,200	309,700	319,300	329,100	339,200	349,700	360,400	371,500	
Chemicals purchased	50,750	52,100	53,400	54,800	56,300	58,100	59,900	61,700	63,600	65,600	67,600	
Distribution	274,453	281,500	288,800	296,300	304,600	314,000	323,700	333,700	343,900	354,500	365,300	
Building utilities and maintenance	64,572	66,200	68,000	69,700	71,700	73,900	76,200	78,500	80,900	83,400	86,000	
Subtotal - Variable Costs	668,827	686,100	703,900	722,000	742,300	765,300	788,900	813,100	838,100	863,900	890,400	
Sub Total Operating	2,927,002	2,989,200	3,053,100	3,118,000	3,186,200	3,258,100	3,331,400	3,406,600	3,483,500	3,562,100	3,642,700	
<u>Capital-Related</u>												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-	
New Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-	
Existing Debt (Principal) - Non-Growth Related		326,363	336,121	346,172	356,524	367,184	378,164	389,391				
Existing Debt (Interest) - Non-Growth Related		69,361	59,602	49,551	39,200	28,539	17,559	6,251				
New Non-Growth Related Debt (Principal)		-	-	52,933	153,967	240,801	356,347	379,308	419,786	453,556	493,379	
New Non-Growth Related Debt (Interest)		-	-	63,049	178,754	268,690	385,215	381,332	396,302	399,734	407,416	
Transfer to Capital		-	-	-	-	-	-	-	-	-	-	
Transfer to Capital Reserve	2,586,076	2,388,115	2,611,577	2,748,846	2,835,573	3,028,070	2,813,730	2,805,943	3,159,910	3,132,390	3,093,228	
Sub Total Capital Related	2,586,076	2,783,839	3,007,300	3,260,551	3,564,018	3,933,285	3,951,015	3,962,224	3,975,998	3,985,679	3,994,023	
Total Expenditures	5,513,078	5,773,039	6,060,400	6,378,551	6,750,218	7,191,385	7,282,415	7,368,824	7,459,498	7,547,779	7,636,723	
<u>Revenues</u>												
Base Charge	2,020,244	2,259,918	2,526,924	2,824,650	3,168,322	3,570,195	3,621,860	3,670,572	3,723,021	3,772,979	3,823,398	
Other Revenue	185,301	187,631	189,995	192,395	194,831	200,676	206,696	210,800	215,000	219,300	223,700	
Interest	21,024	21,865	22,740	23,649	24,595	25,333	26,093	26,600	27,100	27,600	28,200	
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	
Contributions from Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	2,226,569	2,469,414	2,739,659	3,040,694	3,387,748	3,796,204	3,854,649	3,907,972	3,965,121	4,019,879	4,075,298	
Water Billing Recovery - Operating	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424	
Water Billing Recovery - Total	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424	



Table 7
Town of Cobourg
Water Services
Water Rate Forecast
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<i>Increasing Block Structure</i>											
<i>Volume Forecast By Block (m3)</i>											
Block 1	1,208,619	1,220,281	1,231,944	1,243,606	1,260,408	1,282,622	1,304,744	1,327,232	1,350,040	1,372,847	1,395,655
Block 2	902,499	903,165	903,831	904,497	905,429	906,761	908,093	909,425	910,757	912,089	913,421
Block 3	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664	40,664
Total Volume	2,151,782	2,164,110	2,176,438	2,188,766	2,206,501	2,230,047	2,253,501	2,277,321	2,301,461	2,325,600	2,349,740
<i>Increasing Block Rates (\$/m³)</i>											
Block 1	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Block 2	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71
Block 3	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
<i>Revenue</i>											
Block 1	1,655,808	1,671,786	1,687,763	1,703,740	1,726,758	1,757,192	1,787,500	1,818,308	1,849,554	1,880,801	1,912,047
Block 2	1,543,273	1,544,412	1,545,551	1,546,690	1,548,284	1,550,562	1,552,839	1,555,117	1,557,395	1,559,672	1,561,950
Block 3	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427	87,427
Total Revenue	3,286,509	3,303,625	3,320,741	3,337,857	3,362,470	3,395,181	3,427,766	3,460,852	3,494,376	3,527,900	3,561,424