



Water and Wastewater Rate Study

Town of Parry Sound

For Public Circulation and Comment

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Report



Chapter 1

Introduction



1. Introduction

1.1 Background

The Town of Parry Sound (Town) provides water and wastewater services to its constituents located in the urban serviced areas of the Town. There are approximately 2,346 water customers and 2,273 wastewater customers using the municipal systems. In addition to the Town's municipal water and wastewater customers. The Town also provides water service to the neighbouring community of McDougall. The Town has a purchase of service agreement with the Municipality of McDougall based upon an agreed upon rate and the annual amount of water consumed. This agreement provides for annual rate adjustments in accordance with the water rate adjustments imposed by Council for municipal customers.

The Town of Parry Sound recovers the cost of municipal water services and wastewater services through the imposition of user fees. The Town's municipal water system is partially metered, with 54% of the customers billed on a flat rate basis. Metered customers are billed a monthly base charge amount, differentiated between residential and non-residential uses and by meter size, for fixed costs of operation and capital. The monthly base charges recognize a minimum amount of water consumption included within the base charge. The minimum consumption threshold also increases by meter size. In addition to the monthly base charge, customers are also charged a volumetric rate per 1,000 gallons of water consumed above the minimum threshold. The volumetric charge is also differentiated by residential and non-residential users.

The water and wastewater rates presently in effect are summarized as follows:



Table 1-1
2020 Water and Wastewater Rates

Description	Water	Water Capital	Wastewater	Wastewater Capital
Metered				
Residential - Metered				
5/8", 3/4" (1,000 gals allowed)	\$7.38	\$31.24	\$13.02	\$37.63
1" (1,000 gals allowed)	\$5.55	\$34.56	\$9.80	\$41.67
Commerical - Metered				
5/8" (5,000 gals allowed)	\$26.08	\$33.89	\$51.34	\$40.83
3/4" (6,000 gals allowed)	\$28.86	\$37.54	\$56.85	\$45.16
1" (8,000 gals allowed)	\$52.15	\$67.81	\$102.68	\$81.64
1 1/4", 1 1/2" (12,000 gals allowed)	\$88.21	\$114.66	\$173.63	\$138.13
2" (20,000 gals allowed)	\$136.25	\$177.12	\$268.15	\$213.35
3" (48,000 gals allowed)	\$344.88	\$448.39	\$678.87	\$540.06
4" (88,000 gals allowed)	\$641.72	\$834.26	\$1,263.11	\$1,004.78
6" (175,000 gals allowed)	\$1,259.22	\$1,637.12	\$2,478.66	\$1,971.79
Volume Charge (per 1,000 gallons)				
Residential - Water Used Over Minimum of 1,000 gallons	\$0.78	\$1.03	\$6.56	\$5.20
Non-Res. - Water Used Over Minimum Up to 100,000 gallons	\$5.14	\$6.70	\$10.16	\$8.05
Non-Res - Water Used Over 100,000 gallons	\$3.83	\$4.88	\$7.45	\$5.93
Unmetered (Flat Rate)				
Residential - Flat				
1/2", 5/8", 3/4"	\$24.03	\$31.24	\$47.32	\$37.63
1"	\$26.59	\$34.56	\$52.64	\$41.65
Commercial - Flat				
1/2", 5/8"	\$30.02	\$39.06	\$59.09	\$47.03
3/4"	\$32.85	\$42.65	\$64.59	\$51.39

1.2 Study Process

Watson & Associates Economists Ltd. was retained by the Town of Parry Sound to undertake a water and wastewater rate study update.

The objectives of the study and the steps involved in carrying out this assignment are summarized below:



- Update water and wastewater service demand assumptions based on analysis of historical consumption and recent trends;
- Estimate future consumption levels by applying revised demand assumptions to forecast growth;
- Build a capital program that blends lifecycle needs arising from the Town's Asset Management Plan with specific needs identified by staff;
- Identify potential methods of cost recovery from the capital needs listing. These recovery methods include other statutory authorities (e.g. Municipal Act, etc.) as an offset to recovery through the water and wastewater rates;
- Forecast annual operating costs and rate-based funding requirements;
- Prepare alternative rate structures and forecasts and provide an impact assessment on the rate payers;
 - In 2017, Council approved implementation of alternative rate structure comprised of a base charge (based on meter size) and consumptive rate that is uniform across all customers. This rate structure would eliminate the minimum bill consumption included in the base charge, and the premium charged to non-residential customers. As part of this assignment, Watson was engaged to provide recommended rates to implement the new rate structure as approved by Council. A later resolution by Council instructed staff to consider alternatives that would mitigate the impacts on small and residential users on the system when transitioning to the recommended rate structure.
- Present findings to and public in a public meeting of Council.

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



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 *Safe Drinking Water Act* is being implemented in stages.

“The purpose of the *Safe Drinking Water Act* is to protect human health through the control and regulation of drinking-water systems and drinking-water testing. Building on existing policy and practice in Ontario's



treatment and distribution of drinking water, the *Safe Drinking Water Act* requires that all municipal drinking water systems obtain an approval from the Director of the Ministry of the Environment in order to operate. Operators are required to be trained and certified to provincial standards. The act also provides legally binding standards for testing of drinking water and requires that testing be done in licensed and accredited laboratories.”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 Ontario Regulation 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.

¹ The Ministry of Environment http://www.ene.gov.on.ca/environment/en/legislation/safe_drinking_water_act/index.html



- 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.



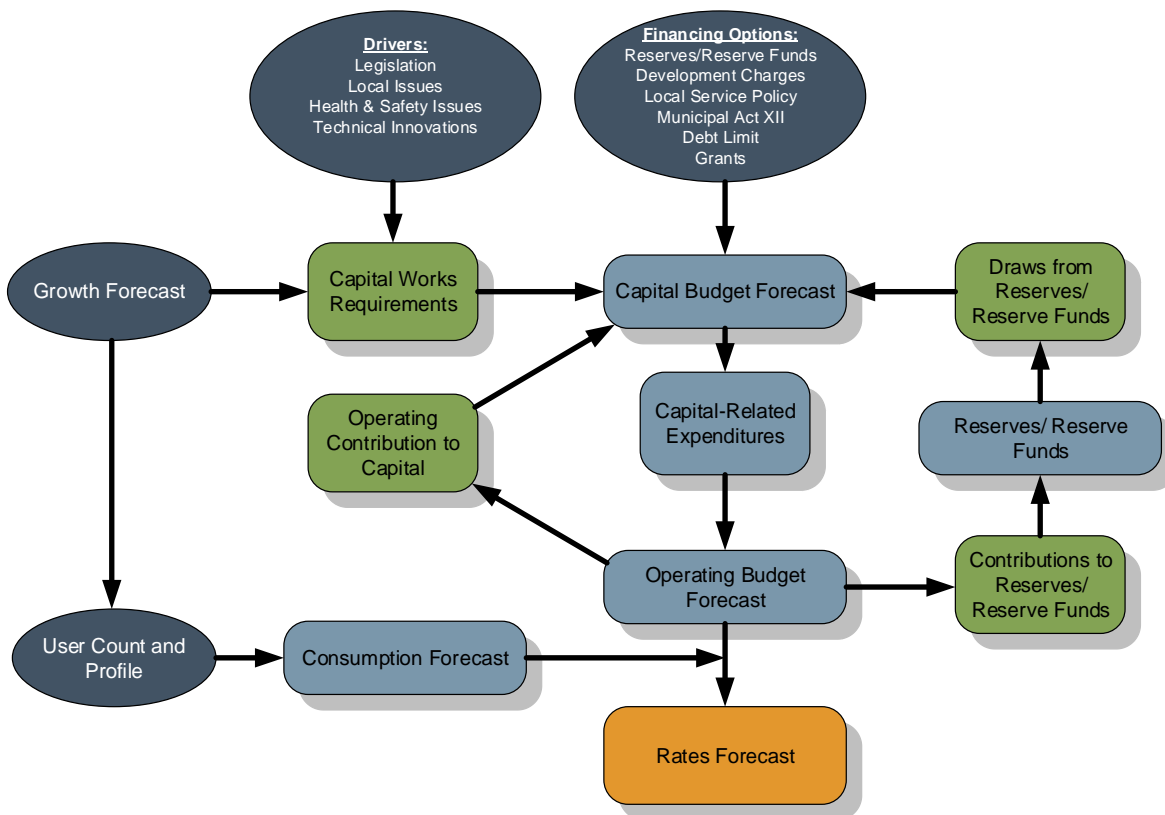
Regulations will prescribe:

- 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 forecast.

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 a rate structure consisting of a monthly base and capital charge and a consumptive rate for metered customers and a monthly flat rate for unmetered users. The base charge is imposed based on water meter size with higher charges imposed on larger meters, generally reflective of higher capital infrastructure demands. Metered customers are also charged for any consumption in excess of the minimum threshold included in the base charge. For metered residential customers this is imposed at a constant rate per 1,000 gallons. For metered non-residential customers, this variable portion is billed based on a declining block rate (i.e. as consumption increases beyond certain thresholds, the volumetric rate decreases).

This first step in the analysis is important as it produces the current base revenue by source and assumptions for forecasting purposes. The base charge revenues are forecast with customer growth. The customer profile forecast is modeled based on the historical growth to the system, applying generally witnessed metered size assumptions by use. Moreover, the customer forecast is modelled for the water and wastewater systems independently to identify differences in service demands.

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

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 Asset Management Plan provided the base capital forecast with adjustments



made by Town staff for specific projects. Included in the Asset Management Plan capital forecast modified based on input from staff as well as any other needs identified by staff. 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 and debt for program/service level improvements. Growth-related sources of funding include development charges, and debt. The use of rate-based funding is measured against the revenue projections and affordability impacts. The reserve/reserve fund sources are measured against the sustainability of these funds, relative to lifecycle demands, revenue projections and affordability impacts. Debt financing is considered for significant capital expenditures, where funding is required beyond long-term lifecycle needs or to facilitate rate transition policies. Debt financing is measured 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 and wastewater services, as well as the capital cost requirements to ensure service sustainability. Operating revenues are projected to identify the base charge and consumptive rate components net of anticipated operating revenues, such as connection fees, rental fees and 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, a list of water and wastewater customer accounts was extracted from the Town's billing system and supplemented with the Town's water production data. There are currently 2,346 water customers and 2,273 wastewater customers. The Town also provided historical data pertaining to the water purchase agreement with the Town of McDougall.

2.2 Forecast Service Demands

Historical average annual consumption levels by customer type were applied to the Town's growth projections for the urban service area to forecast future service demands. In consultation with Town staff, it was determined that the analysis should provide for conservative system growth over the forecast period 2020-2030. Factoring in potential for further conservation of this period, a conservative growth forecast minimizes the financial risk to the Town.

In total, water and wastewater system customers are anticipated to increase by 30 customers by 2030. This results in an increase from 2,346 customers currently to 2,375 for the water system and from 2,273 currently to 2,302 for the wastewater system. Table 2-1 provides the detailed growth forecast for the period.

Consumption by metered customers was based on billing data. In addition, Town staff provided consumption estimates for unmetered system users. New growth to the system was estimated at 43,226 imperial gallons of water consumption per year based on the average consumption. The same estimate per customer has been used for wastewater. Applying these estimates to new customers, results in an estimated increase in total water consumption from 188.1 million imperial gallons currently to 189.3 million imperial gallons by 2029. Total wastewater flows are anticipated to increase from 165.6 million imperial gallons currently to 166.8 million imperial gallons by 2029. Based on the current minimum use thresholds in the water and wastewater bills, billed water and wastewater represents 70% of total water and wastewater demand. Table 2-2 provides the detailed consumption and flow forecast.



Table 2-1
Town of Parry Sound
Water and Wastewater Customer Forecast

Water Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Residential										
Existing - Metered	666	666	666	666	666	666	666	666	666	666
Existing - Unmetered	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
New - Growth	2	5	8	11	14	17	20	23	26	29
Total - Residential Customers	1,927	1,930	1,933	1,936	1,939	1,942	1,945	1,948	1,951	1,954
Non-Residential										
Existing - Metered	414	414	414	414	414	414	414	414	414	414
Existing - Flat Rate	7	7	7	7	7	7	7	7	7	7
New - Growth	-	-	-	-	-	-	-	-	-	-
Total - Non-Residential Customers	421	421	421	421	421	421	421	421	421	421
Total	2,348	2,351	2,354	2,357	2,360	2,363	2,366	2,369	2,372	2,375

Wastewater Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Residential										
Existing - Metered	633	633	633	633	633	633	633	633	633	633
Existing - Unmetered	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219
New - Growth	2	5	8	11	14	17	20	23	26	29
Total - Residential Customers	1,854	1,857	1,860	1,863	1,866	1,869	1,872	1,875	1,878	1,881
Non-Residential										
Existing - Metered	414	414	414	414	414	414	414	414	414	414
Existing - Flat Rate	7	7	7	7	7	7	7	7	7	7
New - Growth	-	-	-	-	-	-	-	-	-	-
Total - Non-Residential Customers	421	421	421	421	421	421	421	421	421	421
Total	2,275	2,278	2,281	2,284	2,287	2,290	2,293	2,296	2,299	2,302



Table 2-2
Town of Parry Sound
Water Consumption and Wastewater Flow Forecast

Water Consumption (Imperial Gallons)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Residential											
Existing - Metered	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847	17,784,847
Existing - Unmetered	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883	54,421,883
New - Growth	-	86,453	216,131	345,810	475,489	605,168	734,847	864,526	994,204	1,123,883	1,253,562
Sub-total - Residential Customers	72,206,731	72,293,183	72,422,862	72,552,541	72,682,220	72,811,898	72,941,577	73,071,256	73,200,935	73,330,614	73,460,293
Less: Included in Base Charge	7,992,000	8,016,000	8,052,000	8,088,000	8,124,000	8,160,000	8,196,000	8,232,000	8,268,000	8,304,000	8,340,000
Total Billed Consumption - Residential Customers	64,214,731	64,277,183	64,370,862	64,464,541	64,558,220	64,651,898	64,745,577	64,839,256	64,932,935	65,026,614	65,120,293
Non-Residential											
Existing - Metered	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583
Existing - Flat Rate	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584
New - Growth	-	-	-	-	-	-	-	-	-	-	-
Sub-total - Non-Residential Customers	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167
Less: Included in Base Charge	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856
Total Billed Consumption - Non-Residential Customers	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311
McDougall Service Agreement	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458	19,881,458
Total Consumption	188,077,355	188,163,808	188,293,487	188,423,166	188,552,844	188,682,523	188,812,202	188,941,881	189,071,560	189,201,239	189,330,917
Less: Included in Base Charge	55,727,856	55,751,856	55,787,856	55,823,856	55,859,856	55,895,856	55,931,856	55,967,856	56,003,856	56,039,856	56,075,856
Total Billed Water Consumption	132,349,499	132,411,952	132,505,631	132,599,310	132,692,988	132,786,667	132,880,346	132,974,025	133,067,704	133,161,383	133,255,061
Wastewater Flows (Imperial Gallons)											
Residential											
Existing - Metered	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616	16,903,616
Existing - Unmetered	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832	52,692,832
New - Growth	-	86,453	216,131	345,810	475,489	605,168	734,847	864,526	994,204	1,123,883	1,253,562
Sub-total - Residential Customers	69,596,448	69,682,901	69,812,580	69,942,259	70,071,937	70,201,616	70,331,295	70,460,974	70,590,653	70,720,332	70,850,010
Less: Included in Base Charge	7,596,000	7,620,000	7,656,000	7,692,000	7,728,000	7,764,000	7,800,000	7,836,000	7,872,000	7,908,000	7,944,000
Total Billed Consumption - Residential Customers	62,000,448	62,062,901	62,156,580	62,250,259	62,343,937	62,437,616	62,531,295	62,624,974	62,718,653	62,812,332	62,906,010
Non-Residential											
Existing - Metered	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583	95,686,583
Existing - Flat Rate	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584	302,584
New - Growth	-	-	-	-	-	-	-	-	-	-	-
Sub-total - Non-Residential Customers	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167	95,989,167
Less: Included in Base Charge	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856	47,735,856
Total Billed Consumption - Non-Residential Customers	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311	48,253,311
Total Consumption	165,585,615	165,672,068	165,801,746	165,931,425	166,061,104	166,190,783	166,320,462	166,450,141	166,579,819	166,709,498	166,839,177
Less: Included in Base Charge	55,331,856	55,355,856	55,391,856	55,427,856	55,463,856	55,499,856	55,535,856	55,571,856	55,607,856	55,643,856	55,679,856
Total Billed Wastewater Flows	110,253,759	110,316,212	110,409,890	110,503,569	110,597,248	110,690,927	110,784,606	110,878,285	110,971,963	111,065,642	111,159,321

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



Chapter 3

Capital Infrastructure Needs

I hang in with
I get response to
the number of new
customers
2020-2030!



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.

3.1.2 Financing Costs

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

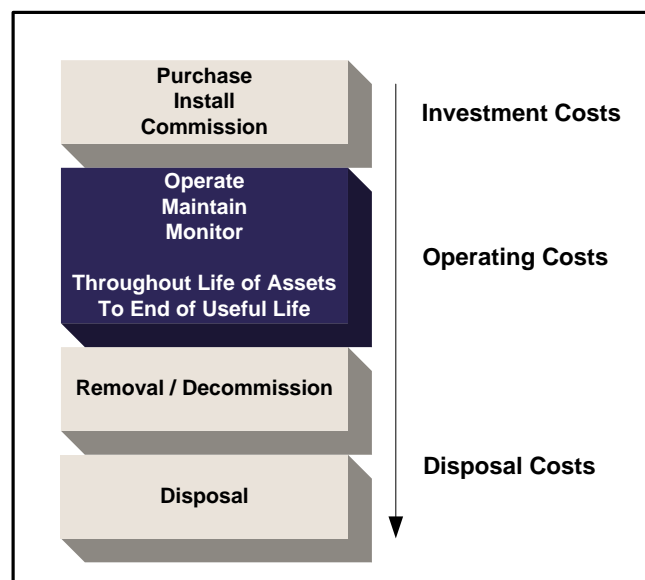
In a municipal context, services are provided to benefit tax/rate payers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the municipality. Over the past few decades, new financing techniques such as development charges 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 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.

Figure 3-1
Lifecycle Costing



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 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

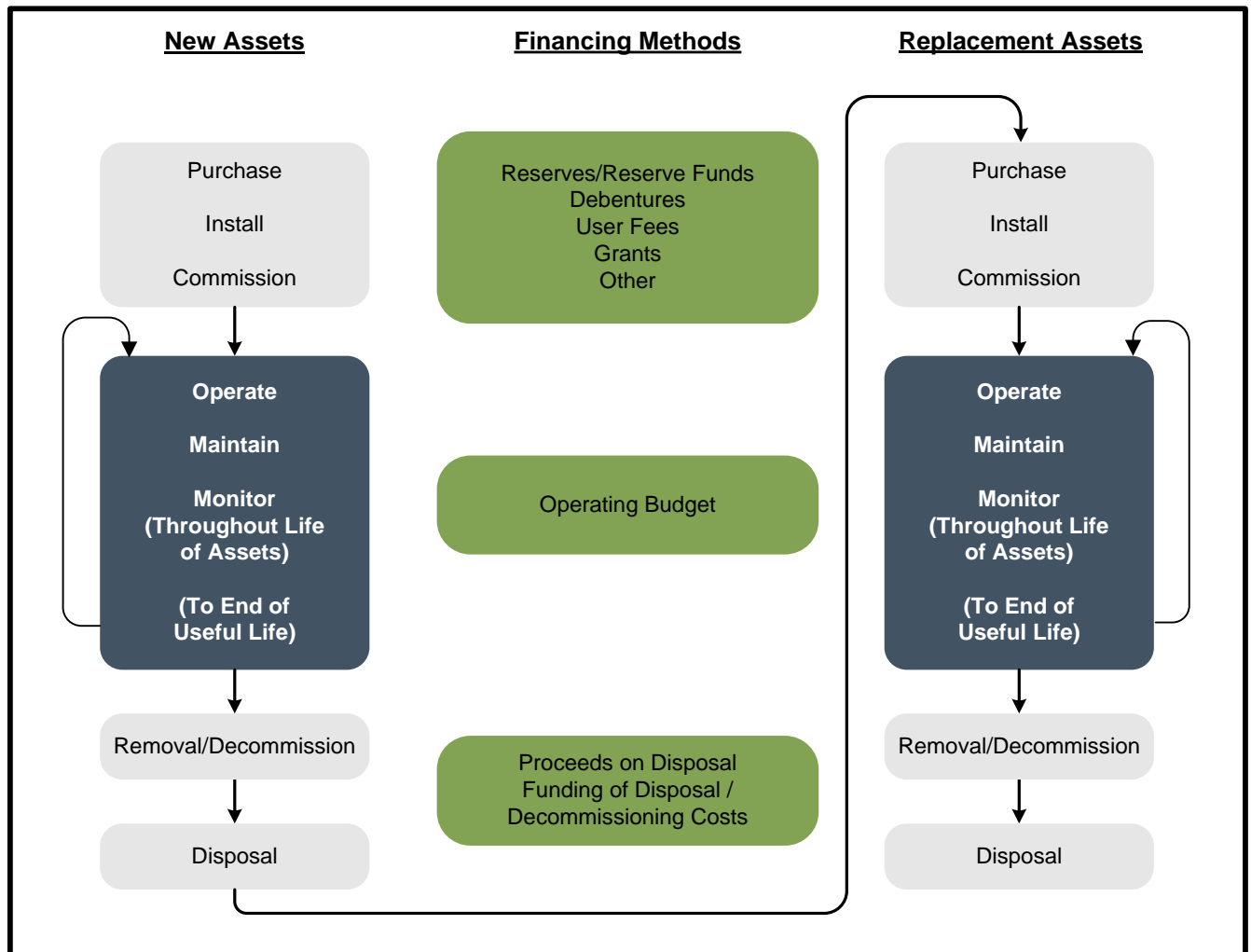


used as well to finance the non-growth-related component of this project; reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers and debenturing which will be carried by future tax/rate payers. Ongoing costs for monitoring, 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 he 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



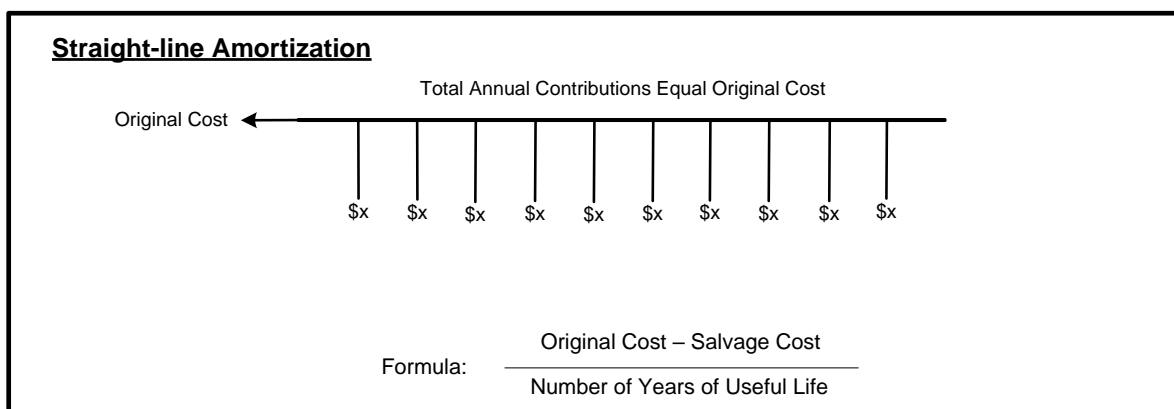
Charging for the cost of using up of an asset is the fundamental concept behind amortization methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms part of the product's selling price and hence 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.



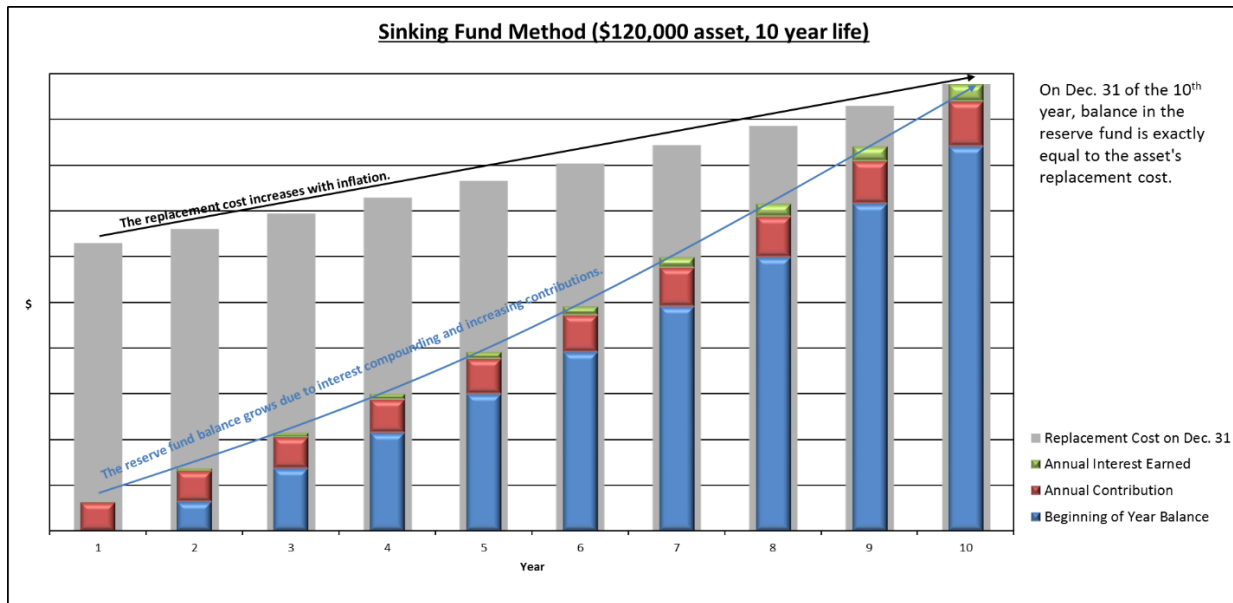
3.1.3 Costing Methods

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 reducing balance 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.



3.2 Asset Inventory

Detailed water and wastewater capital asset inventory information was obtained from the Town's Asset Management Plan inventory database. The information from the Asset Management Plan was used to develop the ten-year capital forecast. Please refer to the Town's 2016 Asset Management Plan for detailed capital asset inventories.

Lifecycle contribution amounts for each piece of infrastructure have also been included. These calculations 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 as part of the Town's 2016 Asset Management Plan. The rate forecast in this study was developed to fund the annual lifecycle requirements by the end of the forecast period i.e. 2030.



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

Water

Asset Type	Replacement Cost (2020\$)	Annual Lifecycle Replacement (2020\$)
Valve and Box	\$ 80,700	
Hydrants	\$ 1,712,200	
Watermains - 400mm	\$ 10,400	
Watermains - 375mm	\$ 173,800	
Watermains - 300mm	\$ 6,319,800	
Watermains - 250mm	\$ 1,358,800	
Watermains - 200mm	\$ 14,923,500	
Watermains - 150mm	\$ 7,011,700	
Watermains - 100mm	\$ 3,288,300	
Watermains - 50mm	\$ 104,300	
Watermains - Unknown	\$ 1,257,900	
Water Equipment	\$ 483,200	
Water Plan	\$ 17,976,200	
Water Booster Station	\$ 642,900	
Water Tower	\$ 6,251,100	
Total	\$ 61,594,800	\$ 1,297,000

Wastewater

Asset Type	Replacement Cost (2020\$)	Annual Lifecycle Replacement (2020\$)
Sewer mains - 450mm	\$ 1,506,800	
Sewer mains - 400mm	\$ 30,100	
Sewer mains - 375mm	\$ 233,300	
Sewer mains - 350mm	\$ 65,300	
Sewer mains - 300mm	\$ 2,340,200	
Sewer mains - 250mm	\$ 1,376,800	
Sewer mains - 200mm	\$ 27,128,700	
Sewer mains - 150mm	\$ 880,800	
Sewer mains - 100mm	\$ 717,800	
Sewer mains - 75mm	\$ 107,700	
Sewer mains - Unknown	\$ 93,700	
Manholes	\$ 524,600	
Public Washroom	\$ 136,200	
Pumping Stations	\$ 19,026,000	
Wastewater Treatment Plan	\$ 23,247,100	
Wastewater Equipment	\$ 82,300	
Total	\$ 77,497,400	\$ 1,742,000



3.3 Capital Forecast

Ten-year capital forecasts (i.e. 2020-2029) have been developed for the water and wastewater systems to address capital needs across all areas for the systems. The forecasts include projects to implement recommendations from the Asset Management Plan and other staff identified needs.

The capital forecasts are summarized in Tables 3-1 and 3-2 for water and wastewater services respectively. These capital needs are forecast in current year dollars (i.e. 2020\$). The water capital plan totals \$10.79 million. For wastewater services, the capital plan totals \$15.98 million for the forecast period.

For rate determination purposes, the capital needs forecast will be indexed by 2% annually based on the CPI and in line with the Town's Asset Management Plan.



Table 3-2
Town of Parry Sound
Water Service
Capital Budget Forecast – Uninflated\$

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Water Hydrants	687,675	-	68,767	68,767	68,767	68,767	68,767	68,767	68,767	68,767	68,767
Watermains	3,109,159	975,983	-	172,400	-	633,085	668,853	-	71,535	158,093	114,456
Water Plant	5,584,959	-	1,525,273	702,980	1,032,221	-	-	2,324,485	-	-	-
Water Equipment	255,071	66,200	10,105	53,032	84,005	-	29,532	-	-	12,197	-
Water Tower	120,894	20,000	-	-	-	-	-	-	6,428	94,466	-
Water Booster Station	63,480	-	4,296	-	59,183	-	-	-	-	-	-
Light Duty Trucks/Vehicles	192,019	-	-	39,362	56,647	-	-	-	-	-	39,362
Access Road/Driveways/Paved Assets	409,075	-	-	-	-	85,767	-	323,308	-	-	-
Computer Hardware	329,051	-	-	-	82,263	82,263	-	82,263	-	-	82,263
Computer Software	18,622	-	-	-	-	-	-	18,622	-	-	-
Fencing	21,587	-	-	-	-	21,587	-	-	-	-	-
Total Capital Expenditures	10,791,592	1,062,183	1,608,442	1,036,541	1,383,086	891,470	767,152	2,817,446	146,730	333,523	304,849

Table 3-3
Town of Parry Sound
Wastewater Service
Capital Budget Forecast – Uninflated\$

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Sewer mains	2,549,637	975,983	195,044	738,066	-	441,067	-	-	-	132,985	66,492
Pumping Stations	8,876,682	2,400,000	1,703,894	1,142,598	748,469	366,161	9,504	2,048,255	-	457,802	-
Wastewater Treatment Plant	4,058,395	-	54,292	-	452,436	-	499,728	-	54,077	2,990,075	7,787
WW Equipment	169,756	51,200	20,774	-	-	37,094	-	60,687	-	-	-
Access Road/Driveways/Paved Assets	-	-	-	-	-	-	-	-	-	-	-
Computer Hardware	97,337	-	32,446	-	-	32,446	-	-	32,446	-	-
Vehicles	179,333	-	20,521	105,100	-	-	-	20,521	-	-	33,191
Manholes	50,000	50,000	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	15,981,140	3,477,183	2,026,971	1,985,764	1,200,905	876,768	509,232	2,129,462	86,523	3,580,862	107,470



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 bylaws); while others appear to restrict them (Bill 98 in 1997 providing amendments to the Development Charges Act).

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

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

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



4.2 Development Charges Act, 1997

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

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

At present, the Town does not impose development charges on new development. As a result, the capital funding plan does not identify development charges as a source of funding for anticipated capital needs.

In the future growth-related capital may be funded directly through developer agreements, Municipal Act Capital Charges, or in accordance with the Town's Local Service Policy.

4.3 Municipal Act

4.3.1 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 Local Planning Appeal Tribunal (L.P.A.T.).



4.3.2 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
- L.P.A.T. approval is not required.

4.3.3 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 L.P.A.T., 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 Regulation 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.



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.

No grants have been identified in the capital plan over the forecast period. To the extent that the Town is successful in securing 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 reserves and reserve funds for water and wastewater capital costs. The established water and wastewater reserves have been used in the capital funding forecast for rate-based needs. The Town also has development reserve funds for water and wastewater that can be utilized for growth-related capital purposes.

The following table summarizes the water and wastewater reserves/reserve funds utilized in this analysis and the respective 2020 opening balances.



Table 4-1
Town of Parry Sound
Water and Wastewater Projected Reserve/Reserve Fund Balances
(as at Jan. 1, 2020)

Reserve/Reserve Fund	2020 Opening Balance
Water	
Rate Stabilization Reserve	\$ 5,108,388
Development Reserve Fund	\$ 131,172
Total - Water	\$ 5,239,560
Wastewater	
Rate Stabilization Reserve	\$ 3,366,323
Development Reserve Fund	\$ 127,355
Total - Wastewater	\$ 3,493,678

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 Regulations 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue may be allotted for servicing the debt (i.e. debt charges).

The Town has outstanding external debt for both water and wastewater services. In total the outstanding principal balance as at January 1, 2020 is \$1.71 million for water services and \$4.93 million for wastewater services.

The capital forecast does not propose any additional debt financing for water and wastewater capital needs.



4.7 Recommended Approach

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

Table 4-2
Town of Parry Sound
2020-2029 Water and Wastewater Capital Funding Program

Description	Water	Wastewater	Total
Capital Financing			
Provincial/Federal Grants	\$ -	\$ -	\$ -
Non-Growth Related Debenture Requirements	\$ -	\$ -	\$ -
Reserves	\$11,381,000	\$17,563,000	\$28,944,000
Total Capital Financing	\$11,381,000	\$17,563,000	\$28,944,000

It is anticipated that all future capital needs will be funded through transfers from rate-based reserves and reserve funds. Tables 4-3 and 4-4 provide for the full capital expenditure and funding program by year for water and wastewater services, respectively. These capital funding plans are provided in inflated dollars.

Based on the capital funding plan identified in Table 4-2 and the 2020 reserve and reserve fund balances in Table 4-1, the water rate stabilization reserve is anticipated to increase from \$5.11 million to \$6.31 million by 2029. The wastewater rate stabilization reserve is forecast to decrease from \$3.37 million to \$3.1 million over the forecast period. The water and wastewater development reserve funds are forecast to remain unchanged except for interest accumulation.



Table 4-3
Town of Parry Sound
Water Service
Capital Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures										
Water Hydrants	-	72,000	73,000	74,000	76,000	77,000	79,000	81,000	82,000	84,000
Watermains	996,000	-	183,000	-	699,000	753,000	-	84,000	189,000	140,000
Water Plant	-	1,587,000	746,000	1,117,000	-	-	2,670,000	-	-	-
Water Equipment	68,000	11,000	56,000	91,000	-	33,000	-	-	15,000	-
Water Tower	20,000	-	-	-	-	-	-	8,000	113,000	-
Water Booster Station	-	4,000	-	64,000	-	-	-	-	-	-
Light Duty Trucks/Vehicles	-	-	42,000	61,000	-	-	-	-	-	48,000
Access Road/Driveways/Paved Assets	-	-	-	-	95,000	-	371,000	-	-	-
Computer Hardware	-	-	-	89,000	91,000	-	94,000	-	-	100,000
Computer Software	-	-	-	-	-	-	21,000	-	-	-
Fencing	-	-	-	-	24,000	-	-	-	-	-
Total Capital Expenditures	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000
Capital Financing										
Provincial/Federal Grants										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-
Water Reserve	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000
Total Capital Financing	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000



Table 4-4
Town of Parry Sound
Wastewater Service
Capital Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures										
Sewer mains	996,000	203,000	783,000	-	487,000	-	-	-	159,000	81,000
Pumping Stations	2,448,000	1,773,000	1,213,000	810,000	404,000	11,000	2,353,000	-	547,000	-
Wastewater Treatment Plant	-	56,000	-	490,000	-	563,000	-	63,000	3,573,000	9,000
WW Equipment	52,000	22,000	-	-	41,000	-	70,000	-	-	-
Access Road/Driveways/Paved Assets	-	-	-	-	-	-	-	-	-	-
Computer Hardware	-	34,000	-	-	36,000	-	-	38,000	-	-
Vehicles	-	21,000	112,000	-	-	-	24,000	-	-	40,000
Manholes	51,000	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	3,547,000	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000
Capital Financing										
Provincial/Federal Grants										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	3,547,000	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000
Total Capital Financing	3,547,000	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000



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 Draft 2020 operating budgets. The expenditures for each component of the operating budget have been reviewed with staff to establish inflationary adjustments.

Capital-related annual expenditures in the forecast include annual debt repayments and contributions to reserves to support the forecast and future needs. While operating aspects identified above generally increase with inflation over the period (i.e. 2% annually), the capital-related aspects tend to increase more specifically with the increase in capital funding requirements. Capital related expenditures are forecast to increase from \$1.2 million in 2020 to \$1.5 million by 2029 for water services and from \$1.8 million in 2020 to \$2.2 million in 2029 for wastewater services. This increase in capital related expenditures provides for the average annual asset management plan needs of the water and wastewater systems to be funded from rates

As a result of the inflationary increases in operating expenditures and the gradual increase in capital related expenditures to achieve the target annual capital funding requirements presented in Chapter 3 the water and wastewater operating expenditures are anticipated to increase over the forecast period. Specifically, the gross operating expenditures for water services are anticipated to increase from \$2.6 million in 2020 to \$3.3 million by 2029. Similarly, annual gross expenditures for wastewater services are forecast to increase from \$3.6 million in 2020 to \$4.3 million by 2029.

5.2 Operating Revenues

The Town has operating revenue sources such as service calls, water meters, service charges, inspections, and other miscellaneous revenues.

In addition to the revenue sources identified above, the Town also receives revenue from the water purchase agreement with McDougall. Revenue estimates under the agreement for 2020 total approximately \$88,000. In accordance with the agreement,



these revenues are forecast to increase with annual rate recovery revenues for the Town.

The monthly base charge rate component is also identified under the operating revenues forecast for water and wastewater. Base charge revenues have been forecast based on the underlying system growth assumptions and the Town's forecast base charge rates for the period 2020-2029. In total, base charge revenues for water are estimated at \$1.2 million in 2020, increasing to \$1.5 million by 2029. Base charge revenues for wastewater are forecast to increase from \$1.8 million to \$2.2 million by 2029.

The consumptive rate recovery component of the water revenue is anticipated to increase from \$1.3 million in 2020 to \$1.5 million by 2029. The wastewater consumptive billing recovery is anticipated to increase from \$1.8 million in 2020 to \$2.1 million in 2029.

Tables 5-1 to 5-2 provide the water and wastewater operating budget forecasts.



Table 5-1
Town of Parry Sound
Water Service
Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
<u>Operating Costs</u>										
Water Collection System	640,642	653,500	666,600	679,900	693,500	707,400	721,500	735,900	750,600	765,600
Water Treatment Plant	832,149	848,800	865,800	883,100	900,800	918,800	937,200	955,900	975,000	994,500
Sub Total Operating	1,472,791	1,502,300	1,532,400	1,563,000	1,594,300	1,626,200	1,658,700	1,691,800	1,725,600	1,760,100
<u>Capital-Related</u>										
Existing Debt (Principal) - Non-Growth Related	490,356	168,356	168,356	168,356	168,356	168,356	168,356	68,356	41,664	41,664
Existing Debt (Interest) - Non-Growth Related	68,729	47,454	40,340	33,227	26,190	19,000	11,886	5,928	3,773	2,604
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	610,523	1,041,550	1,078,761	1,118,230	1,159,830	1,203,933	1,250,656	1,398,885	1,472,833	1,505,380
Sub Total Capital Related	1,169,607	1,257,359	1,287,457	1,319,813	1,354,375	1,391,288	1,430,897	1,473,169	1,518,270	1,549,647
Total Expenditures	2,642,398	2,759,659	2,819,857	2,882,813	2,948,675	3,017,488	3,089,597	3,164,969	3,243,870	3,309,747
Revenues										
Base Charge	1,169,607	1,053,642	1,107,451	1,163,957	1,223,208	1,285,347	1,350,618	1,419,085	1,490,913	1,549,647
McDougall Service Charges	88,137	90,386	92,691	95,056	97,481	99,967	102,517	105,132	107,814	110,564
Other Revenue	112,600	114,900	117,200	119,500	121,900	124,300	126,800	129,300	131,900	134,500
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	1,370,344	1,258,928	1,317,342	1,378,512	1,442,589	1,509,615	1,579,935	1,653,517	1,730,627	1,794,712
Water Billing Recovery - Operating	1,272,054	1,500,732	1,502,515	1,504,300	1,506,086	1,507,874	1,509,662	1,511,452	1,513,243	1,515,036
Water Billing Recovery - Total	1,272,054	1,500,732	1,502,515	1,504,300	1,506,086	1,507,874	1,509,662	1,511,452	1,513,243	1,515,036



Table 5-2
Town of Parry Sound
Wastewater Service
Operating Budget Forecast – Inflated\$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
<u>Operating Costs</u>										
Waterwater Plant, Stations & Collection	1,759,064	1,794,200	1,830,100	1,866,700	1,904,000	1,942,100	1,980,900	2,020,500	2,060,900	2,102,100
Sub Total Operating	1,759,064	1,794,200	1,830,100	1,866,700	1,904,000	1,942,100	1,980,900	2,020,500	2,060,900	2,102,100
<u>Capital-Related</u>										
Existing Debt (Principal) - Non-Growth Related	209,973	209,973	209,973	209,973	209,973	209,973	209,973	209,973	179,164	179,164
Existing Debt (Interest) - Non-Growth Related	241,310	228,723	218,975	209,226	200,486	190,183	181,680	170,181	160,869	153,009
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	1,358,869	1,594,580	1,626,621	1,659,869	1,693,394	1,729,655	1,765,564	1,805,806	1,876,093	1,899,102
Sub Total Capital Related	1,810,151	2,033,276	2,055,568	2,079,068	2,103,853	2,129,811	2,157,216	2,185,959	2,216,126	2,231,275
Total Expenditures	3,569,215	3,827,476	3,885,668	3,945,768	4,007,853	4,071,911	4,138,116	4,206,459	4,277,026	4,333,375
Revenues										
Base Charge	1,810,151	1,702,435	1,758,921	1,817,315	1,877,693	1,940,043	2,004,539	2,071,171	2,140,027	2,194,663
Other Revenue	2,200	2,244	2,289	2,335	2,382	2,430	2,479	2,529	2,580	2,632
Total Operating Revenue	1,812,351	1,704,679	1,761,210	1,819,650	1,880,075	1,942,473	2,007,018	2,073,700	2,142,607	2,197,295
Wastewater Billing Recovery - Operating	1,756,864	2,122,797	2,124,457	2,126,118	2,127,778	2,129,438	2,131,099	2,132,759	2,134,419	2,136,079
Wastewater Billing Recovery - Total	1,756,864	2,122,797	2,124,457	2,126,118	2,127,778	2,129,438	2,131,099	2,132,759	2,134,419	2,136,079



Figures 5-1 and 5-2 illustrate the annual net operating budget increase for water and wastewater service respectively over the forecast period by component, illustrating the increase in annual revenues for increased capital funding purposes.

Figure 5-1
Town of Parry Sound
2020-2029 Water Annual Net Operating Forecast by Major Component

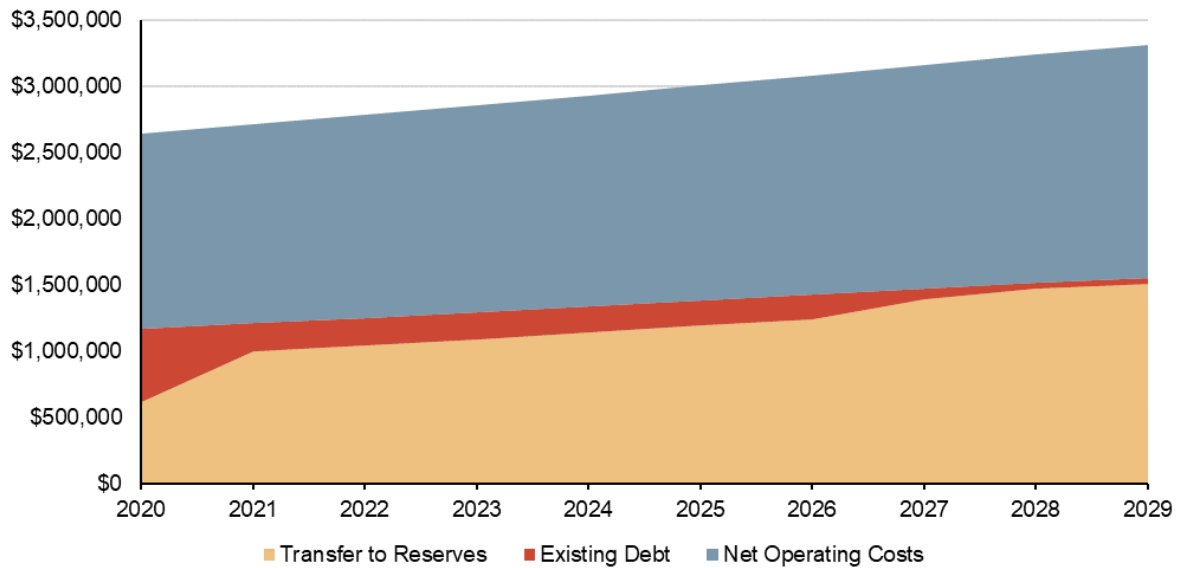
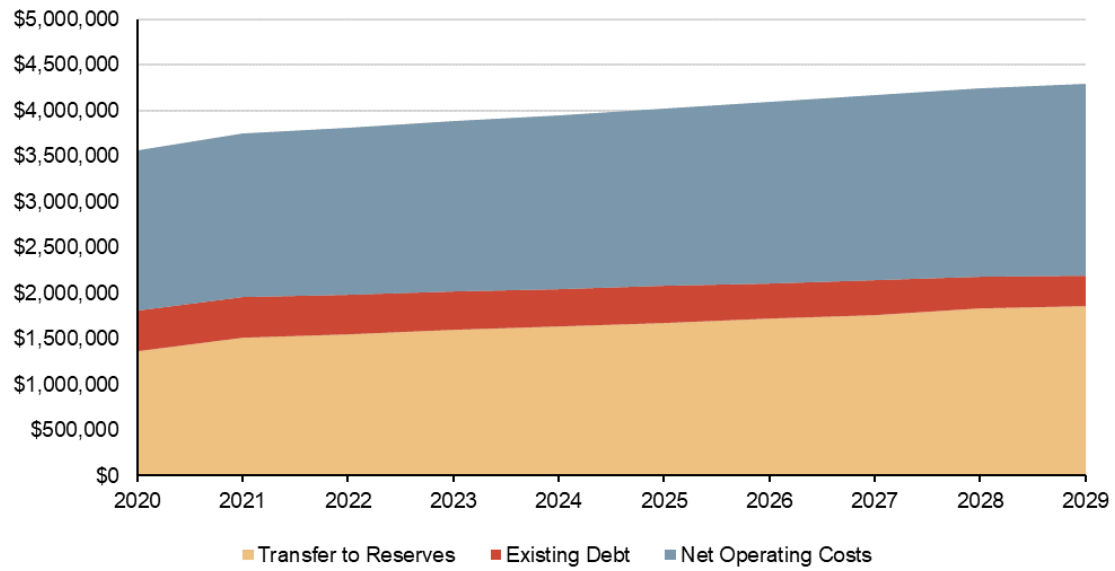




Figure 5-2
Town of Parry Sound
2020-2029 Wastewater Annual Net Operating Forecast by Major Component





Chapter 6

Forecast Water and Wastewater Rates



6. Forecast Water and Wastewater Rates

6.1 Introduction

To summarize the analysis undertaken thus far, Chapter 3 reviewed capital-related expenditures for all customers 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) will be the predominant basis for financing future capital needs. Chapter 5 established the 10-year operating forecast of expenditures for the Town's water and wastewater systems. The following calculations will be based on the net operating expenditures provided in Chapter 5, divided by the customers and volumes forecast provided in Chapter 2.

6.2 Recommended Water and Wastewater Rate Structure

As previously mentioned, the Town's existing rate structure differentiates fees by meter size and customer type i.e. residential or non-residential. A residential customer on a 5/8" meter would be charged a different rate than a non-residential customer on the same meter regardless of consumption. Furthermore, the minimum consumption included in the base charge would also differ. In response to customer concerns about the minimum bill and premium paid by non-residential users, Council approved a change from the current rate structure to a structure comprised of a monthly fixed charge, based on meter size, and a uniform consumptive rate which was presented as Option 3 in the Town's 2012 Water and Wastewater Rate Study.

Under this structure the same monthly base charges would be imposed on 5/8" metered customers, if these customers are residential or non-residential, and the same consumptive rate would apply if the customer is a large or small consuming user. The monthly base charges would still be graduated by meter size and the monthly minimum consumption would be removed. The monthly bill for flat rate customers was calculated based on 43,226 imperial gallons, which is consistent with the historical average consumption.

The proposed change in rate structure would have different impacts on customer bills by customer type as. In response to the customers bill impacts and the direction from Council to consider alternatives to mitigate the impacts on residential and small non-



residential users of the system, the forecast increases to the monthly base charges are proposed to be phased-in over the forecast period.

6.3 Forecast Water and Wastewater Rates

The base charges and volumetric rates for the 2021 to 2029 period are shown in Tables 6-1 and 6-2 for water and Tables 6-3 and 6-4 for wastewater.

The initial change (i.e. 2021 rates) in monthly service charges resulting from the change in rate structure differs by customer type. The impacts of this rate structure change on the annual water and wastewater bills are discussed in Section 6.4.

For water services, monthly base charges are forecast to increase by 5.0% annually for the period 2022-2028 and then by 3.9% in 2029. The consumptive rate is forecast to increase by 0.04% over the forecast period.

For wastewater services, monthly base charges are forecast to increase by 3.2% annually for the period 2022-2028 and then by 2.5% in 2029. No change in the consumptive rate is forecast over the period to 2029.

The detailed calculations of the proposed water and wastewater rate calculations are contained in Appendices A and B to this report, respectively.

Table 6-1
Town of Parry Sound
Monthly Base Charge Forecast - Water Service

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Charge by Meter Size									
5/8"	\$ 25.14	\$ 26.40	\$ 27.73	\$ 29.11	\$ 30.57	\$ 32.09	\$ 33.69	\$ 35.36	\$ 36.72
3/4"	\$ 25.14	\$ 26.40	\$ 27.73	\$ 29.11	\$ 30.57	\$ 32.09	\$ 33.69	\$ 35.36	\$ 36.72
1"	\$ 78.09	\$ 82.01	\$ 86.12	\$ 90.43	\$ 94.94	\$ 99.68	\$ 104.64	\$ 109.84	\$ 114.07
1 1/4", 1 1/12"	\$ 132.07	\$ 138.69	\$ 145.65	\$ 152.93	\$ 160.56	\$ 168.57	\$ 176.96	\$ 185.76	\$ 192.92
2"	\$ 204.01	\$ 214.24	\$ 224.98	\$ 236.23	\$ 248.02	\$ 260.39	\$ 273.35	\$ 286.94	\$ 297.99
3"	\$ 516.42	\$ 542.33	\$ 569.51	\$ 597.99	\$ 627.83	\$ 659.15	\$ 691.97	\$ 726.37	\$ 754.35
4"	\$ 960.87	\$ 1,009.07	\$ 1,059.65	\$ 1,112.64	\$ 1,168.16	\$ 1,226.43	\$ 1,287.50	\$ 1,351.51	\$ 1,403.56
6"	\$ 1,885.53	\$ 1,980.12	\$ 2,079.37	\$ 2,183.35	\$ 2,292.30	\$ 2,406.64	\$ 2,526.48	\$ 2,652.09	\$ 2,754.22
Annual Percentage Change		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.9%



Table 6-2
Town of Parry Sound
Consumptive Water Rate Forecast

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Consumptive Rate									
Constant Rate (\$/1,000 gallons)	\$ 8.91	\$ 8.91	\$ 8.92	\$ 8.92	\$ 8.93	\$ 8.93	\$ 8.93	\$ 8.94	\$ 8.94
Annual Percentage Change		0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%

Table 6-3
Town of Parry Sound
Wastewater Service
Monthly Base Charge Forecast

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Charge by Meter Size									
5/8"	\$ 41.49	\$ 42.83	\$ 44.21	\$ 45.64	\$ 47.12	\$ 48.64	\$ 50.21	\$ 51.84	\$ 53.11
3/4"	\$ 41.49	\$ 42.83	\$ 44.21	\$ 45.64	\$ 47.12	\$ 48.64	\$ 50.21	\$ 51.84	\$ 53.11
1"	\$ 128.88	\$ 133.04	\$ 137.33	\$ 141.77	\$ 146.35	\$ 151.08	\$ 155.97	\$ 161.01	\$ 164.98
1 1/4", 1 1/2"	\$ 217.95	\$ 224.98	\$ 232.25	\$ 239.75	\$ 247.50	\$ 255.50	\$ 263.77	\$ 272.30	\$ 279.01
2"	\$ 336.66	\$ 347.53	\$ 358.75	\$ 370.34	\$ 382.31	\$ 394.67	\$ 407.43	\$ 420.61	\$ 430.98
3"	\$ 852.23	\$ 879.73	\$ 908.14	\$ 937.50	\$ 967.78	\$ 999.08	\$ 1,031.39	\$ 1,064.75	\$ 1,090.98
4"	\$ 1,585.68	\$ 1,636.86	\$ 1,689.72	\$ 1,744.33	\$ 1,800.67	\$ 1,858.91	\$ 1,919.03	\$ 1,981.10	\$ 2,029.90
6"	\$ 3,111.61	\$ 3,212.03	\$ 3,315.76	\$ 3,422.93	\$ 3,533.49	\$ 3,647.77	\$ 3,765.74	\$ 3,887.54	\$ 3,983.32
Annual Percentage Change		3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	2.5%

Table 6-4
Town of Parry Sound
Consumptive Wastewater Rate Forecast

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Consumptive Rate									
Constant Rate (\$/1,000 gallons)	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80
Annual Percentage Change		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

6.4 Customer Impact Assessment

The annual water and wastewater bill impacts are provided for a typical residential customer in Table 6-5.

As shown in Table 6-5, the change in the rate structure would result in a 9% increase in the annual water and wastewater bill for an average metered residential customer on a 5/8" meter. The increase in the annual bill would be approximately 2% per year for the remainder of the forecast.

To better understand the distributional effects of the change in the rate structure for different customer types, the bill impacts for a cross section of customers are presented in Table 6-6. The 2021 bill impacts are provided for a cross-section of residential



metered customers, residential unmetered customers, non-residential metered customers, and non-residential unmetered customers.

High volume non-residential users would either benefit (reduction in annual costs) or experience minimal increases in their annual water and wastewater bill. It is anticipated that the annual bill for a small residential customer would decrease slightly in 2021 (i.e. 1% decrease), while the bill for an average residential metered customer would increase by 9%. Greater bill impacts in 2021 would be seen for residential customers consuming greater than average annual water consumption (i.e. greater than 26,704 gallons). Bills for all customers would increase by approximately 2% each year for 2022-2029.

Table 6-5
Town of Parry Sound
Water and Wastewater Customer Bill Impact
Annual Customer Water Bill - Based on 26,204 Gallons of usage and 5/8" or 3/4" meter

Water	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Rate	\$ 38.62	\$ 25.14	\$ 26.40	\$ 27.73	\$ 29.11	\$ 30.57	\$ 32.09	\$ 33.69	\$ 35.36	\$ 36.72
Constant Rate		\$ 8.91	\$ 8.91	\$ 8.92	\$ 8.92	\$ 8.93	\$ 8.93	\$ 8.93	\$ 8.94	\$ 8.94
Annual Base Rate Bill	\$ 463.44	\$ 301.70	\$ 316.84	\$ 332.72	\$ 349.35	\$ 366.79	\$ 385.08	\$ 404.26	\$ 424.36	\$ 440.70
Annual Volume Bill	\$ 26.61	\$ 237.96	\$ 238.06	\$ 238.16	\$ 238.26	\$ 238.36	\$ 238.46	\$ 238.56	\$ 238.66	\$ 238.76
Total Annual Bill	\$ 490.05	\$ 539.66	\$ 554.90	\$ 570.88	\$ 587.61	\$ 605.15	\$ 623.54	\$ 642.82	\$ 663.02	\$ 679.46
% Increase - Base Rate			5%	5%	5%	5%	5%	5%	5%	4%
% Increase - Volume Rate			0%	0%	0%	0%	0%	0%	0%	0%
% Increase - Total Annual Bill		10%	3%	3%	3%	3%	3%	3%	3%	2%
\$ Increase - Total Annual Bill		\$ 49.61	\$ 15.23	\$ 15.98	\$ 16.74	\$ 17.53	\$ 18.40	\$ 19.28	\$ 20.20	\$ 16.44

Wastewater	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Rate	\$ 50.65	\$ 41.49	\$ 42.83	\$ 44.21	\$ 45.64	\$ 47.12	\$ 48.64	\$ 50.21	\$ 51.84	\$ 53.11
Constant Rate		\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80
Annual Base Rate Bill	\$ 607.80	\$ 497.88	\$ 513.95	\$ 530.55	\$ 547.70	\$ 565.39	\$ 583.68	\$ 602.55	\$ 622.04	\$ 637.37
Annual Volume Bill	\$ 172.92	\$ 341.90	\$ 341.90	\$ 341.90	\$ 341.90	\$ 341.90	\$ 341.90	\$ 341.90	\$ 341.90	\$ 341.90
Total Annual Bill	\$ 780.72	\$ 839.78	\$ 855.85	\$ 872.45	\$ 889.60	\$ 907.29	\$ 925.57	\$ 944.45	\$ 963.94	\$ 979.26
% Increase - Base Rate			3%	3%	3%	3%	3%	3%	3%	2%
% Increase - Volume Rate			0%	0%	0%	0%	0%	0%	0%	0%
% Increase - Total Annual Bill		7.6%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.1%	1.6%
\$ Increase - Total Annual Bill		\$ 59.06	\$ 16.07	\$ 16.60	\$ 17.15	\$ 17.69	\$ 18.29	\$ 18.88	\$ 19.49	\$ 15.33

Water and Wastewater	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Rate	\$ 89.27	\$ 66.63	\$ 69.23	\$ 71.94	\$ 74.75	\$ 77.68	\$ 80.73	\$ 83.90	\$ 87.20	\$ 89.84
Constant Rate		\$ 21.71	\$ 21.72	\$ 21.72	\$ 21.73	\$ 21.73	\$ 21.73	\$ 21.74	\$ 21.74	\$ 21.74
Annual Base Rate Bill	\$ 1,071.24	\$ 799.59	\$ 830.79	\$ 863.27	\$ 897.05	\$ 932.18	\$ 968.76	\$ 1,006.81	\$ 1,046.40	\$ 1,078.07
Annual Volume Bill	\$ 199.53	\$ 579.86	\$ 579.96	\$ 580.06	\$ 580.16	\$ 580.26	\$ 580.36	\$ 580.46	\$ 580.56	\$ 580.66
Total Annual Bill	\$ 1,270.77	\$ 1,379.44	\$ 1,410.75	\$ 1,443.33	\$ 1,477.21	\$ 1,512.44	\$ 1,549.12	\$ 1,587.27	\$ 1,626.95	\$ 1,658.72
% Increase - Base Rate			4%	4%	4%	4%	4%	4%	4%	3%
% Increase - Volume Rate			0%	0%	0%	0%	0%	0%	0%	0%
% Increase - Total Annual Bill		9%	2%	2%	2%	2%	2%	2%	3%	2%
\$ Increase - Total Annual Bill		\$ 108.67	\$ 31.30	\$ 32.58	\$ 33.88	\$ 35.22	\$ 36.68	\$ 38.15	\$ 39.69	\$ 31.77



Table 6-6
Town of Parry Sound
Comparison of Water and Wastewater Bill Impacts Current vs. Proposed 2021

Customer Type	Annual Consumption (gallons)	Meter Size	2020 Annual Bill	Proposed 2021 Annual Bill	Increase over 2020 Annual Bill (%)
Small Residential	12,000	5/8"	\$ 1,071	\$ 1,060	-1%
Average Metered Residential	26,704	5/8"	\$ 1,271	\$ 1,379	9%
Average Flat Rate Residential	43,226	5/8"	\$ 1,683	\$ 1,738	3%
Small Non-Residential	51,620	5/8"	\$ 1,826	\$ 1,920	5%
Average Non-Residential	231,000	1"	\$ 7,708	\$ 7,500	-3%
High Volume Non-Residential	23,000,000	6"	\$ 559,394	\$ 559,394	0%



6.5 Recommendations

The study's findings are scheduled to be presented to Council and the public at a public meeting of Council on December 1, 2020. At this meeting, Council will be presented with the recommended rate structure for their consideration and adoption.

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

1. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates;
2. That Council approve the 2021 water and wastewater rates as shown in Chapter 6, and direct staff to review the Rate Study in five years;
3. That Council direct staff to consider the results of the rate study update in future amendments to the Town's asset management plan;
4. That Council maintain the Capital (lifecycle) Reserve/Reserve Funds for water and wastewater services as discussed in section 4.5; and
5. That Council approve the Rate Study and direct staff to prepare the Water Financial Plan in the format required under O.Reg. 453/07 and submit the plan to the Province to maintain the Town's Municipal Drinking Water Licence.



Appendices



Appendix A

Water Services



Appendix A: Water Service

The following appendix contains the tables outlining the detailed wastewater rate calculations as follows:

- Page A-3 Water Capital Budget
- Page A-4 Water Debenture Schedules
- Page A-5 Water Reserves/Reserve Funds Schedules
- Page A-6 Water Operating Budget Forecast – Expenditures
- Page A-7 Water Operating Budget Forecast – Revenues and Water Rate Forecast



Table A-1
Town of Parry Sound
Water Service - Option 1
Capital Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures										
Water Hydrants	-	72,000	73,000	74,000	76,000	77,000	79,000	81,000	82,000	84,000
Watermains	996,000	-	183,000	-	699,000	753,000	-	84,000	189,000	140,000
Water Plant	-	1,587,000	746,000	1,117,000	-	-	2,670,000	-	-	-
Water Equipment	68,000	11,000	56,000	91,000	-	33,000	-	-	15,000	-
Water Tower	20,000	-	-	-	-	-	-	8,000	113,000	-
Water Booster Station	-	4,000	-	64,000	-	-	-	-	-	-
Light Duty Trucks/Vehicles	-	-	42,000	61,000	-	-	-	-	-	48,000
Access Road/Driveways/Paved Assets	-	-	-	-	95,000	-	371,000	-	-	-
Computer Hardware	-	-	-	89,000	91,000	-	94,000	-	-	100,000
Computer Software	-	-	-	-	-	-	21,000	-	-	-
Fencing	-	-	-	-	24,000	-	-	-	-	-
Total Capital Expenditures	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000
Capital Financing										
Provincial/Federal Grants										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-
Water Reserve	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000
Total Capital Financing	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000



Table A-2
Town of Parry Sound
Water Service - Option 1
Schedule of Non-Growth Related Debenture Repayments
Inflated \$

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



Table A-3
Town of Parry Sound
Water Service
Water Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	5,108,388	4,727,609	4,177,062	4,238,940	3,938,394	4,195,488	4,627,150	2,695,662	3,999,978	5,175,287
Transfer from Operating	610,523	1,041,550	1,078,761	1,118,230	1,159,830	1,203,933	1,250,656	1,398,885	1,472,833	1,505,380
Transfer to Capital	1,084,000	1,674,000	1,100,000	1,496,000	985,000	863,000	3,235,000	173,000	399,000	372,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	4,634,911	4,095,159	4,155,824	3,861,171	4,113,224	4,536,421	2,642,805	3,921,547	5,073,811	6,308,667
Interest	92,698	81,903	83,116	77,223	82,264	90,728	52,856	78,431	101,476	126,173

Table A-4
Town of Parry Sound
Water Service
Water Development Reserve/Reserve Fund Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	131,172	133,795	136,471	139,201	141,985	144,824	147,721	150,675	153,689	156,763
Development Charge Proceeds	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	131,172	133,795	136,471	139,201	141,985	144,824	147,721	150,675	153,689	156,763
Interest	2,623	2,676	2,729	2,784	2,840	2,896	2,954	3,014	3,074	3,135



**Table A-5
Town of Parry Sound
Water Services
Operating Budget Forecast
Inflated \$**

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
<u>Operating Costs</u>										
Water Collection System	640,642	653,500	666,600	679,900	693,500	707,400	721,500	735,900	750,600	765,600
Water Treatment Plant	832,149	848,800	865,800	883,100	900,800	918,800	937,200	955,900	975,000	994,500
Sub Total Operating	1,472,791	1,502,300	1,532,400	1,563,000	1,594,300	1,626,200	1,658,700	1,691,800	1,725,600	1,760,100
<u>Capital-Related</u>										
Existing Debt (Principal) - Non-Growth Related	490,356	168,356	168,356	168,356	168,356	168,356	168,356	68,356	41,664	41,664
Existing Debt (Interest) - Non-Growth Related	68,729	47,454	40,340	33,227	26,190	19,000	11,886	5,928	3,773	2,604
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	610,523	1,041,550	1,078,761	1,118,230	1,159,830	1,203,933	1,250,656	1,398,885	1,472,833	1,505,380
Sub Total Capital Related	1,169,607	1,257,359	1,287,457	1,319,813	1,354,375	1,391,288	1,430,897	1,473,169	1,518,270	1,549,647
Total Expenditures	2,642,398	2,759,659	2,819,857	2,882,813	2,948,675	3,017,488	3,089,597	3,164,969	3,243,870	3,309,747
Revenues										
Base Charge	1,169,607	1,053,642	1,107,451	1,163,957	1,223,208	1,285,347	1,350,618	1,419,085	1,490,913	1,549,647
McDougall Service Charges	88,137	90,386	92,691	95,056	97,481	99,967	102,517	105,132	107,814	110,564
Other Revenue	112,600	114,900	117,200	119,500	121,900	124,300	126,800	129,300	131,900	134,500
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	1,370,344	1,258,928	1,317,342	1,378,512	1,442,589	1,509,615	1,579,935	1,653,517	1,730,627	1,794,712
Water Billing Recovery - Operating	1,272,054	1,500,732	1,502,515	1,504,300	1,506,086	1,507,874	1,509,662	1,511,452	1,513,243	1,515,036
Water Billing Recovery - Total	1,272,054	1,500,732	1,502,515	1,504,300	1,506,086	1,507,874	1,509,662	1,511,452	1,513,243	1,515,036



Table A-6
Town of Parry Sound
Constant Rate Calculation
Water Rate Forecast
 Inflated \$

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Charge by Meter Size									
5/8"	\$ 25.14	\$ 26.40	\$ 27.73	\$ 29.11	\$ 30.57	\$ 32.09	\$ 33.69	\$ 35.36	\$ 36.72
3/4"	\$ 25.14	\$ 26.40	\$ 27.73	\$ 29.11	\$ 30.57	\$ 32.09	\$ 33.69	\$ 35.36	\$ 36.72
1"	\$ 78.09	\$ 82.01	\$ 86.12	\$ 90.43	\$ 94.94	\$ 99.68	\$ 104.64	\$ 109.84	\$ 114.07
1 1/4", 1 1/2"	\$ 132.07	\$ 138.69	\$ 145.65	\$ 152.93	\$ 160.56	\$ 168.57	\$ 176.96	\$ 185.76	\$ 192.92
2"	\$ 204.01	\$ 214.24	\$ 224.98	\$ 236.23	\$ 248.02	\$ 260.39	\$ 273.35	\$ 286.94	\$ 297.99
3"	\$ 516.42	\$ 542.33	\$ 569.51	\$ 597.99	\$ 627.83	\$ 659.15	\$ 691.97	\$ 726.37	\$ 754.35
4"	\$ 960.87	\$1,009.07	\$1,059.65	\$1,112.64	\$1,168.16	\$1,226.43	\$1,287.50	\$1,351.51	\$1,403.56
6"	\$1,885.53	\$1,980.12	\$2,079.37	\$2,183.35	\$2,292.30	\$2,406.64	\$2,526.48	\$2,652.09	\$2,754.22
Annual Percentage Change		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.9%
Consumptive Rate									
Constant Rate (\$/1,000 gallons)	\$ 8.91	\$ 8.91	\$ 8.92	\$ 8.92	\$ 8.93	\$ 8.93	\$ 8.93	\$ 8.94	\$ 8.94
Annual Percentage Change		0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%



Appendix B

Wastewater Services



Appendix B: Wastewater System Inventory Data

The following appendix contains the tables outlining the detailed wastewater rate calculations as follows:

- Page B-3 Wastewater Capital Budget
- Page B-4 Wastewater Debenture Schedules
- Page B-5 Wastewater Reserves/Reserve Funds Schedules
- Page B-6 Wastewater Operating Budget Forecast
- Page B-7 Wastewater Rate Forecast



Table B-1
Town of Parry Sound
Wastewater Service
Capital Budget Forecast
 Inflated \$

Description	Forecast								
	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures									
Sewer mains	203,000	783,000	-	487,000	-	-	-	159,000	81,000
Pumping Stations	1,773,000	1,213,000	810,000	404,000	11,000	2,353,000	-	547,000	-
Wastewater Treatment Plant	56,000	-	490,000	-	563,000	-	63,000	3,573,000	9,000
WW Equipment	22,000	-	-	41,000	-	70,000	-	-	-
Access Road/Driveways/Paved Assets	-	-	-	-	-	-	-	-	-
Computer Hardware	34,000	-	-	36,000	-	-	38,000	-	-
Vehicles	21,000	112,000	-	-	-	24,000	-	-	40,000
Manholes	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000
Capital Financing									
Provincial/Federal Grants									
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-
Wastewater Reserve	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000
Total Capital Financing	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000



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

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



Table B-3
Town of Parry Sound
Wastewater Service
Wastewater Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	3,366,323	1,201,756	701,083	224,097	595,645	1,347,460	2,553,178	1,909,176	3,686,261	1,309,022
Transfer from Operating	1,358,869	1,594,580	1,626,621	1,659,869	1,693,394	1,729,655	1,765,564	1,805,806	1,876,093	1,899,102
Transfer to Capital	3,547,000	2,109,000	2,108,000	1,300,000	968,000	574,000	2,447,000	101,000	4,279,000	130,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	1,178,192	687,336	219,703	583,966	1,321,040	2,503,115	1,871,741	3,613,982	1,283,355	3,078,124
Interest	23,564	13,747	4,394	11,679	26,421	50,062	37,435	72,280	25,667	61,562

Table B-4
Town of Parry Sound
Wastewater Service
Wastewater Development Reserve/Reserve Fund Continuity
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	127,355	129,902	132,500	135,150	137,853	140,610	143,423	146,291	149,217	152,201
Development Charge Proceeds	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	127,355	129,902	132,500	135,150	137,853	140,610	143,423	146,291	149,217	152,201
Interest	2,547	2,598	2,650	2,703	2,757	2,812	2,868	2,926	2,984	3,044



Table B-5
Town of Parry Sound
Wastewater Services
Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
<u>Operating Costs</u>										
Waterwater Plant, Stations & Collection	1,759,064	1,794,200	1,830,100	1,866,700	1,904,000	1,942,100	1,980,900	2,020,500	2,060,900	2,102,100
Sub Total Operating	1,759,064	1,794,200	1,830,100	1,866,700	1,904,000	1,942,100	1,980,900	2,020,500	2,060,900	2,102,100
<u>Capital-Related</u>										
Existing Debt (Principal) - Non-Growth Related	209,973	209,973	209,973	209,973	209,973	209,973	209,973	209,973	179,164	179,164
Existing Debt (Interest) - Non-Growth Related	241,310	228,723	218,975	209,226	200,486	190,183	181,680	170,181	160,869	153,009
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	1,358,869	1,594,580	1,626,621	1,659,869	1,693,394	1,729,655	1,765,564	1,805,806	1,876,093	1,899,102
Sub Total Capital Related	1,810,151	2,033,276	2,055,568	2,079,068	2,103,853	2,129,811	2,157,216	2,185,959	2,216,126	2,231,275
Total Expenditures	3,569,215	3,827,476	3,885,668	3,945,768	4,007,853	4,071,911	4,138,116	4,206,459	4,277,026	4,333,375
Revenues										
Base Charge	1,810,151	1,702,435	1,758,921	1,817,315	1,877,693	1,940,043	2,004,539	2,071,171	2,140,027	2,194,663
Other Revenue	2,200	2,244	2,289	2,335	2,382	2,430	2,479	2,529	2,580	2,632
Total Operating Revenue	1,812,351	1,704,679	1,761,210	1,819,650	1,880,075	1,942,473	2,007,018	2,073,700	2,142,607	2,197,295
Wastewater Billing Recovery - Operating	1,756,864	2,122,797	2,124,457	2,126,118	2,127,778	2,129,438	2,131,099	2,132,759	2,134,419	2,136,079
Wastewater Billing Recovery - Total	1,756,864	2,122,797	2,124,457	2,126,118	2,127,778	2,129,438	2,131,099	2,132,759	2,134,419	2,136,079



Table B-6
Town of Parry Sound
Constant Rate Calculation
Wastewater Rate Forecast
 Inflated \$

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Monthly Base Charge by Meter Size									
5/8"	\$ 41.49	\$ 42.83	\$ 44.21	\$ 45.64	\$ 47.12	\$ 48.64	\$ 50.21	\$ 51.84	\$ 53.11
3/4"	\$ 41.49	\$ 42.83	\$ 44.21	\$ 45.64	\$ 47.12	\$ 48.64	\$ 50.21	\$ 51.84	\$ 53.11
1"	\$ 128.88	\$ 133.04	\$ 137.33	\$ 141.77	\$ 146.35	\$ 151.08	\$ 155.97	\$ 161.01	\$ 164.98
1 1/4", 1 1/12"	\$ 217.95	\$ 224.98	\$ 232.25	\$ 239.75	\$ 247.50	\$ 255.50	\$ 263.77	\$ 272.30	\$ 279.01
2"	\$ 336.66	\$ 347.53	\$ 358.75	\$ 370.34	\$ 382.31	\$ 394.67	\$ 407.43	\$ 420.61	\$ 430.98
3"	\$ 852.23	\$ 879.73	\$ 908.14	\$ 937.50	\$ 967.78	\$ 999.08	\$1,031.39	\$1,064.75	\$1,090.98
4"	\$1,585.68	\$1,636.86	\$1,689.72	\$1,744.33	\$1,800.67	\$1,858.91	\$1,919.03	\$1,981.10	\$2,029.90
6"	\$3,111.61	\$3,212.03	\$3,315.76	\$3,422.93	\$3,533.49	\$3,647.77	\$3,765.74	\$3,887.54	\$3,983.32
Annual Percentage Change		3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	2.5%
Consumptive Rate									
Constant Rate (\$/1,000 gallons)	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80	\$ 12.80
Annual Percentage Change		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%