



 **Watson  
& Associates**  
ECONOMISTS LTD.

# Water and Wastewater Rate Study

## Township of Leeds and the Thousand Islands

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# Table of Contents

	Page
<b>1. Introduction.....</b>	<b>1-1</b>
1.1 Background.....	1-1
1.2 Study Process.....	1-3
1.3 Legislative Context .....	1-3
1.3.1 Sustainable Water and Sewage Systems Act.....	1-4
1.3.2 Safe Drinking Water Act.....	1-4
1.3.3 Financial Plans Regulation.....	1-5
1.3.4 Water Opportunities Act.....	1-7
1.4 Water and Wastewater Rate Calculation Methodology.....	1-9
1.4.1 Customer Demands and Consumption Forecast .....	1-9
1.4.2 Capital Needs Forecast .....	1-10
1.4.3 Capital Funding Plan.....	1-10
1.4.4 Operating Budget Forecast .....	1-10
1.4.5 Rate Forecast and Structure .....	1-11
<b>2. Forecast Growth and Service Demands.....</b>	<b>2-1</b>
2.1 Current Service Demands.....	2-1
2.2 Forecast Service Demands.....	2-1
<b>3. Capital Infrastructure Needs.....</b>	<b>3-1</b>
3.1 Overview of Lifecycle Costing.....	3-1
3.1.1 Definition .....	3-1
3.1.2 Financing Costs .....	3-2
3.1.3 Costing Methods .....	3-4
3.1.4 Asset Inventory .....	3-6
3.2 Capital Needs Forecast .....	3-7
<b>4. Capital Cost Financing Options .....</b>	<b>4-1</b>
4.1 Development Charges Act, 1997 .....	4-2
4.2 Municipal Act .....	4-2
4.3 Grant Funding Availability .....	4-3



# Table of Contents (Cont'd)

	Page
4.4 Existing Reserves/Reserve Funds .....	4-3
4.5 Debenture Financing.....	4-3
4.6 Recommended Approach .....	4-4
<b>5. Net Operating Expenditure Forecast .....</b>	<b>5-1</b>
5.1 Operating Expenditures .....	5-2
5.2 Operating Revenues .....	5-3
<b>6. Forecast Water and Wastewater Rates.....</b>	<b>6-1</b>
6.1 Water Rates .....	6-1
6.2 Wastewater Rates .....	6-5
6.3 Forecast Water and Wastewater Rate Impacts .....	6-9
6.4 Summary .....	6-16
6.5 Recommendations .....	6-16
<b>Appendix A Water Services .....</b>	<b>A-1</b>
<b>Appendix B Wastewater Services .....</b>	<b>B-1</b>



## List of Acronyms and Abbreviations

<b>Acronym</b>	<b>Full Description of Acronym</b>
C.P.I.	Consumer Price Index
D.C.	Development Charges
G.I.S.	Geographic Information System
OCWA	Ontario Clean Water Agency
O. Reg.	Ontario Regulation
P.I.L.	Payment-in-Lieu
Q.S.R.	Quick Score Rating
S.D.W.A.	Safe Drinking Water Act



# Report



# Chapter 1

## Introduction



# 1. Introduction

The Township of Leeds and the Thousand Islands (Township) retained Watson & Associates Economists Ltd. (Watson) to undertake a water and wastewater rate study. As required by provincial regulation (O. Reg 453/07), the Township maintains a Water Financial Plan as a condition of its drinking water license. With the drinking water license coming up for renewal, the Township's current Water Financial Plan, completed in 2015, needs to be updated. This rate study has been prepared to assess the financial sustainability of the Township's water and wastewater services through an analysis of the Township's rate structure and user rates. Once approved by Council, this rate study will form the basis for the financial plan required under O. Reg. 453/07.

## 1.1 Background

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The Township has a present population of approximately 9,465 people, based on the 2016 Census. There are approximately 304 water and wastewater customers using the municipal systems. The treatment, storage, and distribution/collection of water and wastewater are the responsibility of the Township.

All customers are currently billed a monthly base charge that varies with meter size. The monthly base charge includes 20 m<sup>3</sup> of consumption and any consumption in excess of this threshold is charged at a consumptive rate based on the meter size. The water and wastewater rates currently in effect are summarized below in Table 1-1.



Table 1-1  
Township of Leeds and the Thousand Islands  
2020 Water and Wastewater Rates

<b>2020 - Water Billing Rates</b>	
<b>Monthly Base Charge (includes up to 20 m<sup>3</sup>)</b>	
1 ½" or less	75.05
2" or more	91.13
<b>Volume Charge - per m<sup>3</sup> (usage over 20 m<sup>3</sup>)</b>	
1 ½" or less	2.98
2" or more	3.94

<b>2020 - Wastewater Billing Rates</b>	
<b>Monthly Base Charge (includes up to 20 m<sup>3</sup>)</b>	
1 ½" or less	70.86
2" or more	86.04
<b>Volume Charge - per m<sup>3</sup> (usage over 20 m<sup>3</sup>)</b>	
1 ½" or less	2.98
2" or more	4.00



## 1.2 Study Process

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The objectives of the water and wastewater rate 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 demand assumptions to forecast growth based on historical residential building permit activity;
- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- Build a capital program that addresses specific needs identified by Township staff;
- Identify potential methods of cost recovery with respect to the capital needs listing. These recovery methods may include other statutory authorities (e.g. *Development Charges Act, 1997, Municipal Act, etc.*) as an offset to recovery through the water and wastewater rates;
- Forecast annual operating costs and rate-based funding requirements;
- Develop a long-term water and wastewater rate forecast;
- Provide an impact assessment on the rate payers; and
- Present findings to staff and Council for their consideration.

In approaching this study, the following analysis is provided:

- Chapter 2 – Forecast Growth and Service Demands
- Chapter 3 – Capital Infrastructure Needs
- Chapter 4 – Capital Cost Financing Options
- Chapter 5 – Operating Expenditure Forecast
- Chapter 6 – Forecast Water and Wastewater Rates

## 1.3 Legislative Context

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Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario. These changes arose in consequence to the Walkerton Commission



and the 93 recommendations made by the Walkerton Inquiry Part II report. Areas of recommendation included:

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

The following sections describe significant applicable regulatory areas.

### **1.3.1 Sustainable Water and Sewage Systems Act**

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

### **1.3.2 Safe Drinking Water Act**

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

The purposes of the *Safe Drinking Water Act* are to “recognize that the people of Ontario are entitled to expect their drinking water to be safe and to provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing. 2002, c. 32, s. 1.”

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

- Mandatory licensing and accreditation of testing laboratories;



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

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

### **1.3.3 Financial Plans Regulation**

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

- The financial plan will represent one of the key elements to obtain a Drinking Water Licence.
- The plan is to be completed, approved by Council Resolution, and submitted to the Ministry of Municipal Affairs and Housing as part of the application for receiving approval of a water licence.
- The financial plans shall be for a period of at least six years, but longer planning horizons are encouraged.
- As the regulation is under the *Safe Drinking Water Act*, the preparation of the plan is mandatory for water services and encouraged for wastewater services.
- The plan is considered a living document (i.e. it can be updated if there are significant changes to budgets) but an update 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. Many of the prescriptive requirements, however, have been removed (e.g. preparation of two separate documents for provincial approval, auditor opinions, engineer certifications, etc.).

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

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

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

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

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

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

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



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

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

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

### **1.3.4 Water Opportunities Act**

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

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

With regard to the sustainability plans:

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

The Financial Plan shall include:

- An asset management plan for the physical infrastructure;
- Financial Plan;
- For water, a water conservation plan;



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

Performance indicators will be established by service that:

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

Regulations will prescribe:

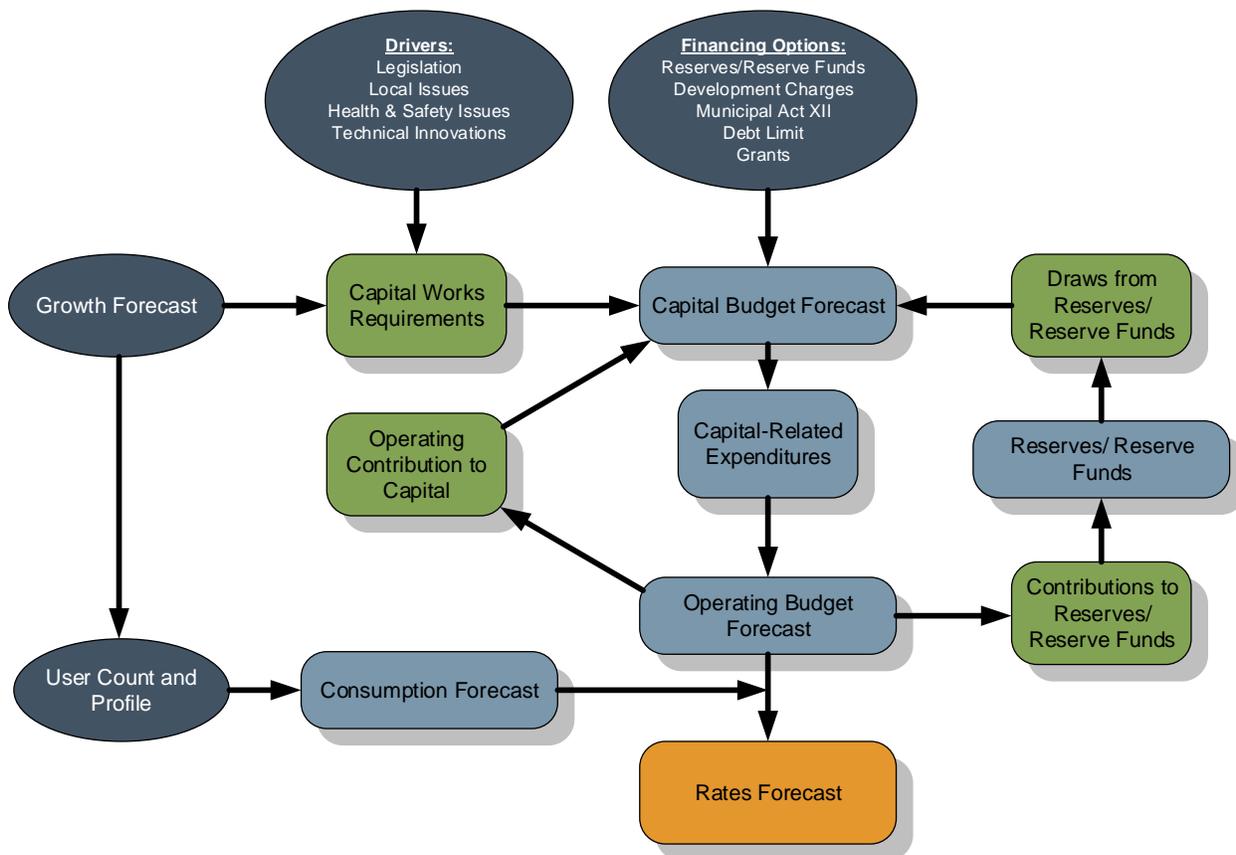
- Timing;
- Contents of the plans;
- Portions of the plan that will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.



## 1.4 Water and Wastewater Rate Calculation Methodology

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

Figure 1-1  
Water and Wastewater Rate Calculation Methodology



The methodology employed generally consists of five major elements:

### 1.4.1 Customer Demands and Consumption Forecast

As noted in section 1.1, the Township employs a rate structure consisting of a monthly base charge and a consumptive rate. The base charge is imposed based on water meter size with higher charges imposed on larger meters, generally reflective of higher capital infrastructure demands. The consumptive rate, which also increases with meter size, is imposed on all consumption in excess of 20 m<sup>3</sup> a month.



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 modelled based on average annual historical building permit activity witnessed in the Township over the past 5 years.

The water consumption forecast is prepared by applying average annual consumption estimates to future development. Consumption estimates are based on average consumption levels by customer type drawn from the Township's 2019 billing records.

### **1.4.2 Capital Needs Forecast**

The capital needs forecast is developed to measure program/service level adjustments, lifecycle requirements, and growth-related needs. Analysis conducted by the Ontario Clean Water Agency (OCWA), the operator of the Township's systems, identified capital projects that together form the majority of the capital forecast. Capital expenditures are forecast with inflationary adjustments based on capital cost indices.

### **1.4.3 Capital Funding Plan**

The capital funding plan considers the potential funding sources available to address the capital needs forecast. The sources of capital funding include rate-based support, reserves/reserve funds, and debt for program/service level improvements. The use of rate-based funding is measured against the revenue projections and affordability impacts. The reserve/reserve fund sources are measured against the sustainability of these funds, relative to lifecycle demands, revenue projections, and affordability impacts. Debt financing is considered for significant capital expenditures where funding is required beyond long-term lifecycle needs or to facilitate rate transition policies. Debt financing is measured against annual repayment limits to ensure a practical and sustainable funding mix.

### **1.4.4 Operating Budget Forecast**

The operating budget forecast considers adjustments to the Township's base budget reflecting program/service level changes, operating fund impacts associated with infrastructure, and financing of 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 penalties, interest, and other miscellaneous revenues.

### **1.4.5 Rate Forecast and Structure**

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



# Chapter 2

## Forecast Growth and Service Demands



## 2. Forecast Growth and Service Demands

### 2.1 Current Service Demands

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In preparing the demands forecast for water and wastewater services, annual water and wastewater billing records for 2019 were analyzed. These records detailed the number of customers by type and meter size, and identified their metered water/wastewater consumption, enabling the development of a comprehensive profile of existing customers.

Based on analysis of this information, there are currently 304 water and wastewater customers in the Township. The majority of the customers on the Township's water and wastewater systems have a meter size of 1 ½" or less.

A detailed review of billing records revealed some issues that will need to be further investigated by the Township. Based on 2019 monthly consumption records by account, approximately 36% of the accounts had zero consumption in 2019. This may be indicative of failing water meters that will require replacement however, as indicated above, the Township will need to further investigate this issue to determine the exact cause and appropriate corrective action. In the meantime, missing water consumption readings were supplemented by averages from the 2015-2017 period where available, or estimated based on average annual consumption of all other single-unit Township customers on a 1 ½" meter or less (i.e. 180 m<sup>3</sup> annually).

It is noted that as the Township takes actions to correct these anomalies, the updated water consumption records should be compared to the estimates presented in section 2.2. If differences of more than 10% are found between actual water consumption and the estimates provided in section 2.2 below, then it would be advisable for the Township to undertake an update to this rate study.

### 2.2 Forecast Service Demands

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Over the next ten years (i.e. to 2030), the number of water and wastewater system customers is anticipated to increase by 14, resulting in total water and wastewater customers of 318 by 2030. It is expected that all new development will be connected to



both water and wastewater services. Table 2-1 provides the detailed customer forecast for the period 2020 to 2030 for water and wastewater.

Billing records from 2019 were used to develop a forecast of water demands for the period 2020 to 2030. Average annual consumption levels, as detailed above, were calculated from 2019 billing records (i.e. 180 m<sup>3</sup> annually) and applied to the Township's growth projections to forecast future service demands. For wastewater, the flow estimates are based on each account's water consumption.

As identified in Table 2-2, applying the per-customer consumption estimates to the customer forecast identified in Table 2-1 results in an estimated increase in total annual chargeable water consumption (i.e. consumption exceeding the 20 m<sup>3</sup> monthly threshold) from 4,222 cubic metres as of 2019 to 4,587 cubic metres by 2030, or an annualized increase of 0.8%. It is noted that when developing the consumption forecast it was assumed that the Township would correct the aforementioned anomalies in customer consumption data over the next three years (i.e. 2021-2023). This is expected to result in larger recorded volumes of chargeable water consumption over the 2022-2024 period. Wastewater charges are collected based on the quantity of water consumed.

As will be discussed in Section 5, this study presents several scenarios for Council's consideration. One of the variable factors between these scenarios is the amount of water consumption included in the base charge (currently 20 m<sup>3</sup> per month). Table 2-3 presents the forecast of annual chargeable water consumption if the monthly threshold was reduced from 20 m<sup>3</sup> to 15 m<sup>3</sup>. With this reduced threshold, the annual chargeable consumption would increase from 6,221 m<sup>3</sup> to 7,395 m<sup>3</sup>, or an annualized increase of 1.7%.



Table 2-1  
Township of Leeds and the Thousand Islands  
Water/Wastewater Customer Forecast

Water Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing - 1 ½" or less	283	283	283	283	283	283	283	283	283	283	283
Existing - 2" or greater	21	21	21	21	21	21	21	21	21	21	21
New - Growth (1 ½" or less)	-	1	2	4	5	7	8	10	11	13	14
<b>Total</b>	<b>304</b>	<b>305</b>	<b>306</b>	<b>308</b>	<b>309</b>	<b>311</b>	<b>312</b>	<b>314</b>	<b>315</b>	<b>317</b>	<b>318</b>

Table 2-2  
Township of Leeds and the Thousand Islands  
Chargeable Water Consumption Forecast (m<sup>3</sup>)  
Over 20 m<sup>3</sup> Monthly Threshold

Water Volume Forecast (m <sup>3</sup> )	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing - 1 ½" or less	1,476	1,476	1,527	1,579	1,630	1,630	1,630	1,630	1,630	1,630	1,630
Existing - 2" or greater	2,746	2,746	2,746	2,746	2,746	2,746	2,746	2,746	2,746	2,746	2,746
New - Growth (1 ½" or less)	-	15	30	60	75	105	120	151	166	196	211
<b>Total</b>	<b>4,222</b>	<b>4,237</b>	<b>4,303</b>	<b>4,385</b>	<b>4,451</b>	<b>4,481</b>	<b>4,496</b>	<b>4,527</b>	<b>4,542</b>	<b>4,572</b>	<b>4,587</b>

Note: Consumption above only includes consumption exceeding 20 m<sup>3</sup> per user per month.



Table 2-3  
Township of Leeds and the Thousand Islands  
Chargeable Water Consumption Forecast (m<sup>3</sup>)  
Over 15 m<sup>3</sup> Monthly Threshold

Water Volume Forecast (m <sup>3</sup> )	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing - 1 ½" or less	3,338	3,338	3,569	3,800	4,032	4,032	4,032	4,032	4,032	4,032	4,032
Existing - 2" or greater	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883
New - Growth (1 ½" or less)	-	34	69	137	172	240	275	343	378	446	481
<b>Total</b>	<b>6,221</b>	<b>6,255</b>	<b>6,521</b>	<b>6,820</b>	<b>7,086</b>	<b>7,155</b>	<b>7,189</b>	<b>7,258</b>	<b>7,292</b>	<b>7,361</b>	<b>7,395</b>

Note: Consumption above only includes consumption exceeding 15 m<sup>3</sup> per user per month.



# Chapter 3

## Capital Infrastructure Needs



## 3. Capital Infrastructure Needs

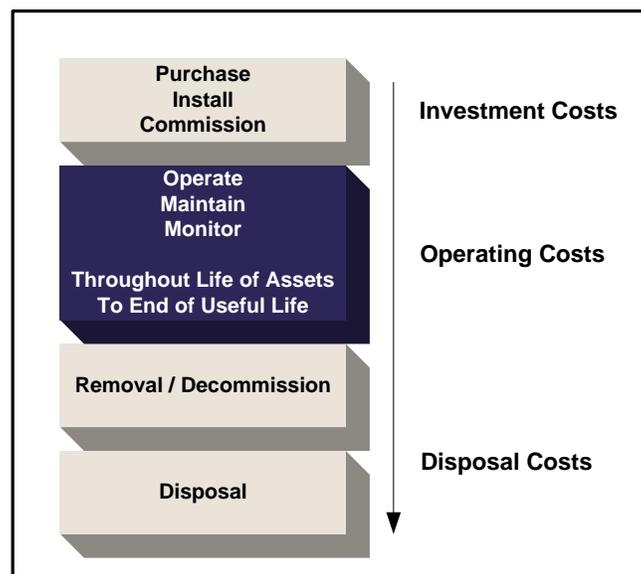
### 3.1 Overview of Lifecycle Costing

#### 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.

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 that 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 D.C.s have been employed, based on the underlying principle of having tax/rate payers who benefit directly from the service, pay 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, D.C., reserves, developer contributions and debentures.

New construction related to growth could produce D.C.s 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.

Capital construction to replace existing infrastructure, however, is largely not growth-related and will therefore not yield D.C.s 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 D.C.s 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



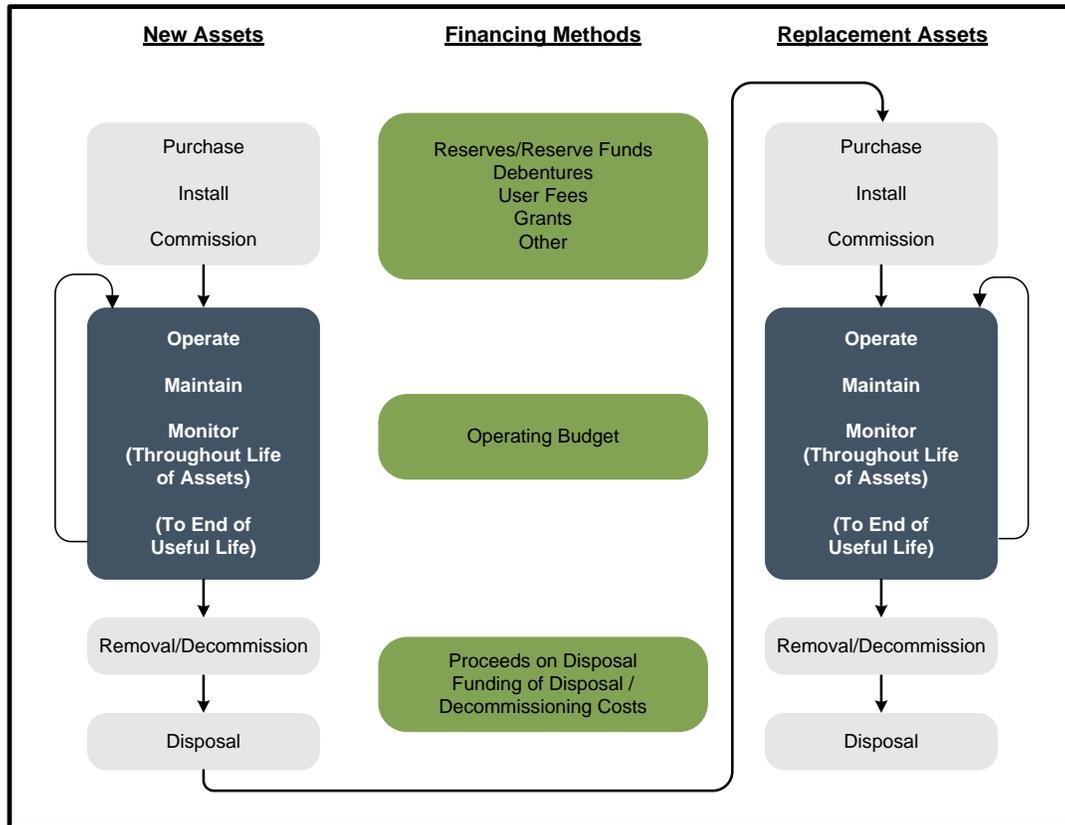
to finance the non-growth-related component of this project: reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers, and debenturing which will be carried by future tax/rate payers. Ongoing costs of monitoring, operating,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

Charging for the cost of using up 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.



Figure 3-2  
Financing Lifecycle Costs



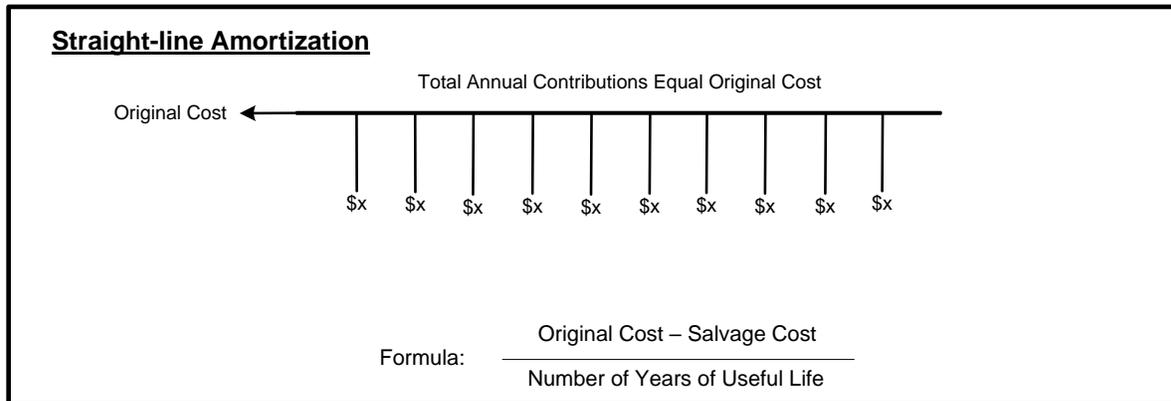
### 3.1.3 Costing Methods

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.

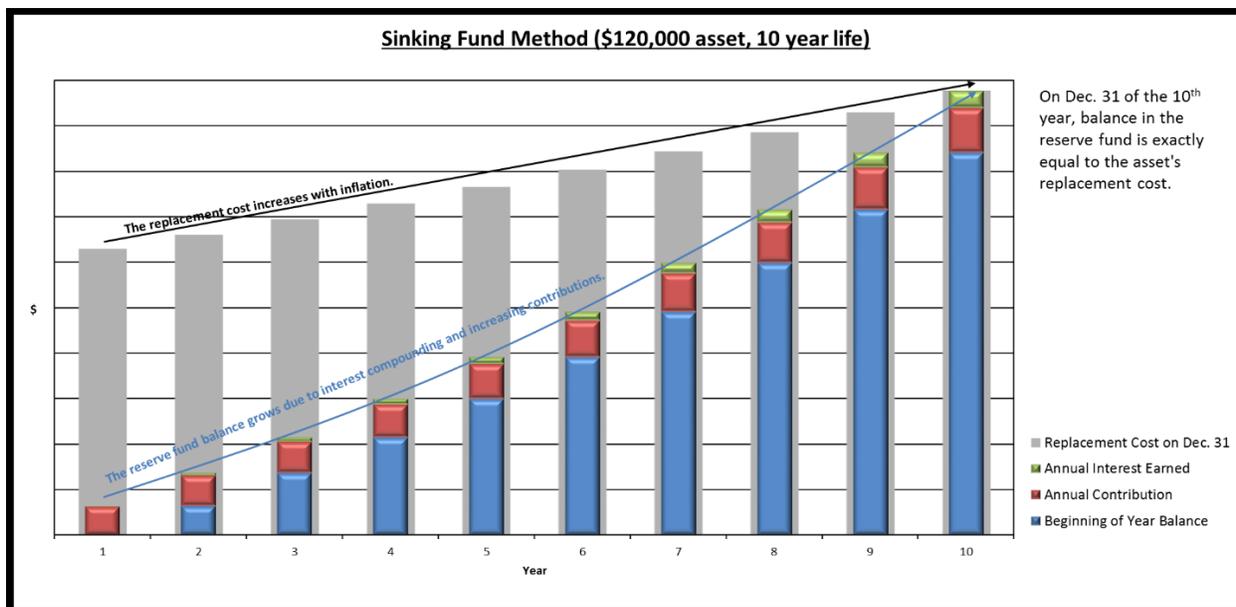


Figure 3-3  
Straight-line Amortization Method



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.

Figure 3-4  
Sinking Fund Method





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

### **3.1.4 Asset Inventory**

Water and wastewater capital asset inventory information was compiled from the Township's asset management inventory, information provided by OCWA, and discussions with Township staff.

Lifecycle "sinking fund" 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 estimated current asset replacement value and long-term average annual lifecycle replacement needs (2020 \$). It is important to note that the Township's current asset management information is lacking detailed replacement cost estimates, and therefore a combination of sources (e.g. benchmark replacement costs from other Ontario municipalities, high-level estimates from OCWA, etc.) have been utilized to estimate these figures. It is expected that the estimates of annual lifecycle costs will be further refined in the coming years through the Township's ongoing asset management efforts. If the annual lifecycle costs identified through subsequent asset management planning differ from the estimates shown in Table 3-1 by more than 10%, the Township should consider undertaking an update of this rate study.



Table 3-1  
Township of Leeds and the Thousand Islands  
Summary of Water and Wastewater Infrastructure (2020 \$)

Asset	Replacement Cost (2020\$)	Annual Lifecycle	% of Replacement Cost
<b>Water</b>			
Water Mains	4,255,022	90,821	2.1%
Water Meters	49,200	2,857	5.8%
Hydrants	182,925	5,193	2.8%
Well #1	1,475,106	41,873	2.8%
Well #2	860,479	24,426	2.8%
Water Tower	4,000,000	113,545	2.8%
<b>Total Water</b>	<b>10,822,732</b>	<b>278,715</b>	<b>2.6%</b>
<b>Wastewater</b>			
WW Mains	6,000,000	128,066	2.1%
SPS	2,663,800	75,616	2.8%
Treatment	15,000	426	2.8%
Lagoon - Pumps	15,000	871	5.8%
Lagoon - Sludge Removal	250,000	27,066	10.8%
<b>Total Wastewater</b>	<b>8,943,800</b>	<b>232,045</b>	<b>2.6%</b>
<b>Total</b>	<b>19,766,532</b>	<b>510,760</b>	<b>2.6%</b>

## 3.2 Capital Needs Forecast

Ten-year capital forecasts were provided by OCWA and further refined through discussions with Township staff to address known capital needs across the water and wastewater systems.

The total capital forecast—in current dollars—includes approximately \$183,300 in capital needs, with \$89,140 of that being related to water services and \$94,140 to wastewater services. The capital forecast includes capital needs identified by OCWA to 2024 and a water meter replacement program (split 50/50 between water and wastewater). The water meter replacement program was included to reflect the lifecycle replacement needs of these assets and also to potentially address the concerns regarding consumption records discussed in Section 2.1.



On this basis, the average annual value of the capital program for water is approximately \$7,400. This level of expenditure is lower than the long-term water infrastructure needs identified in section 3.1.4, which suggests long-term capital needs of \$278,700 (2020 \$) annually. This suggests that the 10-year forecast of specific infrastructure renewal and replacement needs identified in this study are lower than longer-term capital funding requirements.

The average annual value of the capital program for wastewater is approximately \$7,900. This level of expenditure is lower than the long-term infrastructure needs identified in section 3.1.4, which suggests long-term capital needs of 232,000 (2020 \$) annually. This suggests that longer-term capital funding requirements are higher than the 10-year forecast of specific infrastructure renewal and replacement needs identified in this study.

The listing of water and wastewater capital need is presented in Tables 3-2 and 3-3, respectively. For rate determination purposes, the capital needs forecast has been indexed by 3.5% annually. This is generally reflective of the average annual capital cost inflation witnessed in the Statistics Canada Building Construction Price Index over the past 20 years.

As the Township further develops its asset management plan for the water and wastewater systems it is recommended that this study be updated to incorporate capital rehabilitation/replacements needs identified in the asset management plan.



Table 3-2  
Township of Leeds and the Thousand Islands  
Water Capital Budget Forecast (Uninflated \$)

Description	Total	Budget 2020	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Capital Expenditures</b>													
Replace Flow Meters	10,000	-	-	-	10,000	-	-	-	-	-	-	-	-
Replace Well Pump # 1 & Camera Inspection of Well	15,000	15,000	-	-	-	-	-	-	-	-	-	-	-
Replace Well Pump # 2 & Camera Inspection of Well	15,000	-	-	-	-	15,000	-	-	-	-	-	-	-
Water Meter Replacement Program	49,140	-	16,380	16,380	16,380	-	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>89,140</b>	<b>15,000</b>	<b>16,380</b>	<b>16,380</b>	<b>26,380</b>	<b>15,000</b>	-	-	-	-	-	-	-

Table 3-3  
Township of Leeds and the Thousand Islands  
Wastewater Capital Budget Forecast (Uninflated \$)

Description	Total	Budget 2020	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Capital Expenditures</b>													
Build Shed at SPS	10,000	-	10,000	-	-	-	-	-	-	-	-	-	-
Submersible Pump #1 Rebuild / Replace	15,000	15,000	-	-	-	-	-	-	-	-	-	-	-
Submersible Pump #2 Rebuild / Replace	20,000	-	-	20,000	-	-	-	-	-	-	-	-	-
Water Meter Replacement Program	49,140	-	16,380	16,380	16,380	-	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>94,140</b>	<b>15,000</b>	<b>26,380</b>	<b>36,380</b>	<b>16,380</b>	-	-	-	-	-	-	-	-



# Chapter 4

## Capital Cost Financing Options



## 4. Capital Cost Financing Options

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

The most recent *Municipal Act* came into force on January 1, 2003, with significant amendments in 2006 through the *Municipal Statute Law Amendment Act*. Part XII of the Act and O. Reg. 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:

<b>Recovery Methods</b>	<b>Section Reference</b>
<i>Development Charges Act, 1997</i>	4.1
<i>Municipal Act, 2001</i>	
○ Fees and Charges	4.2
○ Local Improvements	
Grant Funding	4.3
Reserves/Reserve Funds	4.4
Debenture Financing	4.5



## 4.1 Development Charges Act, 1997

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

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

The Township does not currently impose D.C.s on new development as a source of funding for anticipated growth-related capital needs. It is noted that the recently completed Lansdowne Serviced Area Infrastructure Assessment and Growth Readiness Study (SNC-Lavalin, 2020) identified a need for additional pump capacity and lagoon wastewater treatment capacity to accommodate future development. As such, the Township should consider implementing development charges to help pay for these capacity upgrades once cost estimates are known.

## 4.2 Municipal Act

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

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



### 4.3 Grant Funding Availability

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Grant funding has not been utilized as a funding source in this study. To the extent that the Township is successful in securing additional grant funding for future infrastructure needs and the financial impacts are material, the rate forecast may be revisited.

### 4.4 Existing Reserves/Reserve Funds

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The Township has an established reserve fund for water and wastewater capital. This reserve fund has been used in the capital funding forecast for rate-based needs. For the purposes of the capital funding forecast, the reserve fund balance has been apportioned equally between the water and wastewater systems. The following table summarizes the water and wastewater reserves/reserve funds utilized in this analysis and the respective estimated January 1, 2020 opening balances.

Table 4-1  
Township of Leeds and the Thousand Islands  
Water and Wastewater Projected Reserve/Reserve Fund Balances

Reserve	2020 Opening Balance
<b>Water</b>	
Capital Reserve	375,192
<b>Wastewater</b>	
Capital Reserve	375,192
<b>Total</b>	<b>750,384</b>

### 4.5 Debenture Financing

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

The Ministry of Municipal Affairs and Housing regulates the level of debt incurred by Ontario municipalities through its powers established under the *Municipal Act*. O. 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-purpose revenue may be allotted for servicing the debt (i.e. debt charges).

The Township has no outstanding external debt for water or wastewater services, and the capital forecast proposes no debt financing for either the water or wastewater systems.

## 4.6 Recommended Approach

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

Table 4-2  
Township of Leeds and the Thousand Islands  
2021 to 2030 Water and Wastewater Capital Funding Program (Inflated \$)

Description	Water	Wastewater
Provincial/Federal Grants	\$ -	\$ -
Debenture Requirements	\$ -	\$ -
Operating Contributions	\$ -	\$ -
Capital Reserves	\$ 96,000	\$ 99,000
<b>Total Capital Funding</b>	<b>\$ 96,000</b>	<b>\$ 99,000</b>

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



Table 4-3  
Township of Leeds and the Thousand Islands  
Water Service Capital Budget Forecast (Inflated \$)

Description	Total	Budget 2020	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Capital Expenditures</b>												
Replace Flow Meters	11,000	-	-	-	11,000	-	-	-	-	-	-	-
Replace Well Pump # 1 & Camera Inspection of Well	15,000	15,000	-	-	-	-	-	-	-	-	-	-
Replace Well Pump # 2 & Camera Inspection of Well	17,000	-	-	-	-	17,000	-	-	-	-	-	-
Water Meter Replacement Program	53,000	-	17,000	18,000	18,000	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>96,000</b>	<b>15,000</b>	<b>17,000</b>	<b>18,000</b>	<b>29,000</b>	<b>17,000</b>	-	-	-	-	-	-
<b>Capital Financing</b>												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	96,000	15,000	17,000	18,000	29,000	17,000	-	-	-	-	-	-
<b>Total Capital Financing</b>	<b>96,000</b>	<b>15,000</b>	<b>17,000</b>	<b>18,000</b>	<b>29,000</b>	<b>17,000</b>	-	-	-	-	-	-

Table 4-4  
Township of Leeds and the Thousand Islands  
Wastewater Service Capital Budget Forecast (Inflated \$)

Description	Total	Budget 2020	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Capital Expenditures</b>												
Build Shed at SPS	10,000	-	10,000	-	-	-	-	-	-	-	-	-
Submersible Pump #1 Rebuild / Replace	15,000	15,000	-	-	-	-	-	-	-	-	-	-
Submersible Pump #2 Rebuild / Replace	21,000	-	-	21,000	-	-	-	-	-	-	-	-
Water Meter Replacement Program	53,000	-	17,000	18,000	18,000	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>99,000</b>	<b>15,000</b>	<b>27,000</b>	<b>39,000</b>	<b>18,000</b>	-	-	-	-	-	-	-
<b>Capital Financing</b>												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	99,000	15,000	27,000	39,000	18,000	-	-	-	-	-	-	-
<b>Total Capital Financing</b>	<b>99,000</b>	<b>15,000</b>	<b>27,000</b>	<b>39,000</b>	<b>18,000</b>	-	-	-	-	-	-	-



# Chapter 5

## Net Operating Expenditure Forecast



## 5. Net Operating Expenditure Forecast

Three scenarios were developed in consultation with Township staff to provide options for Council's consideration. The scenarios, named Scenario 1, Scenario 2, and Scenario 3, are detailed below and will be referenced throughout the remainder of the report.

### Scenario 1: Maintain current rate structure and move towards full lifecycle funding over 10 years

Scenario 1 was developed to maintain the Township's current rate structure (i.e. include 20 m<sup>3</sup> of consumption in the monthly base charge) and gradually introduce rate increases over the entire forecast period. This scenario would allow the Township to gradually increase annual contributions towards capital (i.e. annual transfers to capital reserve funds) to full lifecycle funding levels, as identified in section 3.1.4, by the end of the forecast period.

### Scenario 2: Modify current rate structure (15 m<sup>3</sup> monthly threshold) and move towards full lifecycle funding over 10 years

Scenario 2 was developed to modify the Township's current rate structure (i.e. reduce the amount of consumption included in the monthly base charge to 15 m<sup>3</sup>) and gradually introduce rate increases over the entire forecast period.

Per capita and per household consumption levels have steadily declined in recent years. This decline is partially due to individuals' responses to price signals and conservation efforts, and partially due to a gradual turnover in appliance and plumbing fixture stock to newer, more efficient models. The Township's current rate structure provides for 20 m<sup>3</sup> of consumption included in the monthly base charge. This translates to annual consumption of 240 m<sup>3</sup>, which is higher than the observed average annual consumption per customer identified in Section 2.2 (i.e. 180 m<sup>3</sup> annually). Reducing the amount of consumption included in the monthly base charge to 15 m<sup>3</sup> would align with the observed average. As such, the average residential customer would continue to have most of their consumption included in the fixed monthly charge, but customers consuming more than the average would be billed accordingly. This would provide a closer alignment of the monthly bill that a customer receives and their share of total consumption.



As with Scenario 1, this scenario would also allow the Township to gradually increase annual contributions towards capital (i.e. annual transfers to capital reserve funds) to full lifecycle funding levels, as identified in section 3.1.4, by the end of the forecast period.

### Scenario 3: Modify Current Rate Structure (15 m<sup>3</sup> Monthly Threshold) and move towards modified lifecycle funding target

Scenario 3 was developed to modify the Township's current rate structure (i.e. reduce amount of consumption included in the monthly base charge to 15 m<sup>3</sup>) and gradually introduce rate increases over the entire forecast period.

The rationale for reducing the amount of consumption included in the monthly base charge to 15 m<sup>3</sup> is described in detail under Scenario 2 above.

However, instead of targeting full lifecycle funding levels as is the case under the first two scenarios, Scenario 3 limits the annual increases to the monthly base charge to 3.5% annually over the forecast period. It is important to note that this scenario does not achieve full lifecycle funding and therefore does not provide long-term financial sustainability in the traditional sense.

## **5.1 Operating Expenditures**

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The Township provided its 2020 Operating Budget which formed the basis for the water and wastewater services net operating expenditure forecast, which was further refined through discussions with Township staff. The operating expenditure estimates were generally inflated at 2% annually, reflecting historical Consumer Price Index (C.P.I.) rates.

The Township currently budgets for the water and wastewater system on a combined basis. For the purposes of this rate study, all operating expenditures except OCWA contract costs, were equally allocated between the water and wastewater systems. The OCWA contract costs were allocated 56.7% to Water and 43.3% to Wastewater, consistent with the Township's 2015 Rate Study.

The operating budget forecast generally includes two components – the operating expenditures and capital-related expenditures. The former is based on the Township's projected annual spending for ongoing operations and maintenance, while the latter is



based on the capital funding plan decisions (i.e. transfers to reserve funds, debt repayment, and capital fund transfers) presented earlier.

Capital-related annual expenditures in the forecast include 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.

As a result, gross operating expenditures for water services are anticipated to increase from \$240,200 in 2020, to \$292,800 million by 2030. Similarly, for wastewater services annual gross operating expenditures are forecast to increase from \$205,200 in 2020, to \$250,200 by 2030.

## 5.2 Operating Revenues

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The Township has operating revenue sources including interest on accounts, penalties, and rentals that offset some of the annual operating costs. These operating revenues have been forecast over the period with general inflation of 2% annually.

Similar to the apportionment of budgeted operating expenditures, as identified in section 5.1 above, all operating revenues were equally allocated between the water and wastewater systems.

The annual operating revenues for both the water and wastewater systems are forecast to increase from \$16,800 in 2020 to \$20,400 by 2030.

Tables 5-1 to 5-2, 5-3 to 5-4, and 5-5 to 5-6 provide the water and wastewater operating budget forecasts for Scenarios 1, 2, and 3, respectively. The forecast operating budgets are provided in inflated dollars. Detailed breakdowns of the operating expenditure forecasts can be found in Appendix A for water services and in Appendix B for wastewater services.



Table 5-1  
Township of Leeds and the Thousand Islands  
Scenario 1  
Water Service Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Expenditures</b>												
<u>Operating Costs</u>												
Office Supplies	250	260	260	270	270	280	280	290	290	300	300	
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100	
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100	
Leases	100	100	100	110	110	110	110	110	120	120	120	
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000	
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500	
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240	
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800	
Contracted Jobs												
OCWA - Maintenance Forecast	42,700	50,800	48,700	47,400	42,500	43,400	44,200	45,100	46,000	46,900	47,900	
Other	17,300	10,400	13,700	16,300	22,400	22,800	23,400	23,800	24,300	24,800	25,200	
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	
O.C.W.A.	149,008	152,000	155,000	158,100	161,300	164,500	167,800	171,200	174,600	178,100	181,600	
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900	
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900	
<b>Sub-Total Operating Costs</b>	<b>240,208</b>	<b>244,960</b>	<b>249,770</b>	<b>254,990</b>	<b>260,000</b>	<b>265,210</b>	<b>270,520</b>	<b>276,030</b>	<b>281,440</b>	<b>287,060</b>	<b>292,760</b>	
<u>Capital-Related</u>												
Transfer to Capital Reserve	69,594	84,766	101,286	120,031	139,413	161,219	183,523	208,893	234,841	264,490	294,534	
<b>Sub-Total Capital-Related</b>	<b>69,594</b>	<b>84,766</b>	<b>101,286</b>	<b>120,031</b>	<b>139,413</b>	<b>161,219</b>	<b>183,523</b>	<b>208,893</b>	<b>234,841</b>	<b>264,490</b>	<b>294,534</b>	
<b>Total Expenditures</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>	
<b>Revenues</b>												
<u>Operating Revenues</u>												
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800	
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400	
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200	
Contributions from Reserve	-	-	-	-	-	-	-	-	-	-	-	
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>	
<u>Billing Revenues</u>												
Base Charge Revenue	277,835	297,929	318,532	341,649	365,200	391,603	418,497	448,650	479,376	513,819	548,912	
Consumptive Revenue	15,218	14,698	15,124	15,572	16,013	16,327	16,646	16,973	17,305	17,631	17,982	
<b>Sub-Total Billing Revenues</b>	<b>293,052</b>	<b>312,626</b>	<b>333,656</b>	<b>357,221</b>	<b>381,213</b>	<b>407,929</b>	<b>435,143</b>	<b>465,623</b>	<b>496,681</b>	<b>531,450</b>	<b>566,894</b>	
<b>Total Revenues</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>	



Table 5-2  
Township of Leeds and the Thousand Islands  
Scenario 1  
Wastewater Service Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<b>Operating Costs</b>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	40,000	39,800	49,900	66,300	34,600	35,300	36,000	36,700	37,500	38,200	39,000
Other	20,000	21,400	12,500	-	30,300	30,900	31,600	32,200	32,800	33,500	34,100
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	113,992	116,300	118,600	121,000	123,400	125,900	128,400	130,900	133,600	136,200	139,000
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>205,192</b>	<b>209,260</b>	<b>213,370</b>	<b>220,490</b>	<b>222,100</b>	<b>226,610</b>	<b>231,120</b>	<b>235,730</b>	<b>240,440</b>	<b>245,160</b>	<b>250,160</b>
<b>Capital-Related</b>											
Transfer to Capital Reserve	89,263	104,876	122,222	139,260	162,350	185,285	209,001	235,994	263,582	295,228	327,322
<b>Sub-Total Capital-Related</b>	<b>89,263</b>	<b>104,876</b>	<b>122,222</b>	<b>139,260</b>	<b>162,350</b>	<b>185,285</b>	<b>209,001</b>	<b>235,994</b>	<b>263,582</b>	<b>295,228</b>	<b>327,322</b>
<b>Total Expenditures</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>
<b>Revenues</b>											
<b>Operating Revenues</b>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<b>Billing Revenues</b>											
Base Charge Revenue	262,323	284,516	305,310	328,513	352,617	379,491	407,046	437,979	469,688	505,283	541,769
Consumptive Revenue	15,382	12,520	12,882	13,437	13,633	13,905	14,174	14,445	14,734	15,005	15,313
<b>Sub-Total Billing Revenues</b>	<b>277,705</b>	<b>297,036</b>	<b>318,192</b>	<b>341,950</b>	<b>366,250</b>	<b>393,395</b>	<b>421,221</b>	<b>452,424</b>	<b>484,422</b>	<b>520,288</b>	<b>557,082</b>
<b>Wastewater Billing Recovery - Total</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>



Table 5-3  
Township of Leeds and the Thousand Islands  
Scenario 2  
Water Service Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<b>Operating Costs</b>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	42,700	50,800	48,700	47,400	42,500	43,400	44,200	45,100	46,000	46,900	47,900
Other	17,300	10,400	13,700	16,300	22,400	22,800	23,400	23,800	24,300	24,800	25,200
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	149,008	152,000	155,000	158,100	161,300	164,500	167,800	171,200	174,600	178,100	181,600
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>240,208</b>	<b>244,960</b>	<b>249,770</b>	<b>254,990</b>	<b>260,000</b>	<b>265,210</b>	<b>270,520</b>	<b>276,030</b>	<b>281,440</b>	<b>287,060</b>	<b>292,760</b>
<b>Capital-Related</b>											
Transfer to Capital Reserve	69,594	84,766	101,286	120,031	139,413	161,219	183,523	208,893	234,841	264,490	294,534
<b>Sub-Total Capital-Related</b>	<b>69,594</b>	<b>84,766</b>	<b>101,286</b>	<b>120,031</b>	<b>139,413</b>	<b>161,219</b>	<b>183,523</b>	<b>208,893</b>	<b>234,841</b>	<b>264,490</b>	<b>294,534</b>
<b>Total Expenditures</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>
<b>Revenues</b>											
<b>Operating Revenues</b>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserve	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<b>Billing Revenues</b>											
Base Charge Revenue	277,835	292,532	312,538	335,009	357,935	384,132	410,848	440,787	471,326	505,552	540,447
Consumptive Revenue	15,218	20,094	21,118	22,212	23,278	23,798	24,295	24,836	25,354	25,899	26,447
<b>Sub-Total Billing Revenues</b>	<b>293,052</b>	<b>312,626</b>	<b>333,656</b>	<b>357,221</b>	<b>381,213</b>	<b>407,929</b>	<b>435,143</b>	<b>465,623</b>	<b>496,681</b>	<b>531,450</b>	<b>566,894</b>
<b>Total Revenues</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>



Table 5-4  
Township of Leeds and the Thousand Islands  
Scenario 2  
Wastewater Service Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Expenditures</b>												
<b>Operating Costs</b>												
Office Supplies	250	260	260	270	270	280	280	290	290	300	300	
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100	
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100	
Leases	100	100	100	110	110	110	110	110	120	120	120	
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000	
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500	
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240	
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800	
Contracted Jobs												
OCWA - Maintenance Forecast	40,000	39,800	49,900	66,300	34,600	35,300	36,000	36,700	37,500	38,200	39,000	
Other	20,000	21,400	12,500	-	30,300	30,900	31,600	32,200	32,800	33,500	34,100	
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	
O.C.W.A.	113,992	116,300	118,600	121,000	123,400	125,900	128,400	130,900	133,600	136,200	139,000	
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900	
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900	
<b>Sub-Total Operating Costs</b>	<b>205,192</b>	<b>209,260</b>	<b>213,370</b>	<b>220,490</b>	<b>222,100</b>	<b>226,610</b>	<b>231,120</b>	<b>235,730</b>	<b>240,440</b>	<b>245,160</b>	<b>250,160</b>	
<b>Capital-Related</b>												
Transfer to Capital Reserve	89,263	104,876	122,222	139,260	162,350	185,285	209,001	235,994	263,582	295,228	327,322	
<b>Sub-Total Capital-Related</b>	<b>89,263</b>	<b>104,876</b>	<b>122,222</b>	<b>139,260</b>	<b>162,350</b>	<b>185,285</b>	<b>209,001</b>	<b>235,994</b>	<b>263,582</b>	<b>295,228</b>	<b>327,322</b>	
<b>Total Expenditures</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>	
<b>Revenues</b>												
<b>Operating Revenues</b>												
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800	
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400	
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200	
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>	
<b>Billing Revenues</b>												
Base Charge Revenue	262,323	279,965	300,256	322,840	346,492	373,191	400,598	431,352	462,901	498,316	534,631	
Consumptive Revenue	15,382	17,071	17,936	19,110	19,758	20,205	20,623	21,071	21,520	21,972	22,451	
<b>Sub-Total Billing Revenues</b>	<b>277,705</b>	<b>297,036</b>	<b>318,192</b>	<b>341,950</b>	<b>366,250</b>	<b>393,395</b>	<b>421,221</b>	<b>452,424</b>	<b>484,422</b>	<b>520,288</b>	<b>557,082</b>	
<b>Wastewater Billing Recovery - Total</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>	



Table 5-5  
Township of Leeds and the Thousand Islands  
Scenario 3  
Water Service Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Expenditures</b>												
<b>Operating Costs</b>												
Office Supplies	250	260	260	270	270	280	280	290	290	300	300	
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100	
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100	
Leases	100	100	100	110	110	110	110	110	120	120	120	
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000	
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500	
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240	
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800	
Contracted Jobs												
OCWA - Maintenance Forecast	42,700	50,800	48,700	47,400	42,500	43,400	44,200	45,100	46,000	46,900	47,900	
Other	17,300	10,400	13,700	16,300	22,400	22,800	23,400	23,800	24,300	24,800	25,200	
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	
O.C.W.A.	149,008	152,000	155,000	158,100	161,300	164,500	167,800	171,200	174,600	178,100	181,600	
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900	
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900	
<b>Sub-Total Operating Costs</b>	<b>240,208</b>	<b>244,960</b>	<b>249,770</b>	<b>254,990</b>	<b>260,000</b>	<b>265,210</b>	<b>270,520</b>	<b>276,030</b>	<b>281,440</b>	<b>287,060</b>	<b>292,760</b>	
<b>Capital-Related</b>												
Transfer to Capital Reserve	69,594	80,725	88,301	97,056	105,467	114,555	123,061	133,047	142,414	153,555	163,785	
<b>Sub-Total Capital-Related</b>	<b>69,594</b>	<b>80,725</b>	<b>88,301</b>	<b>97,056</b>	<b>105,467</b>	<b>114,555</b>	<b>123,061</b>	<b>133,047</b>	<b>142,414</b>	<b>153,555</b>	<b>163,785</b>	
<b>Total Expenditures</b>	<b>309,802</b>	<b>325,685</b>	<b>338,071</b>	<b>352,046</b>	<b>365,467</b>	<b>379,765</b>	<b>393,581</b>	<b>409,077</b>	<b>423,854</b>	<b>440,615</b>	<b>456,545</b>	
<b>Revenues</b>												
<b>Operating Revenues</b>												
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800	
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400	
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200	
Contributions from Reserve	-	-	-	-	-	-	-	-	-	-	-	
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>	
<b>Billing Revenues</b>												
Base Charge Revenue	277,835	288,491	299,553	312,034	323,989	337,468	350,386	364,941	378,900	394,617	409,698	
Consumptive Revenue	15,218	20,094	21,118	22,212	23,278	23,798	24,295	24,836	25,354	25,899	26,447	
<b>Sub-Total Billing Revenues</b>	<b>293,052</b>	<b>308,585</b>	<b>320,671</b>	<b>334,246</b>	<b>347,267</b>	<b>361,265</b>	<b>374,681</b>	<b>389,777</b>	<b>404,254</b>	<b>420,515</b>	<b>436,145</b>	
<b>Total Revenues</b>	<b>309,802</b>	<b>325,685</b>	<b>338,071</b>	<b>352,046</b>	<b>365,467</b>	<b>379,765</b>	<b>393,581</b>	<b>409,077</b>	<b>423,854</b>	<b>440,615</b>	<b>456,545</b>	



Table 5-6  
Township of Leeds and the Thousand Islands  
Scenario 3  
Wastewater Service Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast										
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Expenditures</b>												
<b>Operating Costs</b>												
Office Supplies	250	260	260	270	270	280	280	290	290	300	300	
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100	
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100	
Leases	100	100	100	110	110	110	110	110	120	120	120	
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000	
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500	
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240	
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800	
Contracted Jobs												
OCWA - Maintenance Forecast	40,000	39,800	49,900	66,300	34,600	35,300	36,000	36,700	37,500	38,200	39,000	
Other	20,000	21,400	12,500	-	30,300	30,900	31,600	32,200	32,800	33,500	34,100	
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100	
O.C.W.A.	113,992	116,300	118,600	121,000	123,400	125,900	128,400	130,900	133,600	136,200	139,000	
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900	
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900	
<b>Sub-Total Operating Costs</b>	<b>205,192</b>	<b>209,260</b>	<b>213,370</b>	<b>220,490</b>	<b>222,100</b>	<b>226,610</b>	<b>231,120</b>	<b>235,730</b>	<b>240,440</b>	<b>245,160</b>	<b>250,160</b>	
<b>Capital-Related</b>												
Transfer to Capital Reserve	89,263	97,295	104,794	111,033	121,758	130,721	139,227	149,207	158,426	169,496	179,515	
<b>Sub-Total Capital-Related</b>	<b>89,263</b>	<b>97,295</b>	<b>104,794</b>	<b>111,033</b>	<b>121,758</b>	<b>130,721</b>	<b>139,227</b>	<b>149,207</b>	<b>158,426</b>	<b>169,496</b>	<b>179,515</b>	
<b>Total Expenditures</b>	<b>294,455</b>	<b>306,555</b>	<b>318,164</b>	<b>331,523</b>	<b>343,858</b>	<b>357,331</b>	<b>370,347</b>	<b>384,937</b>	<b>398,866</b>	<b>414,656</b>	<b>429,675</b>	
<b>Revenues</b>												
<b>Operating Revenues</b>												
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800	
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400	
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200	
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>	
<b>Billing Revenues</b>												
Base Charge Revenue	262,323	272,384	282,828	294,613	305,900	318,626	330,824	344,566	357,746	372,585	386,824	
Consumptive Revenue	15,382	17,071	17,936	19,110	19,758	20,205	20,623	21,071	21,520	21,972	22,451	
<b>Sub-Total Billing Revenues</b>	<b>277,705</b>	<b>289,455</b>	<b>300,764</b>	<b>313,723</b>	<b>325,658</b>	<b>338,831</b>	<b>351,447</b>	<b>365,637</b>	<b>379,266</b>	<b>394,556</b>	<b>409,275</b>	
<b>Wastewater Billing Recovery - Total</b>	<b>294,455</b>	<b>306,555</b>	<b>318,164</b>	<b>331,523</b>	<b>343,858</b>	<b>357,331</b>	<b>370,347</b>	<b>384,937</b>	<b>398,866</b>	<b>414,656</b>	<b>429,675</b>	



# Chapter 6

## Forecast Water and Wastewater Rates



## 6. Forecast Water and Wastewater Rates

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

### 6.1 Water Rates

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The calculated rate forecasts for Scenarios 1 and 2 are provided to address full costs of the municipal systems, including annual operating and capital expenditures from a lifecycle perspective. The calculated rate forecast for Scenario 3 is provided to address full operating costs of the municipal system and limit base charge rate increases to 3.5% annually.

To achieve the objectives identified above, water base charge rates would be required to increase by:

- Scenario 1
  - 2021: 6.9%
  - 2022-2030: 6.5% to 6.6% annually
- Scenario 2
  - 2021: 4.9%
  - 2022-2030: 6.5% to 6.6% annually
- Scenario 3
  - 2021-2030: 3.5% annually

These increases would provide the Township with revenue certainty as they would allow for a large share of capital-related expenditures to be funded through a consistent revenue source (i.e. base charge revenues).

Furthermore, consumptive rates would be required to increase/decrease by:

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- Scenario 1
  - 2021: -3.7%
  - 2022-2030: 1.3% to 1.7% annually
- Scenarios 2 and 3
  - 2021: -6.1%
  - 2022-2030: 1.3% to 1.7% annually

Scenario 1 would maintain the Township's current rate structure of only billing monthly consumption in excess of 20 m<sup>3</sup>, while Scenarios 2 and 3 would lower this threshold to 15 m<sup>3</sup>. The reduction in the consumptive rates in the first year of the forecast (i.e. 2021) is reflective of the greater share of billing revenues recovered through the base charges.

The resultant rate forecasts for Scenarios 1, 2, and 3 are presented below in Tables 6-1 to 6-3, respectively. The detailed financial forecast and rate calculations for water services are provided in Appendix A to this report.



Table 6-1  
Township of Leeds and the Thousand Islands  
Scenario 1  
Water Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.870	\$ 2.915	\$ 2.955	\$ 3.001	\$ 3.043	\$ 3.093	\$ 3.137	\$ 3.189	\$ 3.231	\$ 3.287
Volume Charge (2" or greater)	\$ 3.940	\$ 3.794	\$ 3.854	\$ 3.907	\$ 3.968	\$ 4.023	\$ 4.090	\$ 4.147	\$ 4.216	\$ 4.272	\$ 4.345
Annual Increase (%)		-3.7%	1.6%	1.4%	1.6%	1.4%	1.7%	1.4%	1.7%	1.3%	1.7%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 75.05	\$ 80.22	\$ 85.49	\$ 91.11	\$ 97.08	\$ 103.43	\$ 110.19	\$ 117.39	\$ 125.03	\$ 133.18	\$ 141.84
2" or greater	\$ 91.13	\$ 97.41	\$ 103.81	\$ 110.63	\$ 117.88	\$ 125.60	\$ 133.80	\$ 142.54	\$ 151.82	\$ 161.72	\$ 172.23
Annual Increase (%)		6.9%	6.6%	6.6%	6.6%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%

Table 6-2  
Township of Leeds and the Thousand Islands  
Scenario 2  
Water Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.797	\$ 2.835	\$ 2.866	\$ 2.904	\$ 2.944	\$ 2.993	\$ 3.034	\$ 3.084	\$ 3.124	\$ 3.177
Volume Charge (2" or greater)	\$ 3.940	\$ 3.698	\$ 3.748	\$ 3.790	\$ 3.840	\$ 3.892	\$ 3.957	\$ 4.011	\$ 4.078	\$ 4.131	\$ 4.201
Annual Increase (%)		-6.1%	1.4%	1.1%	1.3%	1.4%	1.7%	1.4%	1.7%	1.3%	1.7%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 75.05										
2" or greater	\$ 91.13										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 78.76	\$ 83.88	\$ 89.34	\$ 95.14	\$ 101.46	\$ 108.18	\$ 115.33	\$ 122.93	\$ 131.04	\$ 139.65
2" or greater		\$ 95.64	\$ 101.85	\$ 108.48	\$ 115.53	\$ 123.20	\$ 131.35	\$ 140.04	\$ 149.27	\$ 159.12	\$ 169.57
Annual Increase (%)		4.9%	6.5%	6.5%	6.5%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%



Table 6-3  
Township of Leeds and the Thousand Islands  
Scenario 3  
Water Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.797	\$ 2.835	\$ 2.866	\$ 2.904	\$ 2.944	\$ 2.993	\$ 3.034	\$ 3.084	\$ 3.124	\$ 3.177
Volume Charge (2" or greater)	\$ 3.940	\$ 3.698	\$ 3.748	\$ 3.790	\$ 3.840	\$ 3.892	\$ 3.957	\$ 4.011	\$ 4.078	\$ 4.131	\$ 4.201
Annual Increase (%)		-6.1%	1.4%	1.1%	1.3%	1.4%	1.7%	1.4%	1.7%	1.3%	1.7%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 75.05										
2" or greater	\$ 91.13										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 77.68	\$ 80.40	\$ 83.21	\$ 86.12	\$ 89.14	\$ 92.26	\$ 95.48	\$ 98.83	\$ 102.29	\$ 105.87
2" or greater		\$ 94.32	\$ 97.62	\$ 101.04	\$ 104.57	\$ 108.23	\$ 112.02	\$ 115.94	\$ 120.00	\$ 124.20	\$ 128.55
Annual Increase (%)		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%



## 6.2 Wastewater Rates

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The calculated rate forecasts for Scenarios 1 and 2 are provided to address full costs of the municipal systems, including annual operating and capital expenditures from both a lifecycle perspective. The calculated rate forecast for Scenario 3 is provided to address full operating costs of the municipal system and provide sufficient balances in the reserve funds by 2034 to fund replacement of half of the Town's wastewater mains.

To achieve the objectives identified above, wastewater base charge rates would be required to increase by:

- Scenario 1
  - 2021: 8.1%
  - 2022-2030: 6.9% to 7.0% annually
- Scenario 2
  - 2021: 6.4%
  - 2022-2030: 6.8% to 7.0% annually
- Scenario 3
  - 2021-2030: 3.5% annually

These increases would provide the Township with revenue certainty as they would allow for a large share of capital-related expenditures to be funded through a consistent revenue source (i.e. base charge revenues).

Furthermore, consumptive rates would be required to increase/decrease by:

- Scenario 1
  - 2021: -18.8%
  - 2022: 1.6%
  - 2023: 2.7%
  - 2024: 0.2%
  - 2025-2030: 1.3% to 1.8% annually
- Scenarios 2 and 3
  - 2021: -20.9%
  - 2022: 1.4%
  - 2023: 2.5%
  - 2024: 0.0%



- 2025-2030: 1.3% to 1.8% annually

Scenario 1 would maintain the Township's current rate structure of only billing monthly consumption in excess of 20 m<sup>3</sup>, while Scenarios 2 and 3 would lower this threshold to 15 m<sup>3</sup>. The reductions in the consumptive rates in the first year of the forecast (i.e. 2021) is reflective of the greater share of billing revenues recovered through the base charges.

The resultant rate forecasts for Scenarios 1, 2, and 3 are presented below in Tables 6-4 to 6-6, respectively. The detailed financial forecast and rate calculations for wastewater services are provided in Appendix B to this report.



Table 6-4  
Township of Leeds and the Thousand Islands  
Scenario 1  
Wastewater Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.418	\$ 2.457	\$ 2.523	\$ 2.529	\$ 2.565	\$ 2.607	\$ 2.642	\$ 2.688	\$ 2.722	\$ 2.771
Volume Charge (2" or greater)	\$ 4.000	\$ 3.246	\$ 3.298	\$ 3.387	\$ 3.394	\$ 3.443	\$ 3.500	\$ 3.547	\$ 3.608	\$ 3.654	\$ 3.719
Annual Increase (%)		-18.8%	1.6%	2.7%	0.2%	1.4%	1.7%	1.3%	1.7%	1.3%	1.8%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 70.86	\$ 76.61	\$ 81.94	\$ 87.60	\$ 93.73	\$ 100.24	\$ 107.17	\$ 114.59	\$ 122.51	\$ 130.97	\$ 139.99
2" or greater	\$ 86.04	\$ 93.02	\$ 99.49	\$ 106.37	\$ 113.81	\$ 121.71	\$ 130.13	\$ 139.14	\$ 148.75	\$ 159.03	\$ 169.98
Annual Increase (%)		8.1%	7.0%	6.9%	7.0%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%

Table 6-5  
Township of Leeds and the Thousand Islands  
Scenario 2  
Wastewater Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.357	\$ 2.389	\$ 2.448	\$ 2.447	\$ 2.482	\$ 2.522	\$ 2.556	\$ 2.599	\$ 2.632	\$ 2.678
Volume Charge (2" or greater)	\$ 4.000	\$ 3.164	\$ 3.207	\$ 3.286	\$ 3.285	\$ 3.331	\$ 3.386	\$ 3.431	\$ 3.489	\$ 3.533	\$ 3.595
Annual Increase (%)		-20.9%	1.4%	2.5%	0.0%	1.4%	1.6%	1.3%	1.7%	1.3%	1.8%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 70.86										
2" or greater	\$ 86.04										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 75.38	\$ 80.58	\$ 86.09	\$ 92.10	\$ 98.57	\$ 105.48	\$ 112.86	\$ 120.74	\$ 129.16	\$ 138.15
2" or greater		\$ 91.53	\$ 97.85	\$ 104.53	\$ 111.83	\$ 119.69	\$ 128.07	\$ 137.04	\$ 146.60	\$ 156.84	\$ 167.74
Annual Increase (%)		6.4%	6.9%	6.8%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%



Table 6-6  
Township of Leeds and the Thousand Islands  
Scenario 3  
Wastewater Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.357	\$ 2.389	\$ 2.448	\$ 2.447	\$ 2.482	\$ 2.522	\$ 2.556	\$ 2.599	\$ 2.632	\$ 2.678
Volume Charge (2" or greater)	\$ 4.000	\$ 3.164	\$ 3.207	\$ 3.286	\$ 3.285	\$ 3.331	\$ 3.386	\$ 3.431	\$ 3.489	\$ 3.533	\$ 3.595
Annual Increase (%)		-20.9%	1.4%	2.5%	0.0%	1.4%	1.6%	1.3%	1.7%	1.3%	1.8%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 70.86										
2" or greater	\$ 86.04										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 73.34	\$ 75.91	\$ 78.56	\$ 81.31	\$ 84.16	\$ 87.11	\$ 90.15	\$ 93.31	\$ 96.57	\$ 99.96
2" or greater		\$ 89.05	\$ 92.17	\$ 95.39	\$ 98.73	\$ 102.19	\$ 105.77	\$ 109.47	\$ 113.30	\$ 117.26	\$ 121.37
Annual Increase (%)		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%



## 6.3 Forecast Water and Wastewater Rate Impacts

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Tables 6-7 to 6-10 summarize the impacts of the recommended rates on four types of customers:

- Typical residential customer with a 1 ½” meter consuming 180 m<sup>3</sup> per year;
- Medium residential customer with a 1 ½” meter consuming 240 m<sup>3</sup> per year;
- Large residential customer with a 1 ½” meter consuming 270 m<sup>3</sup> per year; and
- Non-residential customer with a 2” meter consuming 1,570 m<sup>3</sup> per year.

At current rates, the annual water and wastewater bill for a typical residential customer would total approximately \$1,751 (i.e. \$901 for water and \$850 for wastewater). Under Scenario 1 the proposed 2021 annual bill would be approximately \$1,882 (i.e. \$963 for water and \$919 for wastewater). This represents a \$131 (7.5%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a typical residential customer would further increase by approximately 6.7% to 6.8% annually over the remainder of the forecast period. Under Scenario 2 the proposed 2021 annual bill would be approximately \$1,850 (i.e. \$945 for water and \$905 for wastewater). This represents a \$99 (5.6%) increase relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for a typical residential customer would further increase by approximately 6.7% to 6.8% annually over the remainder of the forecast period. Lastly, under Scenario 3 the proposed 2021 annual bill would be approximately \$1,812 (i.e. \$932 for water and \$880 for wastewater). This represents a \$61 (3.5%) increase relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for a typical residential customer would further increase by approximately 3.5% annually over the remainder of the forecast period.

A medium residential customer could expect an annual water and wastewater bill of approximately \$1,751 (i.e. \$901 for water and \$850 for wastewater) at current rates. Under Scenario 1 the proposed 2021 annual bill would be approximately \$1,882 (i.e. \$963 for water and \$919 for wastewater). This represents a \$131 (7.5%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a medium residential customer would further increase by approximately 6.7% to 6.8% annually over the remainder of the forecast period. Under Scenario 2 the proposed 2021 annual bill would be approximately \$2,159



(i.e. \$1,113 for water and \$1,046 for wastewater). This represents a \$408 (23.3%) increase relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for a medium residential customer would further increase by 5.9 to 6.3% annually over the remainder of the forecast period. Lastly, under Scenario 3 the proposed 2021 annual bill would be approximately \$2,121 (i.e. \$1,100 for water and \$1,022 for wastewater). This represents a \$371 (21.2%) increase relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for a medium residential customer would further increase by approximately 3.1% to 3.3% annually over the remainder of the forecast period.

A large residential customer could expect an annual water and wastewater bill of approximately \$1,930 (i.e. \$990 for water and \$940 for wastewater) at current rates. Under Scenario 1 the proposed 2021 annual bill would be approximately \$2,041 (i.e. \$1,049 for water and \$992 for wastewater). This represents a \$111 (5.7%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a large residential customer would further increase by approximately 6.4% annually over the remainder of the forecast period. Under Scenario 2 the proposed 2021 annual bill would be approximately \$2,314 (i.e. \$1,197 for water and \$1,117 for wastewater). This represents a \$384 (19.9%) increase relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for a large residential customer would further increase by 5.6% to 6.0% annually over the remainder of the forecast period. Lastly, under Scenario 3 the proposed 2021 annual bill would be approximately \$2,276 (i.e. \$1,184 for water and \$1,092 for wastewater). This represents a \$346 (17.9%) increase relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for a large residential customer would further increase by approximately 2.9% to 3.2% annually over the remainder of the forecast period.

The annual water and wastewater bill for a hypothetical non-residential customer would total approximately \$12,686 (i.e. \$6,334 for water and \$6,352 for wastewater) at current rates. Under Scenario 1 the proposed 2021 annual bill would be approximately \$11,649 (i.e. \$6,215 for water and \$5,434 for wastewater). This represents a \$1,037 (-8.2%) decrease relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for this hypothetical non-residential customer would further increase by approximately 2.2% to 3.1% annually over the



remainder of the forecast period. Under Scenario 2 the proposed 2021 annual bill would be approximately \$11,784 (i.e. \$6,288 for water and \$5,496 for wastewater). This represents a \$902 (-7.1%) decrease relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for this hypothetical non-residential customer would further increase by 1.9% to 3.0% annually over the remainder of the forecast period. Lastly, under Scenario 3 the proposed 2021 annual bill would be approximately \$11,739 (i.e. \$6,272 for water and \$5,467 for wastewater). This represents a \$947 (-7.5%) decrease relative to what the bill would be, based on the rates that are currently in effect. The annual water and wastewater bill for this hypothetical non-residential customer would further increase by 1.2% to 2.1% annually over the remainder of the forecast period.



Table 6-7  
Township of Leeds and the Thousand Islands  
Annual Water and Wastewater Bill Impact – Typical Residential

Scenario	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Annual Water &amp; Wastewater Bill</b>											
Scenario 1											
Water Bill	\$ 901	\$ 963	\$ 1,026	\$ 1,093	\$ 1,165	\$ 1,241	\$ 1,322	\$ 1,409	\$ 1,500	\$ 1,598	\$ 1,702
Wastewater Bill	\$ 850	\$ 919	\$ 983	\$ 1,051	\$ 1,125	\$ 1,203	\$ 1,286	\$ 1,375	\$ 1,470	\$ 1,572	\$ 1,680
<b>Total Scenario 1</b>	<b>\$ 1,751</b>	<b>\$ 1,882</b>	<b>\$ 2,009</b>	<b>\$ 2,145</b>	<b>\$ 2,290</b>	<b>\$ 2,444</b>	<b>\$ 2,608</b>	<b>\$ 2,784</b>	<b>\$ 2,970</b>	<b>\$ 3,170</b>	<b>\$ 3,382</b>
Scenario 2											
Water Bill	\$ 901	\$ 945	\$ 1,007	\$ 1,072	\$ 1,142	\$ 1,218	\$ 1,298	\$ 1,384	\$ 1,475	\$ 1,572	\$ 1,676
Wastewater Bill	\$ 850	\$ 905	\$ 967	\$ 1,033	\$ 1,105	\$ 1,183	\$ 1,266	\$ 1,354	\$ 1,449	\$ 1,550	\$ 1,658
<b>Total Scenario 2</b>	<b>\$ 1,751</b>	<b>\$ 1,850</b>	<b>\$ 1,974</b>	<b>\$ 2,105</b>	<b>\$ 2,247</b>	<b>\$ 2,400</b>	<b>\$ 2,564</b>	<b>\$ 2,738</b>	<b>\$ 2,924</b>	<b>\$ 3,122</b>	<b>\$ 3,334</b>
Scenario 3											
Water Bill	\$ 901	\$ 932	\$ 965	\$ 999	\$ 1,033	\$ 1,070	\$ 1,107	\$ 1,146	\$ 1,186	\$ 1,227	\$ 1,270
Wastewater Bill	\$ 850	\$ 880	\$ 911	\$ 943	\$ 976	\$ 1,010	\$ 1,045	\$ 1,082	\$ 1,120	\$ 1,159	\$ 1,199
<b>Total Scenario 3</b>	<b>\$ 1,751</b>	<b>\$ 1,812</b>	<b>\$ 1,876</b>	<b>\$ 1,941</b>	<b>\$ 2,009</b>	<b>\$ 2,080</b>	<b>\$ 2,152</b>	<b>\$ 2,228</b>	<b>\$ 2,306</b>	<b>\$ 2,386</b>	<b>\$ 2,470</b>
<b>Annual Increase (\$)</b>											
Scenario 1		\$ 131	\$ 127	\$ 135	\$ 145	\$ 154	\$ 164	\$ 175	\$ 187	\$ 199	\$ 212
Scenario 2		\$ 99	\$ 124	\$ 132	\$ 142	\$ 153	\$ 163	\$ 174	\$ 186	\$ 198	\$ 211
Scenario 3		\$ 61	\$ 63	\$ 66	\$ 68	\$ 70	\$ 73	\$ 75	\$ 78	\$ 81	\$ 84
<b>Annual Increase (%)</b>											
Scenario 1		7.5%	6.8%	6.7%	6.8%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%
Scenario 2		5.6%	6.7%	6.7%	6.7%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Scenario 3		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%



Table 6-8  
Township of Leeds and the Thousand Islands  
Annual Water and Wastewater Bill Impact – Medium Residential

Scenario	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Annual Water &amp; Wastewater Bill</b>											
Scenario 1											
Water Bill	\$ 901	\$ 963	\$ 1,026	\$ 1,093	\$ 1,165	\$ 1,241	\$ 1,322	\$ 1,409	\$ 1,500	\$ 1,598	\$ 1,702
Wastewater Bill	\$ 850	\$ 919	\$ 983	\$ 1,051	\$ 1,125	\$ 1,203	\$ 1,286	\$ 1,375	\$ 1,470	\$ 1,572	\$ 1,680
<b>Total Scenario 1</b>	<b>\$ 1,751</b>	<b>\$ 1,882</b>	<b>\$ 2,009</b>	<b>\$ 2,145</b>	<b>\$ 2,290</b>	<b>\$ 2,444</b>	<b>\$ 2,608</b>	<b>\$ 2,784</b>	<b>\$ 2,970</b>	<b>\$ 3,170</b>	<b>\$ 3,382</b>
Scenario 2											
Water Bill	\$ 901	\$ 1,113	\$ 1,177	\$ 1,244	\$ 1,316	\$ 1,394	\$ 1,478	\$ 1,566	\$ 1,660	\$ 1,760	\$ 1,866
Wastewater Bill	\$ 850	\$ 1,046	\$ 1,110	\$ 1,180	\$ 1,252	\$ 1,332	\$ 1,417	\$ 1,508	\$ 1,605	\$ 1,708	\$ 1,818
<b>Total Scenario 2</b>	<b>\$ 1,751</b>	<b>\$ 2,159</b>	<b>\$ 2,287</b>	<b>\$ 2,424</b>	<b>\$ 2,568</b>	<b>\$ 2,726</b>	<b>\$ 2,895</b>	<b>\$ 3,074</b>	<b>\$ 3,265</b>	<b>\$ 3,468</b>	<b>\$ 3,685</b>
Scenario 3											
Water Bill	\$ 901	\$ 1,100	\$ 1,135	\$ 1,170	\$ 1,208	\$ 1,246	\$ 1,287	\$ 1,328	\$ 1,371	\$ 1,415	\$ 1,461
Wastewater Bill	\$ 850	\$ 1,022	\$ 1,054	\$ 1,090	\$ 1,123	\$ 1,159	\$ 1,197	\$ 1,235	\$ 1,276	\$ 1,317	\$ 1,360
<b>Total Scenario 3</b>	<b>\$ 1,751</b>	<b>\$ 2,121</b>	<b>\$ 2,189</b>	<b>\$ 2,260</b>	<b>\$ 2,330</b>	<b>\$ 2,405</b>	<b>\$ 2,483</b>	<b>\$ 2,563</b>	<b>\$ 2,647</b>	<b>\$ 2,732</b>	<b>\$ 2,821</b>
<b>Annual Increase (\$)</b>											
Scenario 1		\$ 131	\$ 127	\$ 135	\$ 145	\$ 154	\$ 164	\$ 175	\$ 187	\$ 199	\$ 212
Scenario 2		\$ 408	\$ 128	\$ 137	\$ 144	\$ 158	\$ 169	\$ 179	\$ 191	\$ 203	\$ 217
Scenario 3		\$ 371	\$ 68	\$ 71	\$ 70	\$ 75	\$ 78	\$ 80	\$ 84	\$ 85	\$ 89
<b>Annual Increase (%)</b>											
Scenario 1		7.5%	6.8%	6.7%	6.8%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%
Scenario 2		23.3%	5.9%	6.0%	5.9%	6.1%	6.2%	6.2%	6.2%	6.2%	6.3%
Scenario 3		21.2%	3.2%	3.2%	3.1%	3.2%	3.2%	3.2%	3.3%	3.2%	3.3%



Table 6-9  
Township of Leeds and the Thousand Islands  
Annual Water and Wastewater Bill Impact – Large Residential

Scenario	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Annual Water &amp; Wastewater Bill</b>											
Scenario 1											
Water Bill	\$ 990	\$ 1,049	\$ 1,113	\$ 1,182	\$ 1,255	\$ 1,332	\$ 1,415	\$ 1,503	\$ 1,596	\$ 1,695	\$ 1,801
Wastewater Bill	\$ 940	\$ 992	\$ 1,057	\$ 1,127	\$ 1,201	\$ 1,280	\$ 1,364	\$ 1,454	\$ 1,551	\$ 1,653	\$ 1,763
<b>Total Scenario 1</b>	<b>\$ 1,930</b>	<b>\$ 2,041</b>	<b>\$ 2,170</b>	<b>\$ 2,309</b>	<b>\$ 2,456</b>	<b>\$ 2,612</b>	<b>\$ 2,779</b>	<b>\$ 2,957</b>	<b>\$ 3,147</b>	<b>\$ 3,348</b>	<b>\$ 3,564</b>
Scenario 2											
Water Bill	\$ 990	\$ 1,197	\$ 1,262	\$ 1,330	\$ 1,403	\$ 1,482	\$ 1,567	\$ 1,657	\$ 1,753	\$ 1,854	\$ 1,962
Wastewater Bill	\$ 940	\$ 1,117	\$ 1,182	\$ 1,253	\$ 1,326	\$ 1,406	\$ 1,493	\$ 1,584	\$ 1,683	\$ 1,787	\$ 1,899
<b>Total Scenario 2</b>	<b>\$ 1,930</b>	<b>\$ 2,314</b>	<b>\$ 2,444</b>	<b>\$ 2,583</b>	<b>\$ 2,729</b>	<b>\$ 2,889</b>	<b>\$ 3,060</b>	<b>\$ 3,241</b>	<b>\$ 3,436</b>	<b>\$ 3,641</b>	<b>\$ 3,861</b>
Scenario 3											
Water Bill	\$ 990	\$ 1,184	\$ 1,220	\$ 1,256	\$ 1,295	\$ 1,335	\$ 1,376	\$ 1,419	\$ 1,463	\$ 1,509	\$ 1,556
Wastewater Bill	\$ 940	\$ 1,092	\$ 1,126	\$ 1,163	\$ 1,196	\$ 1,233	\$ 1,272	\$ 1,312	\$ 1,354	\$ 1,396	\$ 1,441
<b>Total Scenario 3</b>	<b>\$ 1,930</b>	<b>\$ 2,276</b>	<b>\$ 2,346</b>	<b>\$ 2,420</b>	<b>\$ 2,491</b>	<b>\$ 2,568</b>	<b>\$ 2,649</b>	<b>\$ 2,731</b>	<b>\$ 2,817</b>	<b>\$ 2,904</b>	<b>\$ 2,997</b>
<b>Annual Increase (\$)</b>											
Scenario 1		\$ 111	\$ 130	\$ 139	\$ 147	\$ 157	\$ 167	\$ 178	\$ 190	\$ 202	\$ 215
Scenario 2		\$ 384	\$ 130	\$ 140	\$ 145	\$ 160	\$ 171	\$ 181	\$ 194	\$ 205	\$ 220
Scenario 3		\$ 346	\$ 70	\$ 74	\$ 71	\$ 77	\$ 81	\$ 82	\$ 86	\$ 87	\$ 92
<b>Annual Increase (%)</b>											
Scenario 1		5.7%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%
Scenario 2		19.9%	5.6%	5.7%	5.6%	5.9%	5.9%	5.9%	6.0%	6.0%	6.0%
Scenario 3		17.9%	3.1%	3.1%	2.9%	3.1%	3.1%	3.1%	3.2%	3.1%	3.2%



Table 6-10  
Township of Leeds and the Thousand Islands  
Annual Water and Wastewater Bill Impact – Non-Residential

Scenario	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Annual Water &amp; Wastewater Bill</b>											
Scenario 1											
Water Bill	\$ 6,334	\$ 6,215	\$ 6,372	\$ 6,524	\$ 6,691	\$ 6,857	\$ 7,045	\$ 7,226	\$ 7,430	\$ 7,623	\$ 7,846
Wastewater Bill	\$ 6,352	\$ 5,434	\$ 5,580	\$ 5,781	\$ 5,880	\$ 6,039	\$ 6,216	\$ 6,387	\$ 6,584	\$ 6,768	\$ 6,986
<b>Total Scenario 1</b>	<b>\$12,686</b>	<b>\$11,649</b>	<b>\$11,952</b>	<b>\$12,305</b>	<b>\$12,572</b>	<b>\$12,897</b>	<b>\$13,261</b>	<b>\$13,613</b>	<b>\$14,013</b>	<b>\$14,391</b>	<b>\$14,832</b>
Scenario 2											
Water Bill	\$ 6,334	\$ 6,288	\$ 6,432	\$ 6,570	\$ 6,724	\$ 6,889	\$ 7,076	\$ 7,256	\$ 7,459	\$ 7,651	\$ 7,874
Wastewater Bill	\$ 6,352	\$ 5,496	\$ 5,632	\$ 5,821	\$ 5,908	\$ 6,066	\$ 6,243	\$ 6,413	\$ 6,609	\$ 6,793	\$ 7,010
<b>Total Scenario 2</b>	<b>\$12,686</b>	<b>\$11,784</b>	<b>\$12,064</b>	<b>\$12,391</b>	<b>\$12,632</b>	<b>\$12,955</b>	<b>\$13,319</b>	<b>\$13,669</b>	<b>\$14,068</b>	<b>\$14,444</b>	<b>\$14,884</b>
Scenario 3											
Water Bill	\$ 6,334	\$ 6,272	\$ 6,381	\$ 6,480	\$ 6,592	\$ 6,709	\$ 6,844	\$ 6,967	\$ 7,108	\$ 7,232	\$ 7,382
Wastewater Bill	\$ 6,352	\$ 5,467	\$ 5,564	\$ 5,712	\$ 5,751	\$ 5,856	\$ 5,975	\$ 6,082	\$ 6,209	\$ 6,318	\$ 6,454
<b>Total Scenario 3</b>	<b>\$12,686</b>	<b>\$11,739</b>	<b>\$11,945</b>	<b>\$12,192</b>	<b>\$12,344</b>	<b>\$12,565</b>	<b>\$12,820</b>	<b>\$13,049</b>	<b>\$13,317</b>	<b>\$13,550</b>	<b>\$13,835</b>
<b>Annual Increase (\$)</b>											
Scenario 1		\$ (1,037)	\$ 303	\$ 353	\$ 267	\$ 325	\$ 365	\$ 352	\$ 400	\$ 378	\$ 441
Scenario 2		\$ (902)	\$ 279	\$ 327	\$ 241	\$ 323	\$ 364	\$ 349	\$ 400	\$ 376	\$ 440
Scenario 3		\$ (947)	\$ 206	\$ 247	\$ 152	\$ 222	\$ 254	\$ 229	\$ 269	\$ 233	\$ 285
<b>Annual Increase (%)</b>											
Scenario 1		-8.2%	2.6%	3.0%	2.2%	2.6%	2.8%	2.7%	2.9%	2.7%	3.1%
Scenario 2		-7.1%	2.4%	2.7%	1.9%	2.6%	2.8%	2.6%	2.9%	2.7%	3.0%
Scenario 3		-7.5%	1.8%	2.1%	1.2%	1.8%	2.0%	1.8%	2.1%	1.7%	2.1%



## 6.4 Summary

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In summary, it is recommended that the Township adopts Scenario 3 presented above. This scenario embraces Council's intent, expressed at a public meeting on December 14, 2020, to adopt rate increases to the monthly charge of 3.5% annually. This scenario would reduce the minimum billing threshold from 20 to 15 cubic meters per month, which will move the Township closer towards alignment between the monthly bill that a customer receives and their share of total consumption. However, it is noted that this scenario does not produce a rate forecast that embraces the full lifecycle costs of infrastructure supporting water and wastewater services.

It is noted that during the next update of this rate study, and once the anomalies with consumption records have been addressed, the Township should explore additional rate structure alternatives. More specifically, the Township should consider the option of a monthly base charge combined with a constant consumptive rate. This would be similar to the Township's existing rate structure, however the monthly base charge in this option would not be a minimum charge. Therefore, each customer would pay a base monthly charge as well as a consumptive charge, with the consumptive charge being applicable to all metered consumption by that customer. This type of rate structure is widely used in Ontario and can ensure a good balance between providing revenue stability to the Township and promoting water conservation.

## 6.5 Recommendations

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

1. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates and maintain reserve funds for water and wastewater services;
2. That Council approve the rate forecast presented under Scenario 3, and direct staff to review the Rate Study in five years;
3. That Council approve the Rate Study;



4. That Council direct staff to update this study ahead of the five-year cycle if, after correcting the consumption record anomalies, differences of more than 10% are found between actual water consumption and the estimates identified in Section 2.2; and
5. That Council direct staff to update this study ahead of the five-year cycle if future asset management planning identifies lifecycle needs that differ by more than 10% from the estimates presented in Section 3.1.



# Appendices



# Appendix A

## Water Services



**Table W-1a**  
**Township of Leeds and the Thousand Islands**  
**Water Service**  
**Capital Budget Forecast**  
 Uninflated \$

Description	Total	Budget 2020	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Capital Expenditures</b>													
Replace Flow Meters	10,000	-	-	-	10,000	-	-	-	-	-	-	-	-
Replace Well Pump # 1 & Camera Inspection of Well	15,000	15,000	-	-	-	-	-	-	-	-	-	-	-
Replace Well Pump # 2 & Camera Inspection of Well	15,000	-	-	-	-	15,000	-	-	-	-	-	-	-
Water Meter Replacement Program	49,140	-	16,380	16,380	16,380	-	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>89,140</b>	<b>15,000</b>	<b>16,380</b>	<b>16,380</b>	<b>26,380</b>	<b>15,000</b>	-	-	-	-	-	-	-

**Table W-1**  
**Township of Leeds and the Thousand Islands**  
**Water Service**  
**Capital Budget Forecast**  
 Inflated \$

Description	Total	Budget 2020	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Capital Expenditures</b>													
Replace Flow Meters	11,000	-	-	-	11,000	-	-	-	-	-	-	-	-
Replace Well Pump # 1 & Camera Inspection of Well	15,000	15,000	-	-	-	-	-	-	-	-	-	-	-
Replace Well Pump # 2 & Camera Inspection of Well	17,000	-	-	-	-	17,000	-	-	-	-	-	-	-
Water Meter Replacement Program	53,000	-	17,000	18,000	18,000	-	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>96,000</b>	<b>15,000</b>	<b>17,000</b>	<b>18,000</b>	<b>29,000</b>	<b>17,000</b>	-	-	-	-	-	-	-
<b>Capital Financing</b>													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	96,000	15,000	17,000	18,000	29,000	17,000	-	-	-	-	-	-	-
<b>Total Capital Financing</b>	<b>96,000</b>	<b>15,000</b>	<b>17,000</b>	<b>18,000</b>	<b>29,000</b>	<b>17,000</b>	-	-	-	-	-	-	-



**Table W-2**  
**Township of Leeds and the Thousand Islands**  
**Water Service**  
**Schedule of Debenture Repayments**  
 Inflated \$

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

**Table W-3**  
**Township of Leeds and the Thousand Islands**  
**Water Service**  
**Scenario 1**  
**Water Reserve Continuity**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	375,192	429,786	502,603	596,752	705,369	853,004	1,048,245	1,275,684	1,539,864	1,842,674	2,189,675
Transfer from Operating	69,594	89,816	112,150	137,617	164,635	195,241	227,439	264,180	302,810	347,001	393,155
Transfer to Capital	15,000	17,000	18,000	29,000	17,000	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
<b>Closing Balance</b>	<b>429,786</b>	<b>502,603</b>	<b>596,752</b>	<b>705,369</b>	<b>853,004</b>	<b>1,048,245</b>	<b>1,275,684</b>	<b>1,539,864</b>	<b>1,842,674</b>	<b>2,189,675</b>	<b>2,582,830</b>
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table W-4**  
**Township of Leeds and the Thousand Islands**  
**Water Services**  
**Scenario 1**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<u>Operating Costs</u>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	42,700	50,800	48,700	47,400	42,500	43,400	44,200	45,100	46,000	46,900	47,900
Other	17,300	10,400	13,700	16,300	22,400	22,800	23,400	23,800	24,300	24,800	25,200
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	149,008	152,000	155,000	158,100	161,300	164,500	167,800	171,200	174,600	178,100	181,600
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>240,208</b>	<b>244,960</b>	<b>249,770</b>	<b>254,990</b>	<b>260,000</b>	<b>265,210</b>	<b>270,520</b>	<b>276,030</b>	<b>281,440</b>	<b>287,060</b>	<b>292,760</b>
<u>Capital-Related</u>											
Transfer to Capital Reserve	69,594	84,766	101,286	120,031	139,413	161,219	183,523	208,893	234,841	264,490	294,534
<b>Sub-Total Capital-Related</b>	<b>69,594</b>	<b>84,766</b>	<b>101,286</b>	<b>120,031</b>	<b>139,413</b>	<b>161,219</b>	<b>183,523</b>	<b>208,893</b>	<b>234,841</b>	<b>264,490</b>	<b>294,534</b>
<b>Total Expenditures</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>
<b>Revenues</b>											
<u>Operating Revenues</u>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserve	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<u>Billing Revenues</u>											
Base Charge Revenue	277,835	297,929	318,532	341,649	365,200	391,603	418,497	448,650	479,376	513,819	548,912
Consumptive Revenue	15,218	14,698	15,124	15,572	16,013	16,327	16,646	16,973	17,305	17,631	17,982
<b>Sub-Total Billing Revenues</b>	<b>293,052</b>	<b>312,626</b>	<b>333,656</b>	<b>357,221</b>	<b>381,213</b>	<b>407,929</b>	<b>435,143</b>	<b>465,623</b>	<b>496,681</b>	<b>531,450</b>	<b>566,894</b>
<b>Total Revenues</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>



**Table W-5**  
**Township of Leeds and the Thousand Islands**  
**Water Services**  
**Scenario 1**  
**Water Rate Forecast**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2,980	\$ 2,870	\$ 2,915	\$ 2,955	\$ 3,001	\$ 3,043	\$ 3,093	\$ 3,137	\$ 3,189	\$ 3,231	\$ 3,287
Volume Charge (2" or greater)	\$ 3,940	\$ 3,794	\$ 3,854	\$ 3,907	\$ 3,968	\$ 4,023	\$ 4,090	\$ 4,147	\$ 4,216	\$ 4,272	\$ 4,345
Annual Increase (%)		-3.7%	1.6%	1.4%	1.6%	1.4%	1.7%	1.4%	1.7%	1.3%	1.7%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 75.05	\$ 80.22	\$ 85.49	\$ 91.11	\$ 97.08	\$ 103.43	\$ 110.19	\$ 117.39	\$ 125.03	\$ 133.18	\$ 141.84
2" or greater	\$ 91.13	\$ 97.41	\$ 103.81	\$ 110.63	\$ 117.88	\$ 125.60	\$ 133.80	\$ 142.54	\$ 151.82	\$ 161.72	\$ 172.23
Annual Increase (%)		6.9%	6.6%	6.6%	6.6%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%

**Table W-6**  
**Township of Leeds and the Thousand Islands**  
**Water Service**  
**Scenario 2**  
**Water Reserve Continuity**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	375,192	429,786	497,553	580,838	671,869	794,282	955,502	1,139,025	1,347,917	1,582,758	1,847,248
Transfer from Operating	69,594	84,766	101,286	120,031	139,413	161,219	183,523	208,893	234,841	264,490	294,534
Transfer to Capital	15,000	17,000	18,000	29,000	17,000	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
<b>Closing Balance</b>	<b>429,786</b>	<b>497,553</b>	<b>580,838</b>	<b>671,869</b>	<b>794,282</b>	<b>955,502</b>	<b>1,139,025</b>	<b>1,347,917</b>	<b>1,582,758</b>	<b>1,847,248</b>	<b>2,141,782</b>
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table W-7**  
**Township of Leeds and the Thousand Islands**  
**Water Services**  
**Scenario 2**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<u>Operating Costs</u>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	42,700	50,800	48,700	47,400	42,500	43,400	44,200	45,100	46,000	46,900	47,900
Other	17,300	10,400	13,700	16,300	22,400	22,800	23,400	23,800	24,300	24,800	25,200
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	149,008	152,000	155,000	158,100	161,300	164,500	167,800	171,200	174,600	178,100	181,600
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>240,208</b>	<b>244,960</b>	<b>249,770</b>	<b>254,990</b>	<b>260,000</b>	<b>265,210</b>	<b>270,520</b>	<b>276,030</b>	<b>281,440</b>	<b>287,060</b>	<b>292,760</b>
<u>Capital-Related</u>											
Transfer to Capital Reserve	69,594	84,766	101,286	120,031	139,413	161,219	183,523	208,893	234,841	264,490	294,534
<b>Sub-Total Capital-Related</b>	<b>69,594</b>	<b>84,766</b>	<b>101,286</b>	<b>120,031</b>	<b>139,413</b>	<b>161,219</b>	<b>183,523</b>	<b>208,893</b>	<b>234,841</b>	<b>264,490</b>	<b>294,534</b>
<b>Total Expenditures</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>
<b>Revenues</b>											
<u>Operating Revenues</u>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserve	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<u>Billing Revenues</u>											
Base Charge Revenue	277,835	292,532	312,538	335,009	357,935	384,132	410,848	440,787	471,326	505,552	540,447
Consumptive Revenue	15,218	20,094	21,118	22,212	23,278	23,798	24,295	24,836	25,354	25,899	26,447
<b>Sub-Total Billing Revenues</b>	<b>293,052</b>	<b>312,626</b>	<b>333,656</b>	<b>357,221</b>	<b>381,213</b>	<b>407,929</b>	<b>435,143</b>	<b>465,623</b>	<b>496,681</b>	<b>531,450</b>	<b>566,894</b>
<b>Total Revenues</b>	<b>309,802</b>	<b>329,726</b>	<b>351,056</b>	<b>375,021</b>	<b>399,413</b>	<b>426,429</b>	<b>454,043</b>	<b>484,923</b>	<b>516,281</b>	<b>551,550</b>	<b>587,294</b>



**Table W-8**  
**Township of Leeds and the Thousand Islands**  
**Water Services**  
**Scenario 2**  
**Water Rate Forecast**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2,980	\$ 2,797	\$ 2,835	\$ 2,866	\$ 2,904	\$ 2,944	\$ 2,993	\$ 3,034	\$ 3,084	\$ 3,124	\$ 3,177
Volume Charge (2" or greater)	\$ 3,940	\$ 3,698	\$ 3,748	\$ 3,790	\$ 3,840	\$ 3,892	\$ 3,957	\$ 4,011	\$ 4,078	\$ 4,131	\$ 4,201
Annual Increase (%)		-6.1%	1.4%	1.1%	1.3%	1.4%	1.7%	1.4%	1.7%	1.3%	1.7%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 75.05										
2" or greater	\$ 91.13										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 78.76	\$ 83.88	\$ 89.34	\$ 95.14	\$ 101.46	\$ 108.18	\$ 115.33	\$ 122.93	\$ 131.04	\$ 139.65
2" or greater		\$ 95.64	\$ 101.85	\$ 108.48	\$ 115.53	\$ 123.20	\$ 131.35	\$ 140.04	\$ 149.27	\$ 159.12	\$ 169.57
Annual Increase (%)		4.9%	6.5%	6.5%	6.5%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%

**Table W-9**  
**Township of Leeds and the Thousand Islands**  
**Water Service**  
**Scenario 3**  
**Water Reserve Continuity**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	375,192	429,786	493,512	563,812	631,868	720,335	834,891	957,952	1,090,999	1,233,414	1,386,969
Transfer from Operating	69,594	80,725	88,301	97,056	105,467	114,555	123,061	133,047	142,414	153,555	163,785
Transfer to Capital	15,000	17,000	18,000	29,000	17,000	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
<b>Closing Balance</b>	<b>429,786</b>	<b>493,512</b>	<b>563,812</b>	<b>631,868</b>	<b>720,335</b>	<b>834,891</b>	<b>957,952</b>	<b>1,090,999</b>	<b>1,233,414</b>	<b>1,386,969</b>	<b>1,550,754</b>
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table W-10**  
**Township of Leeds and the Thousand Islands**  
**Water Services**  
**Scenario 3**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<u>Operating Costs</u>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	42,700	50,800	48,700	47,400	42,500	43,400	44,200	45,100	46,000	46,900	47,900
Other	17,300	10,400	13,700	16,300	22,400	22,800	23,400	23,800	24,300	24,800	25,200
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	149,008	152,000	155,000	158,100	161,300	164,500	167,800	171,200	174,600	178,100	181,600
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>240,208</b>	<b>244,960</b>	<b>249,770</b>	<b>254,990</b>	<b>260,000</b>	<b>265,210</b>	<b>270,520</b>	<b>276,030</b>	<b>281,440</b>	<b>287,060</b>	<b>292,760</b>
<u>Capital-Related</u>											
Transfer to Capital Reserve	69,594	80,725	88,301	97,056	105,467	114,555	123,061	133,047	142,414	153,555	163,785
<b>Sub-Total Capital-Related</b>	<b>69,594</b>	<b>80,725</b>	<b>88,301</b>	<b>97,056</b>	<b>105,467</b>	<b>114,555</b>	<b>123,061</b>	<b>133,047</b>	<b>142,414</b>	<b>153,555</b>	<b>163,785</b>
<b>Total Expenditures</b>	<b>309,802</b>	<b>325,685</b>	<b>338,071</b>	<b>352,046</b>	<b>365,467</b>	<b>379,765</b>	<b>393,581</b>	<b>409,077</b>	<b>423,854</b>	<b>440,615</b>	<b>456,545</b>
<b>Revenues</b>											
<u>Operating Revenues</u>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserve	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<u>Billing Revenues</u>											
Base Charge Revenue	277,835	288,491	299,553	312,034	323,989	337,468	350,386	364,941	378,900	394,617	409,698
Consumptive Revenue	15,218	20,094	21,118	22,212	23,278	23,798	24,295	24,836	25,354	25,899	26,447
<b>Sub-Total Billing Revenues</b>	<b>293,052</b>	<b>308,585</b>	<b>320,671</b>	<b>334,246</b>	<b>347,267</b>	<b>361,265</b>	<b>374,681</b>	<b>389,777</b>	<b>404,254</b>	<b>420,515</b>	<b>436,145</b>
<b>Total Revenues</b>	<b>309,802</b>	<b>325,685</b>	<b>338,071</b>	<b>352,046</b>	<b>365,467</b>	<b>379,765</b>	<b>393,581</b>	<b>409,077</b>	<b>423,854</b>	<b>440,615</b>	<b>456,545</b>



**Table W-11**  
**Township of Leeds and the Thousand Islands**  
**Water Services**  
**Scenario 3**  
**Water Rate Forecast**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.797	\$ 2.835	\$ 2.866	\$ 2.904	\$ 2.944	\$ 2.993	\$ 3.034	\$ 3.084	\$ 3.124	\$ 3.177
Volume Charge (2" or greater)	\$ 3.940	\$ 3.698	\$ 3.748	\$ 3.790	\$ 3.840	\$ 3.892	\$ 3.957	\$ 4.011	\$ 4.078	\$ 4.131	\$ 4.201
Annual Increase (%)		-6.1%	1.4%	1.1%	1.3%	1.4%	1.7%	1.4%	1.7%	1.3%	1.7%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 75.05										
2" or greater	\$ 91.13										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 77.68	\$ 80.40	\$ 83.21	\$ 86.12	\$ 89.14	\$ 92.26	\$ 95.48	\$ 98.83	\$ 102.29	\$ 105.87
2" or greater		\$ 94.32	\$ 97.62	\$ 101.04	\$ 104.57	\$ 108.23	\$ 112.02	\$ 115.94	\$ 120.00	\$ 124.20	\$ 128.55
Annual Increase (%)		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%



# Appendix B

## Wastewater Services



**Table WW-1a**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Service**  
**Capital Budget Forecast**  
 Uninflated \$

Description	Total	Budget 2020	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Capital Expenditures</b>													
Build Shed at SPS	10,000	-	10,000	-	-	-	-	-	-	-	-	-	-
Submersible Pump #1 Rebuild / Replace	15,000	15,000	-	-	-	-	-	-	-	-	-	-	-
Submersible Pump #2 Rebuild / Replace	20,000	-	-	20,000	-	-	-	-	-	-	-	-	-
Water Meter Replacement Program	49,140	-	16,380	16,380	16,380	-	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>94,140</b>	<b>15,000</b>	<b>26,380</b>	<b>36,380</b>	<b>16,380</b>	-	-	-	-	-	-	-	-

**Table WW-1**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Service**  
**Capital Budget Forecast**  
 Inflated \$

Description	Total	Budget 2020	Forecast										
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Capital Expenditures</b>													
Build Shed at SPS	10,000	-	10,000	-	-	-	-	-	-	-	-	-	-
Submersible Pump #1 Rebuild / Replace	15,000	15,000	-	-	-	-	-	-	-	-	-	-	-
Submersible Pump #2 Rebuild / Replace	21,000	-	-	21,000	-	-	-	-	-	-	-	-	-
Water Meter Replacement Program	53,000	-	17,000	18,000	18,000	-	-	-	-	-	-	-	-
<b>Total Capital Expenditures</b>	<b>99,000</b>	<b>15,000</b>	<b>27,000</b>	<b>39,000</b>	<b>18,000</b>	-	-	-	-	-	-	-	-
<b>Capital Financing</b>													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	99,000	15,000	27,000	39,000	18,000	-	-	-	-	-	-	-	-
<b>Total Capital Financing</b>	<b>99,000</b>	<b>15,000</b>	<b>27,000</b>	<b>39,000</b>	<b>18,000</b>	-	-	-	-	-	-	-	-



**Table WW-2**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Service**  
**Schedule of Debenture Repayments**  
 Inflated \$

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

**Table WW-3**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Service**  
**Scenario 1**  
**Wastewater Reserves Continuity**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	375,192	449,455	527,331	610,553	731,813	894,164	1,079,449	1,288,450	1,524,443	1,788,025	2,083,253
Transfer from Operating	89,263	104,876	122,222	139,260	162,350	185,285	209,001	235,994	263,582	295,228	327,322
Transfer to Capital	15,000	27,000	39,000	18,000	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
<b>Closing Balance</b>	<b>449,455</b>	<b>527,331</b>	<b>610,553</b>	<b>731,813</b>	<b>894,164</b>	<b>1,079,449</b>	<b>1,288,450</b>	<b>1,524,443</b>	<b>1,788,025</b>	<b>2,083,253</b>	<b>2,410,575</b>
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table WW-4**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Services**  
**Scenario 1**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<u>Operating Costs</u>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	40,000	39,800	49,900	66,300	34,600	35,300	36,000	36,700	37,500	38,200	39,000
Other	20,000	21,400	12,500	-	30,300	30,900	31,600	32,200	32,800	33,500	34,100
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	113,992	116,300	118,600	121,000	123,400	125,900	128,400	130,900	133,600	136,200	139,000
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>205,192</b>	<b>209,260</b>	<b>213,370</b>	<b>220,490</b>	<b>222,100</b>	<b>226,610</b>	<b>231,120</b>	<b>235,730</b>	<b>240,440</b>	<b>245,160</b>	<b>250,160</b>
<u>Capital-Related</u>											
Transfer to Capital Reserve	89,263	104,876	122,222	139,260	162,350	185,285	209,001	235,994	263,582	295,228	327,322
<b>Sub-Total Capital-Related</b>	<b>89,263</b>	<b>104,876</b>	<b>122,222</b>	<b>139,260</b>	<b>162,350</b>	<b>185,285</b>	<b>209,001</b>	<b>235,994</b>	<b>263,582</b>	<b>295,228</b>	<b>327,322</b>
<b>Total Expenditures</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>
<b>Revenues</b>											
<u>Operating Revenues</u>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<u>Billing Revenues</u>											
Base Charge Revenue	262,323	284,516	305,310	328,513	352,617	379,491	407,046	437,979	469,688	505,283	541,769
Consumptive Revenue	15,382	12,520	12,882	13,437	13,633	13,905	14,174	14,445	14,734	15,005	15,313
<b>Sub-Total Billing Revenues</b>	<b>277,705</b>	<b>297,036</b>	<b>318,192</b>	<b>341,950</b>	<b>366,250</b>	<b>393,395</b>	<b>421,221</b>	<b>452,424</b>	<b>484,422</b>	<b>520,288</b>	<b>557,082</b>
<b>Wastewater Billing Recovery - Total</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>



**Table WW-5**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Services**  
**Scenario 1**  
**Wastewater Rate Forecast**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2,980	\$ 2,418	\$ 2,457	\$ 2,523	\$ 2,529	\$ 2,565	\$ 2,607	\$ 2,642	\$ 2,688	\$ 2,722	\$ 2,771
Volume Charge (2" or greater)	\$ 4,000	\$ 3,246	\$ 3,298	\$ 3,387	\$ 3,394	\$ 3,443	\$ 3,500	\$ 3,547	\$ 3,608	\$ 3,654	\$ 3,719
Annual Increase (%)		-18.8%	1.6%	2.7%	0.2%	1.4%	1.7%	1.3%	1.7%	1.3%	1.8%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 70.86	\$ 76.61	\$ 81.94	\$ 87.60	\$ 93.73	\$ 100.24	\$ 107.17	\$ 114.59	\$ 122.51	\$ 130.97	\$ 139.99
2" or greater	\$ 86.04	\$ 93.02	\$ 99.49	\$ 106.37	\$ 113.81	\$ 121.71	\$ 130.13	\$ 139.14	\$ 148.75	\$ 159.03	\$ 169.98
Annual Increase (%)		8.1%	7.0%	6.9%	7.0%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%

**Table WW-6**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Service**  
**Scenario 2**  
**Wastewater Reserves Continuity**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	375,192	449,455	527,331	610,553	731,813	894,164	1,079,449	1,288,450	1,524,443	1,788,025	2,083,253
Transfer from Operating	89,263	104,876	122,222	139,260	162,350	185,285	209,001	235,994	263,582	295,228	327,322
Transfer to Capital	15,000	27,000	39,000	18,000	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
<b>Closing Balance</b>	<b>449,455</b>	<b>527,331</b>	<b>610,553</b>	<b>731,813</b>	<b>894,164</b>	<b>1,079,449</b>	<b>1,288,450</b>	<b>1,524,443</b>	<b>1,788,025</b>	<b>2,083,253</b>	<b>2,410,575</b>
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table WW-7**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Services**  
**Scenario 2**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<u>Operating Costs</u>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	40,000	39,800	49,900	66,300	34,600	35,300	36,000	36,700	37,500	38,200	39,000
Other	20,000	21,400	12,500	-	30,300	30,900	31,600	32,200	32,800	33,500	34,100
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	113,992	116,300	118,600	121,000	123,400	125,900	128,400	130,900	133,600	136,200	139,000
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>205,192</b>	<b>209,260</b>	<b>213,370</b>	<b>220,490</b>	<b>222,100</b>	<b>226,610</b>	<b>231,120</b>	<b>235,730</b>	<b>240,440</b>	<b>245,160</b>	<b>250,160</b>
<u>Capital-Related</u>											
Transfer to Capital Reserve	89,263	104,876	122,222	139,260	162,350	185,285	209,001	235,994	263,582	295,228	327,322
<b>Sub-Total Capital-Related</b>	<b>89,263</b>	<b>104,876</b>	<b>122,222</b>	<b>139,260</b>	<b>162,350</b>	<b>185,285</b>	<b>209,001</b>	<b>235,994</b>	<b>263,582</b>	<b>295,228</b>	<b>327,322</b>
<b>Total Expenditures</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>
<b>Revenues</b>											
<u>Operating Revenues</u>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<u>Billing Revenues</u>											
Base Charge Revenue	262,323	279,965	300,256	322,840	346,492	373,191	400,598	431,352	462,901	498,316	534,631
Consumptive Revenue	15,382	17,071	17,936	19,110	19,758	20,205	20,623	21,071	21,520	21,972	22,451
<b>Sub-Total Billing Revenues</b>	<b>277,705</b>	<b>297,036</b>	<b>318,192</b>	<b>341,950</b>	<b>366,250</b>	<b>393,395</b>	<b>421,221</b>	<b>452,424</b>	<b>484,422</b>	<b>520,288</b>	<b>557,082</b>
<b>Wastewater Billing Recovery - Total</b>	<b>294,455</b>	<b>314,136</b>	<b>335,592</b>	<b>359,750</b>	<b>384,450</b>	<b>411,895</b>	<b>440,121</b>	<b>471,724</b>	<b>504,022</b>	<b>540,388</b>	<b>577,482</b>



**Table WW-8**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Services**  
**Scenario 2**  
**Wastewater Rate Forecast**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2,980	\$ 2,357	\$ 2,389	\$ 2,448	\$ 2,447	\$ 2,482	\$ 2,522	\$ 2,556	\$ 2,599	\$ 2,632	\$ 2,678
Volume Charge (2" or greater)	\$ 4,000	\$ 3,164	\$ 3,207	\$ 3,286	\$ 3,285	\$ 3,331	\$ 3,386	\$ 3,431	\$ 3,489	\$ 3,533	\$ 3,595
Annual Increase (%)		-20.9%	1.4%	2.5%	0.0%	1.4%	1.6%	1.3%	1.7%	1.3%	1.8%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 70.86										
2" or greater	\$ 86.04										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 75.38	\$ 80.58	\$ 86.09	\$ 92.10	\$ 98.57	\$ 105.48	\$ 112.86	\$ 120.74	\$ 129.16	\$ 138.15
2" or greater		\$ 91.53	\$ 97.85	\$ 104.53	\$ 111.83	\$ 119.69	\$ 128.07	\$ 137.04	\$ 146.60	\$ 156.84	\$ 167.74
Annual Increase (%)		6.4%	6.9%	6.8%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%

**Table WW-9**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Service**  
**Scenario 3**  
**Wastewater Reserves Continuity**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	375,192	449,455	519,750	585,545	678,577	800,335	931,056	1,070,283	1,219,490	1,377,917	1,547,413
Transfer from Operating	89,263	97,295	104,794	111,033	121,758	130,721	139,227	149,207	158,426	169,496	179,515
Transfer to Capital	15,000	27,000	39,000	18,000	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
<b>Closing Balance</b>	<b>449,455</b>	<b>519,750</b>	<b>585,545</b>	<b>678,577</b>	<b>800,335</b>	<b>931,056</b>	<b>1,070,283</b>	<b>1,219,490</b>	<b>1,377,917</b>	<b>1,547,413</b>	<b>1,726,928</b>
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table WW-10**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Services**  
**Scenario 3**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Expenditures</b>											
<u>Operating Costs</u>											
Office Supplies	250	260	260	270	270	280	280	290	290	300	300
Postage / Courier	1,700	1,700	1,800	1,800	1,800	1,900	1,900	2,000	2,000	2,000	2,100
Insurance	5,800	5,900	6,000	6,200	6,300	6,400	6,500	6,700	6,800	6,900	7,100
Leases	100	100	100	110	110	110	110	110	120	120	120
Consultants	2,500	2,600	2,600	2,700	2,700	2,800	2,800	2,900	2,900	3,000	3,000
Auditors	1,200	1,200	1,200	1,300	1,300	1,300	1,400	1,400	1,400	1,400	1,500
Miscellaneous	200	200	210	210	220	220	230	230	230	240	240
Supplies	1,500	1,500	1,600	1,600	1,600	1,700	1,700	1,700	1,800	1,800	1,800
Contracted Jobs											
OCWA - Maintenance Forecast	40,000	39,800	49,900	66,300	34,600	35,300	36,000	36,700	37,500	38,200	39,000
Other	20,000	21,400	12,500	-	30,300	30,900	31,600	32,200	32,800	33,500	34,100
Maintenance	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,900	6,000	6,100
O.C.W.A.	113,992	116,300	118,600	121,000	123,400	125,900	128,400	130,900	133,600	136,200	139,000
Water & Sewer - Grant in Lieu	3,200	3,300	3,300	3,400	3,500	3,500	3,600	3,700	3,700	3,800	3,900
Program Support Costs - Internal	9,750	9,900	10,100	10,300	10,600	10,800	11,000	11,200	11,400	11,700	11,900
<b>Sub-Total Operating Costs</b>	<b>205,192</b>	<b>209,260</b>	<b>213,370</b>	<b>220,490</b>	<b>222,100</b>	<b>226,610</b>	<b>231,120</b>	<b>235,730</b>	<b>240,440</b>	<b>245,160</b>	<b>250,160</b>
<u>Capital-Related</u>											
Transfer to Capital Reserve	89,263	97,295	104,794	111,033	121,758	130,721	139,227	149,207	158,426	169,496	179,515
<b>Sub-Total Capital-Related</b>	<b>89,263</b>	<b>97,295</b>	<b>104,794</b>	<b>111,033</b>	<b>121,758</b>	<b>130,721</b>	<b>139,227</b>	<b>149,207</b>	<b>158,426</b>	<b>169,496</b>	<b>179,515</b>
<b>Total Expenditures</b>	<b>294,455</b>	<b>306,555</b>	<b>318,164</b>	<b>331,523</b>	<b>343,858</b>	<b>357,331</b>	<b>370,347</b>	<b>384,937</b>	<b>398,866</b>	<b>414,656</b>	<b>429,675</b>
<b>Revenues</b>											
<u>Operating Revenues</u>											
Interest Earned	8,000	8,200	8,300	8,500	8,700	8,800	9,000	9,200	9,400	9,600	9,800
Penalty & Interest	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400	2,400
Rentals	6,750	6,900	7,000	7,200	7,300	7,500	7,600	7,800	7,900	8,100	8,200
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Operating Revenues</b>	<b>16,750</b>	<b>17,100</b>	<b>17,400</b>	<b>17,800</b>	<b>18,200</b>	<b>18,500</b>	<b>18,900</b>	<b>19,300</b>	<b>19,600</b>	<b>20,100</b>	<b>20,400</b>
<u>Billing Revenues</u>											
Base Charge Revenue	262,323	272,384	282,828	294,613	305,900	318,626	330,824	344,566	357,746	372,585	386,824
Consumptive Revenue	15,382	17,071	17,936	19,110	19,758	20,205	20,623	21,071	21,520	21,972	22,451
<b>Sub-Total Billing Revenues</b>	<b>277,705</b>	<b>289,455</b>	<b>300,764</b>	<b>313,723</b>	<b>325,658</b>	<b>338,831</b>	<b>351,447</b>	<b>365,637</b>	<b>379,266</b>	<b>394,556</b>	<b>409,275</b>
<b>Wastewater Billing Recovery - Total</b>	<b>294,455</b>	<b>306,555</b>	<b>318,164</b>	<b>331,523</b>	<b>343,858</b>	<b>357,331</b>	<b>370,347</b>	<b>384,937</b>	<b>398,866</b>	<b>414,656</b>	<b>429,675</b>



**Table WW-11**  
**Township of Leeds and the Thousand Islands**  
**Wastewater Services**  
**Scenario 3**  
**Wastewater Rate Forecast**  
 Inflated \$

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Volume Charges (\$/m<sup>3</sup>)</b>											
Volume Charge (1 ½" or less)	\$ 2.980	\$ 2.357	\$ 2.389	\$ 2.448	\$ 2.447	\$ 2.482	\$ 2.522	\$ 2.556	\$ 2.599	\$ 2.632	\$ 2.678
Volume Charge (2" or greater)	\$ 4.000	\$ 3.164	\$ 3.207	\$ 3.286	\$ 3.285	\$ 3.331	\$ 3.386	\$ 3.431	\$ 3.489	\$ 3.533	\$ 3.595
Annual Increase (%)		-20.9%	1.4%	2.5%	0.0%	1.4%	1.6%	1.3%	1.7%	1.3%	1.8%
<b>Monthly Base Charge (includes 20 m<sup>3</sup>)</b>											
1 ½" or less	\$ 70.86										
2" or greater	\$ 86.04										
<b>Monthly Base Charge (includes 15 m<sup>3</sup>)</b>											
1 ½" or less		\$ 73.34	\$ 75.91	\$ 78.56	\$ 81.31	\$ 84.16	\$ 87.11	\$ 90.15	\$ 93.31	\$ 96.57	\$ 99.96
2" or greater		\$ 89.05	\$ 92.17	\$ 95.39	\$ 98.73	\$ 102.19	\$ 105.77	\$ 109.47	\$ 113.30	\$ 117.26	\$ 121.37
Annual Increase (%)		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%