Water and Wastewater Rate Study

Township of South Stormont

Final Report

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Table of Contents

Table of Contents (Cont'd)

Page

Water and Wastewater Rate Study Report

Chapter 1
Introduction

1. Introduction

1.1 Background

The Township of South Stormont (Township) provides water and wastewater services to its constituents located in the urban serviced areas of the Township. The Township provides water services through three separate systems; Long Sault/Ingleside serving 2011 customers, Rosedale Terrace/St. Andrews/Eamers Corners serving 664 customers, and Newington serving 103 customers. Wastewater services are provided through the Long Sault and Ingleside wastewater systems serving 831 and 742 customers respectively.

The Township currently manages and funds the three water systems as separate divisions, each with a different billing rate structure. Although the two wastewater systems are managed and funded separately, the currently have the same billing rate structure. Because of the economies of scale that exist for the Long Sault/Ingleside water system, this approach has led to affordability issues for the other water systems and inequities in terms of the level of service being provided and customer ability to pay.

1.2 Current Water and Wastewater Rates

Water rates in areas serviced by the Long Sault/Ingleside and Rosedale Terrace/St. Andrews/Eamers Corners water systems are comprised of a consumptive charge per cubic metre of metered water volume and a minimum quarterly water bill. Although currently metered, customers in served by the Newington water system are charged a water bill comprised of an annual flat rate. In addition to the water billing rates, there is a charge levied on existing constituents for the repayment of existing debt issued for the expansion of the water systems.

Wastewater rates in the serviced areas of the Long Sault and Ingleside wastewater systems are imposed based on 225% of the quarterly water bill. In addition to the wastewater rates imposed on wastewater customers, constituents of Long Sault and Ingleside also pay a special area sewer capital levy as part of their property taxes. The proceeds from this levy go towards funding the ongoing operation and maintenance of the wastewater systems.

Current 2019 water and wastewater rates in the Township are presented in Table 1-1

Table 1-1
2019 Water and Wastewater Rates

Water Rates			
Description	Long Sault/ Ingleside	Rosedal Terrace/ St. Andrews/ Eamers Corners	Newington
per m^3	$1.029	$1.597	n/a
per m^3 (>6,000 m^3 annually)	$0.822	n/a	n/a
Minimum Bill	Based on 38.5 m^3 per quarter		n/a
Minimum Bill (Multiple Dwelling Unit)	Based on 25.7 m^3 per quarter		n/a
Annual Flat Rate	n/a	n/a	$661
Annual Flat Rate (Multiple Dwelling Unit)	n/a	n/a	$441
Annual Flat Rate (Commercial/Industrial)	n/a	n/a	$992

Wastewater Rates		
Description	Long Sault	Ingleside
Wastewater Bill	225% of Quarterly Water Bill	

1.3 Study Process

Watson & Associates Economists Ltd. (Watson) was retained by the Township to undertake a comprehensive water and wastewater rate study (Rate Study). This Rate Study is an update to the water and wastewater rate study analysis that was undertaken by Watson in 2015 on behalf of the Township. The objectives of the study and the steps involved in carrying out this assignment are summarized below:

- Update water and wastewater service demand assumptions based on analysis of historical consumption and recent trends;
- Estimate future consumption levels by applying revised demand assumptions to forecast growth identified in the Township based on the historical growth in the serviced areas of the Township in recent years;
- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- Build a capital program that blends lifecycle needs arising from the Township's water and wastewater asset inventory with the expansionary, replacement, and maintenance capital needs identified in the Township's long-term capital plan;
- Identify potential methods of cost recovery from the capital needs listing. These recovery methods may include other statutory authorities (e.g. *Development*

Charges Act, 1997 (D.C.A.), *Municipal Act*, etc.) as an offset to recovery through the water and wastewater rates;

- Forecast annual operating costs and rate-based funding requirements;
- Provide and impact assessment on the rate payers; and
- Develop a long-term water and wastewater rate forecast and present findings to staff, Committee of the Whole, and Council for their consideration;
    - Long-term water and wastewater rate forecasts to consider impacts of transitioning from current system specific water rates and imposition of special area sewer tax levy to uniform water and wastewater rates imposed across the water and wastewater systems respectively.

Direction from Township staff and the Committee of the Whole was to proceed with the assessment of uniform water and wastewater rates. As such, this report has been prepared on that basis.

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

Chapter 1 – Introduction

Chapter 2 – Forecast Growth and Service Demands

Chapter 3 – Capital Infrastructure Needs

Chapter 4 – Capital Cost Financing Options

Chapter 5 – Operating Expenditure Forecast

Chapter 6 – Forecast Water and Wastewater Rates and Customer Impacts

1.4 Regulatory Changes in Ontario

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

- watershed management and source protection;
- quality management;

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

The following sections describe significant applicable regulatory areas.

1.5 Sustainable Water and Sewage Systems Act

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

1.6 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 entitles to expect their drinking water to be safe and to provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing. 2002, c. 32, s. 1."

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

- Mandatory licensing and accreditation of testing laboratories;
- New standards for treatment, distribution quality and testing;
- Mandatory operator training and certification;
- Mandatory licensing of municipal water providers;

- Stronger enforcement and compliance provisions; and
- "Standard of care" requirements for municipalities.

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

1.7 Financial Plans Regulation

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

- The financial plan will represent one of the key elements to obtain a Drinking Water License.
- The plan is to be completed, approved by Council Resolution, and submitted to the Ministry of Municipal Affairs and Housing as part of the application for receiving approval of a water license.
- The financial plans shall be for a period of at least six years but longer planning horizons are encouraged.
- As the regulation is under the *Safe Drinking Water Act*, the preparation of the plan is mandatory for water services and encouraged for wastewater services.
- The plan is considered a living document (i.e. can be updated if there are significant changes to budgets) but will need to be undertaken at a minimum every five years.
- The plans generally require the forecasting of capital, operating and reserve fund positions, and providing detailed capital inventories. In addition, Public Sector Accounting Board full accrual information on the system must be provided for each year of the forecast (i.e. total non-financial assets, tangible capital asset acquisitions, tangible capital asset construction, betterments, write-downs, disposals, total liabilities, net debt, etc.).

- The financial plans must be made available to the public (at no charge) upon request and be available on the Township's web site. The availability of this information must also be advertised.

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

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

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

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

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

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

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

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

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

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

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

1.8 Water Opportunities Act

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

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

With regard to the sustainability plans:

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

The Financial Plan shall include:

- An asset management plan for the physical infrastructure;
- Financial Plan;

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

Performance indicators will be established by service:

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

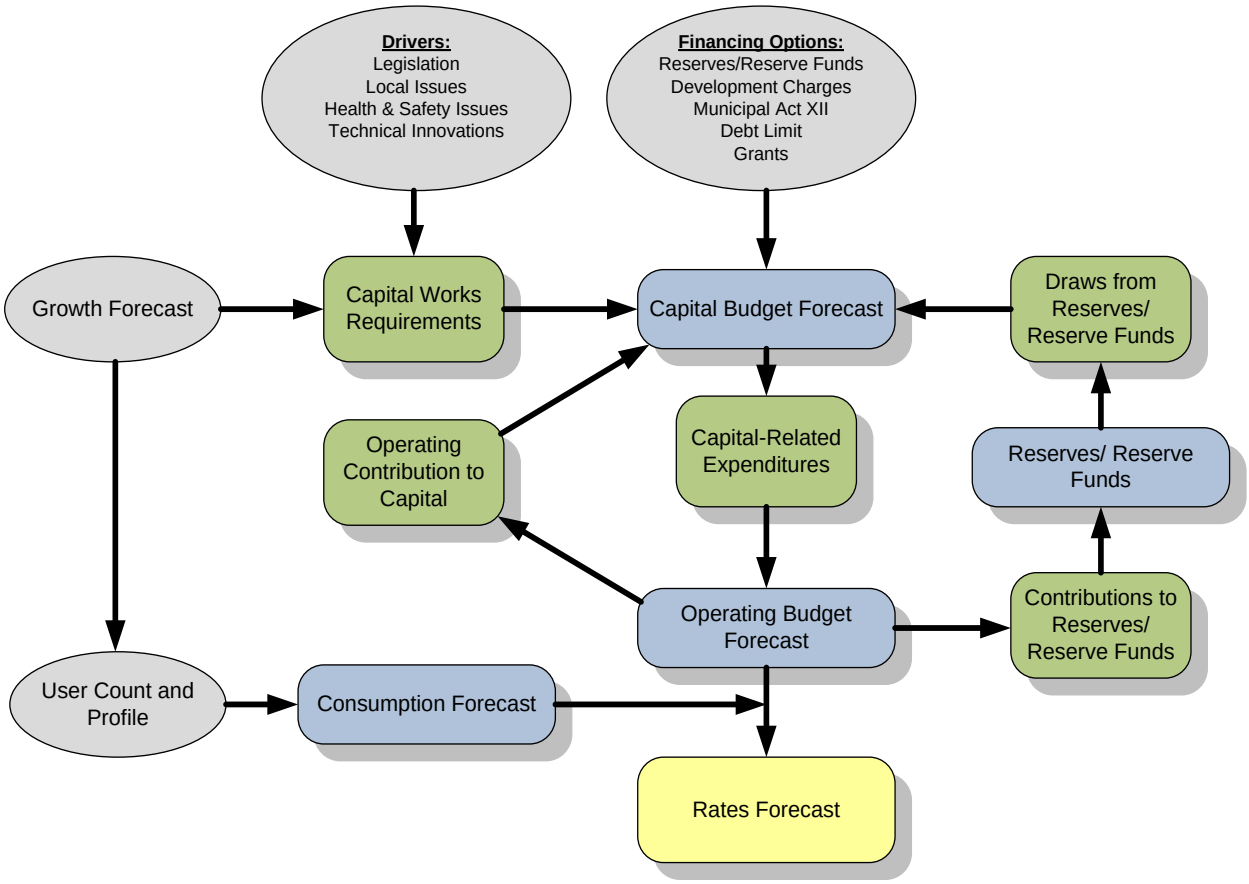
Regulations will prescribe:

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

1.9 Water and Wastewater Rate Calculation Methodology

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

Figure 1-1
Water and Wastewater Rate Calculation Methodology



The methodology employed generally consists of 5 major elements:

1. **Customer Demands and Consumption Forecast**

   As noted in section 1.2, the Township employs rate structures consisting of consumptive rates, minimum quarterly bills and annual flat rates by customer type.

   This first step in the analysis is important as it produces the current base revenue by source for flat rate and minimum bill customers and assumptions for forecasting purposes. The customer profile forecast is modeled based on the Township's average historical growth from 2011 to 2018. Moreover, the customer forecast is modelled for each of the water and wastewater systems independently to identify differences in service demands.

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

2. Capital Needs Forecast

The capital needs forecast is developed to measure program/service level adjustments, lifecycle requirements and growth-related needs. The Township's long-term capital plan provided the base capital forecast with adjustments made by Township staff for specific projects within the forecast period. Capital expenditures are forecast with inflationary adjustments based on capital costs indices.

3. Capital Funding Plan

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

4. Operating Budget Forecast

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

5. Rate Forecast and Structure

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

Chapter 2
Forecast Growth and Service Demands

2. Forecast Growth and Service Demands

2.1 Current Service Demands

In preparing the demands forecast for water and wastewater services, information on the number of customers and water consumption volumes was obtained from the Township for the period 2011-2018. As of 2019, the number of metered water customers in Long Sault/Ingleside and Rosedale Terrace/St. Andrews/Eamers Corners were 2,011 and 664 respectively. The number of flat rate water customers in Newington was 103. The number of wastewater customers in the Long Sault and Ingleside systems was 831 and 742 respectively, reflecting a number of privately serviced sewer customers with municipal water services.

Within the Township's current water rate structure, customers consuming greater than 6,000 m^3 annually pay a reduced water consumptive rate in Long Sault/Ingleside, while there are also minimum bills imposed in in Long Sault/Ingleside and Rosedale Terrace/St. Andrews/Eamers Corners. To account for these billing practices, existing water consumption has been converted to an equivalent volume that would produce average annual billing revenue over the 2016-2019 period. For the Long Sault/Ingleside water system, 2019 water consumption is estimated at 1.1 million m^3 of which 50% is attributable to one large non-residential customer. Of the remaining annual water consumption, 75% or 406,000 m^3 is attributable to residential customers. Within the Rosedale Terrace/St. Andrews/Eamers Corners system, the annual water consumption is 140,000 m^3 of which 94% is related to residential users. The estimated annual water consumption for the Newington water system is 20,000 m^3.

Existing wastewater flows, which have been based on the average water consumption per customer over the 2016-2019 period and the number of wastewater serviced customers, are 222,000 m^3 for the Long Sault system and 750,000 m^3 for the Ingleside system (including 546,000 m^3) attributable to the large non-residential user.

2.2 Forecast Service Demands

The growth forecast estimates are based on the average annual historical growth realized in the Township between 2011 and 2018. In total, water system customers are anticipated to increase by 435 customers by 2029 across the three water systems with

86% of that growth occurring in the Long Sault/Ingleside service area. Wastewater customers are projected to increase by 313 over the forecast period indicating that there will continue to be some growth occurring in Long Sault and Ingleside with municipal water service but private wastewater. This results in an increase from 2,778 customers currently to 3,213 for the water systems and from 1,573 currently to 1,886 for the wastewater systems. Table 2-1 provides the detailed growth forecast for the period.

Annual water demands per customer decreased over the 2010-2015 and have then fluctuated over the 2016-2019 period. As such, average annual consumption over the 2016-2019 period has been used as an estimate of the expected future consumption. As a result, the 2016-2019 average consumption levels were applied to the Township's growth projections for the urban serviced areas to forecast future service demands.

For residential and non-residential water customers, an estimate of 181 m^3 and 430 m^3 respectively of annual water consumption has been calculated across the three systems For residential and non-residential wastewater customers, an estimate of 182 m^3 and 416 m^3 respectively of annual wastewater flows have been calculated based on the historical demands of customers serviced by the Long Sault/Ingleside water system.

Water consumption and wastewater flows for the large non-residential user (Lactalis) have been shown separately to show that no changes in usage have been forecast.

Applying these assumptions to new customers, results in an estimated increase in total water consumption from 1.25 million m^3 currently to 1.33 million m^3 by 2029 (+6.5%). Total wastewater flows are anticipated to increase from 0.97 million m^3 currently to 1.03 million m^3 by 2029 (+6.1%). Table 2-2 provides the detailed water consumption and wastewater flow forecast.

Table 2-1
Township of South Stormont
Water and Wastewater Customer Forecast

Description	Customer Count										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Water											
Long Sault/Ingleside Water System											
Residential	1,920	1,957	1,993	2,030	2,067	2,103	2,140	2,176	2,213	2,250	2,286
Non-Residential	90	91	92	93	94	95	96	97	98	99	100
Lactalis	1	1	1	1	1	1	1	1	1	1	1
Eamers Corners - St. Andrews West Water System											
Residential	648	654	660	666	672	677	683	689	695	701	707
Non-Residential	16	16	16	16	16	16	16	16	16	16	16
Newington Water System											
Residential	99	99	99	99	99	99	99	99	99	99	99
Non-Residential	4	4	4	4	4	4	4	4	4	4	4
Total - Water											
Residential	2,667	2,710	2,752	2,795	2,837	2,880	2,922	2,965	3,007	3,050	3,092
Non-Residential	110	111	112	113	114	115	116	117	118	119	120
Lactalis	1	1	1	1	1	1	1	1	1	1	1
Total	**2,778**	**2,822**	**2,865**	**2,909**	**2,952**	**2,996**	**3,039**	**3,083**	**3,126**	**3,170**	**3,213**
Wastewater											
Long Sault Sewer System											
Residential	796	818	841	863	886	908	930	953	975	997	1,020
Non-Residential	35	36	37	37	38	39	40	40	41	42	43
Ingleside Sewer System											
Residential	705	713	721	729	737	744	752	760	768	776	784
Non-Residential	36	36	37	37	37	37	38	38	38	38	39
Lactalis	1	1	1	1	1	1	1	1	1	1	1
Total - Wastewater											
Residential	1,501	1,531	1,562	1,592	1,622	1,652	1,683	1,713	1,743	1,773	1,804
Non-Residential	71	72	73	74	75	76	77	78	79	80	81
Lactalis	1	1	1	1	1	1	1	1	1	1	1
Total	**1,573**	**1,604**	**1,636**	**1,667**	**1,698**	**1,729**	**1,761**	**1,792**	**1,823**	**1,854**	**1,886**

Table 2-2
Township of South Stormont
Water Consumption and Wastewater Flow Forecast

Description	Consumption/Flows (m^3)										
	2019 [1]	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Water											
Long Sault/Ingleside Water System											
Residential	405,532	412,210	418,889	425,567	432,245	438,924	445,602	452,280	458,959	465,637	472,315
Non-Residential	138,632	139,048	139,464	139,880	140,296	140,712	141,128	141,544	141,960	142,376	142,792
Lactalis	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862
Eamers Corners - St. Andrews West Water System											
Residential	130,655	131,689	132,724	133,758	134,793	135,827	136,862	137,896	138,931	139,965	140,999
Non-Residential	8,909	8,909	8,909	8,909	8,909	8,909	8,909	8,909	8,909	8,909	8,909
Newington Water System											
Residential	17,640	17,640	17,640	17,640	17,640	17,640	17,640	17,640	17,640	17,640	17,640
Non-Residential	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,976
Total - Water											
Residential	553,827	561,540	569,253	576,965	584,678	592,391	600,104	607,816	615,529	623,242	630,955
Non-Residential	149,517	149,933	150,349	150,765	151,181	151,597	152,013	152,429	152,845	153,261	153,677
Lactalis	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862
Total	**1,249,206**	**1,257,334**	**1,265,463**	**1,273,592**	**1,281,721**	**1,289,849**	**1,297,978**	**1,306,107**	**1,314,236**	**1,322,364**	**1,330,493**
Wastewater											
Long Sault Sewer System											
Residential	168,127	172,207	176,287	180,367	184,447	188,526	192,606	196,686	200,766	204,846	208,926
Non-Residential	53,912	54,224	54,536	54,848	55,160	55,472	55,784	56,096	56,408	56,720	57,032
Ingleside Sewer System											
Residential	148,906	150,342	151,778	153,214	154,650	156,086	157,522	158,958	160,394	161,830	163,266
Non-Residential	55,453	55,557	55,661	55,765	55,869	55,973	56,077	56,181	56,285	56,389	56,493
Lactalis	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862
Total - Wastewater											
Residential	317,033	322,549	328,065	333,581	339,097	344,613	350,128	355,644	361,160	366,676	372,192
Non-Residential	109,365	109,781	110,197	110,613	111,029	111,445	111,861	112,277	112,693	113,109	113,525
Lactalis	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862	545,862
Total	**972,260**	**978,192**	**984,124**	**990,056**	**995,988**	**1,001,919**	**1,007,851**	**1,013,783**	**1,019,715**	**1,025,647**	**1,031,579**

1. Forecast water consumption and sewage flows based on forecasted system connections and 2016-2019 average annual consumption. Existing Consumption is Block 1 equivalent to account for consumption in excess of 6,000 cu m and consumption below minimum threshold

Chapter 3
Capital Infrastructure Needs

3. Capital Infrastructure Needs

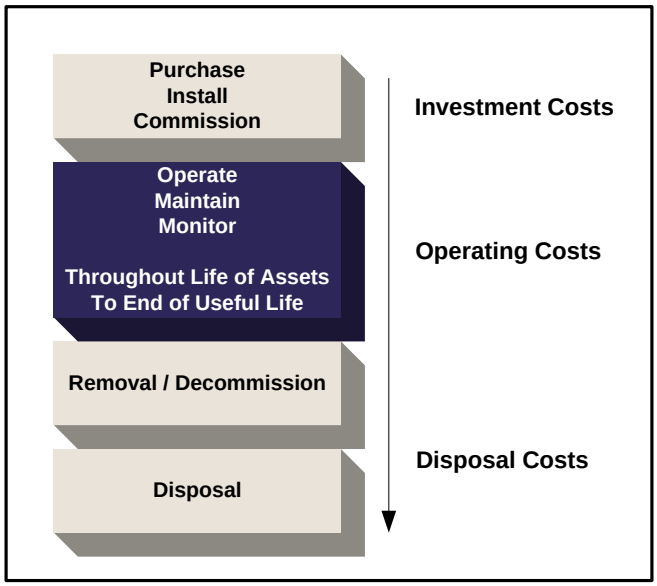
3.1 Overview of Lifecycle Costing

3.1.1 Definition

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

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

Figure 3-1
Lifecycle Costing



3.1.2 Financing Costs

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

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

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

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

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

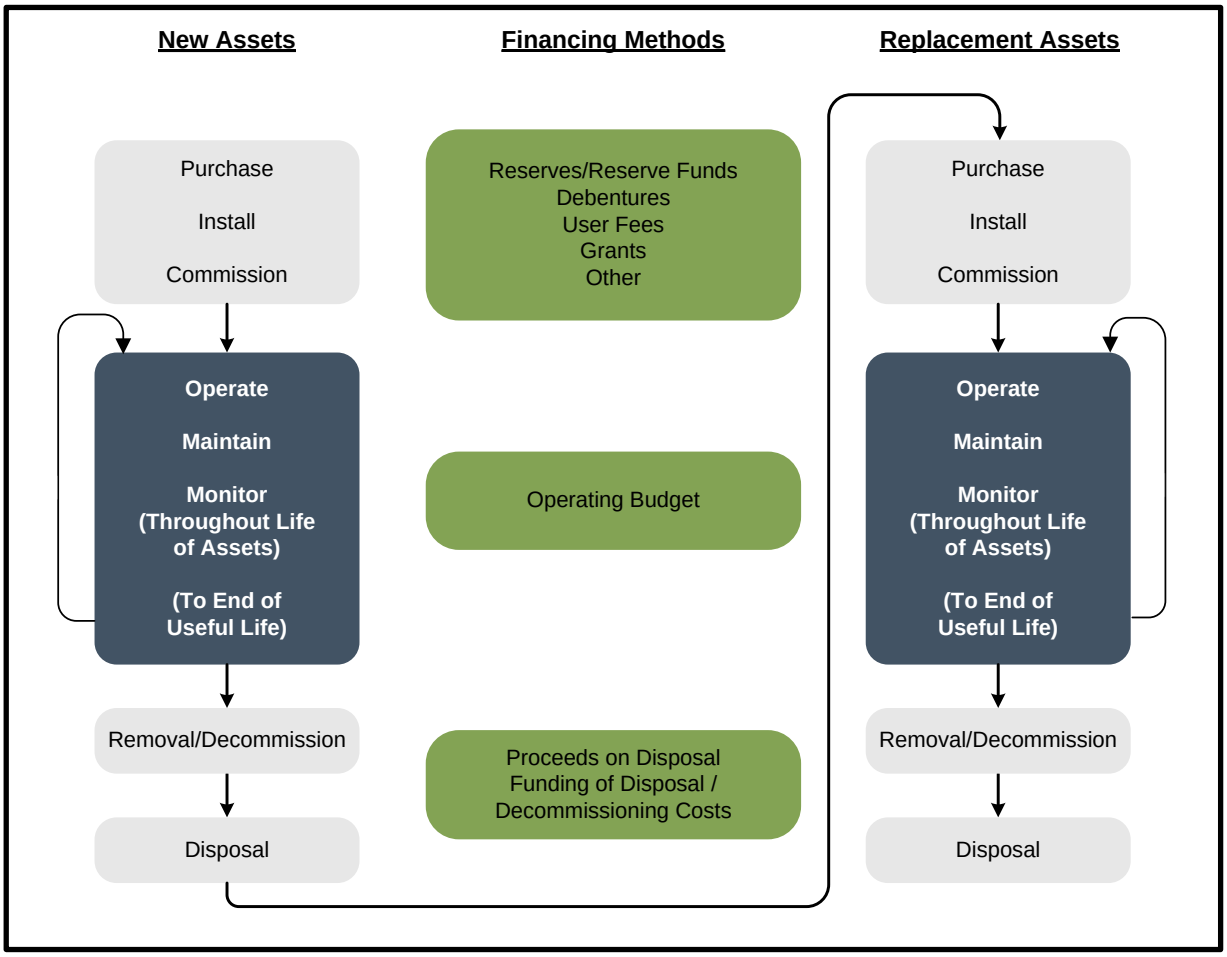
Figure 3-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

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

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

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

Figure 3-2
Financing Lifecycle Costs



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

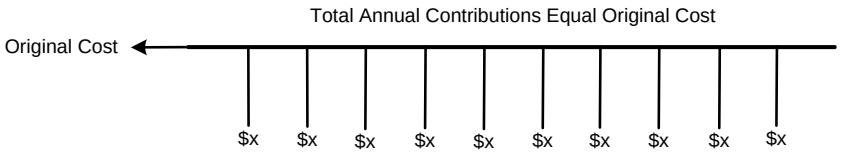
3.1.3 Costing Methods

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it.

The first method is the Amortization Method. This method recognizes the reduction in the value of the asset through wear and tear, and aging. There are two commonly used forms of amortization: the straight-line method and the sinking fund method.

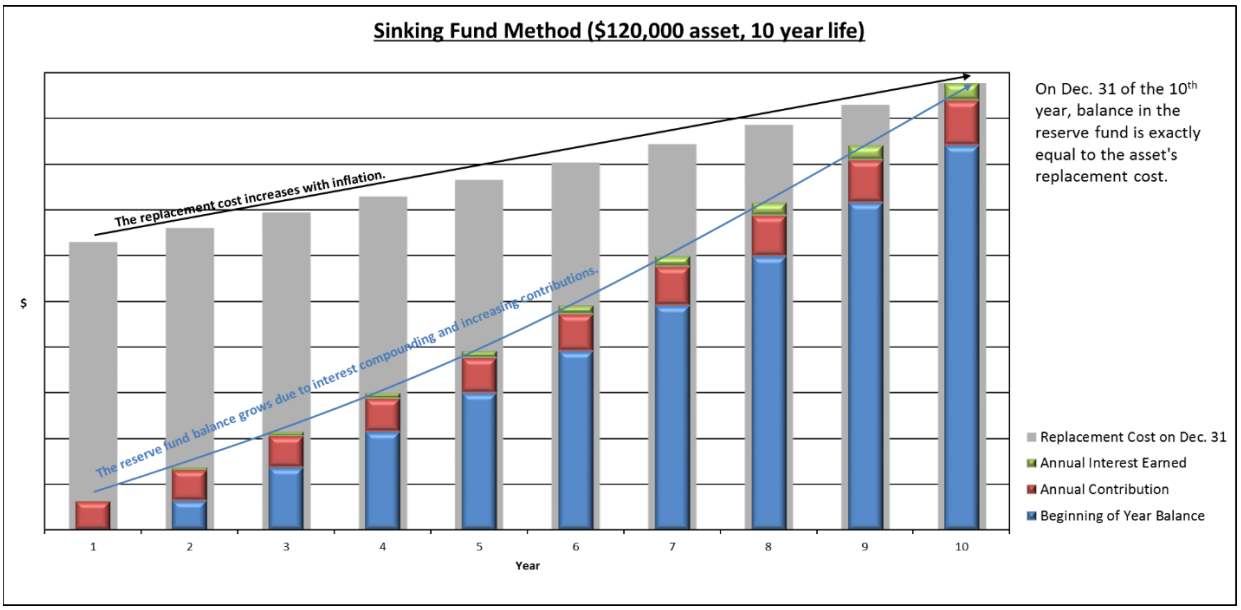
The straight-line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing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

Straight-line Amortization



Formula: $\frac{\text{Original Cost – Salvage Cost}}{\text{Number of Years of Useful Life}}$

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



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

3.2 Asset Inventory

Lifecycle "sinking fund" contribution amounts for the infrastructure have been calculated to determine the level of capital investment to be included in the full cost assessment and rate forecast. Table 3-1 summarizes the current asset replacement value and long-term annual lifecycle replacement needs, in 2019 dollars. These values were calculated based on detailed water and wastewater capital asset inventory information obtained from the Township's asset inventory data base for waster and wastewater assets. The approach of including full lifecycle sinking fund contributions within the level of investment is consistent with Township asset management planning principles, including:

- Aligning recovery of costs associated with use of assets from benefitting users;
- Providing for the sustainable maintenance, rehabilitation, and replacement of the water and wastewater systems; and
- Reducing financial risk

Table 3-1
Township of South Stormont
Summary of Water and Wastewater Infrastructure (2019$)

Description	Replacement Cost	Annual Lifecycle Contribution
Water		
Long Sault/Ingleside Water System	37,171,567	832,685
Eamers Corners - St. Andrews West Water System	8,107,820	125,039
Newington Water System	2,428,071	46,370
Water Total	**47,707,459**	**1,004,093**
Wastewater		
Long Sault Sewer System	21,136,548	527,074
Ingleside Sewer System	31,265,818	857,807
Wastewater Total	**52,402,366**	**1,384,881**
Total	**100,109,825**	**2,388,974**

3.3 Capital Forecast

10-year capital forecasts have been developed for the water and wastewater systems to address capital maintenance, replacement, and expansionary needs across the systems. The forecasts are based on the Township's long-term capital plan with adjustments in timing for capacity improvements to the Ingleside Wastewater Treatment Plan.

The capital forecasts are summarized in Tables 3-2 and 3-3 for the water and wastewater services respectively. These capital needs are forecast in 2019$ valuations. The water capital plan totals $4.3 million. For wastewater services, the capital plan totals $40.2 million for the forecast period. The wastewater capital needs are inclusive of the required capacity improvements to the Ingleside Wastewater Treatment Plant of $30 million in 2025 and $7.5 million of improvements to the Long Sault Wastewater Treatment Plant over the forecast period.

For rate determination purposes, the capital needs forecast will be indexed by 2.0% annually. This is reflective of the annual capital cost inflation witnessed in the Statistics Canada Non-Residential Building Construction Price Index in recent years.

Table 3-2
Township of South Stormont
Water Service
Capital Forecast – Uninflated (2019$)

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Long Sault/Ingleside	-										
WATER TREATMENT PLANT – LONG SAULT	1,329,388	86,464	194,189	396,029	-	-	149,961	-	-	165,159	337,586
LOW LIFT PUMPING STATION - LONG SAULT	175,014	51,238	52,365	-	-	-	71,410	-	-	-	-
INGLESIDE BOOSTER STATION - INGLESIDE	169,931	64,048	52,365	53,517	-	-	-	-	-	-	-
WATER TOWER - INGLESIDE	204,419	204,419	-	-	-	-	-	-	-	-	-
St. Andrews/Eamers Corners	-										
WATER TOWER - ST.ANDREWS	21,349	21,349	-	-	-	-	-	-	-	-	-
ST.ANDREWS - BOOSTER STATION	-	-	-	-	-	-	-	-	-	-	-
Newington	-										
WATER TREATMENT PLANT - NEWINGTON	45,820	-	45,820	-	-	-	-	-	-	-	-
	-										
Capital Maintenance	-										
Long Sault/Ingleside	-										
Long Sault Low Lift Pump	219,000	118,000	48,000	48,000	-	-	-	-	-	5,000	-
Long Sault WTP	1,712,000	323,000	182,000	312,000	66,000	-	178,000	20,000	176,000	195,000	260,000
Ingleside Booster Station	185,000	48,000	48,000	48,000	-	-	25,000	-	-	8,000	8,000
	-										
St. Andrews/Eamers Corners	-										
St. Andrews Booster Station	152,000	47,000	22,000	-	25,000	-	-	25,000	-	4,000	29,000
	-										
Newington	-										
Newington WTP	87,900	8,200	25,000	-	-	-	9,400	-	35,000	-	10,300
Total Capital Expenditures	**4,301,821**	**971,719**	**669,739**	**857,547**	**91,000**	**-**	**433,771**	**45,000**	**211,000**	**377,159**	**644,886**

Table 3-3
Township of South Stormont
Wastewater Service
Capital Budget Forecast – Uninflated (2019$)

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Long Sault	-										
SEWAGE TREATMENT PLANT - LONG SAULT	7,596,538	758,194	758,194	758,194	758,194	758,194	758,194	772,790	758,194	758,194	758,194
PUMPING STATION - POST RD	71,532	-	-	26,759	-	-	14,282	-	-	30,491	-
PUMPING STATION - MILLES ROCHES	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Ingleside	-										
SEWAGE TREATMENT PLANT - INGLESIDE	30,055,736	-	17,128	19,512	-	-	30,000,000	19,097	-	-	-
PUMPING STATION - INGLESIDE	1,682,787	-	-	-	-	-	-	40,140	-	-	1,642,647
	-	-	-	-	-	-	-	-	-	-	-
Capital Maintenance	-										
Long Sault	-										
Post Road Sewage Pumping Station	36,000	-	-	6,000	-	-	24,000	-	-	6,000	-
Mille Roches Road Pumping Station	36,000	-	6,000	-	-	24,000	-	-	6,000	-	-
Long Sault WWTP	420,000	37,000	51,000	35,000	43,000	38,000	53,000	46,000	73,000	14,000	30,000
	-										
Ingleside	-										
Ingleside WWTP	295,500	30,000	21,000	-	164,000	9,000	37,500	-	14,000	20,000	-
	-										
Total Capital Expenditures	**40,194,093**	**825,194**	**853,322**	**845,465**	**965,194**	**829,194**	**30,886,976**	**878,027**	**851,194**	**828,685**	**2,430,842**

Chapter 4
Capital Cost Financing Options

4. Capital Cost Financing Options

4.1 Summary of Capital Cost Financing Alternatives

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

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

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

Recovery Methods	Section Reference
• D.C.A., 1997	4.2
• *Municipal Act* o Fees and Charge o Local Improvements	4.3
• Grant Funding	4.4
• Reserves/Reserve Funds	4.5
• Debenture Financing	4.6

4.2 Development Charges Act, 1997

The D.C.A. received royal assent on December 8, 1997, replacing the previous act, which had been in-force since November 23, 1989.

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

The Township does not currently impost D.C.s on new development and as such D.C.s have not been included as a source of capital financing in the financial plan.

4.3 Municipal Act

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

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

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

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

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

Under the previous *Local Improvement Act*:

- A variety of different types of works could be undertaken, such as watermain, storm and sanitary sewer projects, supply of electrical light or power, bridge construction, sidewalks, road widening and paving;
- Council could pass a by-law for undertaking such work on petition of a majority of benefiting taxpayers, on a 2/3 vote of Council and on sanitary grounds, based on the recommendation of the Minister of Health. The by-law was required to go to the Ontario Municipal Board, which might hold hearings and alter the by-law, particularly if there were objections;
- The entire cost of a work was assessed only upon the lots abutting directly on the work, according to the extent of their respective frontages, using an equal special rate per metre of frontage; and
- As noted, this Act was repealed as of April 1, 2003; however, Ontario Reg. 119/03 was enacted on April 19, 2003 which restores many of the previous *Local Improvement Act* provisions; however, the authority is now provided under the *Municipal Act*.

Municipal Act Capital Charges are used by the Township to recover outstanding debt payments associated with prior expansion of the water systems from benefitting landowners. Furthermore, the Township also imposes capital water and sewer levies on new connections to the systems under the authority of the *Municipal Act* for their benefitting share of existing infrastructure. These capital levies which are imposed

under By-law 2019-031 are anticipated to produce revenues of approximately $132,000 annually for the water systems and $53,000 for the wastewater systems.

4.4 Grant Funding Availability

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

The current capital plan has identified that two thirds grant funding would be anticipated to be received towards the funding of the Ingleside Wastewater Treatment Plan (i.e. $20 million). No no additional grants have been identified over the forecast period of 2020 to 2029. To the extent that the Township is successful in achieving additional grant funding for future infrastructure needs and the financial impacts are material, the rate forecast may be revisited.

4.5 Existing Reserves/Reserve Funds

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

The estimated 2020 water and wastewater reserve balances are estimated at $2.1 million combined for the three water systems and $3.7 million for the two wastewater systems.

4.6 Debenture Financing

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

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

The Township has outstanding external debt for water and wastewater services. In total the outstanding principal balance is $4.1 million as at January 1, 2019. Some of the current outstanding debt balance is scheduled to be fully paid off during the forecast period.

The capital financing plan anticipates the issuance of $10.1 million between 2025 and 2029 primarily related to the Ingleside Wastewater Treatment Plant and Pumping Station improvements. Based on the Township's 2018 Financial Information Return, the Township is currently utilizing 23% of their legislated debt servicing capacity (i.e. 6% of net own source revenues) for outstanding municipal debt payments (rate and non-rate based). With forecast growth in own source revenues based on the rate forecast presented herein and growth in the Township more generally, the anticipated debt for the wastewater systems would increase the Township's debt capacity utilization from 6% of own source revenues currently to 7% by the end of the forecast period. This would place the Township well within the legislated limit of 25% of own source revenues and preserve debt funding capacity for other municipal services.

4.7 Recommended Approach

In undertaking the Rate Study, multiple scenarios were assessed that considered maintaining the separate management and funding of the individual water and wastewater systems within the current rate structure vs. consolidating the management and funding of the water and wastewater systems. From a capital financing

perspective, blending the management of the three water systems and two wastewater systems as combined water and wastewater systems will provide a more flexible funding source that will allow for the sustainable maintenance and replacement of capital infrastructure.

The following table summarizes the recommended capital funding sources supporting the capital needs forecast, for consideration by the Township of South Stormont:

Table 4-1
Township of South Stormont
2020-2029 Water and Wastewater Capital Funding Program (Inflated $)

Capital Financing	Water	Wastewater
Provincial/Federal Grants	-	22,523,333
Debenture Requirements	-	10,098,271
Water/Wastewater Reserve	4,719,000	12,709,395
Total Capital Financing	**4,719,000**	**45,331,000**

Tables 4-2 and 4-3 provide for the full capital expenditure and funding program by year for water and wastewater services respectively. These capital funding plans are provided in inflated dollars.

Based on the capital funding plans identified in Tables 4-2 and 4-3 and the 2020 estimated water and wastewater reserve balances in Section 4.5, the water and wastewater reserve continuity schedules are presented in Tables 4-4 and 4-5 respectively. By 2029, water reserves are anticipated to increase from $2.1 million to $4.1 million while wastewater reserves are anticipated to decrease from $3.7 million to $0.

Table 4-2
Township of South Stormont
Water Service
Capital Budget Forecast – Inflated $

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Forecast	-	-	-	-	-	-	-	-	-	-	-
Long Sault/Ingleside	-	-	-	-	-	-	-	-	-	-	-
WATER TREATMENT PLANT – LONG SAULT	1,488,000	88,000	202,000	420,000	-	-	169,000	-	-	197,000	412,000
LOW LIFT PUMPING STATION - LONG SAULT	186,000	52,000	54,000	-	-	-	80,000	-	-	-	-
INGLESIDE BOOSTER STATION - INGLESIDE	176,000	65,000	54,000	57,000	-	-	-	-	-	-	-
WATER TOWER - INGLESIDE	209,000	209,000	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
St. Andrews/Eamers Corners	-	-	-	-	-	-	-	-	-	-	-
WATER TOWER - ST.ANDREWS	22,000	22,000	-	-	-	-	-	-	-	-	-
ST.ANDREWS - BOOSTER STATION	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Newington	-	-	-	-	-	-	-	-	-	-	-
WATER TREATMENT PLANT - NEWINGTON	48,000	-	48,000	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Capital Maintenance	-	-	-	-	-	-	-	-	-	-	-
Long Sault/Ingleside	-	-	-	-	-	-	-	-	-	-	-
Long Sault Low Lift Pump	227,000	120,000	50,000	51,000	-	-	-	-	-	6,000	-
Long Sault WTP	1,899,000	329,000	189,000	331,000	71,000	-	200,000	23,000	206,000	233,000	317,000
Ingleside Booster Station	198,000	49,000	50,000	51,000	-	-	28,000	-	-	10,000	10,000
	-	-	-	-	-	-	-	-	-	-	-
St. Andrews/Eamers Corners	-	-	-	-	-	-	-	-	-	-	-
St. Andrews Booster Station	167,000	48,000	23,000	-	27,000	-	-	29,000	-	5,000	35,000
	-	-	-	-	-	-	-	-	-	-	-
Newington	-	-	-	-	-	-	-	-	-	-	-
Newington WTP	99,000	8,000	26,000	-	-	-	11,000	-	41,000	-	13,000
	-	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**4,719,000**	**990,000**	**696,000**	**910,000**	**98,000**	**-**	**488,000**	**52,000**	**247,000**	**451,000**	**787,000**
Capital Financing											
Provincial/Federal Grants	-										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	4,719,000	990,000	696,000	910,000	98,000	-	488,000	52,000	247,000	451,000	787,000
Total Capital Financing	**4,719,000**	**990,000**	**696,000**	**910,000**	**98,000**	**-**	**488,000**	**52,000**	**247,000**	**451,000**	**787,000**

Table 4-3
Township of South Stormont
Wastewater Service
Capital Budget Forecast – Inflated $

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Long Sault	-	-	-	-	-	-	-	-	-	-	-
SEWAGE TREATMENT PLANT - LONG SAULT	8,485,000	773,000	789,000	805,000	821,000	837,000	854,000	888,000	888,000	906,000	924,000
PUMPING STATION - POST RD	80,000	-	-	28,000	-	-	16,000	-	-	36,000	-
PUMPING STATION - MILLES ROCHES	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Ingleside	-	-	-	-	-	-	-	-	-	-	-
SEWAGE TREATMENT PLANT - INGLESIDE	33,846,000	-	18,000	21,000	-	-	33,785,000	22,000	-	-	-
PUMPING STATION - INGLESIDE	2,048,000	-	-	-	-	-	-	46,000	-	-	2,002,000
	-	-	-	-	-	-	-	-	-	-	-
Capital Maintenance	-	-	-	-	-	-	-	-	-	-	-
Long Sault	-	-	-	-	-	-	-	-	-	-	-
Post Road Sewage Pumping Station	40,000	-	-	6,000	-	-	27,000	-	-	7,000	-
Mille Roches Road Pumping Station	39,000	-	6,000	-	-	26,000	-	-	7,000	-	-
Long Sault WWTP	470,000	38,000	53,000	37,000	47,000	42,000	60,000	53,000	86,000	17,000	37,000
	-	-	-	-	-	-	-	-	-	-	-
Ingleside	-	-	-	-	-	-	-	-	-	-	-
Ingleside WWTP	323,000	31,000	22,000	-	178,000	10,000	42,000	-	16,000	24,000	-
	-	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**45,331,000**	**842,000**	**888,000**	**897,000**	**1,046,000**	**915,000**	**34,784,000**	**1,009,000**	**997,000**	**990,000**	**2,963,000**
Capital Financing											
Provincial/Federal Grants	22,523,333				-		22,523,333				
Non-Growth Related Debenture Requirements	10,098,271	-	-	-	-	-	8,023,280	254,348	111,389	-	1,709,254
Wastewater Reserve	12,709,395	842,000	888,000	897,000	1,046,000	915,000	4,237,386	754,652	885,611	990,000	1,253,746
Total Capital Financing	**45,331,000**	**842,000**	**888,000**	**897,000**	**1,046,000**	**915,000**	**34,784,000**	**1,009,000**	**997,000**	**990,000**	**2,963,000**

Table 4-4
Township of South Stormont
Water Reserve Continuity– Inflated $

Description		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance		2,145,208	1,504,879	1,220,983	789,573	1,257,877	1,768,400	1,888,239	2,562,504	3,179,808	3,742,150
Transfer from Operating		325,972	392,876	466,156	546,495	482,674	578,103	685,910	814,228	954,410	1,106,409
Transfer to Capital		990,000	696,000	910,000	98,000	-	488,000	52,000	247,000	451,000	787,000
Transfer to Operating		-	-	-	-	-	-	-	-	-	-
Closing Balance		**1,481,180**	**1,201,755**	**777,138**	**1,238,067**	**1,740,551**	**1,858,503**	**2,522,150**	**3,129,732**	**3,683,218**	**4,061,559**
Interest		23,699	19,228	12,434	19,809	27,849	29,736	40,354	50,076	58,931	64,985

Table 4-5
Township of South Stormont
Wastewater Reserve Continuity– Inflated $

Description		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance		3,740,980	3,536,631	3,336,305	3,223,420	3,065,983	3,156,629	-	-	-	47,347
Transfer from Operating		398,017	489,134	587,352	694,280	809,935	934,757	608,652	739,611	890,601	1,060,399
Transfer from Operating (Ingleside/Lactalis Reserve Fund)		146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000
Transfer from Operating (BY-law 2011-088)		37,938	-	-	-	-	-	-	-	-	-
Transfer to Capital		842,000	888,000	897,000	1,046,000	915,000	4,237,386	754,652	885,611	990,000	1,253,746
Transfer to Operating			-	-	-	-	-	-	-	-	-
Closing Balance		**3,480,936**	**3,283,765**	**3,172,657**	**3,017,700**	**3,106,918**	**-**	**-**	**-**	**46,601**	**-**
Interest		55,695	52,540	50,763	48,283	49,711	-	-	-	746	-

Chapter 5
Operating Expenditure Forecast

5. Operating Expenditure Forecast

5.1 Operating Expenditures

In this report the forecasted operating budget figures for water and wastewater services are based on the Township's 2019 operating budgets. The expenditures for each component of the operating budget have been reviewed with staff to establish inflationary adjustments.

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

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

5.1.1 Water Services

Debt repayment costs are expected to decrease from $309,000 in 2020 to $290,000 by 2029 as some debentures mature. Reserve transfers are projected to increase from $332,000 to $1.1 million over the same period. Other operating expenditures are also expected to increase from $1.3 million in 2020 to $1.6 million by the end of the forecast period.

Overall, gross operating expenditures for water services are anticipated to increase from $2.0 million in 2020 to $3.0 million by 2029.

5.1.2 Wastewater Services

For wastewater services, debt repayment costs are expected to increase from $0 in 2020 to $482,000 by 2029 due to the issuance of new debt. Reserve transfers are projected to increase from $544,000 to $1.2 million over the same period. Other operating expenditures are also expected to increase from $2.1 million in 2020 to $2.6 million by the end of the forecast period. Transfers to reserve of $37,938 associated with by-law 2011-38 are not anticipated beyond 2020.

Overall, gross operating expenditures for water services are anticipated to increase from $2.7 million in 2020 to $4.3 million by 2029.

5.2 Operating Revenues

The Township has operating revenue sources such as fines and penalties, special area sewer tax levy, and other miscellaneous revenues that offset some of the annual operating costs. In addition, there are on-going *Municipal Act* Capital Charge debt recovery payments for local capital projects that are continuing to be recovered over the forecast period, as well as revenues to be used for capital purposes in accordance with agreements with the Township's large non-residential wastewater customer (Lactalis).

5.2.1 Water Services

The Township's water services non-rate revenue is collected via capital levy payments (related to existing debt and for new connections) and fines/penalties. Fines and penalties are forecast to increase with annual inflation. Capital levy payments for existing debt are forecast to decrease from $362,000 to $191,000 by the end of the period, consistent with the repayment schedule. *Municipal Act* Capital levies for new connections to the system are forecast based on the existing rates (plus inflation) and the anticipated new connections to the system.

The greatest source of revenue is secured from the consumptive water rates (i.e. $/m^3 of water consumption) and minimum bills. The consumptive rate revenues have been forecast based on the underlying system growth assumptions and the Township's forecast consumptive rates for the 2020-2029 period

The total annual operating revenues (consumptive rate revenue) are forecast to increase from $1.5 million in 2020 to $2.7 million by 2029.

5.2.2 Wastewater Services

The Township's wastewater service revenue is collected from, fines and penalties, special area tax levy, *Municipal Act* capital levies, and from agreements with the Township's large non-residential customer (Lactalis). Fines and penalties are forecast to increase with annual inflation. The special area tax levy is proposed to be discontinued, with the $418,000 in annual funding becoming an obligation of the wastewater rates. *Municipal Act* capital levies for new connections to the system are

forecast based on the existing rates (plus inflation) and the anticipated new connections to the system. Wastewater revenue from Lactalis is has been forecast based on the conditions of the existing agreements. Lactalis direct billing has been forecast to increase by 2% annually (approximately $1.1 million annually), in line with forecast annual increases in operating costs. Annual Lactalis contributions towards the sewer capital reserve (i.e. $73,000 annually have been maintained over the forecast period, while contributions ($37,398) under by-law 2011-88 are not forecast to continue beyond 2020.

Revenue secured from the consumptive wastewater rates (i.e. $/m^3 of water consumption) represents the greatest share of the annual wastewater rate revenue. The consumptive rate revenues have been forecast based on the underlying system growth assumptions and the Township's forecast consumptive rates for the period 2020-2029.

The total annual operating revenues (including consumptive rate revenue) are forecast to increase from $2.7 million in 2019 to $4.3 million by 2032

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

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

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
Operating Costs		-	-	-	-	-	-	-	-	-
SALARIES, WAGES & BENEFITS	55,900	57,000	58,100	59,300	60,500	61,700	62,900	64,200	65,500	66,800
UTILITIES, TELECOMMUNICATIONS	340,300	347,100	354,000	361,100	368,300	375,700	383,200	390,900	398,700	406,700
CHEMICALS	21,900	22,300	22,700	23,200	23,700	24,200	24,700	25,200	25,700	26,200
PROFESSIONAL FEES	31,600	32,200	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700
ADMINISTRATION (OVERHEAD)	119,300	121,700	124,100	126,600	129,100	131,700	134,300	137,000	139,700	142,500
REPAIRS , MAINTENANCE, SMALL TOOLS, EQUIP.	132,600	135,300	138,000	140,800	143,600	146,500	149,400	152,400	155,400	158,500
SAMPLING	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100	31,700	32,300
EQUIPMENT CHARGES	20,700	21,100	21,500	21,900	22,300	22,700	23,200	23,700	24,200	24,700
METER REPAIRS	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100	9,300	9,500
BLDG/GROUNDS OPS	18,900	19,300	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500
INFRASTRUCTURE REP/MAINT.	117,300	119,600	122,000	124,400	126,900	129,400	132,000	134,600	137,300	140,000
CONTRACTS	390,900	398,700	406,700	414,800	423,100	431,600	440,200	449,000	458,000	467,200
PROPERTY TAXES	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700	16,000	16,300
INSURANCE	31,600	32,200	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700
	-	-	-	-	-	-	-	-	-	-
Sub Total Operating	**1,329,300**	**1,355,800**	**1,382,800**	**1,410,700**	**1,439,000**	**1,467,900**	**1,497,200**	**1,527,200**	**1,557,600**	**1,588,600**
Capital-Related										
Existing Debt (Principal) - Non-Growth Related	203,062	190,118	195,305	200,634	206,108	211,731	217,508	223,442	229,538	235,801
Existing Debt (Interest) - Non-Growth Related	105,901	100,375	95,188	89,860	84,386	78,762	72,986	67,051	60,955	54,692
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	325,972	392,876	466,156	546,495	482,674	578,103	685,910	814,228	954,410	1,106,409
Sub Total Capital Related	**634,935**	**683,369**	**756,649**	**836,988**	**773,168**	**868,597**	**976,404**	**1,104,722**	**1,244,904**	**1,396,902**
Total Expenditures	**1,964,235**	**2,039,169**	**2,139,449**	**2,247,688**	**2,212,168**	**2,336,497**	**2,473,604**	**2,631,922**	**2,802,504**	**2,985,502**
Revenues										
Fees and Penalties	17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700	20,100	20,500
LS/ING - CAPITAL WATER LEVY PAYMENT	158,658	158,658	158,658	158,658	158,658	158,658	158,658	158,658	158,658	158,658
LS/ING - VIN VISTA CAPITAL LEVY PAYMENT	13,823	13,823	13,823	13,823	13,823	13,823	13,823	13,823	13,823	13,823
LS/ING - CTY RD 36 CAPITAL LEVY PAYMENT	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550
LS/ING - MANNING/COLONIAL CAPITAL LEVYP	6,546	6,546	6,546	6,546	6,546	6,546	6,546	6,546	6,546	6,546
LS/ING - WALES VILLAGE CAPITAL WATER PAY	18,678									
EC - CAPITAL LEVY PAYMENT	2,283	2,283	2,283	2,283	2,283	2,283	2,283	2,283	2,283	2,283
NEWINGTON - CAPITAL LEVY PAYMENT	8,404	8,404	8,404	8,404	8,404	8,404	8,404	8,404	8,404	8,404
Capital Water Levy (Lactalis)	151,741	151,741	151,741	151,741						
Capital Levy (New Connections)	120,845	123,247	125,728	128,258	130,830	133,444	136,107	138,813	141,603	144,436
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**499,627**	**483,651**	**486,432**	**489,362**	**340,593**	**343,608**	**346,671**	**349,776**	**352,967**	**356,200**
Water Billing Recovery - Operating	**1,464,609**	**1,555,518**	**1,653,017**	**1,758,326**	**1,871,574**	**1,992,889**	**2,126,933**	**2,282,145**	**2,449,537**	**2,629,303**

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

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
Operating Costs										
SALARIES, WAGES & BENEFITS	13,700	14,000	14,300	14,600	14,900	15,200	15,500	15,800	16,100	16,400
UTILITIES, TELECOMMUNICATIONS	445,700	454,600	463,700	473,000	482,500	492,200	502,000	512,000	522,200	532,600
CHEMICALS	290,700	296,500	302,400	308,400	314,600	320,900	327,300	333,800	340,500	347,300
PROFESSIONAL FEES	117,300	119,600	122,000	124,400	126,900	129,400	132,000	134,600	137,300	140,000
ADMINISTRATION (OVERHEAD)	162,200	165,400	168,700	172,100	175,500	179,000	182,600	186,300	190,000	193,800
REPAIRS , MAINTENANCE, SMALL TOOLS, EQUIP.	326,400	332,900	339,600	346,400	353,300	360,400	367,600	375,000	382,500	390,200
SLUDGE DISPOSAL	123,400	125,900	128,400	131,000	133,600	136,300	139,000	141,800	144,600	147,500
SAMPLING	71,400	72,800	74,300	75,800	77,300	78,800	80,400	82,000	83,600	85,300
EQUIPMENT CHARGES	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
BLDG/GROUNDS OPS	23,000	23,500	24,000	24,500	25,000	25,500	26,000	26,500	27,000	27,500
INFRASTRUCTURE REP/MAINT.	76,500	78,000	79,600	81,200	82,800	84,500	86,200	87,900	89,700	91,500
CONTRACTS	424,000	432,500	441,200	450,000	459,000	468,200	477,600	487,200	496,900	506,800
PROPERTY TAXES	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300	26,800
INSURANCE	48,500	49,500	50,500	51,500	52,500	53,600	54,700	55,800	56,900	58,000
Sub Total Operating	**2,150,300**	**2,193,200**	**2,237,300**	**2,282,100**	**2,327,700**	**2,374,400**	**2,421,900**	**2,470,300**	**2,519,500**	**2,569,700**
Capital-Related										
Existing Debt (Principal) - Non-Growth Related										
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	220,062	233,640	243,704	251,015
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	240,698	241,727	238,059	230,748
IS - TRSF TO RES - Lactalis (2011-088 #3)	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000
ING SEWER - CAPITAL SURPLUS ADJUSTMENT	37,938									
Transfer to Capital Reserve	398,017	489,134	587,352	694,280	809,935	934,757	608,652	739,611	890,601	1,060,399
Sub Total Capital Related	**581,955**	**635,134**	**733,352**	**840,280**	**955,935**	**1,080,757**	**1,215,412**	**1,360,978**	**1,518,364**	**1,688,162**
Total Expenditures	**2,732,255**	**2,828,334**	**2,970,652**	**3,122,380**	**3,283,635**	**3,455,157**	**3,637,312**	**3,831,278**	**4,037,864**	**4,257,862**
Revenues										
ING SEWER - LACTALIS DIRECT BILLING - ISSTP	1,022,100	1,042,500	1,063,400	1,084,700	1,106,400	1,128,500	1,151,100	1,174,100	1,197,600	1,221,600
Fees and Penalties, Supps & Omits	51,400	52,400	53,400	54,500	55,600	56,700	57,800	59,000	60,200	61,400
Special Area Tax Levy										
ING SEW - LACTALIS ANN. CAP. SCH 3 2011-88	37,938									
LACTALIS DIRECT FOR SEWER CAP RESERVE	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000
Capital Levy (New Connections)	48,854	49,822	50,820	51,849	52,877	53,936	55,025	56,114	57,233	58,383
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,233,292**	**1,217,722**	**1,240,620**	**1,264,049**	**1,287,877**	**1,312,136**	**1,336,925**	**1,362,214**	**1,388,033**	**1,414,383**
Wastewater Billing Recovery - Operating	**1,498,964**	**1,610,612**	**1,730,032**	**1,858,331**	**1,995,758**	**2,143,021**	**2,300,387**	**2,469,064**	**2,649,831**	**2,843,480**

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

Figure 5-1
Township of South Stormont
2020-2029 Water Annual Operating Cost Forecast by Major Component

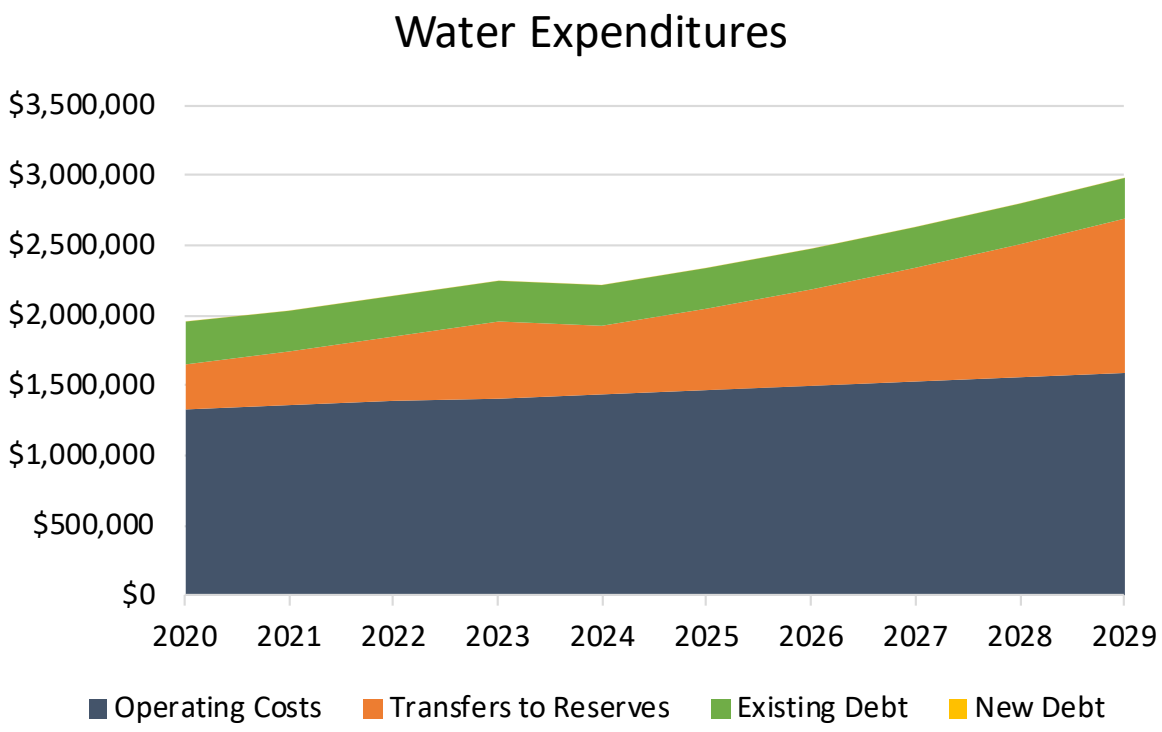
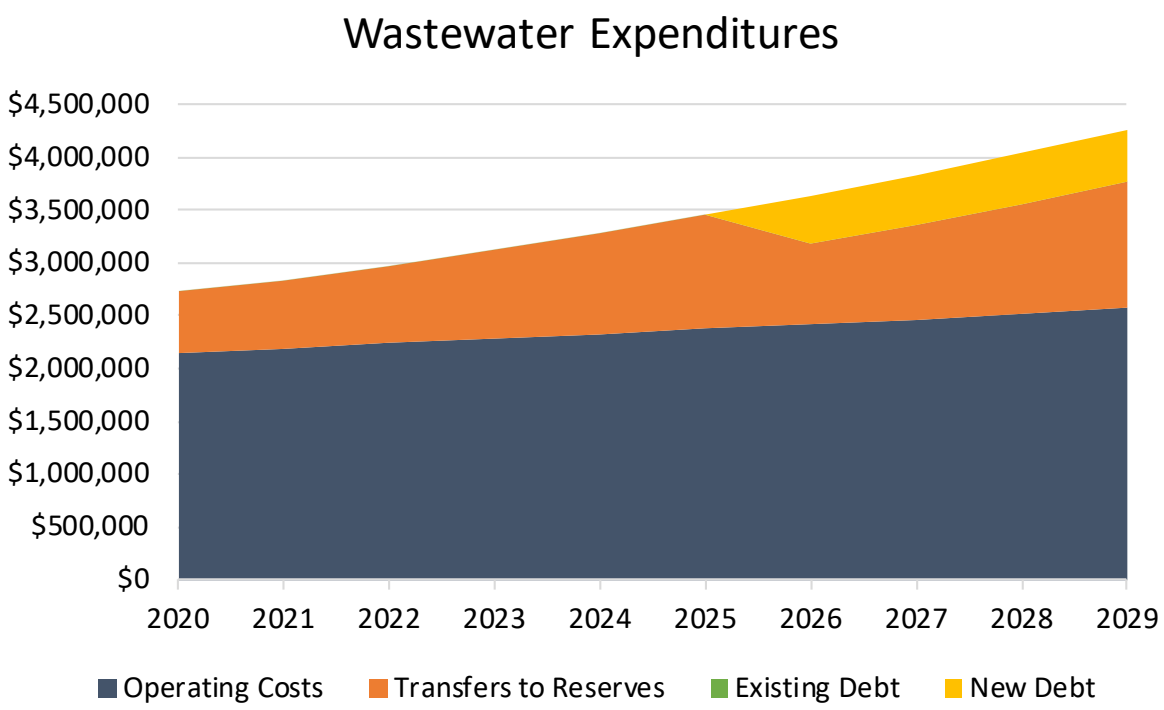


Figure 5-2
Township of South Stormont
2020-2029 Wastewater Annual Operating Cost Forecast by Major Component



Chapter 6
Forecast Water and Wastewater Rates and Customer Impacts

6. Forecast Water and Wastewater Rates and Customer Impacts

6.1 Introduction

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

Based on discussions with staff and the Committee of the Whole, it is recommended that the Township implement uniform water and wastewater rates across all water and wastewater systems. Uniform rate structures are recommended in part to address equity and affordability issues of providing service through multiple systems with differing economies of scale and levels of service. Imposing uniform water and wastewater rates will allow the Township to balance the ability to pay of water customers with expected levels of service, provide a sustainable funding source for all systems, and improve the administrative billing process.

The uniform water and wastewater rates have been forecast such that they will be sufficient to fund the long-term capital needs of the systems by 2029, providing for the sustainable replacement of infrastructure and ongoing operation and maintenance of the systems.

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

6.2 Water Rates

It is proposed that water rates will be imposed on a $ per m^3 of metered water volume with a minimum charge equivalent to 38.5 m^3 water consumption per quarter. For multiple dwelling units, the minimum bill will continue to be calculated based on tow

thirds of the volume identified above. Furthermore, it is proposed that a reduced water consumptive charge for water customers consuming more than 6,000 m^3 of water volume annually is maintained. In subsequent reviews, further consideration may also be given to the imposition of graduated monthly base charges by metre size in additional to consumptive rates, consistent with industry best practices.

Water rates in Long Sault/Ingleside are proposed to increase by 6.8% annually over the forecast period, remaining constant thereafter. The rates for the Rosedale Terrace/St. Andrews/Eamers Corners system are currently greater than those imposed in Long Sault/Ingleside and will remain constant until the forecast rates for Long Sault/Ingleside have reached the current Rosedale Terrace/St. Andrews/Eamers Corners rates (i.e. by 2025). The Rosedale Terrace/St. Andrews/Eamers Corners system rates will increase by 1.9% in 2026 followed by 6.8% annual rate increases thereafter (consistent with Long Sault/Ingleside). Based on the average water consumption per customer in Newington, converting the current annual flat rate bill of $661 to a $ per m^3 consumptive rate would produce rates well in excess of the required uniform rates for the funding of the water systems at 2029. As such it is proposed that the targeted uniform consumptive rate of $1.982 per m^3 by 2029 is imposed in 2020 for Newington and held constant thereafter.

The water billing recovery from Table 5-1 (the product of total annual expenditures less operating revenues) is divided by the equivalent billed water consumption forecast (i.e. water consumption adjusted to account for minimum bills and annual consumption in excess of 6,000 m^3 annually) to calculate the consumptive rates. The resultant consumptive rate forecast for water services is summarized in Table 6-1.

The detailed financial forecast and rate calculations for water services are provided in Appendix A to this report.

6.3 Wastewater Rates

Wastewater rates for the Long Sault and Ingleside systems are currently imposed on a uniform basis across the two systems as the bills are calculated based on 225% of the annual Long Sault/Ingleside water bill. While the uniform structure is proposed to be maintained, the recommended rate structure will be based on a $ per m^3 of water consumption charge. This change allows rates for the water and wastewater systems to be forecast separately, reflecting the differing capital and operating needs of the

water and wastewater systems. The forecast consumptive rates (Table 6-2) have been arrived at by dividing the wastewater billing recovery in Table 5-2 by the wastewater flows forecast to occur. The consumptive rate in 2020 has been calculated based on 225% of the current Long Sault/Ingleside water rate plus 6% with further adjustments to account for the removal of the special area sewer tax levy. Wastewater rates are forecast to increase by 6% annually between 2021 and 2029.

The detailed financial forecast and rate calculations for wastewater services are provided in Appendix B to this report.

Table 6-1
Township of South Stormont
Water Service
Water Rate Forecast

Water Rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Consumptive Rates ($/m^3)											
Long Sault/Ingleside											
Residential	1.029	1.099	1.173	1.252	1.337	1.428	1.525	1.628	1.738	1.856	1.982
Non-residential	1.029	1.099	1.173	1.252	1.337	1.428	1.525	1.628	1.738	1.856	1.982
Large Industrial (>6,000 m3)	0.822	0.878	0.937	1.000	1.068	1.141	1.218	1.301	1.388	1.483	1.583
%Increase		**6.8%**	**6.7%**	**6.7%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**
Eamers Corners/St. Andrews											
Residential	1.597	1.597	1.597	1.597	1.597	1.597	1.597	1.628	1.738	1.856	1.982
Non-residential	1.597	1.597	1.597	1.597	1.597	1.597	1.597	1.628	1.738	1.856	1.982
%Increase		**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**6.8%**	**6.8%**	**6.8%**
Newington [1]											
Residential	n/a	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982
Non-residential	n/a	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982
%Increase		**n/a**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

1. 2019 Newington water rates are $661 for residential customers and $991 for industrial/comercial customers

Table 6-2
Township of South Stormont
Wastewater Service
Wastewater Rate Forecast

Wastewater Rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Flow Rates ($/m^3)											
Long Sault [1]											
Residential	n/a	3.493	3.702	3.923	4.158	4.407	4.671	4.950	5.246	5.560	5.893
Non-residential	n/a	3.493	3.702	3.923	4.158	4.407	4.671	4.950	5.246	5.560	5.893
Large Industrial (>6,000 m3)	n/a	2.791	2.958	3.135	3.323	3.522	3.733	3.956	4.192	4.443	4.709
% Increase		**n/a**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**
Ingleside [1]											
Residential	n/a	3.493	3.702	3.923	4.158	4.407	4.671	4.950	5.246	5.560	5.893
Non-residential	n/a	3.493	3.702	3.923	4.158	4.407	4.671	4.950	5.246	5.560	5.893
Large Industrial (>6,000 m3)	n/a	2.790	2.957	3.134	3.322	3.520	3.731	3.954	4.191	4.442	4.708
% Increase		**n/a**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**

1. 2019 Long Sault & Ingleside wastewater rates imposed based on 225% of the annual water bill

6.4 Water and Wastewater Rates Annual Impacts

Tables 6-3 and 6-4 summarize the annual impacts to a typical residential water and wastewater customer respectively in each of the three municipal water systems and two wastewater systems. The tables assume average annual residential water consumption of 182 m^3.

6.4.1 Annual Water Bill Impacts

In 2019, a typical residential customer with average demand patterns would have a total annual water bill of $188 in Long Sault/Ingleside, $291 in Rosedale Terrace/St. Andrews/Eamers Corners, $661 in Newington because of the differentiated rate structure by system.

As per the water financial plan and the rate forecast in Table 6-1, the consumptive rate would increase to $1.982 per m^3 of water consumption by 2029. These changes would result in an increase to the annual bill for Long Sault/Ingleside customers of 6.8% per year or a $17 average annual increase. The water bills for Rosedale Terrace/St. Andrews/Eamers Corners customers would remain unchanged until 2025, after which the annual bill would increase between 1.9% to 6.8% annually or $17 per year. The annual bill in Newington would decrease from $661 to $361 (54% decrease) and remain constant thereafter.

To assess the impacts on customers in each waster system of moving towards a uniform rate structure vs. maintaining the current rate structure and approach of funding each water system separately, forecast water rates were calculated under the current structure for comparison purposes. Figure 6-1 illustrates the annual residential water bills under the current rate structure (solid bars) vs. the annual water bills based on the forecast rates identified in Table 6-3 (hatched bars). The annual water bills under the recommended rate structure by 2029 would be $1,553 lower for customers in Newington and $132 lower for customers in Rosedale Terrace/St. Andrews/Eamers Corners than under the current funding model. The annual water bills in Long Sault/Ingleside would be $35 (11%) greater than under the current rate structure. This nominal increase for Long Sault/Ingleside offsets the considerable increases that would be required for the Newington and Rosedale Terrace/St. Andrews/Eamers Corners systems under the current funding model an ensures the future affordability and sustainability of those systems.

6.4.2 Annual Wastewater Bill Impacts

In 2019, a typical residential customer with average demand patterns (i.e. 182 m^3 water volume) would have a total annual wastewater bill of $421. In addition to wastewater rates, constituents of Long Sault and Ingleside also pay a special area sewer tax levy as part of their property tax bill that goes towards the funding of the Long Sault and Ingleside wastewater systems. Based on an assessed residential property value of $200,000, the special areas sewer tax bill would be $207. In total the annual charges paid towards the wastewater systems in Long Sault and Ingleside are $628.

As per the wastewater financial plan, with the removal of the special area sewer tax levy the average annual wastewater charges would increase by 1.2% in 2020, followed by 6.0% annual increases for the remainder of the forecast period ($44 average annual increase)

Table 6-3
Township of South Stormont
Annual Water Bill Impacts for a Typical Residential Customer (182 m^3 annual water consumption)

Water Rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Long Sault/Ingleside											
Consumptive Rates ($/$m^3$)	1.029	1.099	1.173	1.252	1.337	1.428	1.525	1.628	1.738	1.856	1.982
Annual Bill ($)	188	200	214	228	244	260	278	297	317	338	361
% Increase (Annual Bill)		6.8%	6.7%	6.7%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Eamers Corners/St. Andrews											
Consumptive Rates ($/$m^3$)	1.597	1.597	1.597	1.597	1.597	1.597	1.597	1.628	1.738	1.856	1.982
Annual Bill ($)	291	291	291	291	291	291	291	297	317	338	361
% Increase (Annual Bill)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	6.8%	6.8%	6.8%
Newington											
Consumptive Rates ($/$m^3$)	n/a	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982	1.982
Annual Bill ($)	661	361	361	361	361	361	361	361	361	361	361
% Increase (Annual Bill)		-45.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure 6-1
Township of South Stormont
Comparison of Water Bill Impacts for a Typical Residential Customer (182 m^3 annual water consumption)
Recommended Uniform Rate Structure vs. Current Rate Structure

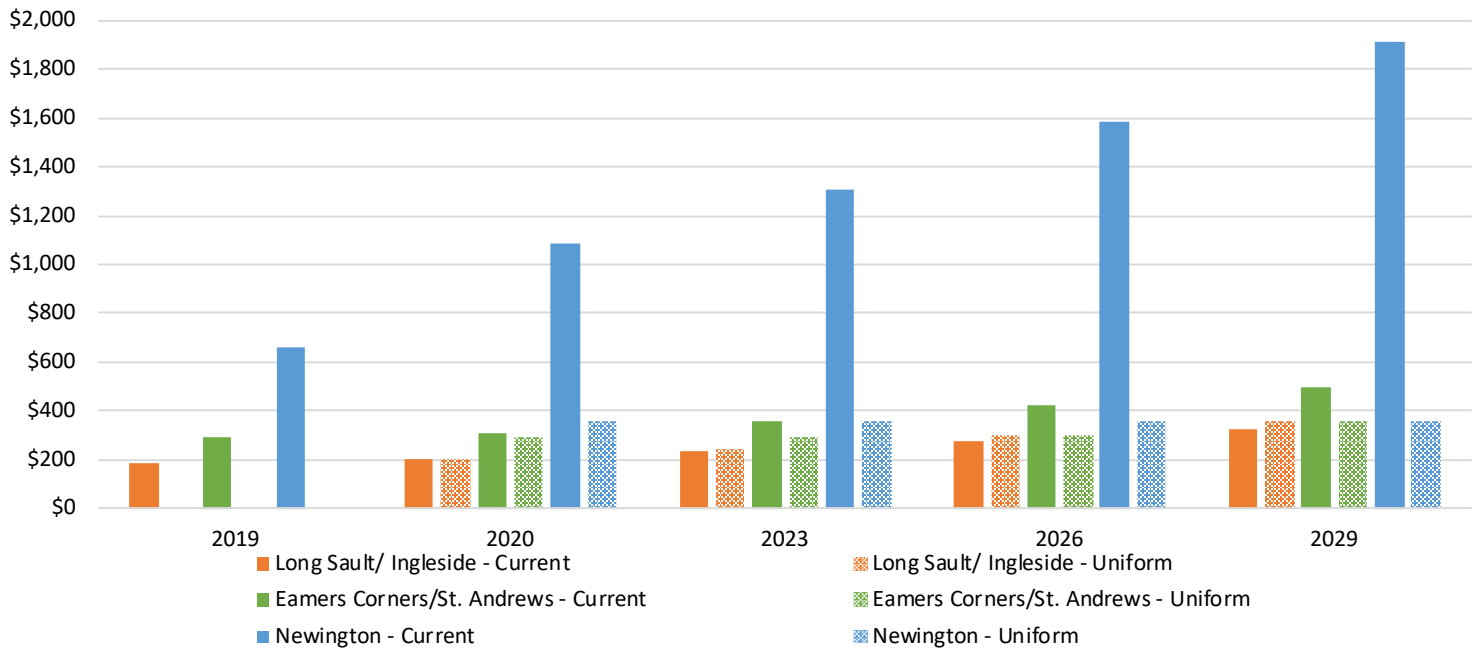


Table 6-4
Township of South Stormont
Annual Wastewater Bill Impacts for a Typical Residential Customer (182 m^3 annual water consumption)

Wastewater Rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Long Sault & Ingleside											
Flow Rates ($/$m^3$)	n/a	3.493	3.702	3.923	4.158	4.407	4.671	4.950	5.246	5.560	5.893
Annual Wastewater Charges											
Annual Wastewater Bill ($)	421	636	674	714	757	802	850	901	955	1,012	1,073
Annual Special Area Sewer Tax Bill ($) [1]	207										
Total Annual Wastewater Charges ($)	**628**	**636**	**674**	**714**	**757**	**802**	**850**	**901**	**955**	**1,012**	**1,073**
% Increase (Total Annual Charges)		**1.2%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**

1. Special area sewer tax levy bill based on assessed property value of $200,000

6.5 Recommendations

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

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

Appendices

Appendix A
Water Services

Table 1
Township of South Stormont
Water Service
Capital Budget Forecast
Inflated $

Description	Total	Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Forecast	-	-	-	-	-	-	-	-	-	-	-
Long Sault/Ingleside	-	-	-	-	-	-	-	-	-	-	-
WATER TREATMENT PLANT – LONG SAULT	1,488,000	88,000	202,000	420,000	-	-	169,000	-	-	197,000	412,000
LOW LIFT PUMPING STATION - LONG SAULT	186,000	52,000	54,000	-	-	-	80,000	-	-	-	-
INGLESIDE BOOSTER STATION - INGLESIDE	176,000	65,000	54,000	57,000	-	-	-	-	-	-	-
WATER TOWER - INGLESIDE	209,000	209,000	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
St. Andrews/Eamers Corners	-	-	-	-	-	-	-	-	-	-	-
WATER TOWER - ST.ANDREWS	22,000	22,000	-	-	-	-	-	-	-	-	-
ST.ANDREWS - BOOSTER STATION	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Newington	-	-	-	-	-	-	-	-	-	-	-
WATER TREATMENT PLANT - NEWINGTON	48,000	-	48,000	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Capital Maintenance	-	-	-	-	-	-	-	-	-	-	-
Long Sault/Ingleside	-	-	-	-	-	-	-	-	-	-	-
Long Sault Low Lift Pump	227,000	120,000	50,000	51,000	-	-	-	-	-	6,000	-
Long Sault WTP	1,899,000	329,000	189,000	331,000	71,000	-	200,000	23,000	206,000	233,000	317,000
Ingleside Booster Station	198,000	49,000	50,000	51,000	-	-	28,000	-	-	10,000	10,000
	-	-	-	-	-	-	-	-	-	-	-
St. Andrews/Eamers Corners	-	-	-	-	-	-	-	-	-	-	-
St. Andrews Booster Station	167,000	48,000	23,000	-	27,000	-	-	29,000	-	5,000	35,000
	-	-	-	-	-	-	-	-	-	-	-
Newington	-	-	-	-	-	-	-	-	-	-	-
Newington WTP	99,000	8,000	26,000	-	-	-	11,000	-	41,000	-	13,000
	-	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**4,719,000**	**990,000**	**696,000**	**910,000**	**98,000**	**-**	**488,000**	**52,000**	**247,000**	**451,000**	**787,000**
Capital Financing											
Provincial/Federal Grants	-										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	4,719,000	990,000	696,000	910,000	98,000	-	488,000	52,000	247,000	451,000	787,000
Total Capital Financing	**4,719,000**	**990,000**	**696,000**	**910,000**	**98,000**	**-**	**488,000**	**52,000**	**247,000**	**451,000**	**787,000**

Table 2
Township of South Stormont
Water Service
Schedule of Non-Growth Related Debenture Repayments
Inflated $

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

Table3
Township of South Stormont
Water Service
Water Reserves/ Reserve Funds Continuity
Inflated $

Description		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance		2,145,208	1,504,879	1,220,983	789,573	1,257,877	1,768,400	1,888,239	2,562,504	3,179,808	3,742,150
Transfer from Operating		325,972	392,876	466,156	546,495	482,674	578,103	685,910	814,228	954,410	1,106,409
Transfer to Capital		990,000	696,000	910,000	98,000	-	488,000	52,000	247,000	451,000	787,000
Transfer to Operating		-	-	-	-	-	-	-	-	-	-
Closing Balance		**1,481,180**	**1,201,755**	**777,138**	**1,238,067**	**1,740,551**	**1,858,503**	**2,522,150**	**3,129,732**	**3,683,218**	**4,061,559**
Interest		23,699	19,228	12,434	19,809	27,849	29,736	40,354	50,076	58,931	64,985

Table 4
Township of South Stormont
Water Services
Operating Budget Forecast
Inflated $

Description		Forecast									
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures											
Operating Costs			-	-	-	-	-	-	-	-	-
SALARIES, WAGES & BENEFITS		55,900	57,000	58,100	59,300	60,500	61,700	62,900	64,200	65,500	66,800
UTILITIES, TELECOMMUNICATIONS		340,300	347,100	354,000	361,100	368,300	375,700	383,200	390,900	398,700	406,700
CHEMICALS		21,900	22,300	22,700	23,200	23,700	24,200	24,700	25,200	25,700	26,200
PROFESSIONAL FEES		31,600	32,200	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700
ADMINISTRATION (OVERHEAD)		119,300	121,700	124,100	126,600	129,100	131,700	134,300	137,000	139,700	142,500
REPAIRS , MAINTENANCE, SMALL TOOLS, EQUIP.		132,600	135,300	138,000	140,800	143,600	146,500	149,400	152,400	155,400	158,500
SAMPLING		27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100	31,700	32,300
EQUIPMENT CHARGES		20,700	21,100	21,500	21,900	22,300	22,700	23,200	23,700	24,200	24,700
METER REPAIRS		7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100	9,300	9,500
BLDG/GROUNDS OPS		18,900	19,300	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500
INFRASTRUCTURE REP/MAINT.		117,300	119,600	122,000	124,400	126,900	129,400	132,000	134,600	137,300	140,000
CONTRACTS		390,900	398,700	406,700	414,800	423,100	431,600	440,200	449,000	458,000	467,200
PROPERTY TAXES		13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700	16,000	16,300
INSURANCE		31,600	32,200	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700
		-	-	-	-	-	-	-	-	-	-
Sub Total Operating		**1,329,300**	**1,355,800**	**1,382,800**	**1,410,700**	**1,439,000**	**1,467,900**	**1,497,200**	**1,527,200**	**1,557,600**	**1,588,600**
Capital-Related											
Existing Debt (Principal) - Non-Growth Related		203,062	190,118	195,305	200,634	206,108	211,731	217,508	223,442	229,538	235,801
Existing Debt (Interest) - Non-Growth Related		105,901	100,375	95,188	89,860	84,386	78,762	72,986	67,051	60,955	54,692
New Non-Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve		325,972	392,876	466,156	546,495	482,674	578,103	685,910	814,228	954,410	1,106,409
Sub Total Capital Related		**634,935**	**683,369**	**756,649**	**836,988**	**773,168**	**868,597**	**976,404**	**1,104,722**	**1,244,904**	**1,396,902**
Total Expenditures		**1,964,235**	**2,039,169**	**2,139,449**	**2,247,688**	**2,212,168**	**2,336,497**	**2,473,604**	**2,631,922**	**2,802,504**	**2,985,502**
Revenues											
Fees and Penalties		17,100	17,400	17,700	18,100	18,500	18,900	19,300	19,700	20,100	20,500
LS/ING - CAPITAL WATER LEVY PAYMENT		158,658	158,658	158,658	158,658	158,658	158,658	158,658	158,658	158,658	158,658
LS/ING - VIN VISTA CAPITAL LEVY PAYMENT		13,823	13,823	13,823	13,823	13,823	13,823	13,823	13,823	13,823	13,823
LS/ING - CTY RD 36 CAPITAL LEVY PAYMENT		1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550
LS/ING - MANNING/COLONIAL CAPITAL LEVYP		6,546	6,546	6,546	6,546	6,546	6,546	6,546	6,546	6,546	6,546
LS/ING - WALES VILLAGE CAPITAL WATER PAY		18,678									
EC - CAPITAL LEVY PAYMENT		2,283	2,283	2,283	2,283	2,283	2,283	2,283	2,283	2,283	2,283
NEWINGTON - CAPITAL LEVY PAYMENT		8,404	8,404	8,404	8,404	8,404	8,404	8,404	8,404	8,404	8,404
Capital Water Levy (Lactalis)		151,741	151,741	151,741	151,741						
Capital Levy (New Connections)		120,845	123,247	125,728	128,258	130,830	133,444	136,107	138,813	141,603	144,436
Contributions from Reserves / Reserve Funds		-	-	-	-	-	-	-	-	-	-
Total Operating Revenue		**499,627**	**483,651**	**486,432**	**489,362**	**340,593**	**343,608**	**346,671**	**349,776**	**352,967**	**356,200**
Water Billing Recovery - Operating		**1,464,609**	**1,555,518**	**1,653,017**	**1,758,326**	**1,871,574**	**1,992,889**	**2,126,933**	**2,282,145**	**2,449,537**	**2,629,303**
Water Billing Recovery - Total		**1,464,609**	**1,555,518**	**1,653,017**	**1,758,326**	**1,871,574**	**1,992,889**	**2,126,933**	**2,282,145**	**2,449,537**	**2,629,303**

Appendix B
Wastewater Services

Table 1
Township of South Stormont
Wastewater Service
Capital Budget Forecast
Inflated $

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures										
Long Sault	-	-	-	-	-	-	-	-	-	-
SEWAGE TREATMENT PLANT - LONG SAULT	773,000	789,000	805,000	821,000	837,000	854,000	888,000	888,000	906,000	924,000
PUMPING STATION - POST RD	-	-	28,000	-	-	16,000	-	-	36,000	-
PUMPING STATION - MILLES ROCHES	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Ingleside	-	-	-	-	-	-	-	-	-	-
SEWAGE TREATMENT PLANT - INGLESIDE	-	18,000	21,000	-	-	33,785,000	22,000	-	-	-
PUMPING STATION - INGLESIDE	-	-	-	-	-	-	46,000	-	-	2,002,000
	-	-	-	-	-	-	-	-	-	-
Capital Maintenance	-	-	-	-	-	-	-	-	-	-
Long Sault	-	-	-	-	-	-	-	-	-	-
Post Road Sewage Pumping Station	-	-	6,000	-	-	27,000	-	-	7,000	-
Mille Roches Road Pumping Station	-	6,000	-	-	26,000	-	-	7,000	-	-
Long Sault WWTP	38,000	53,000	37,000	47,000	42,000	60,000	53,000	86,000	17,000	37,000
	-	-	-	-	-	-	-	-	-	-
Ingleside	-	-	-	-	-	-	-	-	-	-
Ingleside WWTP	31,000	22,000	-	178,000	10,000	42,000	-	16,000	24,000	-
	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**842,000**	**888,000**	**897,000**	**1,046,000**	**915,000**	**34,784,000**	**1,009,000**	**997,000**	**990,000**	**2,963,000**
Capital Financing										
Provincial/Federal Grants				-		22,523,333				
Non-Growth Related Debenture Requirements	-	-	-	-	-	8,023,280	254,348	111,389	-	1,709,254
Wastewater Reserve	842,000	888,000	897,000	1,046,000	915,000	4,237,386	754,652	885,611	990,000	1,253,746
Total Capital Financing	**842,000**	**888,000**	**897,000**	**1,046,000**	**915,000**	**34,784,000**	**1,009,000**	**997,000**	**990,000**	**2,963,000**

Table 2
Township of South Stormont
Wastewater Service
Schedule of Non-Growth Related Debenture Repayments
Inflated $

Debenture Year	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020		-	-	-	-	-	-	-	-	-
2021			-	-	-	-	-	-	-	-
2022				-	-	-	-	-	-	-
2023					-	-	-	-	-	-
2024						-	-	-	-	-
2025							460,760	460,760	460,760	460,760
2026								14,607	14,607	14,607
2027									6,397	6,397
2028										-
2029										
Total Annual Debt Charges	-	-	-	-	-	-	460,760	475,367	481,763	481,763

Table 3
Township of South Stormont
Wastewater Service
Wastewater Reserves/ Reserve Funds Continuity
Inflated $

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	3,740,980	3,536,631	3,336,305	3,223,420	3,065,983	3,156,629	-	-	-	47,347
Transfer from Operating	398,017	489,134	587,352	694,280	809,935	934,757	608,652	739,611	890,601	1,060,399
Transfer from Operating (Ingleside/Lactalis Reserve Fund)	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000
Transfer from Operating (BY-law 2011-088)	37,938	-	-	-	-	-	-	-	-	-
Transfer to Capital	842,000	888,000	897,000	1,046,000	915,000	4,237,386	754,652	885,611	990,000	1,253,746
Transfer to Operating		-	-	-	-	-	-	-	-	-
Closing Balance	**3,480,936**	**3,283,765**	**3,172,657**	**3,017,700**	**3,106,918**	**-**	**-**	**-**	**46,601**	**-**
Interest	55,695	52,540	50,763	48,283	49,711	-	-	-	746	-

Table 4
Township of South Stormont
Wastewater Services
Operating Budget Forecast
Inflated $

Description	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Expenditures										
Operating Costs										
SALARIES, WAGES & BENEFITS	13,700	14,000	14,300	14,600	14,900	15,200	15,500	15,800	16,100	16,400
UTILITIES, TELECOMMUNICATIONS	445,700	454,600	463,700	473,000	482,500	492,200	502,000	512,000	522,200	532,600
CHEMICALS	290,700	296,500	302,400	308,400	314,600	320,900	327,300	333,800	340,500	347,300
PROFESSIONAL FEES	117,300	119,600	122,000	124,400	126,900	129,400	132,000	134,600	137,300	140,000
ADMINISTRATION (OVERHEAD)	162,200	165,400	168,700	172,100	175,500	179,000	182,600	186,300	190,000	193,800
REPAIRS , MAINTENANCE, SMALL TOOLS, EQUIP.	326,400	332,900	339,600	346,400	353,300	360,400	367,600	375,000	382,500	390,200
SLUDGE DISPOSAL	123,400	125,900	128,400	131,000	133,600	136,300	139,000	141,800	144,600	147,500
SAMPLING	71,400	72,800	74,300	75,800	77,300	78,800	80,400	82,000	83,600	85,300
EQUIPMENT CHARGES	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
BLDG/GROUNDS OPS	23,000	23,500	24,000	24,500	25,000	25,500	26,000	26,500	27,000	27,500
INFRASTRUCTURE REP/MAINT.	76,500	78,000	79,600	81,200	82,800	84,500	86,200	87,900	89,700	91,500
CONTRACTS	424,000	432,500	441,200	450,000	459,000	468,200	477,600	487,200	496,900	506,800
PROPERTY TAXES	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300	26,800
INSURANCE	48,500	49,500	50,500	51,500	52,500	53,600	54,700	55,800	56,900	58,000
Sub Total Operating	**2,150,300**	**2,193,200**	**2,237,300**	**2,282,100**	**2,327,700**	**2,374,400**	**2,421,900**	**2,470,300**	**2,519,500**	**2,569,700**
Capital-Related										
Existing Debt (Principal) - Non-Growth Related										
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	220,062	233,640	243,704	251,015
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	240,698	241,727	238,059	230,748
IS - TRSF TO RES - Lactalis (2011-088 #3)	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000
ING SEWER - CAPITAL SURPLUS ADJUSTMENT	37,938									
Transfer to Capital Reserve	398,017	489,134	587,352	694,280	809,935	934,757	608,652	739,611	890,601	1,060,399
Sub Total Capital Related	**581,955**	**635,134**	**733,352**	**840,280**	**955,935**	**1,080,757**	**1,215,412**	**1,360,978**	**1,518,364**	**1,688,162**
Total Expenditures	**2,732,255**	**2,828,334**	**2,970,652**	**3,122,380**	**3,283,635**	**3,455,157**	**3,637,312**	**3,831,278**	**4,037,864**	**4,257,862**
Revenues										
ING SEWER - LACTALIS DIRECT BILLING - ISSTP	1,022,100	1,042,500	1,063,400	1,084,700	1,106,400	1,128,500	1,151,100	1,174,100	1,197,600	1,221,600
Fees and Penalties, Supps & Omits	51,400	52,400	53,400	54,500	55,600	56,700	57,800	59,000	60,200	61,400
Special Area Tax Levy										
ING SEW - LACTALIS ANN. CAP. SCH 3 2011-88	37,938									
LACTALIS DIRECT FOR SEWER CAP RESERVE	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000
Capital Levy (New Connections)	48,854	49,822	50,820	51,849	52,877	53,936	55,025	56,114	57,233	58,383
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,233,292**	**1,217,722**	**1,240,620**	**1,264,049**	**1,287,877**	**1,312,136**	**1,336,925**	**1,362,214**	**1,388,033**	**1,414,383**
Wastewater Billing Recovery - Operating	**1,498,964**	**1,610,612**	**1,730,032**	**1,858,331**	**1,995,758**	**2,143,021**	**2,300,387**	**2,469,064**	**2,649,831**	**2,843,480**

Table 5
Township of South Stormont
Wastewater Services
Wastewater Rate Forecast
Inflated $

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Total Wastewater Billing Recovery	1,498,964	1,610,612	1,730,032	1,858,331	1,995,758	2,143,021	2,300,387	2,469,064	2,649,831	2,843,480
Total Volume (m^3)	429,134	435,065	440,997	446,929	452,861	458,793	464,725	470,657	476,588	482,520
Constant Rate	**3.493**	**3.702**	**3.923**	**4.158**	**4.407**	**4.671**	**4.950**	**5.246**	**5.560**	**5.893**
Annual Percentage Change		**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**	**6.0%**