Water and Wastewater Rate Study

Township of Springwater

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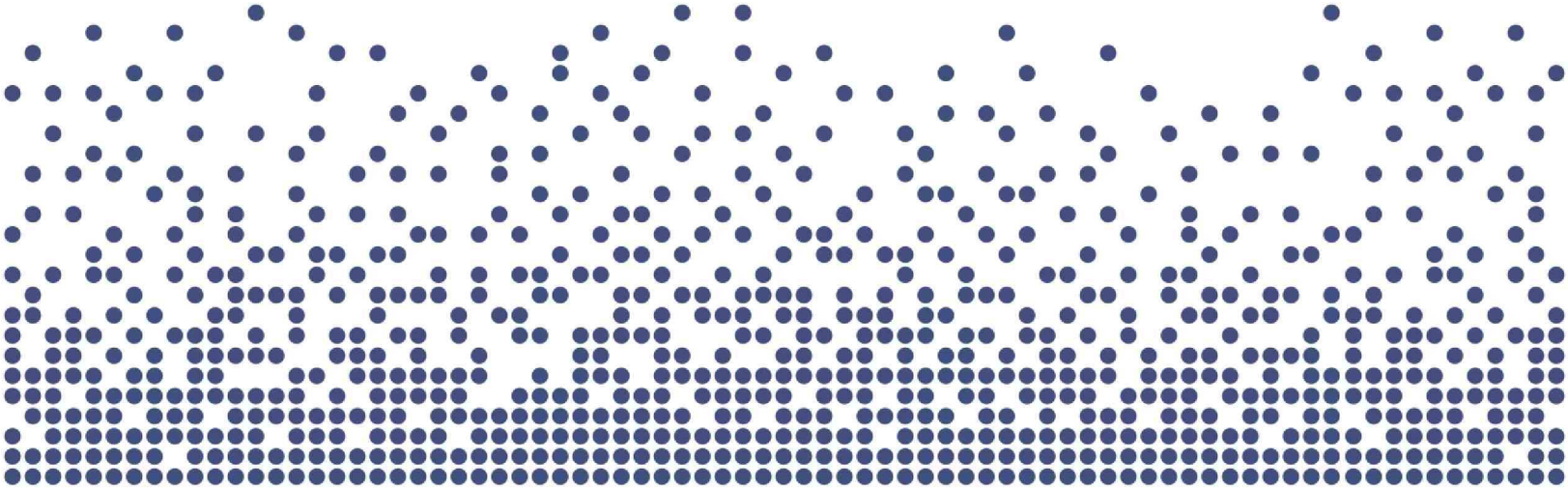
List of Acronyms and Abbreviations

Acronym	Full Description of Acronym
A.M.O.	Association of Municipalities of Ontario
C.W.W.F.	Clean Water and Wastewater Fund
D.C.A.	Development Charges Act, 1997
F.I.R.	Financial Information Return
I.J.P.A.	Infrastructure for Jobs and Prosperity Act, 2015
I.O.	Infrastructure Ontario
LPAT	Local Planning Appeal Tribunal
M.O.E.	Ministry of Environment
O.C.I.F.	Ontario Community Infrastructure Fund
O.M.B.	Ontario Municipal Board
O. Reg.	Ontario Regulation
O.S.I.F.A.	Ontario Strategic Infrastructure Financing Authority
P.S.A.B.	Public Sector Accounting Board
P.T.I.F.	Public Transit Infrastructure Fund
S.W.S.S.A.	Sustainable Water and Sewage Systems Act, 2002



Executive Summary

Executive Summary

The Township of Springwater retained Watson & Associates Economists Ltd. (Watson) to undertake a water and wastewater rate study. This study aims to prepare an analysis of the Township's water and wastewater rate forecast based on current capital and operating forecasts, costing for lifecycle replacement requirements, current volumes, and customer profiles. The results of this analysis provide updated water and wastewater base charges and volume rates for customers within the Township of Springwater. The rate analysis contained herein continues to provide fiscally responsible practices that are in line with current provincial legislation.

The analysis presented herein provides the following:

- The 2024 to 2033 capital spending program for water and wastewater is $14.15 million and $37.88 million (inflated), respectively;
- A significant portion of the wastewater capital spending program is related to the main pumping station and wastewater treatment plant expansion in Elmvale. As such two scenarios for rates are provided. The first scenario provides that the Township will cashflow the construction of the works, the second scenario provides that the developing landowners would cashflow the works;
- Annual operating expenditures are assumed to increase by 3% per annum for most expenditures; expenditures related to utilities, fuels, chemicals and other materials have been increased at 5% per annum;
- The present rate structure for water (base monthly charge and an increasing block volume rate structure) is continued;
- The present rate structure for wastewater (base monthly charge and a constant volume rate) is continued;
- Existing water customers total 4,387; new customers will average approximately 334 annually over the next 10-year period; and
- Existing wastewater customers total 2,116; new customers will average approximately 263 annually over the next 10-year period.

Based on the above information, rate increases have been provided in two scenarios:

1. 4% increases annually for water, and 10% increases annually for wastewater;
2. Phased increases for water and 8% annual increases for wastewater with alternative financing approach.

a. Water: 3% annual increases from 2024 to 2025, 4% from 2026 to 2028, and 5% every year thereafter; and
b. Wastewater: 8% annual increase with developing land owners front-ending the Elmvale main pumping station and wastewater treatment plant expansion.

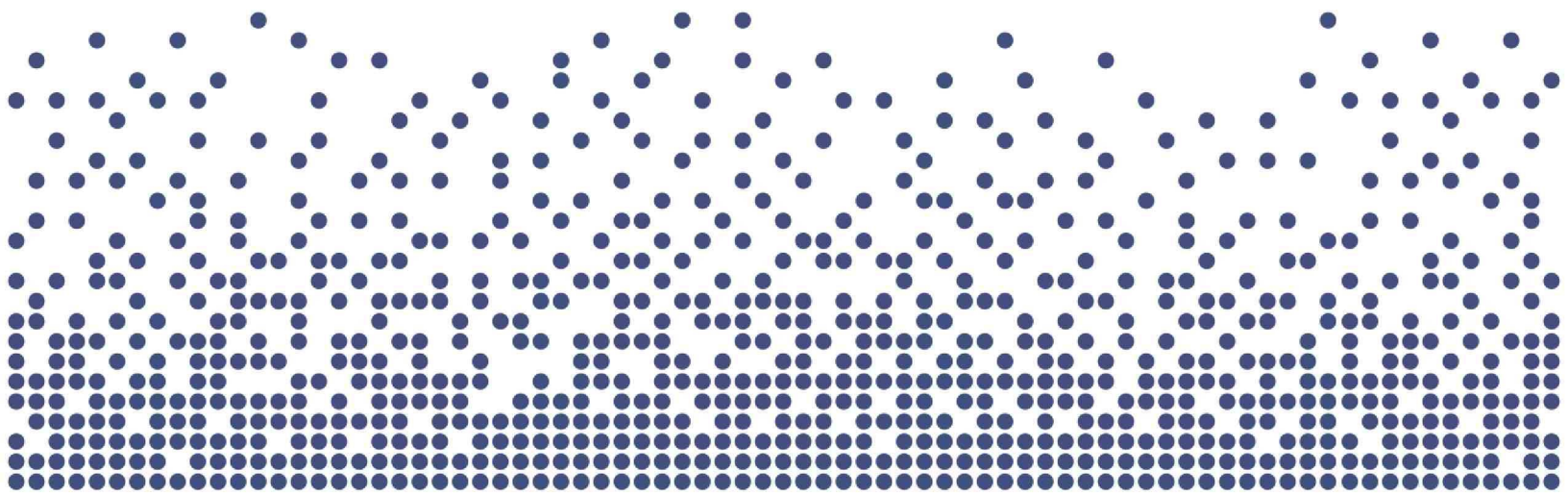
Tables ES-1 and ES-2 summarize the recommended water and wastewater rates and average annual bills for each respective scenario (assuming an annual volume of 180 cu.m.) based on the analysis provided herein over the forecast period.

Table ES-1
Township of Springwater
Scenario 1
Average Annual Residential Water and Wastewater Bill (Based on Annual Usage of 180 cu.m.)

Annual Bill for Residential User with 180 cu.m Volume	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Water											
Base Charge	235	245	255	265	275	286	298	310	322	335	348
Volume	324	337	351	365	380	394	410	427	443	461	479
Total Water Bill	**559**	**582**	**606**	**630**	**655**	**681**	**708**	**736**	**765**	**796**	**827**
Wastewater											
Base Charge	459	505	556	612	673	740	814	895	985	1,083	1,192
Constant Rate	486	535	589	648	713	785	864	950	1,046	1,150	1,265
Total Wastewater Bill	**945**	**1,040**	**1,145**	**1,260**	**1,386**	**1,525**	**1,678**	**1,846**	**2,031**	**2,234**	**2,457**
Total Combined Bill	1,505	1,622	1,750	1,890	2,041	2,205	2,386	2,582	2,796	3,029	3,284
Annual Percentage Change		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%

Table ES-2
Township of Springwater
Scenario 2
Average Annual Residential Water and Wastewater Bill (Based on Annual Usage of 180 cu.m.)

Annual Bill for Residential User with 180 cu.m Volume	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Water											
Base Charge	235	242	250	260	270	281	295	310	325	341	358
Volume	324	334	344	358	373	387	407	427	448	470	493
Total Water Bill	**559**	**576**	**593**	**618**	**643**	**668**	**702**	**736**	**773**	**811**	**852**
Wastewater											
Base Charge	459	496	536	579	625	675	729	787	850	919	992
Constant Rate	486	526	567	612	661	713	770	832	898	970	1,048
Total Wastewater Bill	**945**	**1,022**	**1,103**	**1,191**	**1,286**	**1,388**	**1,500**	**1,619**	**1,749**	**1,889**	**2,040**
Total Combined Bill	**1,505**	**1,598**	**1,696**	**1,809**	**1,928**	**2,056**	**2,201**	**2,355**	**2,522**	**2,700**	**2,891**
Annual Percentage Change		6%	6%	7%	7%	7%	7%	7%	7%	7%	7%



Report

Chapter 1
Introduction

1. Introduction

1.1 Background

The Township of Springwater currently provides water services to the following areas: Anten Mills, Elmvale, Hillsdale, Minesing, Phelpston, Snow Valley, Vespra Downs, Centre Vespra, Del Trend, and Midhurst. Currently there are 4,387 metered water customers within the Township. The Township also provides wastewater services to 2,116 metered customers in the areas of Elmvale, Snow Valley, and Centre Vespra.

The following provides an overview of the water and wastewater systems in Springwater.

Water

The Anten Mills Water Supply System obtains its water supply from three drilled wells, each equipped with a submersible well pump and flow meter. The well water is stored in two water towers and distributed via four high lift pumps.

The Del Trend Water Supply System is supplied from three drilled wells located on the site of the water treatment plant. Water is injected with sodium hypochlorite for treatment and distributed via four high lift pumps in the pump house.

The Elmvale Water Supply System is comprised of water plants supplied by two drilled wells that are enclosed in a pump house and equipped with a vertical turbine pump and flow meter. The water is injected with sodium hypochlorite in the pump houses for treatment and stored in two storage tanks. The water is pumped from the tanks to the distribution system via four high lift pumps located in the booster station.

The Hillsdale Water Supply System is supplied from three drilled wells located on the site of the Hillsdale water treatment plant. Each well is equipped with a submersible well pump and flow meter. Water is treated with sodium hypochlorite that is injected by a chemical metering pump. A stand-by chemical pump is equipped in case the main pump fails.

The Midhurst Water Supply System is comprised of three plants. Raw water is supplied by four drilled wells each equipped with a submersible well pump and flow meter. Water is treated with sodium hypochlorite and sodium silicate injected at each pump

house. Water is stored in two elevated storage tanks and are distributed via polyvinyl chloride (P.V.C.) pipes.

The Minesing Water Supply System is supplied from four drilled wells equipped with a submersible well pump and flow meter. The raw water is treated with sodium hypochlorite and stored within two water tanks. Water is distributed throughout the system via three high lift pumps.

The Phelpston Water Supply System is comprised of a water treatment plant supplied by two drilled wells. These wells are equipped with a submersible well pump and flow meter. Sodium hypochlorite is injected for disinfection with a backup chemical meter pump. Water is stored in an underground reservoir and distributed via four high lift pumps to the distribution system.

The Snow Valley Water Supply System is comprised of buildings located in Snow Valley consisting of an 'Old' Snow Valley plant, a 'Highlands' Snow Valley plant and a booster station. Raw water is supplied by four drilled wells equipped with submersible well pumps and flow meters. The water is treated with sodium hypochlorite in the pumphouse and polyphosphate. These chemicals each have two chemical metering pumps for back-up in case of failure. Water is stored in two storage tanks and distributed via P.V.C. pipes.

The Vespra Downs Water Supply System is supplied by two drilled wells located on the site of the water treatment plant. The raw water is treated with sodium hypoclorite via one of two chemical metering pumps. Sodium silicate is injected for iron sequestering. Eight pressure tanks within the facility ensure adequate pressure is maintained. There are no storage reservoirs, and the system is comprised of P.V.C. piping.

Wastewater

The Elmvale Wastewater System begins with the Main Sewage Pumping System and Queen Street lift station that collects wastewater towards the treatment plant. The treatment plant has a preliminary grit removal system, two aeration tanks, two clarifiers, four sand filter modules, and a U.V. disinfection system. The final effluent discharges into the Wye River.

The Centre Vespra (Stonemanor) Wastewater System starts with a flow balancing tank that feeds into the Inlet works via two submersible pumps. The treatment plant has

anaerobic primary settling/sludge storage changes, an integrated surge anoxic mix chamber, and a sequencing batch reactor chamber. The chemically treated effluent collects into an effluent tank and discharges via submersible pumps.

The Snow Valley Highlands Wastewater Treatment System consists of an inlet sewer, flow balancing tank, submersible pumps and grit channels in the primary treatment system. The influent then travels towards the secondary treatment system consisting of an anaerobic primary settling/sludge storage chamber, an integrated surge anoxic batch reactor chamber, a fixed decanter, and a waste sludge line to the anaerobic chamber. Effluent travels through the secondary effluent tank for treatment through sand filters and then towards the final effluent tank.

The Royal Oaks Wastewater Treatment System begins with the collection of wastewater at four pumping stations to be directed to the Royal Oaks Wastewater Treatment Plant for processing via the flow balancing tank and inlet works. Influent then moves toward two sequence batch reactors for processing. The processed effluent discharges into a tank consisting of a sand filter. The treated effluent discharged into effluent tanks.

With the legislative changes being made across Ontario as a result of the Walkerton crisis, municipalities will be required to conform to new statutes governing the management of water and wastewater systems. Watson & Associates Economists Ltd. (Watson) was retained by the Township of Springwater to assist in addressing these changes in a proactive manner as they relate to the water and wastewater systems. The assessment provided herein addresses changes recommended to the water and wastewater rates based on the most current information and forecasts the implications over the next ten-year period.

1.2 Current Rate Structure

The Township currently imposes a base charge and a four-tier increasing block volumetric rate for water. A base charge and a constant volume rate structure is utilized for wastewater. Wastewater charges are based upon metered water volumes. The rates for both water and wastewater are in place to recover capital and operating costs related to the respective systems. Table 1-1 provides the existing rates currently in effect for the water and wastewater systems.

Table 1-1
Township of Springwater
Water and Wastewater Rates – 2023

Township of Springwater		
2023 - Water Billing Rates		
Monthly Base Charge		
Residential and Multi-Residential	$	19.61
Commercial	$	32.69
Volume Charge		
$ 1.80	0-15 cu.m./month	
$ 1.89	16-30 cu.m./month	
$ 2.36	31-45 cu.m./month	
$ 3.30	45+ cu.m./month	

Township of Springwater		
2023 - Wastewater Billing Rates		
Monthly Base Charge		
Residential and Multi-Residential	$	38.29
Commercial	$	47.87
Volume Charge		
$ 2.70	per cu.m./month	

Prior to 2017, the Township's wastewater rate structure provided for a base charge and a four-tier increasing block volumetric rate (similar to water). Through the 2017 rate study process and public consultation, it was determined that the increasing block volume charge for wastewater be replaced with a constant volume rate to reduce the impact of the wastewater bill on larger water users (e.g. residential homes with irrigation/sprinkler systems for their lawns). As a result of the Township's prior detailed review and public consultation, this analysis maintains the current rate structures.

1.3 Study Process

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

- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- 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;
- Identify existing operating costs by component and estimate future operating costs over the next 10 years. This assessment identifies fixed and variable costs in order to project those costs sensitive to changes to the existing infrastructure inventory, as well as costs which may increase commensurate with growth; and

- Provide staff and Committee/Council the findings to assist in gaining approval of the rates for 2024 and future years.

1.4 Regulatory Changes in Ontario

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

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

The legislation which would have most impacted municipal water and wastewater rates was the *Sustainable Water and Sewage Systems Act* (S.W.S.S.A.) which would have required municipalities to implement full cost pricing. The legislation was enacted in 2002, however, it had not been implemented pending the approval of its regulations. The Act was repealed as of January 1, 2013. It is expected that the provisions of the *Water Opportunities Act* will implement the fundamental requirements of S.W.S.S.A. Furthermore, on December 27, 2017, O. Reg. 588/17 was released under the *Infrastructure for Jobs and Prosperity Act, 2015* (I.J.P.A.), which outlines the requirements for asset management for municipalities. The results of the asset management review under this Act will need to be considered in light of the recent investments undertaken by the Township and the capital spending plan provided herein. The following sections describe these various resulting changes.

1.5 Sustainable Water and Sewage Systems Act

As noted earlier, the S.W.S.S.A. was passed on December 13, 2002. The intent of the Act was to introduce the requirement for municipalities to undertake an assessment of the "full cost" of providing their water and wastewater services. It is noted, however,

that this Act has been repealed. To provide broader context and understanding to other legislation discussed herein, a description of the Act is provided below.

Full costs for water service was defined in subsection 3(7) of the Act and included "…source protection costs, operating costs, financing costs, renewal and replacement costs and improvement costs associated with extracting, treating or distributing water to the public and such other costs which may be specified by regulation." Similar provisions were made for wastewater services in subsection 4(7) with respect to "…collecting, treating or discharging wastewater."

The Act would have required the preparation of two reports for submission to the Ministry of the Environment (or such other member of the Executive Council as may be assigned the administration of this Act under the *Executive Council Act*). The first report was on the "full cost of services" and the second was the "cost recovery plan." Once these reports were reviewed and approved by the Ministry, the municipality would have been required to implement the plans within a specified time period.

In regard to the **full cost of services** report, the municipality (deemed a regulated entity under the Act) would prepare and approve a report concerning the provision of water and sewage services. This report was to include an inventory of the infrastructure, a management plan providing for the long-term integrity of the systems, and would address the full cost of providing the services (other matters may be specified by the regulations) along with the revenue obtained to provide them. A professional engineer would certify the inventory and management plan portion of the report. The municipality's auditor would be required to provide a written opinion on the report. The report was to be approved by the municipality and then be forwarded to the Ministry along with the engineer's certification and the auditor's opinion. The regulations would stipulate the timing for this report.

The second report was referred to as a **cost recovery plan** and would address how the municipality intended to pay for the full costs of providing the service. The regulations were to specify limitations on what sources of revenue the municipality may use. The regulations may have also provided limits as to the level of increases any customer or class of customer may experience over any period of time. Provision was made for the municipality to implement increases above these limits; however, ministerial approval would be required first. Similar to the first report, the municipal auditor would provide a

written opinion on the report prior to Council's adoption, and this opinion must accompany the report when submitted to the Province.

The Act provided the Minister the power to approve or not approve the plans. If the Minister was not satisfied with the report or if a municipality did not submit a plan, the Minister may have a plan prepared. The cost to the Crown for preparing the plan would be recovered from the municipality. As well, the Minister may direct two or more regulated municipalities to prepare a joint plan. This joint plan may be directed at the onset or be directed by the Minister after receiving the individual plans from the municipalities.

The Minister also had the power to order a municipality to generate revenue from a specific revenue source or in a specified manner. The Minister may have also ordered a regulated entity to do or refrain from doing such things as the Minister considered advisable to ensure that the entity pays the full cost of providing the services to the public.

Once the plans were approved and in place, the municipality would be required to submit progress reports. The timing of these reports and the information to be contained therein would be established by the regulations. A municipal auditor's opinion must be provided with the progress report. Municipalities would also revise the plans if they deem the estimate does not reflect the full cost of providing the services, as a result of a change in circumstances, regulatory or other changes that affect their plan, etc. The municipality would then revise its prior plan, provide an auditor's opinion, and submit the plan to the Minister.

1.6 Financial Plans Regulation

On August 16, 2007, the M.O.E. passed O. Reg 453/07 which requires the preparation of financial plans for water (and wastewater) systems. The M.O.E. has also provided a Financial Plan Guidance Document to assist in 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 for the municipality to obtain its Drinking Water Licence;
- The financial plans shall be for a period of at least six years, but longer planning horizons are encouraged;

- As the regulation is under the *Safe Drinking Water Act, 2002*, the preparation of the plan is mandatory for water and encouraged for wastewater;
- The plan is considered a living document (i.e. will be updated as annual budgets are prepared) 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, providing detailed inventories, forecasting future users and volume usage and corresponding calculation of rates. In addition, P.S.A.B. 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 and net debt);
- The financial plans must be made available to the public (at no charge) upon request and be available on the municipality's website. The availability of this information must also be advertised; and
- The financial plans are to be approved by Resolution of the Council or governing body indicating that the drinking water system is financially viable.

In general, the financial principles of the draft regulations follow the intent of S.W.S.S.A. to move municipalities towards financial sustainability. Many of the prescriptive requirements, however, have been removed (e.g. preparation of two separate documents for provincial approval, auditor opinions, engineer certifications, etc.).

A Guideline ("Towards Financially Sustainable Drinking Shores – Water and Wastewater Systems") had been developed to assist municipalities in understanding the Province's direction and provided 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 stormwater systems is desirable given the inherent relationship among these services.

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

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

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

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

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

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

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

1.7 Water Opportunities Act, 2010

As noted earlier, since the passage of the *Safe Drinking Water Act, 2002*, continuing changes and refinements to the legislation have been introduced. Some of these Bills have found their way into law, while others have not been approved. Bill 72, the *Water Opportunities Act, 2010*, was introduced into legislation on May 18, 2010 and received Royal Assent on November 29, 2010.

The Act provides for the following elements:

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

With regard to the sustainability plans:

- The Act extends from the water financial plans and requires a more detailed review of the water financial plan and requires a full plan for wastewater and stormwater services; and
- Regulations 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;
- A financial plan;
- For water, a water conservation plan;
- An 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, with the following considerations:

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

Regulations will prescribe:

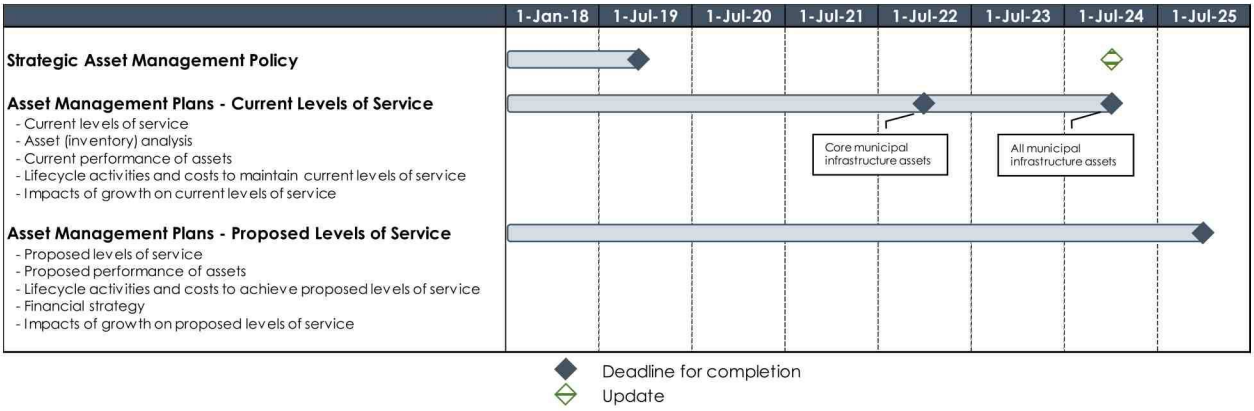
- Timing;
- Contents of the plans;
- Which identified portions of the plan will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.

As noted earlier, it is expected that this Act will implement the principles of the S.W.S.S.A. once all regulations are put in place.

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

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

Figure 1-1
Legislative Timelines set out by the Infrastructure for Jobs and Prosperity Act
Legislation related to Asset Management Plans



Note: on March 15, 2021, the Province filed Regulation 193/21 to extend all of the timelines of Regulation 588/17 by one year (reflected in the table above).

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

- Phase 1 – Asset Management Plan (by July 1, 2022):
    - For core assets, municipalities must have the following:
        - Inventory of assets;
        - Current levels of service measured by standard metrics; and
        - Costs to maintain levels of service.

- Phase 2 – Asset Management Plan (by July 1, 2024):
    - Same steps as Phase 1 but for all assets.
- Phase 3 – Asset Management Plan (by July 1, 2025):
    - Builds on Phase 1 and 2 by adding:
        - Proposed levels of service; and
        - Lifecycle management and financial strategy.

In relation to water and wastewater (which is considered a core asset), municipalities were to have an asset management plan that addresses the related infrastructure by July 1, 2022 (Phase 1). O. Reg. 588/17 specifies that the municipality's asset management plan must include the following for each asset category:

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

1.9 Forecast Growth and Servicing Requirements

The Township of Springwater services 4,387 metered water customers and 2,116 wastewater customers. Information on the existing number of customers and existing billable volumes was obtained from the Township.

For forecasting future water volumes, an average volume per customer of 180 cu.m. has been assumed for new water customers. This assumption was based on a review

of residential water bills over the past three (3) years. As a result, all additional water volume added by new customers is calculated using the Block 1 rate. For forecasting future billable wastewater volumes, an average volume per residential customer of 180 cu.m. has been used as wastewater charges are based on metered water volumes.

For future water and wastewater customers to be added to the systems, consideration has been given to development potential within the serviced areas of the Township over the forecast period 2024 to 2033. The growth forecast utilized in the Township's 2022 Development Charges Background Study was used to estimate future development. Significant growth in the Midhurst Secondary Plan area is anticipated over the forecast period.

Table 1-2 provides for the forecast of water users and volumes for Springwater, while Table 1-3 provides the forecast of wastewater users and volumes.

Table 1-2
Township of Springwater
2023 to 2033 Water System Forecast

Water Users Forecast

Year	Total Users	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
2023	402	201	402	402	402	402	402	402	402	402	402	402
2024	252		126	252	252	252	252	252	252	252	252	252
2025	302			151	302	302	302	302	302	302	302	302
2026	302				151	302	302	302	302	302	302	302
2027	302					151	302	302	302	302	302	302
2028	352						176	352	352	352	352	352
2029	352							176	352	352	352	352
2030	352								176	352	352	352
2031	352									176	352	352
2032	352										176	352
2033	352											176
Total	**3,672**	**201**	**528**	**805**	**1,107**	**1,409**	**1,736**	**2,088**	**2,440**	**2,792**	**3,144**	**3,496**
m^3/user	180	180	180	180	180	180	180	180	180	180	180	180
Annual Flow		**36,180**	**95,032**	**144,885**	**199,237**	**253,590**	**312,442**	**375,794**	**439,147**	**502,499**	**565,851**	**629,204**

Water Customer Forecast	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387
New - Growth	201	528	805	1,107	1,409	1,736	2,088	2,440	2,792	3,144	3,496
Total	**4,588**	**4,915**	**5,192**	**5,494**	**5,796**	**6,123**	**6,475**	**6,827**	**7,179**	**7,531**	**7,883**

Table 1-2 (Cont'd)
Township of Springwater
2023 to 2033 Water System Forecast

Water Volume Forecast (m^3)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Block 1											
Existing	614,147	614,147	614,147	614,147	614,147	614,147	614,147	614,147	614,147	614,147	614,147
New	36,180	95,032	144,885	199,237	253,590	312,442	375,794	439,147	502,499	565,851	629,204
Subtotal Block 1	**650,327**	**709,179**	**759,032**	**813,384**	**867,737**	**926,589**	**989,941**	**1,053,294**	**1,116,646**	**1,179,998**	**1,243,351**
Block 2											
Existing	209,934	209,934	209,934	209,934	209,934	209,934	209,934	209,934	209,934	209,934	209,934
New											
Subtotal Block 2	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**	**209,934**
Block 3											
Existing	76,423	76,423	76,423	76,423	76,423	76,423	76,423	76,423	76,423	76,423	76,423
New											
Subtotal Block 3	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**	**76,423**
Block 4											
Existing	78,688	78,688	78,688	78,688	78,688	78,688	78,688	78,688	78,688	78,688	78,688
New											
Subtotal Block 4	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**	**78,688**
Total	**1,015,372**	**1,074,224**	**1,124,077**	**1,178,429**	**1,232,782**	**1,291,634**	**1,354,986**	**1,418,339**	**1,481,691**	**1,545,043**	**1,608,396**

Table 1-3
Township of Springwater
2023 to 2033 Wastewater System Forecast

Wastewater Users Forecast

Year	Total Users*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
2023	169	85	169	169	169	169	169	169	169	169	169	169
2024	117		59	117	117	117	117	117	117	117	117	117
2025	134			67	134	134	134	134	134	134	134	134
2026	134				67	134	134	134	134	134	134	134
2027	134					67	134	134	134	134	134	134
2028	802						401	802	802	802	802	802
2029	282							141	282	282	282	282
2030	282								141	282	282	282
2031	282									141	282	282
2032	282										141	282
2033	282											141
Total	**2,898**	**85**	**228**	**353**	**487**	**621**	**1,089**	**1,631**	**1,912**	**2,194**	**2,476**	**2,757**
m^3/user	180	180	180	180	180	180	180	180	180	180	180	180
Annual Flow		**15,300**	**41,040**	**63,540**	**87,660**	**111,780**	**196,020**	**293,518**	**344,216**	**394,914**	**445,612**	**496,310**

*From 2023-2027 the Township is receiving 35% of the revenue from Midhurst units, in 2028 the Township will assume the interim WWTP and full billing revenue from Midhurst customers

Wastewater Customer Forecast	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116
New - Growth	85	228	353	487	621	1,089	1,631	1,912	2,194	2,476	2,757
Total	**2,201**	**2,344**	**2,469**	**2,603**	**2,737**	**3,205**	**3,747**	**4,028**	**4,310**	**4,592**	**4,873**

Wastewater Flows Forecast (m^3)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	425,973	425,973	425,973	425,973	425,973	425,973	425,973	425,973	425,973	425,973	425,973
New	15,300	41,040	63,540	87,660	111,780	196,020	293,518	344,216	394,914	445,612	496,310
Total	**441,273**	**467,013**	**489,513**	**513,633**	**537,753**	**621,993**	**719,491**	**770,189**	**820,887**	**871,585**	**922,283**

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

Chapter 2
Capital Infrastructure Needs

2. Capital Infrastructure Needs

2.1 Capital Forecast

Capital forecasts have been provided for the water and wastewater systems and are presented in Tables 2-1 and 2-2 (Note: the costs have been provided in uninflated dollars). The basis for these forecasts is the Township's Capital Budgets in addition to capital infrastructure replacement needs based on recommendations from the Ontario Clean Water Authority (O.C.W.A.) in the Township's 2022 Asset Management Plan. The capital plan addresses both growth and replacement projects.

A summary of the capital works related to the water and wastewater services is provided in the following tables. Note, the capital plans for water and wastewater do not include the water and wastewater treatment plants as well as linear infrastructure being constructed by the developing landowners in Midhurst. For water, the anticipated total construction cost is approximately $74 million and for wastewater the anticipated total construction cost is approximately $181 million. As these capital projects will be funded directly by the developing landowners, the capital costs do not impact the water and wastewater rates, however, as noted in Chapter 5 of this report, this infrastructure will have an operating impact once it is assumed by the Township.

Table 2-1
Township of Springwater
2024 to 2033 Water Capital Forecast Summary (Uninflated $)

Description	Total 2024 to 2033	Years Undertaken
Capital Expenditures		
Growth Related Projects		
Elmvale		
Additional Water Storage Reservoir (Elmvale) -	828,000	2025
Minesing		
Minesing - New Well (Design, EA and Construction) -	1,162,000	2025 to 2030
Repair/Replacement Projects		
Anten Mills		
Pump Inspections, Repairs, Replacements	62,000	2024
Del Trend		
Pump Inspections, Repairs, Replacements	33,000	2026
MCC -	180,000	2027
Elmvale		
Rehab storage tanks	55,000	2026
High lift pumps	51,000	2027
Booster Station MCC -	61,000	2030
Hillsdale		
Pumps	45,000	2027
MCC	58,000	2028
Midhurst		
Idlewood - MCC	56,000	2027
Vespra Downs		
Vespra Downs - replace generator	58,000	2028
Township Wide		
Watermain/Distribution system upgrades	621,000	2024 to 2026
Water/wastewater facilities condition assessments	309,000	2024
Lifecycle:		
OCWA Recommended Expenditures	10,572,000	2031 to 2033
Total	**14,151,000**	

Table 2-2
Township of Springwater
2024 to 2033 Wastewater Capital Forecast Summary (Uninflated $)

Description	Total 2024 to 2033	Years Undertaken
Capital Expenditures		
Growth Related Projects		
Elmvale		
Main Pumping Station & Foremain (Elmvale) -	5,820,000	2024 to 2026
Flow Equalization Expansion (Royal Oaks) -	246,000	2025 to 2026
Inlet Pipework Modifications/Install Mixer (Stonemanor WWTP) - Growth	82,000	2024
Upsize Sanitary Sewer on Amelia Street -	994,000	2026
Elmvale WWTP - EA for plant expansion -	206,000	2024
Expand Wastewater Treatment Plant (Elmvale) -	12,381,000	2027
WWTP - Filter Upgrades - Teritary filters (4) replacement	2,678,000	2024
Repair/Replacement Projects		
Elmvale		
WWTP - replacement of SCADA system	164,000	2026
WWTP - replace UV modules (12) -	824,000	2024
MH installation for easement access	106,000	2025
Gravity Sewer Replacement/repair work	1,302,000	2024 to 2030
WWTP - replacement of MCC -	133,000	2025
Sludge Transfer Pumps (At Elmvale WWTP)	155,000	2024
Inflow & Infiltration abatement program	1,796,000	2025 to 2029
WWTP - rehab jet aerators and jet pump	66,000	2026
WWTP - rehab blowers	58,000	2028
WWTP - inlet corrosion abatement	174,000	2028
WWTP - Digester complex - pump rehab/replacments	93,000	2028
WWTP- vortex grit separator upgrade -	597,000	2029
Elmvale WWTP - replace gen set	246,000	2030
Bar Screens Replacement	1,803,000	2024
Snow Valley		
Snow Valley WWTP - replace screw screening system	119,000	2029
Lifecycle:		
OCWA Recommended Expenditures	7,832,000	2031 to 2033
Total	**37,875,000**	

Chapter 3
Lifecycle Costing

3. Lifecycle Costing

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), install, commission, operate, maintain and disposal. Figure 3-1 depicts these stages in a schematic form.

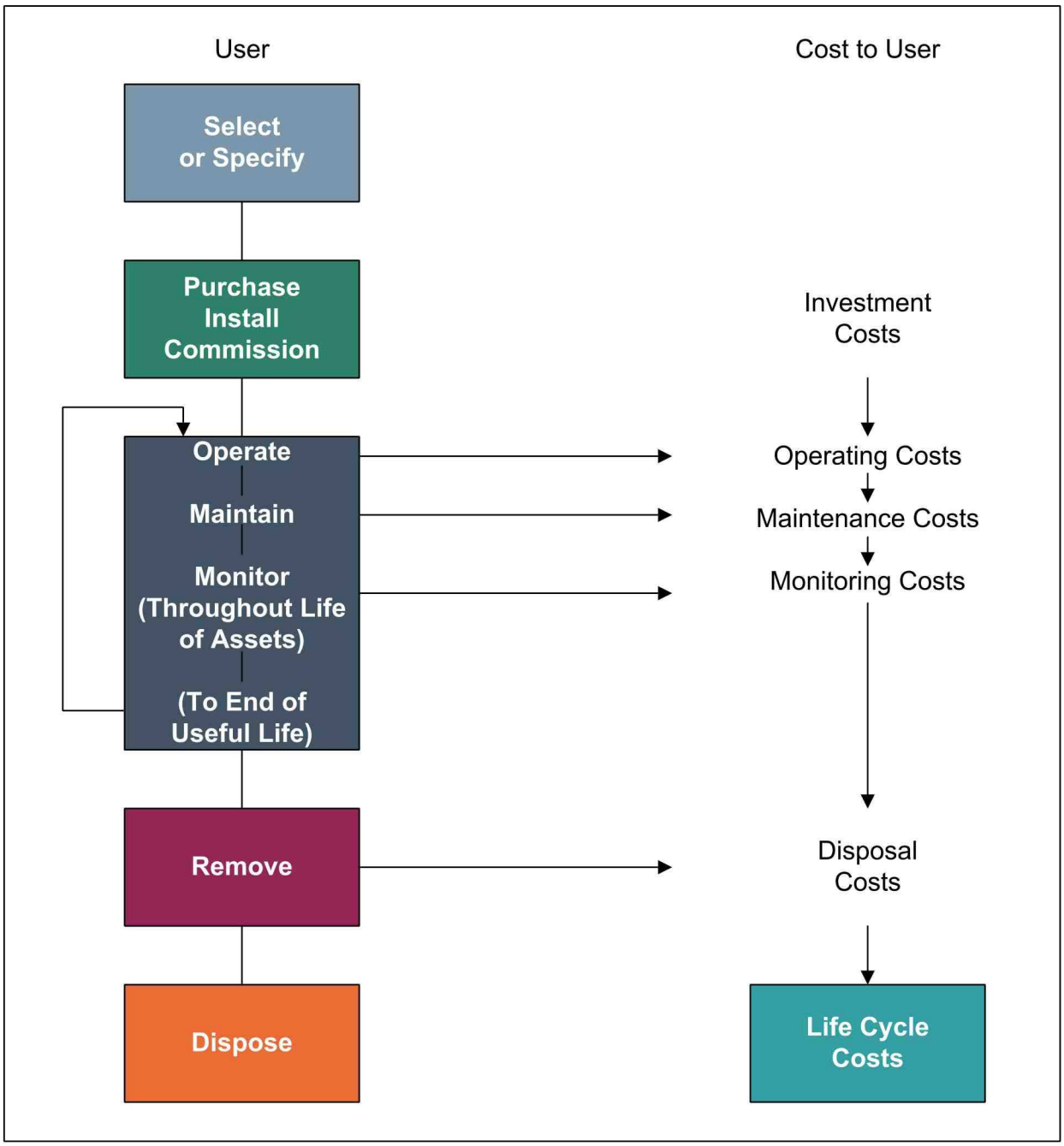
3.1.2 Financing Costs

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

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

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

Figure 3-1
Lifecycle Costing



New construction related to growth could produce development charges and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are being acquired to allow growth within the Township to continue. As well, debentures

could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

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

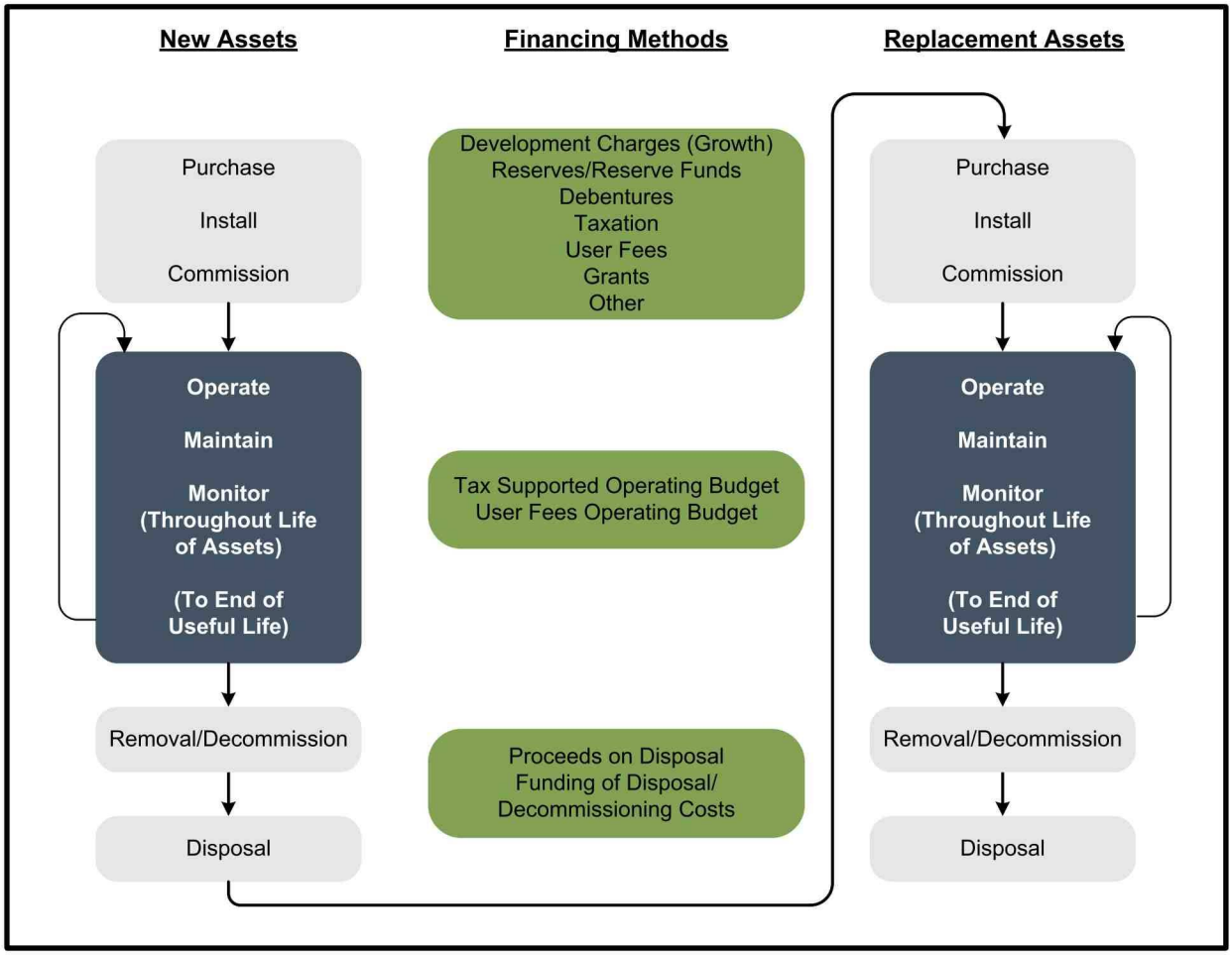
As referred to earlier, growth-related financing methods such as development charges and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of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

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

Charging for the cost of using up an asset is the fundamental concept behind depreciation 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

depreciation. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.

Figure 3-2
Financing Lifecycle Costs



3.1.3 Costing Methods

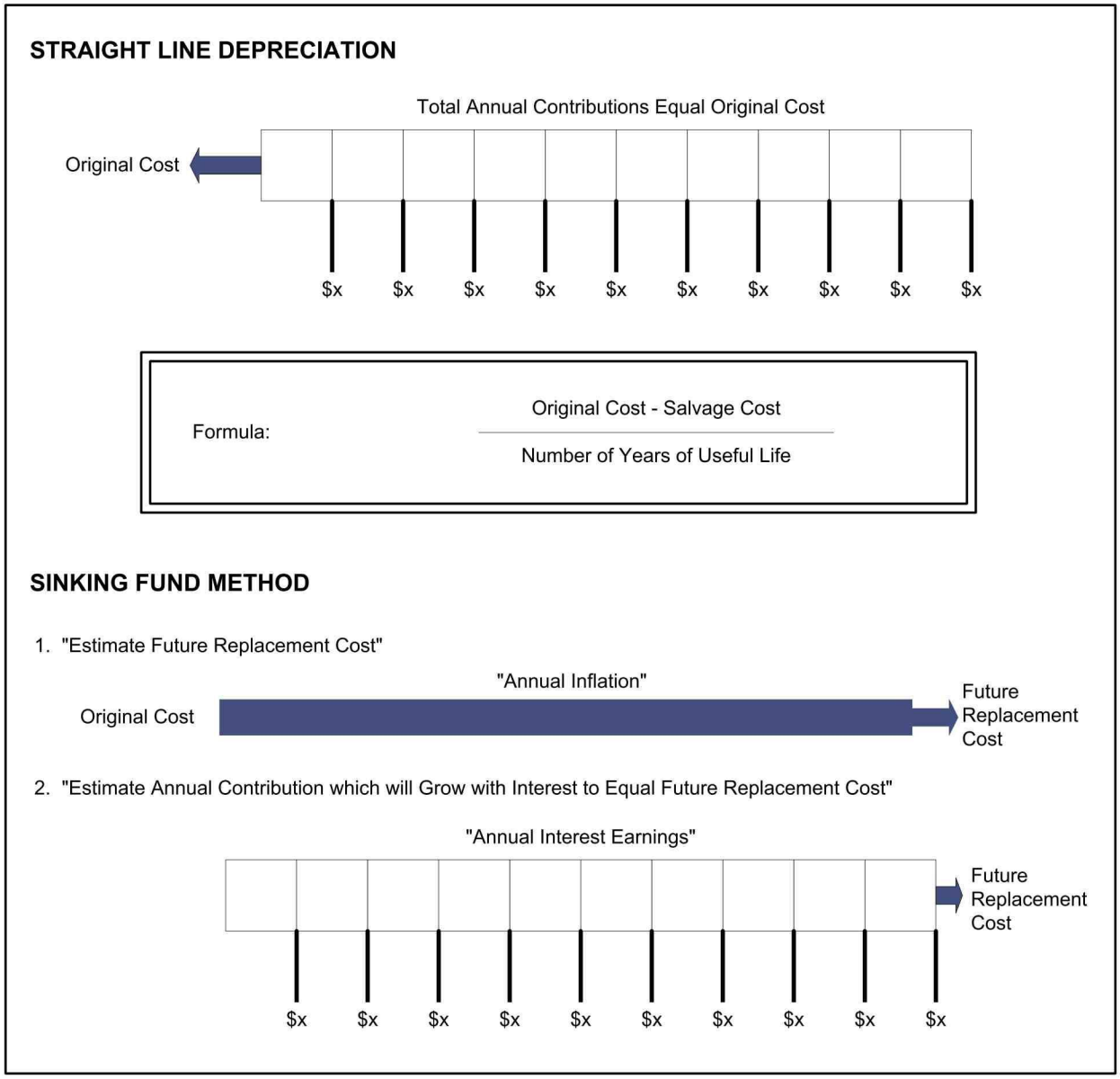
There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Depreciation Method. This method recognizes the reduction in the value of the asset through wear and tear and aging. There are two commonly used forms of depreciation: the straight-line method and the reducing balance method (shown graphically in Figure 3-3).

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

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

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

Figure 3-3



3.2 Impact on Budgets

Detailed water and wastewater systems inventory information was obtained from the Township. The age of the water system dates back to the early 1960's. The wastewater system dates back to the mid 1990's. The total value of existing water infrastructure is $195.29 million, and the value of existing wastewater infrastructure is $92.77 million.

The detailed water and wastewater inventories are provided in Appendices A and B, respectively. As well, the lifecycle "sinking fund" contribution amounts for each piece of infrastructure have also been included. These calculations determine the level of investment the Township may wish to consider as part of its budgeting practices. This information is summarized in Figure 3-4.

Figure 3-4
Township of Springwater
Summary of Water and Wastewater Infrastructure

Area	Total Replacement Value	Amount included in 10-year forecast	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water				
Water Facilities	36,448,847	10,133,360	185,154,029	1,503,177
Watermains	158,838,542			6,313,148
Total Water	**195,287,389**	**10,133,360**	**185,154,029**	**7,816,326**
Wastewater				
Wastewater Facilities	32,595,640	14,274,900	78,497,220	1,335,628
Sanitary Sewers	60,176,480			2,882,651
Total Wastewater	**92,772,120**	**14,274,900**	**78,497,220**	**4,218,279**
Total	**288,059,509**	**24,408,260**	**263,651,249**	**12,034,605**

Investment per customer is $44,515 for water and $43,843 for wastewater

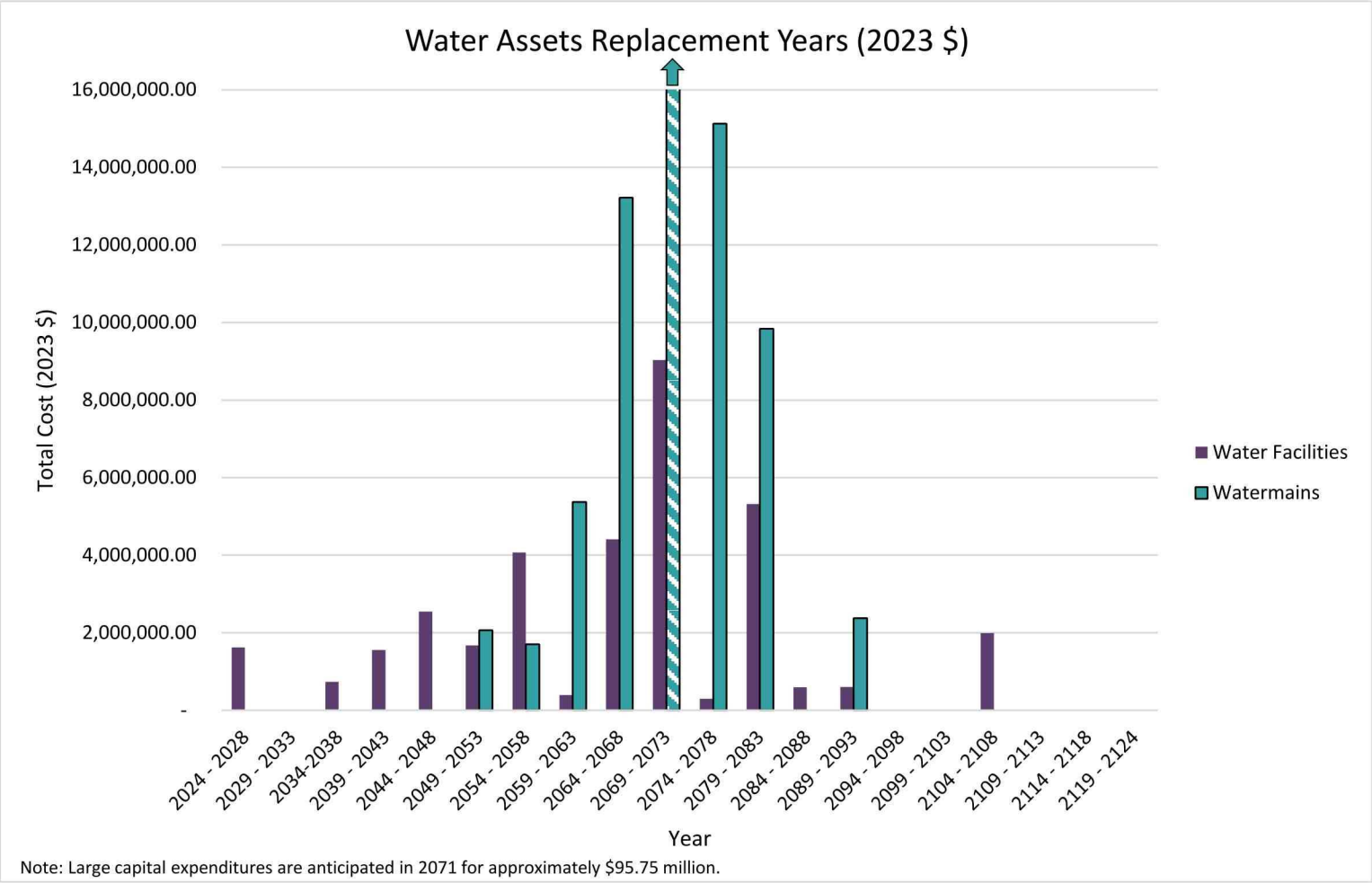
The total value of the water and wastewater systems equate to an average investment per customer of $44,515 for water and $43,843 for wastewater.

With respect to lifecycle costing contained in the Appendices, the following information was taken into consideration:

- approximate age;
- material type;
- main lengths;
- diameter of the mains;
- estimated useful life; and
- estimated replacement costs.

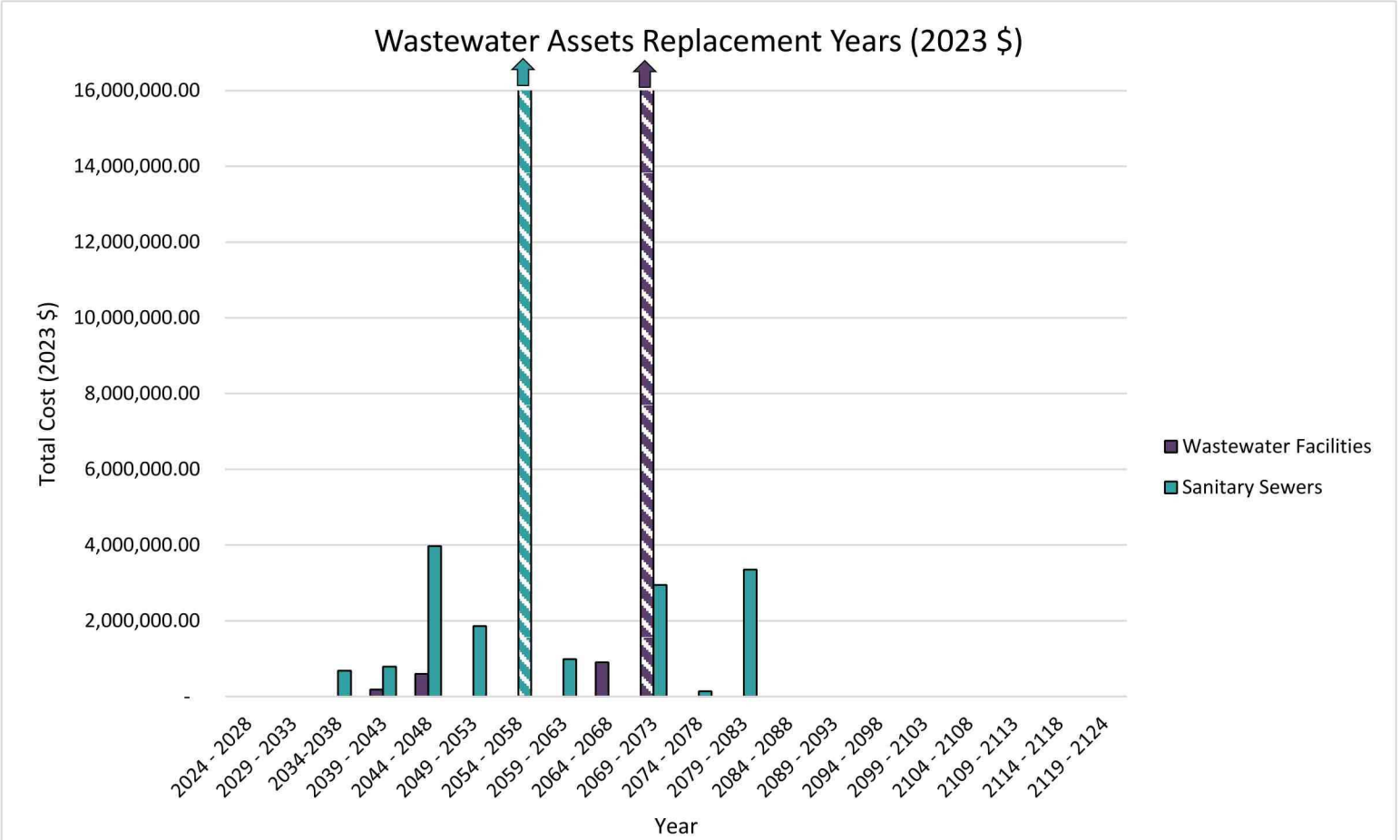
Summaries of both water and wastewater assets are shown on Figures 3-5 and 3-6. These figures show when the assets are coming due and the cost of replacement in 2023 dollars.

Figure 3-5
Township of Springwater
Summary of Water Infrastructure Replacement Years (2023 $)



Note: Large capital expenditures are anticipated in 2071 for approximately $95.75 million.

Figure 3-6
Township of Springwater
Summary of Wastewater Infrastructure Replacement Years (2023 $)



Note: Large capital expenditures are anticipated in 2058 and 2069 for approximately $41.30 million and $30.91 million, respectively.

Chapter 4
Capital Cost Financing Options

4. Capital Cost Financing Options

4.1 Summary of Capital Cost Financing Alternatives

Historically, the powers that municipalities had to raise alternative revenues to taxation to fund capital services have been restrictive. Over the past decade, legislative reforms have been introduced. Some of these have expanded municipal powers (e.g. Bill 26 introduced in 1996 to provide for expanded powers for imposing fees and charges), while others appear to restrict them (Bill 98 in 1997 providing amendments to the D.C.A.).

The Province passed a new *Municipal Act* which came into force on January 1, 2003. Part XII of the Act and O. Reg. 584/06 govern a municipality's ability to impose fees and charges. In contrast to the previous *Municipal Act*, this Act provides municipalities with broadly defined powers and does not differentiate between fees for operating and capital purposes. It is anticipated that the powers to recover capital costs under the previous *Municipal Act* will continue within the new Statutes and Regulations, as indicated by s.9(2) and s.452 of the new *Municipal Act*.

Under s.484 of *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*. To this end, on December 20, 2002, O. Reg. 390/02 was filed, which allowed for the *Local Improvement Act* to be deemed to remain in force until April 1, 2003. O. Reg. 119/03 was enacted on April 19, 2003, which restored many of the previous *Local Improvement Act* provisions; however, the authority is now provided under the *Municipal Act*.

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

Recovery Methods	Section Reference
• *Development Charges Act, 1997*	4.2
• *Municipal Act*	4.3
○ Fees and Charges	
○ Sewer and Water Area Charges	
○ Connection Fees	
○ Local Improvements	

Recovery Methods	Section Reference
• Historical Grant Funding Availability	4.4
• Existing Reserves/Reserve Funds	4.5
• Debenture Financing	4.6
• Infrastructure Ontario	4.7

4.2 Development Charges Act, 1997

In November, 1996, the Ontario Government introduced Bill 98, a new *Development Charges Act*. 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. Generally, the Act provided the following changes to the former Act:

- Replace those sections of the 1989 Act that govern municipal development charges;
- Limit services which can be financed from development charges, specifically excluding parkland acquisition, administration buildings, and cultural, entertainment, tourism, solid waste management and hospital facilities;
- Ensure that the level of service used in the calculation of capital costs will not exceed the average level of service over the previous decade. Level of service is to be measured from both a quality and quantity perspective;
- Provide that uncommitted excess capacity available in existing municipal facilities and benefits to existing residents are removed from the calculation of the charge;
- Ensure that the development charge revenues collected by municipalities are spent only on those capital costs identified in the calculation of the development charge;
- Require municipalities to contribute funds (e.g. taxes, user charges or other non-development charge revenues) to the financing of certain projects primarily funded from development charges. The municipal contribution is 10 percent for services such as recreation, parkland development, libraries, etc.;
- Permit (but apparently not require) municipalities to grant developers credits for the direct provision of services identified in the development charge calculation

and, when credits are granted, require the municipality to reimburse the developer for the costs the municipality would have incurred if the project had been financed from the development charge reserve fund;
- Set out provisions for front-end financing capital projects (limited to essential services) required to service new development; and
- Set out provisions for appeals and complaints.

In late 2015, the Province approved further amendments to the D.C.A. With respect to water and wastewater, the only changes are for the municipality to provide an asset management calculation for the growth-related works and for the Council to consider (but not necessarily approve) area-specific rates.

As of 2019, a number of amendments to the D.C.A. were made through the Bill 108 the More Homes, More Choice Act, 2019, Bill 138 the Plan to Build Ontario Together Act, 2019, Bill 197 the COVID-19 Economic Recovery Act, 2020, and Bill 213 the Better for People, Smarter for Business Act, 2020. With respect to water and wastewater, a few changes may impact D.C. revenue collections:

1. Timing of Collection:

    a. D.C. Rate Freeze - For developments proceeding through site plan or zoning by-law amendment, the D.C. rate is frozen at the time the application is submitted. The D.C. remains frozen for two years after the application is approved. Should the D.C. study be updated to increase water and wastewater D.C. rates during this period, the Municipality would not be able to collect for this increase.

    b. D.C. Installment Payments - For rental housing and institutional development D.C.s are paid over 5 years and for non-profit housing, D.C.s are paid over 20 years. This provides a delay in receipt of D.C. revenues which will need to be cash-flowed by the Municipality.

2. Mandatory Exemption (additional units) – For existing dwellings, one additional dwelling unit could be constructed within the existing dwelling. This additional dwelling unit is exempt from D.C.s. With the changes to the Act, one additional dwelling unit may be constructed within a new residential dwelling, which would be exempt from D.C.s. Further, one ancillary dwelling unit may be constructed on the same property as a new unit. This ancillary dwelling would be exempt

from D.C.s. As these new additional units are exempt from D.C.s, no D.C. revenue may be collected for these units, however, each additional unit provides additional population which requires capacity in the water and wastewater treatment plants. As a result, consideration for these additional units should be made during the D.C. study process to ensure all capacity available to growth is allocated appropriately.

3. Mandatory Exemption (universities) – A new mandatory exemption has been introduced which exempts the payment of D.C.s for developments of land intended for use by a university that receives operating funds from the Government.

The Province introduced Bill 23: *More Homes Built Faster Act*, on October 25, 2022, which subsequently received Royal Assent on November 28, 2022. The Bill amended several items within the D.C.A. and other legislation. These changes impacted a municipality's ability to recover D.C.s for growth-related water and wastewater capital costs.

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 Local Planning Appeal Tribunal (LPAT, formerly known as the O.M.B.).

Section 221 of the previous *Municipal Act* permitted municipalities to impose charges, by by-law, on owners or occupants of land who would or might derive benefit from the

construction of sewage (storm and sanitary) or water works being authorized (in a specific benefit area). For a by-law imposed under this section of the previous Act:

- A variety of different means could be used to establish the rate and recovery of the costs and 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 with respect to costs of major capital works, even though an immediate benefit was not enjoyed;
- Non-abutting owners could be charged;
- Recovery was authorized against existing works, where a new water or sewer main 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;
- Repayment was secured; and
- LPAT approval was not required.

While under the new *Municipal Act* no provisions are provided specific to the previous s.221, the intent to allow capital cost recovery through fees and charges is embraced within s.391. The new *Municipal Act* also maintains the ability of municipalities to impose capital charges for water and sewer services on landowners not receiving an immediate benefit from the works. Under s.391(2) of the Act, "a fee or charge imposed under subsection (1) for capital costs related to sewage or water services or activities may be imposed on persons not receiving an immediate benefit from the services or activities but who will receive a benefit at some later point in time." Also, capital charges imposed under s.391 are not appealable to the LPAT on the grounds that the charges are "unfair or unjust."

Section 222 of the previous *Municipal Act* permitted municipalities to pass a by-law requiring buildings to connect to the municipality's sewer and water systems, charging the owner for the cost of constructing services from the mains to the property line. Under the new *Municipal Act*, this power still exists under Part II, General Municipal Powers (s.9 (3) b of the *Municipal Act*). Enforcement and penalties for this use of power are contained in s.427 (1) of the *Municipal Act*.

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 LPAT, 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, O. 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*.

4.4 Grant Funding Availability

Federal Infrastructure Funding

Phase 1 (April 1, 2016 to March 31, 2018)

Funding was provided by the Government of Canada to expressly help municipalities with repair and rehabilitation projects. Funding was mainly provided through the Clean Water and Wastewater Fund (C.W.W.F.) and Public Transit Infrastructure Fund (P.T.I.F.) in Federal Phase 1 projects. The C.W.W.F. was announced in Ontario on September 15, 2016. The Fund is $1.1 billion for water, wastewater, and storm water systems in Ontario. The federal government provided $569 million and Ontario and municipal governments provided $275 million each.

Over 1,300 water, wastewater, and storm water projects have been approved in Ontario through the C.W.W.F. In Ontario, P.T.I.F. accounted for nearly $1.5 billion of the national total of $3.4 billion. The program was allocated by ridership numbers from the Canadian Urban Transit Association. The Association of Municipalities of Ontario (A.M.O.) understands that $1 billion of Ontario's share has been approved.

Phase 2: Next Steps

The federal government announced Phase 2 of its infrastructure funding plan with a total of $180 billion spent over 11 years. In addition to the balance of funding for previous green, social, and public transit infrastructure funds ($20 billion each, including Phase 1), the government has added $10.1 billion for trade and transportation infrastructure and $2 billion for rural and northern communities.

In Phase 2, Ontario was eligible for $11.8 billion including $8.3 billion for transit, $2.8 billion for green infrastructure, $407 million for community, culture and recreation and $250 million for rural and northern communities.

Federal Gas Tax

The federal Gas Tax is a permanent source of funding provided up front, twice-a-year, to Provinces and Territories, who in turn flow this funding to their municipalities to support local infrastructure priorities. Municipalities can pool, bank and borrow against this funding, providing significant financial flexibility. Every year, the federal Gas Tax provides over $2 billion and supports approximately 2,500 projects in communities across Canada. Each municipality selects how best to direct the funds with the flexibility provided to make strategic investments across 18 different project categories, which include other water and wastewater servicing.

Ontario Government

The Province has taken steps to increase municipal infrastructure funding. The Ontario Community Infrastructure Fund (O.C.I.F.) was increased in 2016 with formula-based support growing to $200 million, and application funding growing to $100 million annually by 2018/2019. As well, $15 million annually will go to the new Connecting Links program to help pay for the construction and repair costs of municipal roads that connect communities to provincial highways. This is on top of the Building Ontario Up investment of $130 billion in public infrastructure over 10 years starting in 2015.

Recently the Province announced funding through a new Ontario Infrastructure Bank. This new, arms-length, board-governed agency will assist investors and institutions to further participate in large-scale infrastructure projects. The total amount available for municipal water and wastewater infrastructure is not yet known, however, recent

announcements suggested a share of the total available funds would be allocated to housing-enabling infrastructure.

4.5 Existing Reserves/Reserve Funds

The Township has established reserves and reserve funds for water and wastewater costs. The following table summarizes the water and wastewater reserves utilized in this analysis and their respective balances at December 31, 2022:

Reserve	Dec. 31 2022
Water	
Capital Reserve	10,269,530
Elmvale Development Charges Reserve Fund	(10,099)
Previous Development Charge Reserve Funds	604,366
Wastewater	
Capital Reserve	156,727
Elmvale Development Charges Reserve Fund	(98,356)
Previous Development Charge Reserve Funds	274,504

As provided above, the Elmvale water and wastewater development charges reserve funds are in a deficit balance due to recent investments in growth-related infrastructure.

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 Regulation 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue may be allotted for servicing the debt (i.e. debt charges). The Township of Springwater's 2022 calculation on Debt Capacity is shown on Schedule 81 of the Township's most recent Financial Information Return (F.I.R.). This calculates to the Township's estimated annual repayment limit of approximately $6.23 million. Based

upon 20-year financing at an assumed rate of 5.22%, the available debt for the Township is approximately $76.20 million.

4.7 Infrastructure Ontario

Infrastructure Ontario (I.O.) is an arms-length crown corporation, which has been set up as a tool to offer low-cost and longer-term financing to assist municipalities in renewing their infrastructure (this corporation has merged the former O.S.I.F.A. into its operations). I.O. combines the infrastructure renewal needs of municipalities into an infrastructure investment "pool." I.O. will raise investment capital to finance loans to the public sector by selling a new investment product called Infrastructure Renewal Bonds to individual and institutional investors.

I.O. provides access to infrastructure capital that would not otherwise be available to smaller borrowers. Larger borrowers receive a longer term on their loans than they could obtain in the financial markets, and can also benefit from significant savings on transaction costs such as legal costs and underwriting commissions. Under the I.O. approach, all borrowers receive the same low interest rate. I.O. will enter into a financial agreement with each municipality subject to technical and credit reviews, for a loan up to the maximum amount of the loan request.

The first round of the former O.S.I.F.A.'s 2004/2005 infrastructure renewal program was focused on municipal priorities of clean water infrastructure, sewage treatment facilities, municipal roads and bridges, public transit and waste management infrastructure. The focus of the program was expanded in 2005/2006 somewhat to include:

- clean water infrastructure;
- sewage infrastructure;
- waste management infrastructure;
- municipal roads and bridges;
- public transit;
- municipal long-term care homes;
- renewal of municipal social housing and culture; and
- tourism and recreation infrastructure.

With the merging of O.S.I.F.A. and I.O., the program was broadened in late 2006 to also include municipal administrative buildings, local police and fire stations, emergency vehicles and equipment, ferries, docks and municipal airports.

To be eligible to receive these loans, municipalities must submit a formal application along with pertinent financial information. Allotments are prioritized and distributed based upon the Province's assessment of need.

The analysis provided herein assumes that the Township will require non-growth related debt financing for the capital projects identified. No non-growth related debt is required for water. Approximately $6.63 million in non-growth related debt is required for wastewater.

4.8 Recommended Capital Financing Approach

Due to significant growth-related capital needs for wastewater, two (2) rate calculation scenarios have been provided in this rate study:

1. 4% increases annually for water, and 10% increases annually for wastewater;
2. Phased increases for water and 8% annual increases for wastewater with alternative financing approach.
    a. Water: 3% annual increases from 2024 to 2025, 4% from 2026 to 2028, and 5% every year thereafter; and
    b. Wastewater: 8% annual increase with developing land owners front-ending the Elmvale main pumping station and wastewater treatment plant expansion.

Of the various funding alternatives provided in this section, the following are recommended for further consideration by the Township of Springwater for the capital expenditures (inflated) provided in Chapter 2.

Scenario 1

Description	Water	Wastewater
Capital Financing		
Provincial/Federal Grants	-	-
Development Charges Reserve Fund	227,040	1,296,420
Non-Growth Related Debenture Requirements	-	6,632,580
Growth Related Debenture Requirements	1,112,240	19,713,000
Operating Contributions	-	-
Lifecycle Reserve Fund	-	-
Water Reserve	12,811,720	-
Wastewater Reserve	-	10,233,000
Total Capital Financing	**14,151,000**	**37,875,000**

Scenario 2

Description	Water	Wastewater
Capital Financing		
Provincial/Federal Grants	-	-
Developer Front-Ending Contributions (Elmvale)	-	17,713,000
Development Charges Reserve Fund	227,040	1,296,420
Non-Growth Related Debenture Requirements	-	6,632,580
Growth Related Debenture Requirements	1,112,240	2,000,000
Operating Contributions	-	-
Lifecycle Reserve Fund	-	-
Water Reserve	12,811,720	-
Wastewater Reserve	-	10,233,000
Total Capital Financing	**14,151,000**	**37,875,000**

Table 4-1 provides for the full capital expenditure and funding program by year for water scenarios 1 and 2 (Note: there is no change in the capital expenditure and funding program between the two scenarios for water services). Tables 4-2 and 4-3 provide for the full capital expenditure and funding program by year for wastewater scenarios 1 and 2, respectively.

Table 4-1
Scenario 1 and 2
Capital Budget Forecast – Water (inflated $)

Description	Budget 2023	Total	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital Expenditures												
Growth Related Projects												
Elmvale												
Additional Water Storage Reservoir (Elmvale) -	-	828,000	-	828,000	-	-	-	-	-	-	-	-
Minesing												
Minesing - New Well (Design, EA and Construction) -	-	1,162,000	-	101,000	382,000	93,000	20,000	21,000	545,000	-	-	-
Repair/Replacement Projects												
Anten Mills												
Pump Inspections, Repairs, Replacements	-	62,000	62,000	-	-	-	-	-	-	-	-	-
Del Trend												
Pump Inspections, Repairs, Replacements	-	33,000	-	-	33,000	-	-	-	-	-	-	-
MCC -	-	180,000	-	-	-	180,000	-	-	-	-	-	-
Elmvale												
Rehab storage tanks	-	55,000	-	-	55,000	-	-	-	-	-	-	-
High lift pumps	-	51,000	-	-	-	51,000	-	-	-	-	-	-
Booster Station MCC -	-	61,000	-	-	-	-	-	-	61,000	-	-	-
Hillsdale												
Pumps	-	45,000	-	-	-	45,000	-	-	-	-	-	-
MCC	-	58,000	-	-	-	-	58,000	-	-	-	-	-
Midhurst												
Idlewood - MCC	-	56,000	-	-	-	56,000	-	-	-	-	-	-
Vespra Downs												
Vespra Downs - replace generator	-	58,000	-	-	-	-	58,000	-	-	-	-	-
Township Wide												
Water Meter Replacement Program - Township wide	150,000	-	-	-	-	-	-	-	-	-	-	-
Watermain/Distribution system upgrades	325,000	621,000	201,000	207,000	213,000	-	-	-	-	-	-	-
Water/wastewater facilities condition assessments	100,000	309,000	309,000	-	-	-	-	-	-	-	-	-
Lifecycle:		-	-	-	-	-	-	-	-	-	-	-
OCWA Recommended Expenditures	-	10,572,000	-	-	-	-	-	-	-	3,420,000	3,523,000	3,629,000
Total Capital Expenditures	**575,000**	**14,151,000**	**572,000**	**1,136,000**	**683,000**	**425,000**	**136,000**	**21,000**	**606,000**	**3,420,000**	**3,523,000**	**3,629,000**
Capital Financing												
Provincial/Federal Grants		-										
Development Charges Reserve Fund	-	227,040	-	-	168,080	40,920	8,800	9,240	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	1,112,240	-	872,440	-	-	-	-	239,800	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	575,000	12,811,720	572,000	263,560	514,920	384,080	127,200	11,760	366,200	3,420,000	3,523,000	3,629,000
Total Capital Financing	**575,000**	**14,151,000**	**572,000**	**1,136,000**	**683,000**	**425,000**	**136,000**	**21,000**	**606,000**	**3,420,000**	**3,523,000**	**3,629,000**

Table 4-2
Scenario 1
Capital Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Total	Forecast									
			2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital Expenditures												
Growth Related Projects												
Elmvale												
Main Pumping Station & Foremain (Elmvale) -	-	5,820,000	515,000	5,305,000	-	-	-	-	-	-	-	-
Flow Equalization Expansion (Royal Oaks) -	-	246,000	-	27,000	219,000	-	-	-	-	-	-	-
Inlet Pipework Modifications/Install Mixer (Stonemanor WWTP) - Growth	-	82,000	82,000	-	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Plan -	496,496	-	-	-	-	-	-	-	-	-	-	-
Upsize Sanitary Sewer on Amelia Street -	-	994,000	-	-	994,000	-	-	-	-	-	-	-
Elmvale WWTP - EA for plant expansion -	-	206,000	206,000	-	-	-	-	-	-	-	-	-
Expand Wastewater Treatment Plant (Elmvale) -	-	12,381,000	-	-	-	12,381,000	-	-	-	-	-	-
WWTP - Filter Upgrades - Teritary filters (4) replacement	-	2,678,000	2,678,000	-	-	-	-	-	-	-	-	-
Repair/Replacement Projects												
Elmvale												
WWTP - replacement of SCADA system	150,000	164,000	-	-	164,000	-	-	-	-	-	-	-
WWTP - replace UV modules (12) -	-	824,000	824,000	-	-	-	-	-	-	-	-	-
MH installation for easement access	125,000	106,000	-	106,000	-	-	-	-	-	-	-	-
Gravity Sewer Replacement/repair work	372,500	1,302,000	170,000	175,000	180,000	186,000	191,000	197,000	203,000	-	-	-
WWTP - replacement of MCC -	175,000	133,000	-	133,000	-	-	-	-	-	-	-	-
Sludge Transfer Pumps (At Elmvale WWTP)	-	155,000	155,000	-	-	-	-	-	-	-	-	-
Inflow & Infiltration abatement program	-	1,796,000	-	265,000	273,000	281,000	290,000	687,000	-	-	-	-
WWTP - rehab jet aerators and jet pump	-	66,000	-	-	66,000	-	-	-	-	-	-	-
WWTP - rehab blowers	-	58,000	-	-	-	-	58,000	-	-	-	-	-
WWTP - inlet corrosion abatement	-	174,000	-	-	-	-	174,000	-	-	-	-	-
WWTP - Digester complex - pump rehab/replacments	-	93,000	-	-	-	-	93,000	-	-	-	-	-
WWTP- vortex grit separator upgrade -	-	597,000	-	-	-	-	-	597,000	-	-	-	-
Elmvale WWTP - replace gen set	-	246,000	-	-	-	-	-	-	246,000	-	-	-
Bar Screens Replacement	150,000	1,803,000	1,803,000	-	-	-	-	-	-	-	-	-
Snow Valley												
Snow Valley WWTP - replace screw screening system	-	119,000	-	-	-	-	-	119,000	-	-	-	-
Lifecycle:		-	-	-	-	-	-	-	-	-	-	-
OCWA Recommended Expenditures	-	7,832,000	-	-	-	-	-	-	-	2,534,000	2,610,000	2,688,000
Total Capital Expenditures	**1,468,996**	**37,875,000**	**6,433,000**	**6,011,000**	**1,896,000**	**12,848,000**	**806,000**	**1,600,000**	**449,000**	**2,534,000**	**2,610,000**	**2,688,000**
Capital Financing												
Provincial/Federal Grants		-										
Development Charges Reserve Fund	446,846	1,296,420	570,480	-	725,940	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	6,632,580	3,862,520	-	1,170,060	-	-	1,600,000	-	-	-	-
Growth Related Debenture Requirements	-	19,713,000	2,000,000	5,332,000	-	12,381,000	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	1,022,150	10,233,000	-	679,000	-	467,000	806,000	-	449,000	2,534,000	2,610,000	2,688,000
Total Capital Financing	**1,468,996**	**37,875,000**	**6,433,000**	**6,011,000**	**1,896,000**	**12,848,000**	**806,000**	**1,600,000**	**449,000**	**2,534,000**	**2,610,000**	**2,688,000**

Table 4-3
Scenario 2
Capital Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Total	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital Expenditures												
Growth Related Projects												
Elmvale												
Main Pumping Station & Foremain (Elmvale) -	-	5,820,000	515,000	5,305,000	-	-	-	-	-	-	-	-
Flow Equalization Expansion (Royal Oaks) -	-	246,000	-	27,000	219,000	-	-	-	-	-	-	-
Inlet Pipework Modifications/Install Mixer (Stonemanor WWTP) - Growth	-	82,000	82,000	-	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Plan -	496,496	-	-	-	-	-	-	-	-	-	-	-
Upsize Sanitary Sewer on Amelia Street -	-	994,000	-	-	994,000	-	-	-	-	-	-	-
Elmvale WWTP - EA for plant expansion -	-	206,000	206,000	-	-	-	-	-	-	-	-	-
Expand Wastewater Treatment Plant (Elmvale) -	-	12,381,000	-	-	-	12,381,000	-	-	-	-	-	-
WWTP - Filter Upgrades - Teritary filters (4) replacement	-	2,678,000	2,678,000	-	-	-	-	-	-	-	-	-
Repair/Replacement Projects												
Elmvale												
WWTP - replacement of SCADA system	150,000	164,000	-	-	164,000	-	-	-	-	-	-	-
WWTP - replace UV modules (12) -	-	824,000	824,000	-	-	-	-	-	-	-	-	-
MH installation for easement access	125,000	106,000	-	106,000	-	-	-	-	-	-	-	-
Gravity Sewer Replacement/repair work	372,500	1,302,000	170,000	175,000	180,000	186,000	191,000	197,000	203,000	-	-	-
WWTP - replacement of MCC -	175,000	133,000	-	133,000	-	-	-	-	-	-	-	-
Sludge Transfer Pumps (At Elmvale WWTP)	-	155,000	155,000	-	-	-	-	-	-	-	-	-
Inflow & Infiltration abatement program	-	1,796,000	-	265,000	273,000	281,000	290,000	687,000	-	-	-	-
WWTP - rehab jet aerators and jet pump	-	66,000	-	-	66,000	-	-	-	-	-	-	-
WWTP - rehab blowers	-	58,000	-	-	-	-	58,000	-	-	-	-	-
WWTP - inlet corrosion abatement	-	174,000	-	-	-	-	174,000	-	-	-	-	-
WWTP - Digester complex - pump rehab/replacments	-	93,000	-	-	-	-	93,000	-	-	-	-	-
WWTP- vortex grit separator upgrade -	-	597,000	-	-	-	-	-	597,000	-	-	-	-
Elmvale WWTP - replace gen set	-	246,000	-	-	-	-	-	-	246,000	-	-	-
Bar Screens Replacement	150,000	1,803,000	1,803,000	-	-	-	-	-	-	-	-	-
Snow Valley												
Snow Valley WWTP - replace screw screening system	-	119,000	-	-	-	-	-	119,000	-	-	-	-
Lifecycle:												
OCWA Recommended Expenditures	-	7,832,000	-	-	-	-	-	-	-	2,534,000	2,610,000	2,688,000
Total Capital Expenditures	**1,468,996**	**37,875,000**	**6,433,000**	**6,011,000**	**1,896,000**	**12,848,000**	**806,000**	**1,600,000**	**449,000**	**2,534,000**	**2,610,000**	**2,688,000**
Capital Financing												
Provincial/Federal Grants		-										
Developer Front-ending Contributions (Elmvale)		17,713,000		5,332,000		12,381,000						
Development Charges Reserve Fund	446,846	1,296,420	570,480	-	725,940	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	6,632,580	3,862,520	-	1,170,060	-	-	1,600,000	-	-	-	-
Growth Related Debenture Requirements	-	2,000,000	2,000,000	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	1,022,150	10,233,000	-	679,000	-	467,000	806,000	-	449,000	2,534,000	2,610,000	2,688,000
Total Capital Financing	**1,468,996**	**37,875,000**	**6,433,000**	**6,011,000**	**1,896,000**	**12,848,000**	**806,000**	**1,600,000**	**449,000**	**2,534,000**	**2,610,000**	**2,688,000**

Chapter 5
Overview of Expenditures and Revenues

5. Overview of Expenditures and Revenues

5.1 Water Operating Expenditures

In this report, the forecast water budget figures (2024 to 2033) are based on the 2023 operating budgets. The costs for each component of the operating budget have been reviewed with staff to establish forecast inflationary adjustments. Most of the expenditures have been assumed to increase at a rate of 3.0% annually. Operating expenditures that involve utilities, fuels, chemicals and hydro have been inflated by 5.0% annually.

Additional costs related to the O.C.W.A. operating contract have been assumed to increase beginning in 2025. These costs are a result of the Township's assumption of new water treatment plants and distribution infrastructure to be put in place for development of the Midhurst Secondary Plan Area. Only a portion of the full costs to operate the new infrastructure are included at the time the Township assumes responsibility for these costs. The new plants and water distribution infrastructure will not be operating at full capacity until the additional customer growth in Midhurst has been fully realized. As a result, the full costs for operation are slowly phased in over the forecast period. The full costs for the proposed Carson Road and Doran Road water treatment plants, as well as the additional distribution infrastructure, are not expected to be realized until after the 2024-2033 forecast period. Additional facility related costs are also assumed to increase over and above inflation, as a result of these new plants. These costs include maintenance costs, hydro costs, and payment in lieu costs. Maintenance costs are assumed to double when the new treatment plants are assumed by the Township. Additional hydro costs are phased into the forecast in line with the phase in of the O.C.W.A. operating costs, noted above. Finally, additional payment in lieu costs are added to the forecast when the new water treatment plants are assumed (2025 and 2027).

Annual contributions have been provided to the capital reserves over the forecast period in order to minimize the need for additional debt to finance the capital program. Also included are growth-related debenture expenditures, which are to be recovered through the D.C. reserve fund.

5.2 Water Operating Revenues

The Township has various miscellaneous revenue sources to help contribute towards operating expenditures. These miscellaneous revenues including land leases, connection fees, etc. are assumed to increase at 3% per year. Tables 5-1 and 5-2 provide for the operating budget for the water system scenarios 1 and 2, respectively.

Table 5-1
Scenario 1
Operating Budget Forecast – Water (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Expenditures											
Operating Costs											
512001-Regular Salaries	102,285	104,480	107,600	110,800	114,100	117,500	121,000	124,600	128,300	132,100	136,100
512007-Vacation Pay	157	166	200	200	200	200	200	200	200	200	200
512130-Benefits-C.P.P.	3,027	3,179	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
512131-Benefits-E.I.	1,042	1,042	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
512132-OMERS	11,791	12,095	12,500	12,900	13,300	13,700	14,100	14,500	14,900	15,300	15,800
512133-Health & Dental	6,444	6,463	6,700	6,900	7,100	7,300	7,500	7,700	7,900	8,100	8,300
512134-Benefits-E.H.T.	2,010	2,054	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900
512135-Benefits-W.S.I.B.	2,366	2,384	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300
512136-Benefits-E.A.P.	29	29	-	-	-	-	-	-	-	-	-
532201-Materials & Supplies	5,000	5,000	5,300	5,600	5,900	6,200	6,500	6,800	7,100	7,500	7,900
532204-Technology	2,500	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400
532205-Office Supplies	3,500	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400
532235-Insurance	38,500	38,500	39,700	40,900	42,100	43,400	44,700	46,000	47,400	48,800	50,300
532237-Hydro	180,670	194,789	208,907	223,026	237,144	251,263	265,381	279,500	293,618	307,737	321,855
532239-Telephone	23,000	23,000	23,700	24,400	25,100	25,900	26,700	27,500	28,300	29,100	30,000
532303-Water Meters - Repairs (Existing)	25,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700	32,700
532305-Payment In Lieu	25,500	26,300	49,200	50,700	75,200	77,500	79,800	82,200	84,700	87,200	89,800
532340-Postage & Courier	17,000	17,000	17,500	18,000	18,500	19,100	19,700	20,300	20,900	21,500	22,100
532343-Consulting Fees	25,000	-	-	-	-	-	-	-	-	-	-
532360-Maintenance - Grounds	10,000	10,300	21,200	21,800	44,900	46,200	47,600	49,000	50,500	52,000	53,600
532361-Maintenance-Buildings	10,200	10,500	21,600	22,200	45,700	47,100	48,500	50,000	51,500	53,000	54,600
532362-Maintenance Equipment	10,000	10,300	21,200	21,800	44,900	46,200	47,600	49,000	50,500	52,000	53,600
532383-Conferences	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
537400-Minor Capital	500,000	500,000	515,000	530,500	546,400	562,800	579,700	597,100	615,000	633,500	652,500
542307-Contracts (Ocwa)	1,073,600	1,106,918	1,140,100	1,174,300	1,209,500	1,245,800	1,283,200	1,321,700	1,361,400	1,402,200	1,444,300
Carson Road WTP Operating Costs (Ocwa) - Midhurst		-	309,000	340,000	370,900	401,800	432,700	463,600	494,500	525,400	556,300
Doran Road WTP Operating Costs (Ocwa) - Midhurst		-	-	-	275,200	302,800	330,300	357,800	385,300	412,900	440,400
Water Distribution Operating Costs - Midhurst		-	449,500	599,300	749,100	898,900	1,048,700	1,198,500	1,348,300	1,498,100	1,798,113
542345-Contracts	21,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700	32,700
577800-Transfers between Departments	175,579	183,852	189,400	195,100	201,000	207,000	213,200	219,600	226,200	233,000	240,000
Source Water Protection											
542345-Contracts	6,100	6,100	6,300	3,250	3,300	3,400	3,500	3,600	3,700	3,800	3,900
Sub Total Operating	**2,282,599**	**2,321,751**	**3,212,707**	**3,471,876**	**4,101,844**	**4,398,463**	**4,697,081**	**4,998,000**	**5,301,318**	**5,606,837**	**6,065,569**

Table 5-1 (Cont'd)
Scenario 1
Operating Budget Forecast – Water (inflated $)

Description	Budget	Forecast									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)		-	-	25,777	27,123	28,539	30,028	31,596	40,330	42,436	44,651
New Growth Related Debt (Interest)		-	-	45,541	44,196	42,780	41,290	39,723	50,591	48,486	46,271
Existing Debt (Principal) - Non-Growth Related											
Existing Debt (Interest) - Non-Growth Related											
New Non-Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	924,295	1,175,356	588,735	673,628	405,067	504,585	653,813	823,478	1,014,099	1,242,972	1,344,684
Sub Total Capital Related	**924,295**	**1,175,356**	**588,735**	**744,947**	**476,386**	**575,904**	**725,132**	**894,797**	**1,105,020**	**1,333,894**	**1,435,606**
Total Expenditures	**3,206,895**	**3,497,106**	**3,801,442**	**4,216,822**	**4,578,230**	**4,974,367**	**5,422,213**	**5,892,797**	**6,406,339**	**6,940,731**	**7,501,174**
Revenues											
Base Charge	1,103,349	1,227,500	1,347,092	1,480,905	1,623,267	1,781,807	1,957,876	2,145,180	2,344,336	2,555,992	2,780,830
Other Revenue			-	-	-	-	-	-	-	-	-
421419-Vespra Downs	-	-	-	-	-	-	-	-	-	-	-
421419-Vespra Downs	29,653	30,246	31,200	32,100	33,100	34,100	35,100	36,200	37,300	38,400	39,600
421420-Midhurst Valley-Water	-	-	-	-	-	-	-	-	-	-	-
421430-5% Charge	15,300	15,300	15,800	16,300	16,800	17,300	17,800	18,300	18,800	19,400	20,000
421434-Miscellaneous	6,800	6,800	7,000	7,200	7,400	7,600	7,800	8,000	8,200	8,400	8,700
421435-Connection Fees	6,100	6,100	6,300	6,500	6,700	6,900	7,100	7,300	7,500	7,700	7,900
481324-Land Leases	7,200	7,200	7,400	7,600	7,800	8,000	8,200	8,400	8,700	9,000	9,300
Contributions from Development Charges Reserve Fund	-	-	-	71,319	71,319	71,319	71,319	71,319	90,921	90,921	90,921
Contributions from Reserves / Reserve Funds	31,100	6,100	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,199,502**	**1,299,246**	**1,414,792**	**1,621,924**	**1,766,386**	**1,927,026**	**2,105,195**	**2,294,699**	**2,515,758**	**2,729,814**	**2,957,251**
Water Billing Recovery - Operating	**2,007,393**	**2,197,860**	**2,386,650**	**2,594,899**	**2,811,844**	**3,047,341**	**3,317,018**	**3,598,098**	**3,890,581**	**4,210,917**	**4,543,923**
Lifecycle Reserve Contribution ($)											
Water Billing Recovery - Total	**2,007,393**	**2,197,860**	**2,386,650**	**2,594,899**	**2,811,844**	**3,047,341**	**3,317,018**	**3,598,098**	**3,890,581**	**4,210,917**	**4,543,923**

Table 5-2
Scenario 2
Operating Budget Forecast – Water (inflated $)

Description	Budget	Forecast									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Expenditures											
Operating Costs											
512001-Regular Salaries	102,285	104,480	107,600	110,800	114,100	117,500	121,000	124,600	128,300	132,100	136,100
512007-Vacation Pay	157	166	200	200	200	200	200	200	200	200	200
512130-Benefits-C.P.P.	3,027	3,179	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
512131-Benefits-E.I.	1,042	1,042	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
512132-OMERS	11,791	12,095	12,500	12,900	13,300	13,700	14,100	14,500	14,900	15,300	15,800
512133-Health & Dental	6,444	6,463	6,700	6,900	7,100	7,300	7,500	7,700	7,900	8,100	8,300
512134-Benefits-E.H.T.	2,010	2,054	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900
512135-Benefits-W.S.I.B.	2,366	2,384	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300
512136-Benefits-E.A.P.	29	29	-	-	-	-	-	-	-	-	-
532201-Materials & Supplies	5,000	5,000	5,300	5,600	5,900	6,200	6,500	6,800	7,100	7,500	7,900
532204-Technology	2,500	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400
532205-Office Supplies	3,500	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400
532235-Insurance	38,500	38,500	39,700	40,900	42,100	43,400	44,700	46,000	47,400	48,800	50,300
532237-Hydro	180,670	194,789	208,907	223,026	237,144	251,263	265,381	279,500	293,618	307,737	321,855
532239-Telephone	23,000	23,000	23,700	24,400	25,100	25,900	26,700	27,500	28,300	29,100	30,000
532303-Water Meters - Repairs (Existing)	25,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700	32,700
532305-Payment In Lieu	25,500	26,300	49,200	50,700	75,200	77,500	79,800	82,200	84,700	87,200	89,800
532340-Postage & Courier	17,000	17,000	17,500	18,000	18,500	19,100	19,700	20,300	20,900	21,500	22,100
532343-Consulting Fees	25,000	-	-	-	-	-	-	-	-	-	-
532360-Maintenance - Grounds	10,000	10,300	21,200	21,800	44,900	46,200	47,600	49,000	50,500	52,000	53,600
532361-Maintenance-Buildings	10,200	10,500	21,600	22,200	45,700	47,100	48,500	50,000	51,500	53,000	54,600
532362-Maintenance Equipment	10,000	10,300	21,200	21,800	44,900	46,200	47,600	49,000	50,500	52,000	53,600
532383-Conferences	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
537400-Minor Capital	500,000	500,000	515,000	530,500	546,400	562,800	579,700	597,100	615,000	633,500	652,500
542307-Contracts (Ocwa)	1,073,600	1,106,918	1,140,100	1,174,300	1,209,500	1,245,800	1,283,200	1,321,700	1,361,400	1,402,200	1,444,300
Carson Road WTP Operating Costs (Ocwa) - Midhurst		-	309,000	340,000	370,900	401,800	432,700	463,600	494,500	525,400	556,300
Doran Road WTP Operating Costs (Ocwa) - Midhurst		-	-	-	275,200	302,800	330,300	357,800	385,300	412,900	440,400
Water Distribution Operating Costs - Midhurst		-	449,500	599,300	749,100	898,900	1,048,700	1,198,500	1,348,300	1,498,100	1,798,113
542345-Contracts	21,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700	32,700
577800-Transfers between Departments	175,579	183,852	189,400	195,100	201,000	207,000	213,200	219,600	226,200	233,000	240,000
Source Water Protection											
542345-Contracts	6,100	6,100	6,300	3,250	3,300	3,400	3,500	3,600	3,700	3,800	3,900
Sub Total Operating	**2,282,599**	**2,321,751**	**3,212,707**	**3,471,876**	**4,101,844**	**4,398,463**	**4,697,081**	**4,998,000**	**5,301,318**	**5,606,837**	**6,065,569**

Table 5-2 (Cont'd)
Scenario 2
Operating Budget Forecast – Water (inflated $)

Description	Budget	Forecast									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)		-	-	25,777	27,123	28,539	30,028	31,596	40,330	42,436	44,651
New Growth Related Debt (Interest)		-	-	45,541	44,196	42,780	41,290	39,723	50,591	48,486	46,271
Existing Debt (Principal) - Non-Growth Related											
Existing Debt (Interest) - Non-Growth Related											
New Non-Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	924,295	1,142,419	513,997	594,155	320,696	414,825	605,711	823,082	1,083,649	1,374,125	1,561,804
Sub Total Capital Related	**924,295**	**1,142,419**	**513,997**	**665,474**	**392,014**	**486,144**	**677,030**	**894,400**	**1,174,571**	**1,465,046**	**1,652,726**
Total Expenditures	**3,206,895**	**3,464,170**	**3,726,704**	**4,137,349**	**4,493,859**	**4,884,607**	**5,374,111**	**5,892,400**	**6,475,889**	**7,071,883**	**7,718,295**
Revenues											
Base Charge	1,103,349	1,215,697	1,321,311	1,452,563	1,592,201	1,747,706	1,938,871	2,144,784	2,366,440	2,604,900	2,861,291
Other Revenue			-	-	-	-	-	-	-	-	-
421419-Vespra Downs	-	-	-	-	-	-	-	-	-	-	-
421419-Vespra Downs	29,653	30,246	31,200	32,100	33,100	34,100	35,100	36,200	37,300	38,400	39,600
421420-Midhurst Valley-Water	-	-	-	-	-	-	-	-	-	-	-
421430-5% Charge	15,300	15,300	15,800	16,300	16,800	17,300	17,800	18,300	18,800	19,400	20,000
421434-Miscellaneous	6,800	6,800	7,000	7,200	7,400	7,600	7,800	8,000	8,200	8,400	8,700
421435-Connection Fees	6,100	6,100	6,300	6,500	6,700	6,900	7,100	7,300	7,500	7,700	7,900
481324-Land Leases	7,200	7,200	7,400	7,600	7,800	8,000	8,200	8,400	8,700	9,000	9,300
Contributions from Development Charges Reserve Fund	-	-	-	71,319	71,319	71,319	71,319	71,319	90,921	90,921	90,921
Contributions from Reserves / Reserve Funds	31,100	6,100	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,199,502**	**1,287,443**	**1,389,011**	**1,593,582**	**1,735,320**	**1,892,925**	**2,086,190**	**2,294,302**	**2,537,862**	**2,778,722**	**3,037,712**
Water Billing Recovery - Operating	**2,007,393**	**2,176,727**	**2,337,693**	**2,543,768**	**2,758,539**	**2,991,682**	**3,287,921**	**3,598,098**	**3,938,027**	**4,293,162**	**4,680,583**
Lifecycle Reserve Contribution ($)											
Water Billing Recovery - Total	**2,007,393**	**2,176,727**	**2,337,693**	**2,543,768**	**2,758,539**	**2,991,682**	**3,287,921**	**3,598,098**	**3,938,027**	**4,293,162**	**4,680,583**

5.3 Wastewater Operating Expenditures

The wastewater operating expenditures have been adjusted over the forecast period by an annual inflationary factor of 3.0%. Operating expenditures that involve utilities, fuels, chemicals and hydro have been inflated by 5.0% annually.

Similar to water services, additional costs related to the O.C.W.A. operating contract have been assumed beginning in 2027 and 2029, when the operations of the new Midhurst interim wastewater treatment plant, and Midhurst wastewater treatment plant and collection sewers are assumed by the Township. Similar to water services, only a portion of the full costs to operate the new infrastructure are initially assumed. The full costs are slowly phased in and will be assumed after the forecast period, when all the growth in the Midhurst Secondary Plan Area has been realized. Additional facility related costs are also assumed to increase over and above inflation, as a result of these new plants. These costs include maintenance costs, hydro costs, and payment in lieu costs. Maintenance costs are assumed to double when the new treatment plants are assumed and are then projected to increase with inflation for the remainder of the forecast period. Additional hydro costs are phased into the forecast in line with the phase-in of the O.C.W.A. operating costs, noted above. Additional payment in lieu costs are added to the forecast in 2027 and 2029 when the new wastewater treatment plans are assumed.

Debenture expenditures and transfers to the capital reserve fund are also included in the operating budget.

5.4 Wastewater Operating Revenues

The operating revenue for the wastewater program comes mainly from base charges along with volumetric revenue from customers. A small amount of revenue is also generated from miscellaneous sources and connection fees. These revenues are assumed to increase at 3% over the forecast period. Table 5-3 outlines the operating budget for the Springwater wastewater system based on Scenario 1 and Table 5-4 outlines the operating budget for the Township based on Scenario 2.

Table 5-3
Scenario 1
Operating Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Expenditures											
Operating Costs											
Snow Valley											
512001-Regular Salaries	16,248	16,603	16,636	16,670	16,670	17,200	17,700	18,200	18,700	19,300	19,900
512007-Vacation Pay	31	33	35	36	36	37	38	39	40	41	42
512130-Benefits-C.P.P.	476	500	502	504	504	520	540	560	580	600	620
512131-Benefits-E.I.	165	165	165	165	165	170	180	190	200	210	220
512132-OMERS	1,876	1,924	1,927	1,930	1,930	2,000	2,100	2,200	2,300	2,400	2,500
512133-Health & Dental	992	995	995	995	995	1,020	1,050	1,080	1,110	1,140	1,170
512134-Benefits-E.H.T.	319	326	327	328	328	340	350	360	370	380	390
512135-Benefits-W.S.I.B.	372	375	376	377	377	390	400	410	420	430	440
512136-Benefits-E.A.P.	5	5	5	5	5	5	5	5	5	5	5
532235-Insurance	7,565	7,565	6,379	6,474	6,700	6,900	7,100	7,300	7,500	7,700	7,900
532236-Heat	3,600	3,600	3,660	3,715	3,800	3,900	4,000	4,100	4,200	4,300	4,400
532237-Hydro	140,000	145,000	125,481	127,364	133,700	140,400	147,400	154,800	162,500	170,600	179,100
532239-Telephone	15,000	15,000	15,000	15,000	15,500	16,000	16,500	17,000	17,500	18,000	18,500
532312-Payment In Lieu	14,769	14,769	-	-	-	-	-	-	-	-	-
532340-Postage & Courier	1,500	1,500	1,500	1,500	1,550	1,600	1,650	1,700	1,750	1,800	1,850
532343-Consulting Fees	15,000	8,923	15,000	15,000	15,500	16,000	16,500	17,000	17,500	18,000	18,500
532366-Maintenance-General	25,000	25,000	40,000	40,000	41,200	42,400	43,700	45,000	46,400	47,800	49,200
537400-Minor Capital	145,000	145,000	106,000	106,000	109,200	112,500	115,900	119,400	123,000	126,700	130,500
542307-Contracts (Ocwa)	258,997	262,882	230,941	230,941	237,900	245,000	252,400	260,000	267,800	275,800	284,100
577800-Transfers between Departments	27,891	29,177	22,331	22,331	23,000	23,700	24,400	25,100	25,900	26,700	27,500
Centre Vespra											
512001-Regular Salaries	17,526	17,906	17,939	17,974	17,974	18,500	19,100	19,700	20,300	20,900	21,500
512007-Vacation Pay	31	33	35	36	36	37	38	39	40	41	42
512130-Benefits-C.P.P.	513	539	541	543	543	560	580	600	620	640	660
512131-Benefits-E.I.	177	177	177	177	177	180	190	200	210	220	230
512132-OMERS	2,024	2,077	2,080	2,083	2,083	2,100	2,200	2,300	2,400	2,500	2,600
512133-Health & Dental	1,079	1,082	1,082	1,082	1,082	1,110	1,140	1,170	1,210	1,250	1,290
512134-Benefits-E.H.T.	345	352	353	353	353	360	370	380	390	400	410
512135-Benefits-W.S.I.B.	403	405	406	408	408	420	430	440	450	460	470
512136-Benefits-E.A.P.	5	5	5	5	5	5	5	5	5	5	5
532235-Insurance	5,345	5,345	4,015	4,076	4,200	4,300	4,400	4,500	4,600	4,700	4,800
532236-Heat	2,500	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400
532237-Hydro	131,605	131,605	127,573	129,486	133,400	137,400	141,500	145,700	150,100	154,600	159,200
532239-Telephone	1,800	1,800	1,200	1,200	1,240	1,280	1,320	1,360	1,400	1,440	1,480
532340-Postage & Courier	1,200	1,200	1,200	1,200	1,240	1,280	1,320	1,360	1,400	1,440	1,480
532343-Consulting Fees	-	-	3,000	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700
532360-Maintenance - Grounds	5,000	5,000	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
532361-Maintenance-Buildings	10,000	10,000	10,000	10,000	10,300	10,600	10,900	11,200	11,500	11,800	12,200
532362-Maintenance Equipment	-	-	26,000	26,000	26,800	27,600	28,400	29,300	30,200	31,100	32,000
532366-Maintenance-General	-	-	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
537400-Minor Capital	90,500	90,500	93,200	96,000	98,900	101,900	105,000	108,200	111,400	114,700	118,100
542307-Contracts (Ocwa)	169,270	171,809	207,743	207,743	214,000	220,400	227,000	233,800	240,800	248,000	255,400

Figure 5-3 (Cont'd)
Scenario 1
Operating Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Elmvale						-	-	-	-	-	-
512001-Regular Salaries	29,041	29,651	29,684	29,719	29,719	30,600	31,500	32,400	33,400	34,400	35,400
512007-Vacation Pay	31	33	35	36	36	37	38	39	40	41	42
512130-Benefits-C.P.P.	827	869	871	873	873	900	930	960	990	1,020	1,050
512131-Benefits-E.I.	283	283	283	283	283	290	300	310	320	330	340
512132-OMERS	3,383	3,469	3,472	3,475	3,475	3,600	3,700	3,800	3,900	4,000	4,100
512133-Health & Dental	1,811	1,816	1,816	1,816	1,816	1,900	2,000	2,100	2,200	2,300	2,400
512134-Benefits-E.H.T.	571	583	583	584	584	600	620	640	660	680	700
512135-Benefits-W.S.I.B.	654	658	659	660	660	680	700	720	740	760	780
512136-Benefits-E.A.P.	8	8	8	8	8	8	8	8	8	8	8
532201-Materials & Supplies	1,100	1,100	1,130	1,160	1,190	1,230	1,270	1,310	1,350	1,390	1,430
532235-Insurance	12,470	12,470	9,009	9,144	9,400	9,700	10,000	10,300	10,600	10,900	11,200
532237-Hydro	169,990	169,990	151,623	153,898	158,500	163,300	168,200	173,200	178,400	183,800	189,300
532239-Telephone	-	-	2,000	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700
532312-Payment In Lieu	18,700	19,000	18,000	18,000	18,500	19,100	19,700	20,300	20,900	21,500	22,100
532340-Postage & Courier	4,977	4,977	4,900	4,900	5,000	5,200	5,400	5,600	5,800	6,000	6,200
532343-Consulting Fees	-	-	10,000	10,000	10,300	10,600	10,900	11,200	11,500	11,800	12,200
532353-Engineering Fees	-	-	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
532360-Maintenance - Grounds	5,000	5,000	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
532361-Maintenance-Buildings	5,100	5,100	2,000	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700
532362-Maintenance Equipment	-	-	25,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800
532366-Maintenance-General	-	-	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
537400-Minor Capital	200,000	200,000	120,000	120,000	123,600	127,300	131,100	135,000	139,100	143,300	147,600
542307-Contracts (Ocwa)	175,254	178,760	165,557	165,557	170,500	175,600	180,900	186,300	191,900	197,700	203,600
577800-Transfers between Departments	85,173	89,032	67,994	67,994	70,000	72,100	74,300	76,500	78,800	81,200	83,600
Midhurst											
512001-Regular Salaries	39,471	40,320	40,387	40,456	40,456	41,670	42,920	44,210	45,540	46,910	48,320
512007-Vacation Pay	63	66	69	72	72	74	76	78	80	82	84
512130-Benefits-C.P.P.	1,211	1,272	1,276	1,280	1,280	1,320	1,360	1,400	1,440	1,480	1,520
512131-Benefits-E.I.	417	417	417	417	417	430	440	450	460	470	480
512132-OMERS	4,508	4,626	4,632	4,638	4,638	4,800	4,900	5,000	5,200	5,400	5,600
512133-Health & Dental	2,563	2,571	2,571	2,571	2,571	2,600	2,700	2,800	2,900	3,000	3,100
512134-Benefits-E.H.T.	776	793	794	795	795	820	840	870	900	930	960
512135-Benefits-W.S.I.B.	938	946	948	950	950	980	1,010	1,040	1,070	1,100	1,130
512136-Benefits-E.A.P.	11	11	11	11	11	12	12	12	12	12	12
532237-Hydro	195,000	236,311	277,622	318,933	360,244	401,556	442,867	484,178	525,489	566,800	608,111
532360-Maintenance - Grounds	-	-	-	-	10,400	10,700	22,000	22,700	23,400	24,100	24,800
532361-Maintenance-Buildings	-	-	-	-	12,400	12,800	26,400	27,200	28,000	28,800	29,700
532362-Maintenance Equipment	-	-	-	-	52,600	54,200	111,700	115,100	118,600	122,200	125,900
532366-Maintenance-General	-	-	-	-	51,600	53,100	109,400	112,700	116,100	119,600	123,200
542307-Contracts (Ocwa)	194,910	208,119	214,400	220,800	227,400	234,200	241,200	248,400	255,900	263,600	271,500
WWTP Operating Costs (OCWA) - Midhurst - Interim	-	-	-	-	297,100	306,000	315,200	324,700	334,400	344,400	354,700
WWTP Operating Costs (OCWA) - Midhurst	-	-	-	-	-	-	1,111,100	1,222,200	1,333,300	1,444,400	1,555,500
Wastewater Collection Operating Costs - Midhurst	-	-	-	-	80,900	121,300	161,700	202,100	242,500	282,900	323,400
Payment In Lieu	-	-	-	-	22,100	22,800	45,800	47,200	48,600	50,100	51,600
542345-Contracts	-	45,986	47,400	48,800	50,300	51,800	53,400	55,000	56,700	58,400	60,200
Sub Total Operating	**2,268,366**	**2,385,912**	**2,316,556**	**2,375,228**	**3,004,377**	**3,166,121**	**4,598,697**	**4,881,223**	**5,166,699**	**5,454,915**	**5,745,871**

Figure 5-3 (Cont'd)
Scenario 1
Operating Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)		-	59,092	219,717	231,187	609,066	640,859	674,312	709,511	746,548	785,518
New Growth Related Debt (Interest)		-	104,400	379,646	368,177	1,002,397	970,604	937,151	901,952	864,915	825,945
Existing Debt (Principal) - Non-Growth Related											
Existing Debt (Interest) - Non-Growth Related											
New Non-Growth Related Debt (Principal)		-	114,123	120,080	160,919	169,319	178,157	234,731	246,984	259,877	273,442
New Non-Growth Related Debt (Interest)		-	201,624	195,666	250,475	242,075	233,237	307,457	295,204	282,312	268,746
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve		232,929	363,451	773,705	571,136	1,523,839	1,512,783	2,271,629	3,329,165	4,573,048	6,032,054
Sub Total Capital Related	**-**	**232,929**	**842,690**	**1,688,815**	**1,581,894**	**3,546,696**	**3,535,640**	**4,425,280**	**5,482,816**	**6,726,699**	**8,185,705**
Total Expenditures	**2,268,366**	**2,618,842**	**3,159,246**	**4,064,042**	**4,586,270**	**6,712,817**	**8,134,337**	**9,306,503**	**10,649,515**	**12,181,614**	**13,931,576**
Revenues											
Base Charge	1,022,352	1,196,863	1,386,046	1,606,600	1,857,405	2,389,465	3,069,317	3,628,442	4,268,699	5,000,723	5,836,464
Snow Valley											
421435-Connection Fees	1,500	1,500	1,500	1,500	-	-	-	-	-	-	-
Elmvale											
421430-5% Charge	8,200	8,200	7,500	7,500	-	-	-	-	-	-	-
421435-Connection Fees	2,000	2,000	-	-	-	-	-	-	-	-	-
Centre Vespra											
421435-Connection Fees	4,000	4,500	-	-	-	-	-	-	-	-	-
Midhurst											
421435-Connection Fees	26,250	18,750	-	-	-						
Contributions from Development Charges Reserve Fund	-	-	163,492	599,363	599,363	1,611,463	1,611,463	1,611,463	1,611,463	1,611,463	1,611,463
Contributions from Reserves / Reserve Funds	12,628	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,076,930**	**1,231,813**	**1,558,538**	**2,214,963**	**2,456,769**	**4,000,927**	**4,680,780**	**5,239,905**	**5,880,162**	**6,612,186**	**7,447,927**
Wastewater Billing Recovery - Operating	**1,191,437**	**1,387,029**	**1,600,708**	**1,849,079**	**2,129,502**	**2,711,889**	**3,453,557**	**4,066,598**	**4,769,353**	**5,569,428**	**6,483,649**
Lifecycle Reserve Contribution ($)											
Wastewater Billing Recovery - Total	**1,191,437**	**1,387,029**	**1,600,708**	**1,849,079**	**2,129,502**	**2,711,889**	**3,453,557**	**4,066,598**	**4,769,353**	**5,569,428**	**6,483,649**

Table 5-4
Scenario 2
Operating Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Expenditures											
Operating Costs											
Snow Valley											
512001-Regular Salaries	16,248	16,603	16,636	16,670	16,670	17,200	17,700	18,200	18,700	19,300	19,900
512007-Vacation Pay	31	33	35	36	36	37	38	39	40	41	42
512130-Benefits-C.P.P.	476	500	502	504	504	520	540	560	580	600	620
512131-Benefits-E.I.	165	165	165	165	165	170	180	190	200	210	220
512132-OMERS	1,876	1,924	1,927	1,930	1,930	2,000	2,100	2,200	2,300	2,400	2,500
512133-Health & Dental	992	995	995	995	995	1,020	1,050	1,080	1,110	1,140	1,170
512134-Benefits-E.H.T.	319	326	327	328	328	340	350	360	370	380	390
512135-Benefits-W.S.I.B.	372	375	376	377	377	390	400	410	420	430	440
512136-Benefits-E.A.P.	5	5	5	5	5	5	5	5	5	5	5
532235-Insurance	7,565	7,565	6,379	6,474	6,700	6,900	7,100	7,300	7,500	7,700	7,900
532236-Heat	3,600	3,600	3,660	3,715	3,800	3,900	4,000	4,100	4,200	4,300	4,400
532237-Hydro	140,000	145,000	125,481	127,364	133,700	140,400	147,400	154,800	162,500	170,600	179,100
532239-Telephone	15,000	15,000	15,000	15,000	15,500	16,000	16,500	17,000	17,500	18,000	18,500
532312-Payment In Lieu	14,769	14,769	-	-	-	-	-	-	-	-	-
532340-Postage & Courier	1,500	1,500	1,500	1,500	1,550	1,600	1,650	1,700	1,750	1,800	1,850
532343-Consulting Fees	15,000	8,923	15,000	15,000	15,500	16,000	16,500	17,000	17,500	18,000	18,500
532366-Maintenance-General	25,000	25,000	40,000	40,000	41,200	42,400	43,700	45,000	46,400	47,800	49,200
537400-Minor Capital	145,000	145,000	106,000	106,000	109,200	112,500	115,900	119,400	123,000	126,700	130,500
542307-Contracts (Ocwa)	258,997	262,882	230,941	230,941	237,900	245,000	252,400	260,000	267,800	275,800	284,100
577800-Transfers between Departments	27,891	29,177	22,331	22,331	23,000	23,700	24,400	25,100	25,900	26,700	27,500
Centre Vespra											
512001-Regular Salaries	17,526	17,906	17,939	17,974	17,974	18,500	19,100	19,700	20,300	20,900	21,500
512007-Vacation Pay	31	33	35	36	36	37	38	39	40	41	42
512130-Benefits-C.P.P.	513	539	541	543	543	560	580	600	620	640	660
512131-Benefits-E.I.	177	177	177	177	177	180	190	200	210	220	230
512132-OMERS	2,024	2,077	2,080	2,083	2,083	2,100	2,200	2,300	2,400	2,500	2,600
512133-Health & Dental	1,079	1,082	1,082	1,082	1,082	1,110	1,140	1,170	1,210	1,250	1,290
512134-Benefits-E.H.T.	345	352	353	353	353	360	370	380	390	400	410
512135-Benefits-W.S.I.B.	403	405	406	408	408	420	430	440	450	460	470
512136-Benefits-E.A.P.	5	5	5	5	5	5	5	5	5	5	5
532235-Insurance	5,345	5,345	4,015	4,076	4,200	4,300	4,400	4,500	4,600	4,700	4,800
532236-Heat	2,500	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400
532237-Hydro	131,605	131,605	127,573	129,486	133,400	137,400	141,500	145,700	150,100	154,600	159,200
532239-Telephone	1,800	1,800	1,200	1,200	1,240	1,280	1,320	1,360	1,400	1,440	1,480
532340-Postage & Courier	1,200	1,200	1,200	1,200	1,240	1,280	1,320	1,360	1,400	1,440	1,480
532343-Consulting Fees	-	-	3,000	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700
532360-Maintenance - Grounds	5,000	5,000	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
532361-Maintenance-Buildings	10,000	10,000	10,000	10,000	10,300	10,600	10,900	11,200	11,500	11,800	12,200
532362-Maintenance Equipment	-	-	26,000	26,000	26,800	27,600	28,400	29,300	30,200	31,100	32,000
532366-Maintenance-General	-	-	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
537400-Minor Capital	90,500	90,500	93,200	96,000	98,900	101,900	105,000	108,200	111,400	114,700	118,100
542307-Contracts (Ocwa)	169,270	171,809	207,743	207,743	214,000	220,400	227,000	233,800	240,800	248,000	255,400

Table 5-4 (Cont'd)
Scenario 2
Operating Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Elmvale						-	-	-	-	-	-
512001-Regular Salaries	29,041	29,651	29,684	29,719	29,719	30,600	31,500	32,400	33,400	34,400	35,400
512007-Vacation Pay	31	33	35	36	36	37	38	39	40	41	42
512130-Benefits-C.P.P.	827	869	871	873	873	900	930	960	990	1,020	1,050
512131-Benefits-E.I.	283	283	283	283	283	290	300	310	320	330	340
512132-OMERS	3,383	3,469	3,472	3,475	3,475	3,600	3,700	3,800	3,900	4,000	4,100
512133-Health & Dental	1,811	1,816	1,816	1,816	1,816	1,900	2,000	2,100	2,200	2,300	2,400
512134-Benefits-E.H.T.	571	583	583	584	584	600	620	640	660	680	700
512135-Benefits-W.S.I.B.	654	658	659	660	660	680	700	720	740	760	780
512136-Benefits-E.A.P.	8	8	8	8	8	8	8	8	8	8	8
532201-Materials & Supplies	1,100	1,100	1,130	1,160	1,190	1,230	1,270	1,310	1,350	1,390	1,430
532235-Insurance	12,470	12,470	9,009	9,144	9,400	9,700	10,000	10,300	10,600	10,900	11,200
532237-Hydro	169,990	169,990	151,623	153,898	158,500	163,300	168,200	173,200	178,400	183,800	189,300
532239-Telephone	-	-	2,000	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700
532312-Payment In Lieu	18,700	19,000	18,000	18,000	18,500	19,100	19,700	20,300	20,900	21,500	22,100
532340-Postage & Courier	4,977	4,977	4,900	4,900	5,000	5,200	5,400	5,600	5,800	6,000	6,200
532343-Consulting Fees	-	-	10,000	10,000	10,300	10,600	10,900	11,200	11,500	11,800	12,200
532353-Engineering Fees	-	-	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
532360-Maintenance - Grounds	5,000	5,000	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
532361-Maintenance-Buildings	5,100	5,100	2,000	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700
532362-Maintenance Equipment	-	-	25,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800
532366-Maintenance-General	-	-	5,000	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
537400-Minor Capital	200,000	200,000	120,000	120,000	123,600	127,300	131,100	135,000	139,100	143,300	147,600
542307-Contracts (Ocwa)	175,254	178,760	165,557	165,557	170,500	175,600	180,900	186,300	191,900	197,700	203,600
577800-Transfers between Departments	85,173	89,032	67,994	67,994	70,000	72,100	74,300	76,500	78,800	81,200	83,600
Midhurst											
512001-Regular Salaries	39,471	40,320	40,387	40,456	40,456	41,670	42,920	44,210	45,540	46,910	48,320
512007-Vacation Pay	63	66	69	72	72	74	76	78	80	82	84
512130-Benefits-C.P.P.	1,211	1,272	1,276	1,280	1,280	1,320	1,360	1,400	1,440	1,480	1,520
512131-Benefits-E.I.	417	417	417	417	417	430	440	450	460	470	480
512132-OMERS	4,508	4,626	4,632	4,638	4,638	4,800	4,900	5,000	5,200	5,400	5,600
512133-Health & Dental	2,563	2,571	2,571	2,571	2,571	2,600	2,700	2,800	2,900	3,000	3,100
512134-Benefits-E.H.T.	776	793	794	795	795	820	840	870	900	930	960
512135-Benefits-W.S.I.B.	938	946	948	950	950	980	1,010	1,040	1,070	1,100	1,130
512136-Benefits-E.A.P.	11	11	11	11	11	12	12	12	12	12	12
532237-Hydro	195,000	236,311	277,622	318,933	360,244	401,556	442,867	484,178	525,489	566,800	608,111
532360-Maintenance - Grounds	-	-	-	-	10,400	10,700	22,000	22,700	23,400	24,100	24,800
532361-Maintenance-Buildings	-	-	-	-	12,400	12,800	26,400	27,200	28,000	28,800	29,700
532362-Maintenance Equipment	-	-	-	-	52,600	54,200	111,700	115,100	118,600	122,200	125,900
532366-Maintenance-General	-	-	-	-	51,600	53,100	109,400	112,700	116,100	119,600	123,200
542307-Contracts (Ocwa)	194,910	208,119	214,400	220,800	227,400	234,200	241,200	248,400	255,900	263,600	271,500
WWTP Operating Costs (OCWA) - Midhurst - Inte	-	-	-	-	297,100	306,000	315,200	324,700	334,400	344,400	354,700
WWTP Operating Costs (OCWA) - Midhurst	-	-	-	-	-	-	1,111,100	1,222,200	1,333,300	1,444,400	1,555,500
Wastewater Collection Operating Costs - Midhurst	-	-	-	-	80,900	121,300	161,700	202,100	242,500	282,900	323,400
Payment In Lieu	-	-	-	-	22,100	22,800	45,800	47,200	48,600	50,100	51,600
542345-Contracts	-	45,986	47,400	48,800	50,300	51,800	53,400	55,000	56,700	58,400	60,200
Sub Total Operating	**2,268,366**	**2,385,912**	**2,316,556**	**2,375,228**	**3,004,377**	**3,166,121**	**4,598,697**	**4,881,223**	**5,166,699**	**5,454,915**	**5,745,871**

Table 5-4 (Cont'd)
Scenario 2
Operating Budget Forecast – Wastewater (inflated $)

Description	Budget 2023	Forecast 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)		-	59,092	62,177	65,423	68,838	72,431	76,212	80,190	84,376	88,781
New Growth Related Debt (Interest)		-	104,400	101,315	98,070	94,655	91,061	87,280	83,302	79,116	74,712
Existing Debt (Principal) - Non-Growth Related											
Existing Debt (Interest) - Non-Growth Related											
New Non-Growth Related Debt (Principal)		-	114,123	120,080	160,919	169,319	178,157	234,731	246,984	259,877	273,442
New Non-Growth Related Debt (Interest)		-	201,624	195,666	250,475	242,075	233,237	307,457	295,204	282,312	268,746
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve		187,817	254,766	584,930	283,744	1,065,575	818,669	1,325,942	2,073,243	2,940,218	3,937,661
Sub Total Capital Related	**-**	**187,817**	**734,005**	**1,064,168**	**858,630**	**1,640,461**	**1,393,555**	**2,031,623**	**2,778,924**	**3,645,899**	**4,643,342**
Total Expenditures	**2,268,366**	**2,573,730**	**3,050,561**	**3,439,396**	**3,863,007**	**4,806,582**	**5,992,252**	**6,912,845**	**7,945,623**	**9,100,814**	**10,389,213**
Revenues											
Base Charge	1,022,352	1,175,102	1,336,102	1,520,551	1,725,961	2,179,997	2,749,338	3,191,080	3,685,905	4,239,478	4,858,034
Snow Valley											
421435-Connection Fees	1,500	1,500	1,500	1,500	-	-	-	-	-	-	-
Elmvale											
421430-5% Charge	8,200	8,200	7,500	7,500	-	-	-	-	-	-	-
421435-Connection Fees	2,000	2,000	-	-	-	-	-	-	-	-	-
Centre Vespra											
421435-Connection Fees	4,000	4,500	-	-	-	-	-	-	-	-	-
Midhurst											
421435-Connection Fees	26,250	18,750	-	-	-						
Contributions from Development Charges Reserve Fund	-	-	163,492	163,492	163,492	163,492	163,492	163,492	163,492	163,492	163,492
Contributions from Reserves / Reserve Funds	12,628	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,076,930**	**1,210,052**	**1,508,595**	**1,693,044**	**1,889,453**	**2,343,490**	**2,912,831**	**3,354,572**	**3,849,397**	**4,402,971**	**5,021,526**
Wastewater Billing Recovery - Operating	**1,191,437**	**1,363,678**	**1,541,966**	**1,746,352**	**1,973,554**	**2,463,092**	**3,079,421**	**3,558,273**	**4,096,226**	**4,697,843**	**5,367,687**
Lifecycle Reserve Contribution ($)											
Wastewater Billing Recovery - Total	**1,191,437**	**1,363,678**	**1,541,966**	**1,746,352**	**1,973,554**	**2,463,092**	**3,079,421**	**3,558,273**	**4,096,226**	**4,697,843**	**5,367,687**

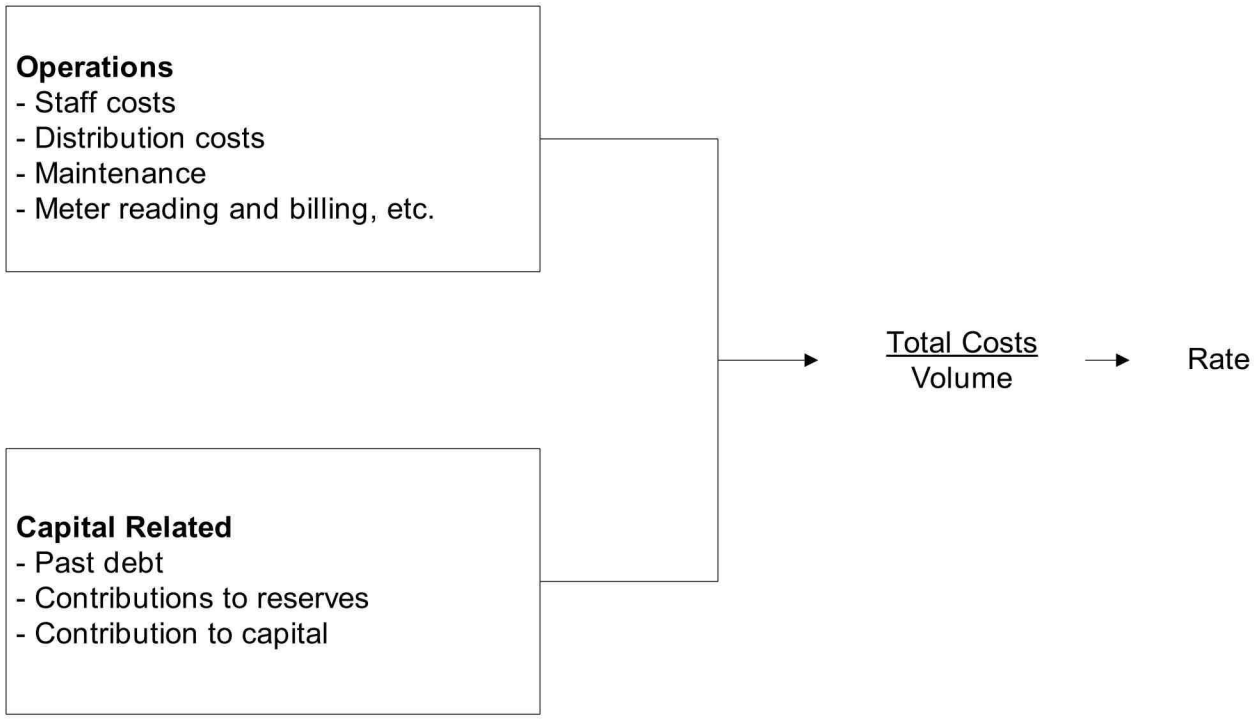
Chapter 6
Pricing Structures

6. Pricing Structures

6.1 Introduction

Rates, in their simplest form, can be defined as total costs to maintain the utility function divided by the total expected volume to be generated for the period. Total costs are usually a combination of operating costs (e.g. staff costs, distribution costs, maintenance, administration, etc.) and capital-related costs (e.g. past debt to finance capital projects, transfers to reserves to finance future expenditures, etc.). The schematic below provides a simplified illustration of the rate calculation for water.

"Annual Costs"



These operating and capital expenditures will vary over time. Examples of factors that will affect the expenditures over time are provided below.

Operations

- Inflation;

- Increased maintenance as system ages; and
- Changes to provincial legislation.

Capital Related

- New capital will be built as areas expand;
- Replacement capital needed as system ages; and
- Financing of capital costs are a function of policy regarding reserves and direct financing from rates (pay as you go), debt and user pay methods (development charges, *Municipal Act*).

6.2 Alternative Pricing Structures

Throughout Ontario, and as well, Canada, the use of pricing mechanisms varies between municipalities. The use of a particular form of pricing depends upon numerous factors, including Council preference, administrative structure, surplus/deficit system capacities, economic/demographic conditions, to name a few.

Municipalities within Ontario have two basic forms of collecting revenues for water purposes, those being through incorporation of the costs within the tax rate charged on property assessment and/or through the establishment of a specific water rate billed to the customer. Within the rate methods, there are five basic rate structures employed along with other variations:

- Flat Rate (non-metered customers);
- Constant Rate;
- Declining Block Rate;
- Increasing (or Inverted) Block Rate;
- Hump Back Block Rate; and
- Base Charges.

The definitions and general application of the various methods are as follows:

Property Assessment: This method incorporates the total costs of providing water into the general requisition or the assessment base of the municipality. This form of collection is a "wealth tax," as payment increases directly with the value of property owned and bears no necessary relationship to actual consumption. This form is easy to

administer as the costs to be recovered are incorporated in the calculation for all general services, normally collected through property taxes.

Flat Rate: This rate is a constant charge applicable to all customers served. The charge is calculated by dividing the total number of user households and other entities (e.g. businesses) into the costs to be recovered. This method does not recognize differences in actual consumption but provides for a uniform spreading of costs across all users. Some municipalities define users into different classes of similar consumption patterns, that is, a commercial user, residential user and industrial user, and charge a flat rate by class. Each user is then billed on a periodic basis. No meters are required to facilitate this method, but an accurate estimate of the number of users is required. This method ensures set revenue for the collection period but is not sensitive to consumption, hence may cause a shortfall or surplus of revenues collected.

Constant Rate: This rate is a volume-based rate, in which the consumer pays the same price per unit consumed, regardless of the volume. The price per unit is calculated by dividing the total cost of the service by the total volume used by total consumers. The bill to the consumer climbs uniformly as the consumption increases. This form of rate requires the use of meters to record the volume consumed by each user. This method closely aligns the revenue recovery with consumption. Revenue collected varies directly with the consumption volume.

Declining Block Rates: This rate structure charges a successively lower price for set volumes, as consumption increases through a series of "blocks." That is to say that within set volume ranges, or blocks, the charge per unit is set at one rate. Within the next volume range, the charge per unit decreases to a lower rate, and so on. Typically, the first, or first and second blocks cover residential and light commercial uses. Subsequent blocks normally are used for heavier commercial and industrial uses. This rate structure requires the use of meters to record the volume consumed by each type of user. This method requires the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect revenue from rate payers.

Increasing or Inverted Block Rates: The increasing block rate works essentially the same way as the declining block rate, except that the price of water in successive blocks increases rather than declines. Under this method the consumer's bill rises faster with higher volumes used. This rate structure also requires the use of meters to

record the volume consumed by each user. This method requires, as with the declining block structure, the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect from rate payers.

The Hump Back Rate: The hump back rate is a combination of an increasing block rate and the declining block rate. Under this method the consumer's bill rises with higher volumes used up to a certain level and then begins to fall for volumes in excess of levels set for the increasing block rate.

6.3 Assessment of Alternative Pricing Structures

The adoption by a municipality or utility of any one particular pricing structure is normally a function of a variety of administrative, social, demographic and financial factors. The number of factors, and the weighting each particular factor receives, can vary between municipalities. The following is a review of some of the more prevalent factors.

Cost Recovery

Cost recovery is a prime factor in establishing a particular pricing structure. Costs can be loosely defined into different categories: operations, maintenance, capital, financing and administration. These costs often vary between municipalities and even within a municipality, based on consumption patterns, infrastructure age, economic growth, etc.

The pricing alternatives defined earlier can all achieve the cost recovery goal, but some do so more precisely than others. Fixed pricing structures, such as Property Assessment and Flat Rate, are established on the value of property or on the number of units present in the municipality, but do not adjust in accordance with consumption. Thus, if actual consumption for the year is greater than projected, the municipality incurs a higher cost of production, but the revenue base remains static (since it was determined at the beginning of the year), thus potentially providing a funding shortfall. Conversely, if the consumption level declines below projections, fixed pricing structures will produce more revenue than actual costs incurred.

The other pricing methods (declining block, constant rate, increasing block) are consumption-based and generally will generate revenues in proportion to actual consumption.

Administration

Administration is defined herein as the staffing, equipment and supplies required to support the undertaking of a particular pricing strategy. This factor not only addresses the physical tangible requirements to support the collection of the revenues, but also the intangible requirements, such as policy development.

The easiest pricing structure to support is the Property Assessment structure. As municipalities undertake the process of calculating property tax bills and the collection process for their general services, the incorporation of the water costs into this calculation would have virtually no impact on the administrative process and structure.

The Flat Rate pricing structure is relatively easy to administer as well. It is normally calculated to collect a set amount, either on a monthly, quarterly, semi-annual or annual basis, and is billed directly to the customer. The impact on administration centres mostly on the accounts receivable or billing area of the municipality, but normally requires minor additional staff or operating costs to undertake.

The three remaining methods, those being Increasing Block Rate, Constant Rate and Declining Block Rate, have a more dramatic effect on administration. These methods are dependent upon actual consumption and hence involve a major structure in place to administer. First, meters must be installed in all existing units in the municipality, and units to be subsequently built must be required to include these meters. Second, meter readings must be undertaken periodically. Hence staff must be available for this purpose or a service contract must be negotiated. Third, the billings process must be expanded to accommodate this process. Billing must be done per a defined period, requiring staff to produce the bills. Lastly, either through increased staffing or by service contract, an annual maintenance program must be set up to ensure meters are working effectively in recording consumed volumes.

The benefit derived from the installation of meters is that information on consumption patterns becomes available. This information provides benefit to administration in calculating rates which will ensure revenue recovery. Additionally, when planning what services are to be constructed in future years, the municipality or utility has documented

consumption patterns distinctive to its own situation, which can be used to project sizing of growth-related works.

Equity

Equity is always a consideration in the establishment of pricing structures but its definition can vary depending on a municipality's circumstances and based on the subjective interpretation of those involved. For example: is the price charged to a particular class of rate payer consistent with those of a similar class in surrounding municipalities; through the pricing structure does one class of rate payer pay more than another class; should one pay based on ability to pay, or on the basis that a unit of water costs the same to supply no matter who consumes it; etc.? There are many interpretations. Equity therefore must be viewed broadly in light of many factors as part of achieving what is best for the municipality as a whole.

Conservation

In today's society, conservation of natural resources is increasingly being more highly valued. Controversy continuously focuses on the preservation of non-renewable resources and on the proper management of renewable resources. Conservation is also a concept which applies to a municipality facing physical limitations in the amount of water which can be supplied to an area. As well, financial constraints can encourage conservation in a municipality where the cost of providing each additional unit is increasing.

Pricing structures such as property assessment and flat rate do not, in themselves, encourage conservation. In fact, depending on the price which is charged, they may even encourage resource "squandering," either because consumers, without the price discipline, consume water at will, or the customer wants to get his money's worth and hence adopts more liberal consumption patterns. The fundamental reason for this is that the price paid for the service bears no direct relationship to the volume consumed and hence is viewed as a "tax," instead of being viewed as the price of a purchased commodity.

The Declining Block Rate provides a decreasing incentive towards conservation. By creating awareness of volumes consumed, the consumer can reduce his total costs by restricting consumption; however, the incentive lessens as more water is consumed, because the marginal cost per unit declines as the consumer enters the next block

pricing range. Similarly, those whose consumption level is at the top end of a block have less incentive to reduce consumption.

The Constant Rate structure presents the customer with a linear relationship between consumption and the cost thereof. As the consumer pays a fixed cost per unit, his bill will vary directly with the amount consumed. This method presents tangible incentive for consumers to conserve water. As metering provides direct feedback as to usage patterns and the consumer has direct control over the total amount paid for the commodity, the consumer is encouraged to use only those volumes that are reasonably required.

The Inverted Block method presents the most effective pricing method for encouraging conservation. Through this method, the price per unit consumed increases as total volumes consumed grow. The consumer becomes aware of consumption through metering with the charges increasing dramatically with usage. Hence, there normally is awareness that exercising control over usage can produce significant savings. This method not only encourages conservation methods, but may also penalize legitimate high-volume users if not properly structured.

Figure 6-1 provides a schematic representation of the various rate structures (note property tax as a basis for revenue recovery has not been presented for comparison, as the proportion of taxes paid varies in direct proportion to the market value of the property). The graphs on the left-hand side of the figure present the cost per unit for each additional amount of water consumed. The right-hand side of the figure presents the impact on the customer's bill as the volume of water increases. Following the schematic is a table summarizing each rate structure.

Figure 6-1

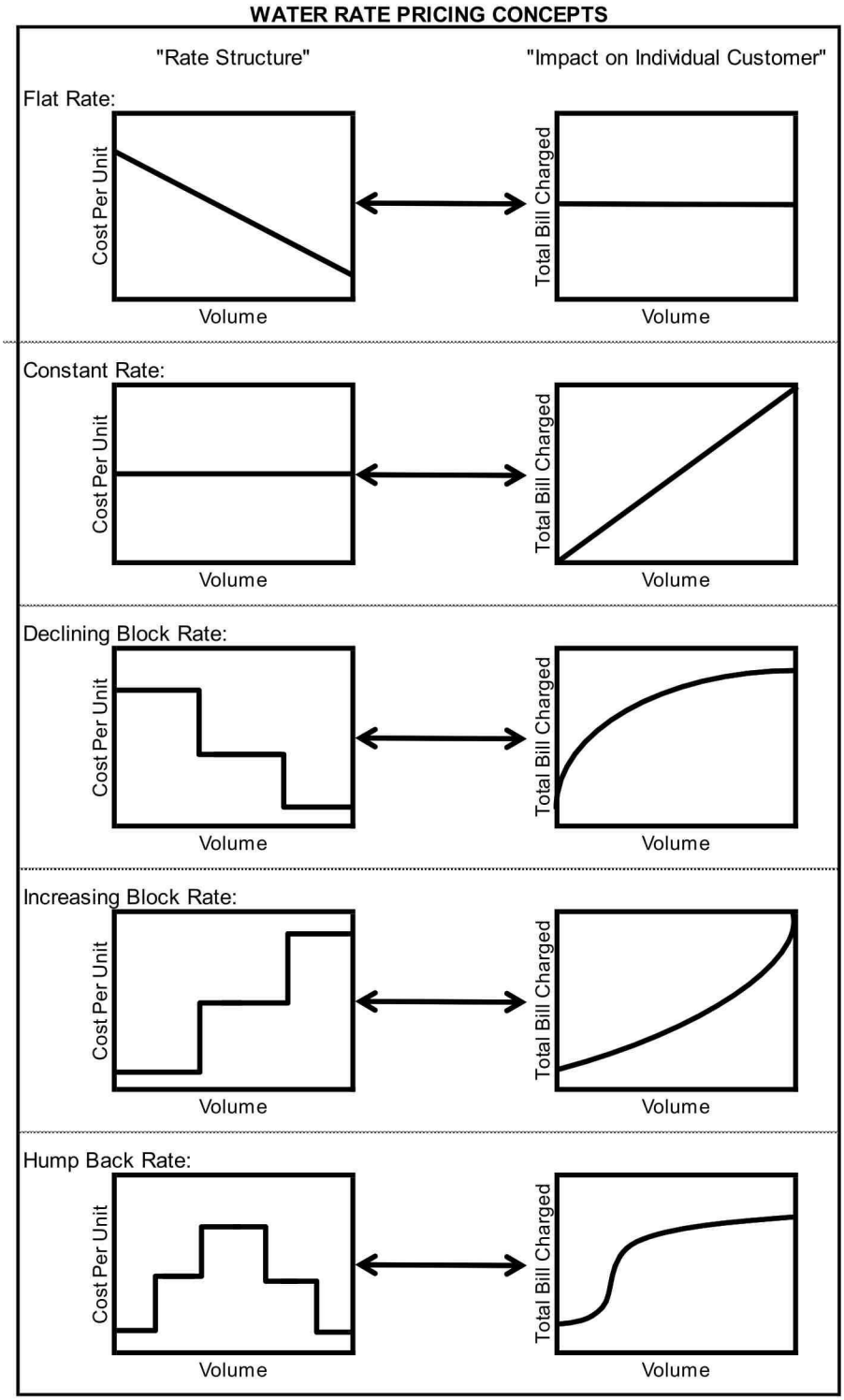

WATER RATE PRICING CONCEPTS
"Rate Structure"
"Impact on Individual Customer"
Flat Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Constant Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Declining Block Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Increasing Block Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Hump Back Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume

Figure 6-2
Summary of Various Rate Structures and their Impact on Customer Bills as Volume Usage Increases

Rate Structure	Cost Per Unit As Volume Increases	Impact On Customer Bill As Volume Increases
Flat Rate	Cost per unit decreases as more volume consumed	Bill remains the same no matter how much volume is consumed
Constant Rate	Cost per unit remains the same	Bill increases in direct proportion to consumption
Declining Block	Cost per unit decreases as threshold targets are achieved	Bill increases at a slower rate as volumes increase
Increasing Block	Cost per unit increases as threshold targets are achieved	Bill increases at a faster rate as volumes increase
Hump Back Rate	Combination of an increasing block at the lower consumption volumes and then converts to a declining block for the high consumption	Bill increases at a faster rate at the lower consumption amounts and then slows as volumes increase

6.4 Rate Structures in Ontario

In a past survey of over 170 municipalities (approximately half of the municipalities who provide water and/or sewer), all forms of rate structures are in use by Ontario municipalities. The most common rate structure is the constant rate (for metered municipalities). Most municipalities (approximately 92%) who have volume rate structures also impose a base monthly charge.

Historically, the development of a base charge often reflected either the recovery of meter reading/billing/collection costs, plus administration or those costs plus certain fixed costs (such as capital contributions or reserve contributions). More recently, many municipalities have started to establish base charges based on ensuring a secure

portion of the revenue stream which does not vary with volume consumption. Selection of the quantum of the base charge is a matter of policy selected by individual municipalities.

6.5 Recommended Rate Structures

Based on the foregoing, it is recommended that the same rate structures be continued in the future.

As noted earlier, the needs for water and wastewater are significant throughout the forecast period. Additional operating expenditures and the requirement for significant capital expenditures create pressure on the financial sustainability of the water and wastewater systems. Further, prior to 2017, the Township's wastewater rate structure provided for a base charge and a four-tier increasing block volumetric rate (similar to water). Through the 2017 rate study process and public consultation, it was determined that the increasing block volume charge for wastewater be replaced with a constant volume rate to reduce the impact of the wastewater bill on larger water users (e.g. residential homes with irrigation/sprinkler systems for their lawns). As a result of the Township's prior detailed review and public consultation, this analysis maintains the current rate structures.

Although the needs are significant for both systems, the water capital reserve fund has a balance of $10.27 million as of December 31, 2022. This reserve balance can be used to assist in funding capital works over the forecast period without the need to issue debentures for non-growth related capital projects. In order to meet the needs for water, it is recommended that both the base rate and volume rates (all four blocks) increase by 4% annually over the forecast period (Scenario 1). As the operating and capital needs are significant for water services, this rate increase, combined with the reserve fund balance, allows the Township to fund capital works and operating expenditures without the need to issue debt for non-growth related capital projects. The second recommended scenario to meet the needs for water is to increase both the base rate and volume rates (all four blocks) by 3% from 2024 to 2025, 4% from 2026 to 2028, and 5% every year thereafter. The forecast base charges are presented in Tables 6-1 and 6-2. The volume rates are presented in section 7.2.

As for wastewater, the reserve fund has a balance of $156,727 as of December 31, 2022. The Township has numerous required capital expenditures planned for the

forecast period, and as discussed in section 5.3, the additional operating expenditures related to the new Midhurst treatment plants are expected to be significant. Since the reserve fund does not have a significant balance, the capital program will need to be funded through debenture issuances. It is recommended that the wastewater base charge and volume charge increase by 10% per year over the forecast period (scenario 1). The second recommended scenario to meet the needs for wastewater is to increase both the base charge and volume charge by 8%, and to have the Elmvale main pumping station and wastewater treatment plant expansion front ended by the developing landowners. Both scenarios result in positive balances in the wastewater reserve funds. The forecast base charges are presented in Tables 6-3 and 6-4. The constant rates are presented in section 7.3.

For scenario 1, the combined impact of the water and wastewater rates above equal to an annual increase of 8% per year on the total water and wastewater bill for customers based on 180 cu.m. of water usage.

For scenario 2, the combined impact of the water and wastewater rates above equal to an annual increase of 6% per year for 2024 to 2025, and 7% every year thereafter on the total water and wastewater bill for customers based on 180 cu.m. of water usage.

The above increases are recommended to ensure that the Township can fund the capital and operating costs while keeping the reserve funds in a positive balance.

Table 6-1
Township of Springwater
Scenario 1: 4% Annual Increases
Base Charge Forecast – Water

Water	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387
New	201	528	805	1,107	1,409	1,736	2,088	2,440	2,792	3,144	3,496
Total Customers	**4,588**	**4,915**	**5,192**	**5,494**	**5,796**	**6,123**	**6,475**	**6,827**	**7,179**	**7,531**	**7,883**
Total Annual Revenue	**$1,103,349**	**$1,227,500**	**$1,347,092**	**$1,480,905**	**$1,623,267**	**$1,781,807**	**$1,957,876**	**$2,145,180**	**$2,344,336**	**$2,555,992**	**$2,780,830**

Residential and Multi-Residential Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236
New	201	528	805	1,107	1,409	1,736	2,088	2,440	2,792	3,144	3,496
Subtotal Customers	**4,437**	**4,764**	**5,041**	**5,343**	**5,645**	**5,972**	**6,324**	**6,676**	**7,028**	**7,380**	**7,732**
Monthly Base Charge	$19.61	$20.39	$21.21	$22.06	$22.94	$23.86	$24.81	$25.81	$26.84	$27.91	$29.03
Annual Base Charge	$235.32	$244.73	$254.52	$264.70	$275.29	$286.30	$297.75	$309.67	$322.05	$334.93	$348.33
Total Annual Revenue	**$1,044,115**	**$1,165,897**	**$1,283,024**	**$1,414,274**	**$1,553,972**	**$1,709,739**	**$1,882,926**	**$2,067,232**	**$2,263,270**	**$2,471,683**	**$2,693,148**

Commercial Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	151	151	151	151	151	151	151	151	151	151	151
New											
Subtotal Customers	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**
Monthly Base Charge	$32.69	$34.00	$35.36	$36.77	$38.24	$39.77	$41.36	$43.02	$44.74	$46.53	$48.39
Annual Base Charge	$392.28	$407.97	$424.29	$441.26	$458.91	$477.27	$496.36	$516.21	$536.86	$558.34	$580.67
Total Annual Revenue	**$59,234**	**$61,604**	**$64,068**	**$66,631**	**$69,296**	**$72,068**	**$74,950**	**$77,948**	**$81,066**	**$84,309**	**$87,681**

Table 6-2
Township of Springwater
Scenario 2: Phased Annual Increases
Base Charge Forecast – Water

Water	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387	4,387
New	201	528	805	1,107	1,409	1,736	2,088	2,440	2,792	3,144	3,496
Total Customers	**4,588**	**4,915**	**5,192**	**5,494**	**5,796**	**6,123**	**6,475**	**6,827**	**7,179**	**7,531**	**7,883**
Total Annual Revenue	**$1,103,349**	**$1,215,697**	**$1,321,311**	**$1,452,563**	**$1,592,201**	**$1,747,706**	**$1,938,871**	**$2,144,784**	**$2,366,440**	**$2,604,900**	**$2,861,291**

Residential and Multi-Residential Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236	4,236
New	201	528	805	1,107	1,409	1,736	2,088	2,440	2,792	3,144	3,496
Subtotal Customers	**4,437**	**4,764**	**5,041**	**5,343**	**5,645**	**5,972**	**6,324**	**6,676**	**7,028**	**7,380**	**7,732**
Monthly Base Charge	$19.61	$20.20	$20.80	$21.64	$22.50	$23.40	$24.57	$25.80	$27.09	$28.45	$29.87
Annual Base Charge	$235.32	$242.38	$249.65	$259.64	$270.02	$280.82	$294.86	$309.61	$325.09	$341.34	$358.41
Total Annual Revenue	**$1,044,115**	**$1,154,686**	**$1,258,469**	**$1,387,208**	**$1,524,231**	**$1,677,018**	**$1,864,649**	**$2,066,850**	**$2,284,610**	**$2,518,978**	**$2,771,072**

Commercial Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	151	151	151	151	151	151	151	151	151	151	151
New											
Subtotal Customers	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**	**151**
Monthly Base Charge	$32.69	$33.67	$34.68	$36.07	$37.51	$39.01	$40.96	$43.01	$45.16	$47.42	$49.79
Annual Base Charge	$392.28	$404.05	$416.17	$432.82	$450.13	$468.13	$491.54	$516.12	$541.92	$569.02	$597.47
Total Annual Revenue	**$59,234**	**$61,011**	**$62,842**	**$65,355**	**$67,970**	**$70,688**	**$74,223**	**$77,934**	**$81,831**	**$85,922**	**$90,218**

Table 6-3
Township of Springwater
Scenario 1: 10% Annual Increases
Base Charge Forecast – Wastewater

Wastewater	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116
New	85	228	353	487	621	1,089	1,631	1,912	2,194	2,476	2,757
Subtotal Customers	**2,201**	**2,344**	**2,469**	**2,603**	**2,737**	**3,205**	**3,747**	**4,028**	**4,310**	**4,592**	**4,873**
Total Annual Revenue	**$1,022,352**	**$1,196,863**	**$1,386,046**	**$1,606,600**	**$1,857,405**	**$2,389,465**	**$3,069,317**	**$3,628,442**	**$4,268,699**	**$5,000,723**	**$5,836,464**

Residential and Multi-Residential Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020
New	85	228	353	487	621	1,089	1,631	1,912	2,194	2,476	2,757
Subtotal Customers	**2,105**	**2,248**	**2,373**	**2,507**	**2,641**	**3,109**	**3,651**	**3,932**	**4,214**	**4,496**	**4,777**
Monthly Base Charge	$38.29	$42.12	$46.33	$50.96	$56.06	$61.67	$67.83	$74.62	$82.08	$90.29	$99.31
Annual Base Charge	$459.48	$505.43	$555.97	$611.57	$672.72	$740.00	$814.00	$895.40	$984.94	$1,083.43	$1,191.77
Total Annual Revenue	**$967,205**	**$1,136,202**	**$1,319,319**	**$1,533,201**	**$1,776,666**	**$2,300,651**	**$2,971,622**	**$3,520,978**	**$4,150,488**	**$4,870,691**	**$5,693,429**

Commercial Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	96	96	96	96	96	96	96	96	96	96	96
New											
Subtotal Customers	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**
Monthly Base Charge	$47.87	$52.66	$57.92	$63.71	$70.09	$77.10	$84.80	$93.29	$102.61	$112.87	$124.16
Annual Base Charge	$574.44	$631.88	$695.07	$764.58	$841.04	$925.14	$1,017.66	$1,119.42	$1,231.36	$1,354.50	$1,489.95
Total Annual Revenue	**$55,146**	**$60,661**	**$66,727**	**$73,400**	**$80,740**	**$88,814**	**$97,695**	**$107,464**	**$118,211**	**$130,032**	**$143,035**

Table 6-4
Township of Springwater
Scenario 2: 8% Annual Increases with Front Ending
Base Charge Forecast – Wastewater

Wastewater	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116	2,116
New	85	228	353	487	621	1,089	1,631	1,912	2,194	2,476	2,757
Subtotal Customers	**2,201**	**2,344**	**2,469**	**2,603**	**2,737**	**3,205**	**3,747**	**4,028**	**4,310**	**4,592**	**4,873**
Total Annual Revenue	**$1,022,352**	**$1,175,102**	**$1,336,102**	**$1,520,551**	**$1,725,961**	**$2,179,997**	**$2,749,338**	**$3,191,080**	**$3,685,905**	**$4,239,478**	**$4,858,034**

Residential and Multi-Residential Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020
New	85	228	353	487	621	1,089	1,631	1,912	2,194	2,476	2,757
Subtotal Customers	**2,105**	**2,248**	**2,373**	**2,507**	**2,641**	**3,109**	**3,651**	**3,932**	**4,214**	**4,496**	**4,777**
Monthly Base Charge	$38.29	$41.35	$44.66	$48.23	$52.09	$56.26	$60.76	$65.62	$70.87	$76.54	$82.67
Annual Base Charge	$459.48	$496.24	$535.94	$578.81	$625.12	$675.13	$729.14	$787.47	$850.47	$918.50	$991.98
Total Annual Revenue	**$967,205**	**$1,115,544**	**$1,271,780**	**$1,451,083**	**$1,650,935**	**$2,098,969**	**$2,661,828**	**$3,096,569**	**$3,583,833**	**$4,129,241**	**$4,738,977**

Commercial Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing	96	96	96	96	96	96	96	96	96	96	96
New											
Subtotal Customers	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**	**96**
Monthly Base Charge	$47.87	$51.70	$55.84	$60.30	$65.13	$70.34	$75.96	$82.04	$88.60	$95.69	$103.35
Annual Base Charge	$574.44	$620.40	$670.03	$723.63	$781.52	$844.04	$911.56	$984.49	$1,063.25	$1,148.31	$1,240.17
Total Annual Revenue	**$55,146**	**$59,558**	**$64,323**	**$69,468**	**$75,026**	**$81,028**	**$87,510**	**$94,511**	**$102,072**	**$110,238**	**$119,057**

Chapter 7
Analysis of Water and Wastewater Rates and Policy Matters

7. Analysis of Water and Wastewater Rates and Policy Matters

7.1 Introduction

To summarize the analysis undertaken thus far, Chapter 2 reviewed capital-related issues and responds to the provincial directives to maintain and upgrade infrastructure to required levels. Chapter 4 provided a review of capital financing options to which water and wastewater reserve contributions will be the predominant basis for financing future capital replacement. Chapter 5 established the 10-year operating forecast of expenditures including an annual capital reserve contribution. The base charge revenues are to ensure that fixed costs are recovered regardless of the amount of volume used by customers. This chapter will provide for the calculation of the volume rates over the forecast period. These calculations will be based on the net operating expenditures (the variable costs) provided in Chapter 5, divided by the water consumption forecast and wastewater volumes provided in section 1.8.

7.2 Water Rates

Based on the discussion of rate structures provided in section 6.5 and the recommendation to continue with the present structures, the rates are calculated by taking the net recoverable amounts from Table 5-1 (the product of total expenditures less non-rate revenues and deduct the base charge amounts provided in section 6.5) and completes the calculation by dividing them by the volumes resulting in the forecasted rates. As stated earlier, the needs for water are significant over the forecast period. While the bulk of the revenue required is being recovered through the base charges, the volume rates are anticipated to increase at 4% per year over the entire forecast period in scenario 1, and 3% from 2024 to 2025, 4% from 2026 to 2028, and 5% every year thereafter in scenario 2. The volume rates are presented in Tables 7-1 and 7-2. Detailed calculations of the volume rates are provided in Appendix C. A summary of the recommended base charge and volume rates along with the total annual bill for an average residential user who consumes 180 cu.m. per year are as follows:

Table 7-1
Township of Springwater
Scenario 1: 4% Annual Increases
Average Annual Residential Water Bill (Based on an Annual Usage of 180 cu.m.)

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Monthly Base Rate	$19.61	$20.39	$21.21	$22.06	$22.94	$23.86	$24.81	$25.81	$26.84	$27.91	$29.03
Block 1 Rate (0-15 cu.m./month)	$1.80	$1.87	$1.95	$2.03	$2.11	$2.19	$2.28	$2.37	$2.46	$2.56	$2.66
Block 2 Rate (16-30 cu.m./month)	$1.89	$1.97	$2.05	$2.13	$2.22	$2.30	$2.39	$2.49	$2.58	$2.69	$2.79
Block 3 Rate (31-45 cu.m./month)	$2.36	$2.45	$2.56	$2.66	$2.77	$2.87	$2.99	$3.11	$3.23	$3.36	$3.49
Block 4 Rate (45+ cu.m./month)	$3.30	$3.43	$3.58	$3.72	$3.87	$4.02	$4.18	$4.35	$4.51	$4.69	$4.88
Annual Base Rate Bill	**$235.32**	**$244.73**	**$254.52**	**$264.70**	**$275.29**	**$286.30**	**$297.75**	**$309.67**	**$322.05**	**$334.93**	**$348.33**
Block 1 Volume	180	180	180	180	180	180	180	180	180	180	180
Block 2 Volume	0	0	0	0	0	0	0	0	0	0	0
Block 3 Volume	0	0	0	0	0	0	0	0	0	0	0
Block 4 Volume	0	0	0	0	0	0	0	0	0	0	0
Annual Volume Bill	**$324.00**	**$336.96**	**$351.00**	**$365.40**	**$379.80**	**$394.20**	**$410.40**	**$426.60**	**$442.80**	**$460.80**	**$478.80**
Total Annual Bill	**$559.32**	**$581.69**	**$605.52**	**$630.10**	**$655.09**	**$680.50**	**$708.15**	**$736.27**	**$764.85**	**$795.73**	**$827.13**
% Increase - Base Rate		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
% Increase - Volume Rate		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
% Increase - Total Annual Bill		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%

Table 7-2
Township of Springwater
Scenario 2: Phased Annual Increases
Average Annual Residential Water Bill (Based on an Annual Usage of 180 cu.m.)

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Monthly Base Rate	$19.61	$20.20	$20.80	$21.64	$22.50	$23.40	$24.57	$25.80	$27.09	$28.45	$29.87
Block 1 Rate (0-15 cu.m./month)	$1.80	$1.85	$1.91	$1.99	$2.07	$2.15	$2.26	$2.37	$2.49	$2.61	$2.74
Block 2 Rate (16-30 cu.m./month)	$1.89	$1.95	$2.01	$2.09	$2.17	$2.26	$2.37	$2.49	$2.61	$2.74	$2.88
Block 3 Rate (31-45 cu.m./month)	$2.36	$2.43	$2.50	$2.61	$2.71	$2.82	$2.96	$3.11	$3.26	$3.42	$3.59
Block 4 Rate (45+ cu.m./month)	$3.30	$3.40	$3.50	$3.65	$3.80	$3.94	$4.14	$4.35	$4.57	$4.79	$5.02
Annual Base Rate Bill	**$235.32**	**$242.38**	**$249.65**	**$259.64**	**$270.02**	**$280.82**	**$294.86**	**$309.61**	**$325.09**	**$341.34**	**$358.41**
Block 1 Volume	180	180	180	180	180	180	180	180	180	180	180
Block 2 Volume	0	0	0	0	0	0	0	0	0	0	0
Block 3 Volume	0	0	0	0	0	0	0	0	0	0	0
Block 4 Volume	0	0	0	0	0	0	0	0	0	0	0
Annual Volume Bill	**$324.00**	**$333.72**	**$343.80**	**$358.20**	**$372.60**	**$387.00**	**$406.80**	**$426.60**	**$448.20**	**$469.80**	**$493.20**
Total Annual Bill	**$559.32**	**$576.10**	**$593.45**	**$617.84**	**$642.62**	**$667.82**	**$701.66**	**$736.21**	**$773.29**	**$811.14**	**$851.61**
% Increase - Base Rate		3.0%	3.0%	4.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%
% Increase - Volume Rate		3.0%	3.0%	4.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%
% Increase - Total Annual Bill		3.0%	3.0%	4.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%

7.3 Wastewater Rates

Similar to water, the calculation of the wastewater rates takes the net recoverable amounts from Table 5-2 and completes the calculation by dividing them by the volumes, resulting in the forecast rates. Detailed calculations are provided in Appendix D. As stated earlier in chapter 6, the needs for wastewater are significant over the forecast period.

Based on the significant capital and operating needs, coupled with an insignificant wastewater reserve fund balance, the wastewater base and constant rates are anticipated to increase by 10% annually in Scenario 1. In Scenario 2, the wastewater base and constant rates are anticipated to increase by 8% annually.

The following summarizes the recommended rates for wastewater and provides the average annual bill for a residential customer who uses 180 cu.m. per year:

Table 7-3
Township of Springwater
Scenario 1: 10% Annual Increases
Average Annual Residential Wastewater Bill (Based on an Annual Usage of 180 cu.m.)

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Monthly Base Rate	$38.29	$42.12	$46.33	$50.96	$56.06	$61.67	$67.83	$74.62	$82.08	$90.29	$99.31
Constant Rate	$2.70	$2.97	$3.27	$3.60	$3.96	$4.36	4.80	$5.28	$5.81	$6.39	$7.03
Annual Base Rate Bill	**$459.48**	**$505.43**	**$555.97**	**$611.57**	**$672.72**	**$740.00**	**$814.00**	**$895.40**	**$984.94**	**$1,083.43**	**$1,191.77**
Volume	180	180	180	180	180	180	180	180	180	180	180
Annual Volume Bill	**$486.00**	**$534.60**	**$588.60**	**$648.00**	**$712.80**	**$784.80**	**$864.00**	**$950.40**	**$1,045.80**	**$1,150.20**	**$1,265.40**
Total Annual Bill	**$945.48**	**$1,040.03**	**$1,144.57**	**$1,259.57**	**$1,385.52**	**$1,524.80**	**$1,678.00**	**$1,845.80**	**$2,030.74**	**$2,233.63**	**$2,457.17**
% Increase - Base Rate		10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
% Increase - Volume Rate		10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
% Increase - Total Annual Bill		10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%

Table 7-4
Township of Springwater
Scenario 2: 8% Annual Increases with Front-ending
Average Annual Residential Wastewater Bill (Based on an Annual Usage of 180 cu.m.)

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Monthly Base Rate	$38.29	$41.35	$44.66	$48.23	$52.09	$56.26	$60.76	$65.62	$70.87	$76.54	$82.67
Constant Rate	$2.70	$2.92	$3.15	$3.40	$3.67	$3.96	4.28	$4.62	$4.99	$5.39	$5.82
Annual Base Rate Bill	**$459.48**	**$496.24**	**$535.94**	**$578.81**	**$625.12**	**$675.13**	**$729.14**	**$787.47**	**$850.47**	**$918.50**	**$991.98**
Volume	180	180	180	180	180	180	180	180	180	180	180
Annual Volume Bill	**$486.00**	**$525.60**	**$567.00**	**$612.00**	**$660.60**	**$712.80**	**$770.40**	**$831.60**	**$898.20**	**$970.20**	**$1,047.60**
Total Annual Bill	**$945.48**	**$1,021.84**	**$1,102.94**	**$1,190.81**	**$1,285.72**	**$1,387.93**	**$1,499.54**	**$1,619.07**	**$1,748.67**	**$1,888.70**	**$2,039.58**
% Increase - Base Rate		8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
% Increase - Volume Rate		8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
% Increase - Total Annual Bill		8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%

7.4 Forecast of Combined Water and Wastewater Impact for the Average Residential Customer

Based on the foregoing information, the combined impact of the water and wastewater base charge and volume rate charges equal to 8% annual increases for scenario 1 and 6% in 2024 and 2025, with 7% annual increases thereafter for scenario 2. Tables 7-5 and 7-6 present the forecast combined annual bill for both scenarios for customers based on an annual usage of 180 cu.m.

Table 7-5
Township of Springwater
Annual Average Water and Wastewater Bill Based on 180 cu.m
Scenario 1

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Water											
Monthly Base Rate	$19.61	$20.39	$21.21	$22.06	$22.94	$23.86	$24.81	$25.81	$26.84	$27.91	$29.03
Block 1 Rate (0 to 15 cu.m./month)	$1.80	$1.87	$1.95	$2.03	$2.11	$2.19	$2.28	$2.37	$2.46	$2.56	$2.66
Annual Base Rate Bill	$235.32	$244.73	$254.52	$264.70	$275.29	$286.30	$297.75	$309.67	$322.05	$334.93	$348.33
Annual Volume Bill	$324.00	$336.96	$351.00	$365.40	$379.80	$394.20	$410.40	$426.60	$442.80	$460.80	$478.80
Total Water Bill	**$559.32**	**$581.69**	**$605.52**	**$630.10**	**$655.09**	**$680.50**	**$708.15**	**$736.27**	**$764.85**	**$795.73**	**$827.13**
Wastewater											
Monthly Base Rate	$38.29	$42.12	$46.33	$50.96	$56.06	$61.67	$67.83	$74.62	$82.08	$90.29	$99.31
Constant Rate	$2.70	$2.97	$3.27	$3.60	$3.96	$4.36	$4.80	$5.28	$5.81	$6.39	$7.03
Annual Base Rate Bill	$459.48	$505.43	$555.97	$611.57	$672.72	$740.00	$814.00	$895.40	$984.94	$1,083.43	$1,191.77
Annual Volume Bill	$486.00	$534.60	$588.60	$648.00	$712.80	$784.80	$864.00	$950.40	$1,045.80	$1,150.20	$1,265.40
Total Wastewater Bill	**$945.48**	**$1,040.03**	**$1,144.57**	**$1,259.57**	**$1,385.52**	**$1,524.80**	**$1,678.00**	**$1,845.80**	**$2,030.74**	**$2,233.63**	**$2,457.17**
Total Water and Wastewater Bill	**$1,504.80**	**$1,621.72**	**$1,750.09**	**$1,889.67**	**$2,040.62**	**$2,205.30**	**$2,386.15**	**$2,582.06**	**$2,795.59**	**$3,029.36**	**$3,284.30**
Annual % Increase		**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**

Table 7-6
Township of Springwater
Annual Average Water and Wastewater Bill Based on 180 cu.m
Scenario 2

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Water											
Monthly Base Rate	$19.61	$20.20	$20.80	$21.64	$22.50	$23.40	$24.57	$25.80	$27.09	$28.45	$29.87
Block 1 Rate (0 to 15 cu.m./month)	$1.80	$1.85	$1.91	$1.99	$2.07	$2.15	$2.26	$2.37	$2.49	$2.61	$2.74
Annual Base Rate Bill	$235.32	$242.38	$249.65	$259.64	$270.02	$280.82	$294.86	$309.61	$325.09	$341.34	$358.41
Annual Volume Bill	$324.00	$333.72	$343.80	$358.20	$372.60	$387.00	$406.80	$426.60	$448.20	$469.80	$493.20
Total Water Bill	**$559.32**	**$576.10**	**$593.45**	**$617.84**	**$642.62**	**$667.82**	**$701.66**	**$736.21**	**$773.29**	**$811.14**	**$851.61**
Wastewater											
Monthly Base Rate	$38.29	$41.35	$44.66	$48.23	$52.09	$56.26	$60.76	$65.62	$70.87	$76.54	$82.67
Constant Rate	$2.70	$2.92	$3.15	$3.40	$3.67	$3.96	$4.28	$4.62	$4.99	$5.39	$5.82
Annual Base Rate Bill	$459.48	$496.24	$535.94	$578.81	$625.12	$675.13	$729.14	$787.47	$850.47	$918.50	$991.98
Annual Volume Bill	$486.00	$525.60	$567.00	$612.00	$660.60	$712.80	$770.40	$831.60	$898.20	$970.20	$1,047.60
Total Wastewater Bill	**$945.48**	**$1,021.84**	**$1,102.94**	**$1,190.81**	**$1,285.72**	**$1,387.93**	**$1,499.54**	**$1,619.07**	**$1,748.67**	**$1,888.70**	**$2,039.58**
Total Water and Wastewater Bill	**$1,504.80**	**$1,597.94**	**$1,696.39**	**$1,808.65**	**$1,928.34**	**$2,055.75**	**$2,201.20**	**$2,355.28**	**$2,521.95**	**$2,699.85**	**$2,891.19**
Annual % Increase		**6.0%**	**6.0%**	**7.0%**	**7.0%**	**7.0%**	**7.0%**	**7.0%**	**7.0%**	**7.0%**	**7.0%**

Chapter 8
Recommendations

8. Recommendations

As presented within this report, capital and operating expenditures have been identified and forecast over a 10-year period for water and wastewater services.

Based upon the foregoing, the following recommendations are identified for consideration by Township Council:

1. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates.
2. That Council consider the Capital Plan for water and wastewater as provided in Tables 2-1 and 2-2 and the associated Capital Financing Plan as set out in Tables 4-1 and 4-2 or 4-3.
3. That Council consider the base charges provided in Table 6-1 and 6-2 for water and Table 6-3 and 6-4 for wastewater.
4. That Council consider the volume rates for water and wastewater as provided in Tables 7-1 through 7-4 respectively.

Appendices

Appendix A
Water System Inventory Data

Appendix A: Water System Inventory Data

Table A-1
Township of Springwater
Water Facility Inventory

Asset ID	Item	Year Installed	Estimated Life	Replacement Year	Replacement Cost	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
2093	MIDHURST Booster PS - Equipment	1984	25	2023	100,048	0	suggested for 10 year capital forecast	100,048
2108	MIDHURST Booster PS - Equipment	1989	25	2023	99,758	0	suggested for 10 year capital forecast	99,758
2140	ELMVALE Booster PS - Equipment	1995	25	2023	100,449	0	suggested for 10 year capital forecast	100,449
2092	MIDHURST Booster PS - Structure	1984	75	2059	100,048	36	4,583	-
2107	MIDHURST Booster PS - Structure	1989	75	2064	99,758	41	4,261	-
2139	ELMVALE Booster PS - Structure	1995	75	2070	100,449	47	4,014	-
2071	ELMVALE Pump Station - Structural	1960	75	2035	160,146	12	16,089	-
2072	ELMVALE Pump Station - Equipment	1960	50	2023	160,146	0	suggested for 10 year capital forecast	160,146
2075	MIDHURST Pump Station - Structural	1972	75	2047	207,760	24	12,268	-
2076	MIDHURST Pump Station - Equipment	1972	50	2023	207,760	0	suggested for 10 year capital forecast	207,760
2079	MINESING Pump Station - Structural	1973	75	2048	210,447	25	12,086	-
2080	MINESING Pump Station - Equipment	1973	50	2023	210,447	0	suggested for 10 year capital forecast	210,447
2085	ANTEN MILLS Pump Station - Structural	1974	75	2049	227,571	26	12,730	-
2086	ANTEN MILLS Pump Station - Equipment	1974	50	2024	227,571	1	suggested for 10 year capital forecast	227,571
2089	MIDHURST Pump Station - Structural	1975	75	2050	217,717	27	11,880	-
2090	MIDHURST Pump Station - Equipment	1975	50	2025	217,717	2	suggested for 10 year capital forecast	217,717
2099	SNOW VALLEY Pump Station - Structural	1988	75	2063	298,107	40	12,897	-
2100	SNOW VALLEY Pump Station - Equipment	1988	50	2038	298,107	15	24,971	-
2120	DEL TREND Pump Station - Structural	1992	75	2067	301,577	44	12,434	-
2121	DEL TREND Pump Station - Equipment	1992	50	2042	301,577	19	21,054	-
2129	ELMVALE Pump Station - Structural	1994	75	2069	299,699	46	12,097	-
2130	ELMVALE Pump Station - Equipment	1994	50	2044	299,699	21	19,442	-
2131	VESPRA DOWNS Pump Station - Structural	1994	75	2069	299,699	46	12,097	-
2132	VESPRA DOWNS Pump Station - Equipment	1994	50	2044	299,699	21	19,442	-
2136	HILLSDALE Pump Station - Structural	1995	75	2070	301,347	47	12,042	-
2137	HILLSDALE Pump Station - Equipment	1995	50	2045	301,347	22	18,909	-
2158	MIDHURST Pump Station - Structural	2002	75	2077	301,400	54	11,340	-
2159	MIDHURST Pump Station - Equipment	2002	50	2052	301,400	29	15,707	-
2170	PHELSTON Pump Station - Structural	2004	75	2079	297,449	56	11,031	-
2171	PHELSTON Pump Station - Equipment	2004	50	2054	297,449	31	14,872	-
2172	SNOW VALLEY Pump Station - Structural	2004	75	2079	297,449	56	11,031	-
2173	SNOW VALLEY Pump Station - Equipment	2004	50	2054	297,449	31	14,872	-
2178	PHELSTON Pump Station - Equipment	2006	50	2056	65,097	33	3,135	-
2180	VESPRA DOWNS Pump Station - Equipment	2006	50	2056	77,241	33	3,720	-
2181	DEL TREND Pump Station - Equipment	2006	50	2056	81,761	33	3,937	-
2182	ELMVALE Pump Station - Equipment	2006	50	2056	40,448	33	1,948	-
2184	VESPRA DOWNS Pump Station - Equipment	2007	50	2057	184,620	34	8,737	-

Table A-1 (Cont'd)
Township of Springwater
Water Facility Inventory

Asset ID	Item	Year Installed	Estimated Life	Replacement Year	Replacement Cost	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
2191	Minesing Pumphouse	2018	10	2028	4,434	5	suggested for 10 year capital forecast	4,434
2091	MIDHURST Elevated Storage Tank	1983	75	2058	1,992,295	35	92,720	-
2102	SNOW VALLEY Inground Storage Tank	1988	100	2088	596,213	65	20,954	-
2109	MINESING Elevated Storage Tank	1989	75	2064	1,995,159	41	85,218	-
2112	MIDHURST Elevated Storage Tank	1990	75	2065	2,015,180	42	85,024	-
2123	DEL TREND Inground Storage Tank	1992	100	2092	603,155	69	20,801	-
2141	ELMVALE Elevated Storage Tank	1995	75	2070	2,008,979	47	80,280	-
2142	ELMVALE Elevated Storage Tank	1995	75	2070	2,008,979	47	80,280	-
2143	HILLSDALE Elevated Storage Tank	1995	75	2070	2,008,979	47	80,280	-
2144	ANTEN MILLS Elevated Storage Tank	1996	75	2071	2,005,607	48	79,377	-
2175	SNOW VALLEY Elevated Storage Tank	2004	75	2079	1,982,995	56	73,538	-
2176	SNOW VALLEY Elevated Storage Tank	2004	75	2079	1,982,995	56	73,538	-
2177	PHELPSTON Inground Storage Tank	2004	100	2104	594,898	81	19,639	-
2179	MINESING Elevated Storage Tank	2006	75	2081	762,040	58	27,882	-
2185	DEL TREND Inground Storage Tank	2008	100	2108	1,395,876	85	45,570	-
2073	Valves & Chambers	1960	50	2023	277,586	0	suggested for 10 year capital forecast	277,586
2081	Valves & Chambers	1973	50	2023	210,447	0	suggested for 10 year capital forecast	210,447
2087	Valves & Chambers	1974	50	2024	901,181	1	suggested for 10 year capital forecast	901,181
2096	Valves & Chambers	1987	50	2037	11,983	14	1,061	-
2101	Valves & Chambers	1988	50	2038	23,849	15	1,998	-
2106	Valves & Chambers	1989	50	2039	299,274	16	23,825	-
2111	Valves & Chambers	1990	50	2040	36,273	17	2,755	-
2114	Valves & Chambers	1991	50	2041	84,513	18	6,145	-
2122	Valves & Chambers	1992	50	2042	96,505	19	6,737	-
2125	Valves & Chambers	1993	50	2043	12,037	20	809	-
2138	Valves & Chambers	1995	50	2045	373,670	22	23,447	-
2146	Valves & Chambers	1997	50	2047	144,209	24	8,515	-
2148	Valves & Chambers	1998	50	2048	228,476	25	13,121	-
2150	Valves & Chambers	1999	50	2049	59,951	26	3,354	-
2153	Valves & Chambers	2000	50	2050	71,272	27	3,889	-
2155	Valves & Chambers	2001	50	2051	191,781	28	10,221	-
2160	Valves & Chambers	2002	50	2052	192,896	29	10,053	-
2162	Valves & Chambers	2003	50	2053	168,307	30	8,587	-
2174	Valves & Chambers	2004	50	2054	321,245	31	16,062	-
2070	ELMVALE Water Supply Well	1960	50	2023	64,058	0	suggested for 10 year capital forecast	64,058
2074	MIDHURST Water Supply Well	1972	50	2023	83,104	0	suggested for 10 year capital forecast	83,104
2078	MINESING Water Supply Well	1973	50	2023	84,179	0	suggested for 10 year capital forecast	84,179
2083	ANTEN MILLS Water Supply Well	1974	50	2024	91,028	1	suggested for 10 year capital forecast	91,028

Table A-1 (Cont'd)
Township of Springwater
Water Facility Inventory

Asset ID	Item	Year Installed	Estimated Life	Replacement Year	Replacement Cost	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
2084	ANTEN MILLS Water Supply Well	1974	50	2024	91,028	1	suggested for 10 year capital forecast	91,028
2088	MIDHURST Water Supply Well	1975	50	2025	87,087	2	suggested for 10 year capital forecast	87,087
2094	MIDHURST Water Supply Well	1985	50	2035	119,459	12	12,001	-
2098	SNOW VALLEY Water Supply Well	1988	50	2038	119,243	15	9,989	-
2104	MINESING Water Supply Well	1989	50	2039	119,710	16	9,530	-
2105	SNOW VALLEY Water Supply Well	1989	50	2039	119,710	16	9,530	-
2116	ELMVALE Water Supply Well	1992	50	2042	120,631	19	8,422	-
2117	DEL TREND Water Supply Well	1992	50	2042	120,631	19	8,422	-
2118	DEL TREND Water Supply Well	1992	50	2042	120,631	19	8,422	-
2119	MINESING Water Supply Well	1992	50	2042	120,631	19	8,422	-
2127	VESPRA DOWNS Water Supply Well	1994	50	2044	119,880	21	7,777	-
2128	VESPRA DOWNS Water Supply Well	1994	50	2044	119,880	21	7,777	-
2134	HILLSDALE Water Supply Well	1995	50	2045	120,539	22	7,564	-
2135	HILLSDALE Water Supply Well	1995	50	2045	120,539	22	7,564	-
2152	DEL TREND Water Supply Well	2000	50	2050	118,787	27	6,482	-
2157	MIDHURST Water Supply Well	2002	50	2052	120,560	29	6,283	-
2164	ANTEN MILLS Water Supply Well	2004	50	2054	118,980	31	5,949	-
2165	HILLSDALE Water Supply Well	2004	50	2054	118,980	31	5,949	-
2166	PHELSTON Water Supply Well	2004	50	2054	118,980	31	5,949	-
2167	PHELSTON Water Supply Well	2004	50	2054	118,980	31	5,949	-
2168	SNOW VALLEY Water Supply Well	2004	50	2054	118,980	31	5,949	-
2169	SNOW VALLEY Water Supply Well	2004	50	2054	118,980	31	5,949	-
	Total				**36,448,847**		**1,503,177**	**3,218,028**

Table A-2
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
7725	148	PVC	238	150	1908	75	2023	1,295	308,118	0	suggested for 10 year capital forecast	308,118
7726	179	PVC	301	150	1975	75	2050	1,295	389,395	27	21,247	-
7727	180	PVC	115	150	1975	75	2050	1,295	149,046	27	8,133	-
7728	181	PVC	243	150	1975	75	2050	1,295	314,940	27	17,184	-
7729	182	PVC	106	150	1975	75	2050	1,295	137,204	27	7,486	-
7730	183	PVC	101	150	1975	75	2050	1,295	130,542	27	7,123	-
7731	184	PVC	182	150	1975	75	2050	1,295	235,192	27	12,833	-
7732	189	PVC	66	150	1975	75	2050	1,295	85,733	27	4,678	-
7733	191	PVC	8	150	1975	75	2050	1,295	10,133	27	553	-
7734	192	PVC	100	150	1975	75	2050	1,295	128,949	27	7,036	-
7735	224	PVC	122	150	1975	75	2050	1,295	158,258	27	8,635	-
7736	245	PVC	254	150	1975	75	2050	1,295	328,512	27	17,925	-
7737	1	PVC	87	200	1980	75	2055	1,295	112,955	32	5,540	-
7738	57	PVC	372	150	1980	75	2055	1,295	481,532	32	23,618	-
7739	149	PVC	197	150	1980	75	2055	1,295	255,750	32	12,544	-
7740	150	PVC	101	150	1980	75	2055	1,295	130,326	32	6,392	-
7741	153	PVC	25	150	1980	75	2055	1,295	32,568	32	1,597	-
7742	154	PVC	176	150	1980	75	2055	1,295	227,525	32	11,159	-
7743	247	PVC	136	200	1980	75	2055	1,295	175,739	32	8,619	-
7744	248	PVC	220	200	1980	75	2055	1,295	284,492	32	13,953	-
7745	135	PVC	127	150	1986	75	2061	1,295	164,199	38	7,300	-
7746	139	PVC	17	150	1986	75	2061	1,295	21,766	38	968	-
7747	140	PVC	96	150	1986	75	2061	1,295	124,452	38	5,533	-
7748	142	PVC	22	150	1986	75	2061	1,295	28,238	38	1,255	-
7749	143	PVC	112	150	1986	75	2061	1,295	144,834	38	6,439	-
7750	144	PVC	114	150	1986	75	2061	1,295	147,877	38	6,575	-
7751	145	PVC	102	150	1986	75	2061	1,295	131,518	38	5,847	-
7752	146	PVC	132	150	1986	75	2061	1,295	171,077	38	7,606	-
7753	147	PVC	170	150	1986	75	2061	1,295	220,755	38	9,815	-
7754	155	PVC	22	150	1986	75	2061	1,295	28,259	38	1,256	-
7755	157	PVC	399	150	1986	75	2061	1,295	516,968	38	22,984	-
7756	158	PVC	63	150	1986	75	2061	1,295	81,759	38	3,635	-
7757	159	PVC	171	150	1986	75	2061	1,295	220,916	38	9,822	-
7758	161	PVC	32	150	1986	75	2061	1,295	41,690	38	1,853	-
7759	225	PVC	110	150	1986	75	2061	1,295	142,403	38	6,331	-
7760	226	PVC	120	150	1986	75	2061	1,295	155,349	38	6,907	-
7761	227	PVC	24	150	1986	75	2061	1,295	30,458	38	1,354	-
7762	246	PVC	46	150	1986	75	2061	1,295	59,635	38	2,651	-
7763	1,075		114	0	1986	75	2061	1,295	147,347	38	6,551	-
7764	1,358	PVC	42	150	1986	75	2061	1,295	54,966	38	2,444	-
7765	162	PVC	454	150	1987	75	2062	1,295	588,119	39	25,785	-
7766	163	PVC	231	150	1987	75	2062	1,295	299,687	39	13,139	-
7767	164	PVC	284	150	1987	75	2062	1,295	367,956	39	16,133	-
7768	167	PVC	79	150	1987	75	2062	1,295	102,154	39	4,479	-
7769	168	PVC	265	150	1987	75	2062	1,295	343,524	39	15,061	-
7770	169	PVC	29	150	1987	75	2062	1,295	38,042	39	1,668	-
7771	170	PVC	73	150	1987	75	2062	1,295	94,124	39	4,127	-
7772	171	PVC	30	150	1987	75	2062	1,295	38,386	39	1,683	-
7773	172	PVC	101	150	1987	75	2062	1,295	130,524	39	5,723	-
7774	196	PVC	102	150	1987	75	2062	1,295	132,445	39	5,807	-
7775	197	PVC	167	150	1987	75	2062	1,295	215,923	39	9,467	-
7776	1,356	PVC	99	150	1987	75	2062	1,295	128,141	39	5,618	-
7777	442	PVC	90	150	1987	75	2062	1,295	116,969	39	5,128	-
7778	445	PVC	40	150	1987	75	2062	1,295	51,748	39	2,269	-
7779	446	PVC	70	150	1987	75	2062	1,295	90,293	39	3,959	-
7780	133	PVC	18	150	1989	75	2064	1,295	23,808	41	1,017	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
7781	188	PVC	117	150	1989	75	2064	1,295	151,466	41	6,469	-
7782	237	PVC	18	150	1989	75	2064	1,295	23,544	41	1,006	-
7783	274	PVC	120	150	1989	75	2064	1,295	155,939	41	6,661	-
7784	275	PVC	2	150	1989	75	2064	1,295	2,518	41	108	-
7785	276	PVC	48	150	1989	75	2064	1,295	62,795	41	2,682	-
7786	277	PVC	28	150	1989	75	2064	1,295	36,392	41	1,554	-
7787	278	PVC	22	300	1989	75	2064	1,295	28,761	41	1,228	-
7788	303	PVC	150	150	1989	75	2064	1,295	194,782	41	8,320	-
7789	304	PVC	1	300	1989	75	2064	1,294	932	41	40	-
7790	305	PVC	1	300	1989	75	2064	1,294	1,398	41	60	-
7791	306	PVC	12	100	1989	75	2064	1,295	15,029	41	642	-
7792	307	PVC	145	150	1989	75	2064	1,295	187,361	41	8,003	-
7793	308	PVC	2	150	1989	75	2064	1,295	2,226	41	95	-
7794	309	PVC	18	150	1989	75	2064	1,295	23,645	41	1,010	-
7795	310	PVC	128	150	1989	75	2064	1,295	165,262	41	7,059	-
7796	311	PVC	31	150	1989	75	2064	1,295	40,209	41	1,717	-
7797	438	PVC	81	150	1989	75	2064	1,295	105,327	41	4,499	-
7798	439	PVC	122	200	1989	75	2064	1,295	157,868	41	6,743	-
7799	669	PVC	15	150	1989	75	2064	1,295	19,835	41	847	-
7800	670	PVC	214	150	1989	75	2064	1,295	277,451	41	11,851	-
7801	671	PVC	2	150	1989	75	2064	1,295	2,373	41	101	-
7802	672	PVC	31	150	1989	75	2064	1,295	39,840	41	1,702	-
7803	673	PVC	18	150	1989	75	2064	1,295	23,548	41	1,006	-
7804	674	PVC	134	150	1989	75	2064	1,295	173,261	41	7,400	-
7805	675	PVC	18	150	1989	75	2064	1,295	23,548	41	1,006	-
7806	676	PVC	82	150	1989	75	2064	1,295	105,957	41	4,526	-
7807	706	PVC	96	150	1989	75	2064	1,295	124,289	41	5,309	-
7808	714	PVC	45	150	1989	75	2064	1,295	57,662	41	2,463	-
7809	715	PVC	70	150	1989	75	2064	1,295	90,096	41	3,848	-
7810	716	PVC	27	150	1989	75	2064	1,295	35,139	41	1,501	-
7811	717	PVC	42	150	1989	75	2064	1,295	54,582	41	2,331	-
7812	718	PVC	13	150	1989	75	2064	1,295	16,346	41	698	-
7813	719	PVC	4	150	1989	75	2064	1,295	5,562	41	238	-
7814	720	PVC	7	150	1989	75	2064	1,295	9,447	41	403	-
7815	721	PVC	16	150	1989	75	2064	1,295	20,187	41	862	-
7816	722	PVC	82	150	1989	75	2064	1,295	106,372	41	4,543	-
7817	723	PVC	17	150	1989	75	2064	1,295	21,737	41	928	-
7818	724	PVC	13	150	1989	75	2064	1,295	16,326	41	697	-
7819	725	PVC	22	150	1989	75	2064	1,295	29,074	41	1,242	-
7820	726	PVC	8	150	1989	75	2064	1,295	10,927	41	467	-
7821	727	PVC	23	150	1989	75	2064	1,295	29,428	41	1,257	-
7822	728	PVC	6	150	1989	75	2064	1,295	7,664	41	327	-
7823	729	PVC	64	150	1989	75	2064	1,295	82,755	41	3,535	-
7824	730	PVC	18	150	1989	75	2064	1,295	23,522	41	1,005	-
7825	731	PVC	95	150	1989	75	2064	1,295	123,333	41	5,268	-
7826	786	PVC	17	150	1989	75	2064	1,295	21,960	41	938	-
7827	787	PVC	113	150	1989	75	2064	1,295	146,527	41	6,259	-
7828	788	PVC	2	150	1989	75	2064	1,295	2,370	41	101	-
7829	789	PVC	18	150	1989	75	2064	1,295	23,602	41	1,008	-
7830	790	PVC	14	150	1989	75	2064	1,295	18,338	41	783	-
7831	698	PVC	40	150	1989	75	2064	1,295	52,440	41	2,240	-
7832	699	PVC	154	150	1989	75	2064	1,295	199,298	41	8,512	-
7833	700	PVC	22	150	1989	75	2064	1,295	28,432	41	1,214	-
7834	701	PVC	47	150	1989	75	2064	1,295	60,810	41	2,597	-
7835	702	PVC	18	150	1989	75	2064	1,295	23,561	41	1,006	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
7836	703	PVC	3	150	1989	75	2064	1,295	3,829	41	164	-
7837	705	PVC	287	150	1989	75	2064	1,295	371,578	41	15,871	-
7838	801	PVC	84	150	1989	75	2064	1,295	109,189	41	4,664	-
7839	818	PVC	24	150	1989	75	2064	1,295	31,598	41	1,350	-
7840	819	PVC	20	150	1989	75	2064	1,295	26,088	41	1,114	-
7841	820	PVC	13	150	1989	75	2064	1,295	16,372	41	699	-
7842	821	PVC	18	150	1989	75	2064	1,295	23,560	41	1,006	-
7843	822	PVC	125	150	1989	75	2064	1,295	161,354	41	6,892	-
7844	823	PVC	162	150	1989	75	2064	1,295	209,820	41	8,962	-
7845	824	PVC	2	150	1989	75	2064	1,295	2,331	41	100	-
7846	825	PVC	109	150	1989	75	2064	1,295	141,701	41	6,052	-
7847	826	PVC	10	150	1989	75	2064	1,295	12,525	41	535	-
7848	827	PVC	17	150	1989	75	2064	1,295	21,574	41	921	-
7849	828	PVC	20	150	1989	75	2064	1,295	25,545	41	1,091	-
7850	831	PVC	78	150	1989	75	2064	1,295	101,611	41	4,340	-
7851	983	PVC	125	150	1989	75	2064	1,295	162,097	41	6,924	-
7852	236	PVC	313	250	1989	75	2064	1,295	405,129	41	17,304	-
7853	74	PVC	76	150	1989	75	2064	1,295	99,034	41	4,230	-
7854	75	PVC	248	150	1989	75	2064	1,295	320,889	41	13,706	-
7855	76	PVC	228	150	1989	75	2064	1,295	295,533	41	12,623	-
7856	77	PVC	177	150	1989	75	2064	1,295	228,835	41	9,774	-
7857	78	PVC	140	150	1989	75	2064	1,295	181,243	41	7,741	-
7858	126	PVC	5	250	1989	75	2064	1,295	6,744	41	288	-
7859	233	PVC	55	150	1989	75	2064	1,295	71,153	41	3,039	-
7860	234	PVC	10	150	1989	75	2064	1,295	12,623	41	539	-
7861	742	PVC	63	150	1989	75	2064	1,295	82,022	41	3,503	-
7862	743	PVC	490	150	1989	75	2064	1,295	634,738	41	27,111	-
7863	940	PVC	9	150	1989	75	2064	1,295	12,060	41	515	-
7864	941	PVC	102	150	1989	75	2064	1,295	131,549	41	5,619	-
7865	942	PVC	15	150	1989	75	2064	1,295	19,403	41	829	-
7866	943	PVC	9	150	1989	75	2064	1,295	11,054	41	472	-
7867	944	PVC	15	150	1989	75	2064	1,295	19,421	41	830	-
7868	947	PVC	146	150	1989	75	2064	1,295	189,421	41	8,091	-
7869	948	PVC	1	150	1989	75	2064	1,295	1,938	41	83	-
7870	950	PVC	69	150	1989	75	2064	1,295	89,615	41	3,828	-
7871	951	PVC	105	150	1989	75	2064	1,295	136,457	41	5,828	-
7872	952	PVC	2	150	1989	75	2064	1,295	2,689	41	115	-
7873	67	PVC	255	200	1990	75	2065	1,295	330,314	42	13,936	-
7874	113	PVC	154	200	1990	75	2065	1,295	199,681	42	8,425	-
7875	209	PVC	18	200	1990	75	2065	1,295	23,711	42	1,000	-
7876	587	PVC	171	200	1990	75	2065	1,295	222,079	42	9,370	-
7877	588	PVC	38	200	1990	75	2065	1,295	49,092	42	2,071	-
7878	713	PVC	2	200	1990	75	2065	1,295	2,331	42	98	-
7879	207	PVC	1	200	1991	75	2066	1,295	1,538	43	64	-
7880	208	PVC	177	250	1991	75	2066	1,295	228,827	43	9,542	-
7881	467	PVC	32	150	1991	75	2066	1,295	41,702	43	1,739	-
7882	563	PVC	59	150	1991	75	2066	1,295	76,241	43	3,179	-
7883	740	PVC	359	150	1991	75	2066	1,295	465,437	43	19,408	-
7884	741	PVC	1	150	1991	75	2066	1,296	793	43	33	-
7885	866	PVC	2	150	1991	75	2066	1,295	2,331	43	97	-
7886	867	PVC	67	150	1991	75	2066	1,295	87,041	43	3,629	-
7887	868	PVC	1	250	1991	75	2066	1,294	672	43	28	-
7888	869	PVC	2	150	1991	75	2066	1,295	2,013	43	84	-
7889	870	PVC	42	150	1991	75	2066	1,295	53,912	43	2,248	-
7890	871	PVC	133	150	1991	75	2066	1,295	172,835	43	7,207	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
7891	872	PVC	213	250	1991	75	2066	1,295	275,831	43	11,502	-
7892	873	PVC	2	250	1991	75	2066	1,295	2,351	43	98	-
7893	874	PVC	1	150	1991	75	2066	1,295	1,353	43	56	-
7894	875	PVC	1	250	1991	75	2066	1,294	1,002	43	42	-
7895	876	PVC	172	150	1991	75	2066	1,295	222,145	43	9,263	-
7896	877	PVC	151	150	1991	75	2066	1,295	196,131	43	8,178	-
7897	289	PVC	21	150	1992	75	2067	1,295	27,579	44	1,137	-
7898	419	PVC	6	150	1992	75	2067	1,295	7,586	44	313	-
7899	420	PVC	131	150	1992	75	2067	1,295	170,230	44	7,019	-
7900	421	PVC	99	150	1992	75	2067	1,295	128,223	44	5,287	-
7901	422	PVC	24	150	1992	75	2067	1,295	31,624	44	1,304	-
7902	423	PVC	334	150	1992	75	2067	1,295	432,362	44	17,826	-
7903	424	PVC	22	150	1992	75	2067	1,295	28,135	44	1,160	-
7904	425	PVC	296	150	1992	75	2067	1,295	382,689	44	15,778	-
7905	426	PVC	7	150	1992	75	2067	1,295	8,917	44	368	-
7906	427	PVC	9	150	1992	75	2067	1,295	12,291	44	507	-
7907	428	PVC	9	150	1992	75	2067	1,295	12,174	44	502	-
7908	429	PVC	103	150	1992	75	2067	1,295	133,891	44	5,520	-
7909	436	PVC	130	150	1992	75	2067	1,295	168,549	44	6,949	-
7910	437	PVC	229	150	1992	75	2067	1,295	295,925	44	12,201	-
7911	447	PVC	5	150	1992	75	2067	1,295	6,614	44	273	-
7912	448	PVC	130	150	1992	75	2067	1,295	168,571	44	6,950	-
7913	568	PVC	122	150	1992	75	2067	1,295	157,734	44	6,503	-
7914	569	PVC	11	150	1992	75	2067	1,295	14,255	44	588	-
7915	570	PVC	19	150	1992	75	2067	1,295	24,035	44	991	-
7916	571	PVC	28	150	1992	75	2067	1,295	36,503	44	1,505	-
7917	687	PVC	15	150	1992	75	2067	1,295	18,804	44	775	-
7918	934	PVC	95	150	1992	75	2067	1,295	123,483	44	5,091	-
7919	935	PVC	22	150	1992	75	2067	1,295	28,810	44	1,188	-
7920	0	PVC	218	200	1993	75	2068	1,295	282,532	45	11,523	-
7921	340	PVC	2	200	1994	75	2069	1,295	2,670	46	108	-
7922	373	PVC	8	200	1994	75	2069	1,295	9,896	46	399	-
7923	399	PVC	2	200	1994	75	2069	1,295	3,077	46	124	-
7924	166	PVC	189	150	1995	75	2070	1,295	245,263	47	9,801	-
7925	253	PVC	13	150	1995	75	2070	1,295	17,316	47	692	-
7926	257	PVC	12	200	1995	75	2070	1,295	15,025	47	600	-
7927	258	PVC	71	200	1995	75	2070	1,295	92,064	47	3,679	-
7928	262	PVC	294	200	1995	75	2070	1,295	380,115	47	15,190	-
7929	263	PVC	13	200	1995	75	2070	1,295	16,828	47	672	-
7930	370	PVC	38	150	1995	75	2070	1,295	49,295	47	1,970	-
7931	371	PVC	156	150	1995	75	2070	1,295	201,974	47	8,071	-
7932	372	PVC	40	150	1995	75	2070	1,295	51,334	47	2,051	-
7933	382	PVC	39	150	1995	75	2070	1,295	50,598	47	2,022	-
7934	391	PVC	10	150	1995	75	2070	1,295	13,206	47	528	-
7935	393	PVC	7	150	1995	75	2070	1,295	9,537	47	381	-
7936	394	PVC	20	150	1995	75	2070	1,295	26,463	47	1,057	-
7937	402	PVC	98	150	1995	75	2070	1,295	127,153	47	5,081	-
7938	404	PVC	25	150	1995	75	2070	1,295	32,107	47	1,283	-
7939	405	PVC	44	150	1995	75	2070	1,295	56,626	47	2,263	-
7940	407	PVC	22	150	1995	75	2070	1,295	29,133	47	1,164	-
7941	957	PVC	57	200	1995	75	2070	1,295	73,668	47	2,944	-
7942	958	PVC	1	150	1995	75	2070	1,294	935	47	37	-
7943	959	PVC	1	200	1995	75	2070	1,295	1,393	47	56	-
7944	960	PVC	147	150	1995	75	2070	1,295	190,847	47	7,626	-
7945	961	PVC	5	150	1995	75	2070	1,295	6,304	47	252	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
7946	962	PVC	9	150	1995	75	2070	1,295	12,188	47	487	-
7947	963	PVC	1	200	1995	75	2070	1,295	1,594	47	64	-
7948	398	PVC	9	100	1995	75	2070	1,295	12,240	47	489	-
7949	577	PVC	44	100	1995	75	2070	1,295	57,494	47	2,297	-
7950	578	PVC	3	300	1995	75	2070	1,295	3,242	47	130	-
7951	609	PVC	5	300	1995	75	2070	1,295	6,132	47	245	-
7952	610	PVC	154	300	1995	75	2070	1,295	199,822	47	7,985	-
7953	611	PVC	9	300	1995	75	2070	1,295	12,036	47	481	-
7954	612	DI	6	300	1995	75	2070	1,295	7,666	47	306	-
7955	613	PVC	45	100	1995	75	2070	1,295	58,180	47	2,325	-
7956	614	PVC	12	100	1995	75	2070	1,295	15,078	47	603	-
7957	615	PVC	0	300	1995	75	2070	1,297	179	47	7	-
7958	616	PVC	260	150	1995	75	2070	1,295	336,326	47	13,440	-
7959	617	PVC	0	150	1995	75	2070	1,292	322	47	13	-
7960	290	PVC	46	150	1995	75	2070	1,295	59,338	47	2,371	-
7961	312	PVC	15	150	1995	75	2070	1,295	19,599	47	783	-
7962	313	PVC	68	150	1995	75	2070	1,295	88,637	47	3,542	-
7963	653	PVC	54	150	1995	75	2070	1,295	69,517	47	2,778	-
7964	654	PVC	10	150	1995	75	2070	1,295	12,360	47	494	-
7965	655	PVC	65	150	1995	75	2070	1,295	84,489	47	3,376	-
7966	677	PVC	66	150	1995	75	2070	1,295	85,601	47	3,421	-
7967	678	PVC	7	150	1995	75	2070	1,295	9,456	47	378	-
7968	679	PVC	93	150	1995	75	2070	1,295	120,644	47	4,821	-
7969	680	PVC	2	150	1995	75	2070	1,295	2,821	47	113	-
7970	800	PVC	2	150	1995	75	2070	1,295	2,212	47	88	-
7971	895	PVC	128	150	1995	75	2070	1,295	165,304	47	6,606	-
7972	896	PVC	83	150	1995	75	2070	1,295	107,453	47	4,294	-
7973	897	PVC	113	150	1995	75	2070	1,295	146,745	47	5,864	-
7974	926	PVC	18	150	1995	75	2070	1,295	23,580	47	942	-
7975	12	PVC	255	250	1997	75	2072	1,295	329,665	49	12,927	-
7976	96	PVC	50	150	1997	75	2072	1,295	65,025	49	2,550	-
7977	105	PVC	0	150	1997	75	2072	1,305	39	49	2	-
7978	117	PVC	105	250	1997	75	2072	1,295	136,613	49	5,357	-
7979	30	PVC	276	200	1997	75	2072	1,295	356,980	49	13,998	-
7980	79	PVC	15	200	1997	75	2072	1,295	19,260	49	755	-
7981	80	PVC	54	200	1997	75	2072	1,295	69,910	49	2,741	-
7982	937	PVC	559	200	1997	75	2072	1,295	723,764	49	28,381	-
7983	938	PVC	277	200	1997	75	2072	1,295	358,124	49	14,043	-
7984	939	PVC	506	200	1997	75	2072	1,295	655,319	49	25,697	-
7985	971	PVC	20	200	1997	75	2072	1,295	26,138	49	1,025	-
7986	972	PVC	14	200	1997	75	2072	1,295	17,933	49	703	-
7987	973	PVC	5	200	1997	75	2072	1,295	6,389	49	251	-
7988	974	PVC	272	200	1997	75	2072	1,295	352,022	49	13,804	-
7989	975	PVC	55	200	1997	75	2072	1,295	71,224	49	2,793	-
7990	976	PVC	691	200	1997	75	2072	1,295	894,673	49	35,083	-
7991	34	PVC	27	250	1998	75	2073	1,295	34,452	50	1,339	-
7992	52	PVC	78	150	1998	75	2073	1,295	100,941	50	3,923	-
7993	53	PVC	11	150	1998	75	2073	1,295	14,097	50	548	-
7994	59	PVC	466	150	1998	75	2073	1,295	603,274	50	23,447	-
7995	89	PVC	248	150	1998	75	2073	1,295	321,132	50	12,481	-
7996	90	PVC	157	150	1998	75	2073	1,295	202,958	50	7,888	-
7997	124	PVC	3	250	1998	75	2073	1,295	4,046	50	157	-
7998	125	PVC	4	150	1998	75	2073	1,295	4,760	50	185	-
7999	882	PVC	93	200	1998	75	2073	1,295	120,851	50	4,697	-
8000	629	PVC	101	150	1998	75	2073	1,295	130,880	50	5,087	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8001	635	PVC	72	150	1998	75	2073	1,295	93,815	50	3,646	-
8002	636	PVC	99	150	1998	75	2073	1,295	128,429	50	4,991	-
8003	637	PVC	98	150	1998	75	2073	1,295	126,515	50	4,917	-
8004	638	PVC	18	150	1998	75	2073	1,295	23,614	50	918	-
8005	639	PVC	151	150	1998	75	2073	1,295	196,188	50	7,625	-
8006	641	PVC	16	150	1998	75	2073	1,295	20,167	50	784	-
8007	642	PVC	7	150	1998	75	2073	1,295	9,568	50	372	-
8008	643	PVC	2	150	1998	75	2073	1,295	2,321	50	90	-
8009	644	PVC	8	150	1998	75	2073	1,295	10,700	50	416	-
8010	791	PVC	215	150	1998	75	2073	1,295	278,610	50	10,828	-
8011	792	PVC	2	150	1998	75	2073	1,295	2,331	50	91	-
8012	793	PVC	13	150	1998	75	2073	1,295	16,192	50	629	-
8013	794	PVC	2	150	1998	75	2073	1,295	2,331	50	91	-
8014	795	PVC	78	150	1998	75	2073	1,295	101,226	50	3,934	-
8015	796	PVC	18	150	1998	75	2073	1,295	23,726	50	922	-
8016	797	PVC	9	150	1998	75	2073	1,295	11,821	50	459	-
8017	798	PVC	84	150	1998	75	2073	1,295	108,496	50	4,217	-
8018	799	PVC	2	150	1998	75	2073	1,295	2,331	50	91	-
8019	922	PVC	80	150	1998	75	2073	1,295	104,143	50	4,048	-
8020	923	PVC	126	150	1998	75	2073	1,295	163,346	50	6,349	-
8021	924	PVC	118	150	1998	75	2073	1,295	152,712	50	5,935	-
8022	35	PVC	143	150	1998	75	2073	1,295	185,499	50	7,210	-
8023	95	PVC	2	150	1998	75	2073	1,295	2,541	50	99	-
8024	886	PVC	2	150	1998	75	2073	1,295	2,381	50	93	-
8025	887	PVC	239	150	1998	75	2073	1,295	309,647	50	12,035	-
8026	1,352	PVC	33	150	1998	75	2073	1,295	42,923	50	1,668	-
8027	341	PVC	162	200	1998	75	2073	1,295	209,277	50	8,134	-
8028	342	PVC	537	150	1998	75	2073	1,295	695,853	50	27,045	-
8029	345	PVC	13	200	1998	75	2073	1,295	16,381	50	637	-
8030	354	PVC	46	150	1998	75	2073	1,295	59,487	50	2,312	-
8031	355	PVC	18	150	1998	75	2073	1,295	23,168	50	900	-
8032	364	PVC	174	200	1998	75	2073	1,295	224,791	50	8,737	-
8033	365	PVC	80	200	1998	75	2073	1,295	103,778	50	4,033	-
8034	692	PVC	1	200	1998	75	2073	1,294	828	50	32	-
8035	693	PVC	1	150	1998	75	2073	1,295	950	50	37	-
8036	746	PVC	133	150	1998	75	2073	1,295	172,493	50	6,704	-
8037	747	PVC	4	150	1998	75	2073	1,295	5,087	50	198	-
8038	832	PVC	305	150	1998	75	2073	1,295	394,932	50	15,349	-
8039	833	PVC	5	150	1998	75	2073	1,295	7,002	50	272	-
8040	956	PVC	3	200	1998	75	2073	1,295	4,361	50	169	-
8041	54	PVC	295	150	1999	75	2074	1,295	381,487	51	14,700	-
8042	94	PVC	30	150	1999	75	2074	1,295	39,401	51	1,518	-
8043	452	PVC	70	150	1999	75	2074	1,295	90,360	51	3,482	-
8044	453	PVC	2	150	1999	75	2074	1,295	2,352	51	91	-
8045	565	PVC	198	150	1999	75	2074	1,295	256,480	51	9,883	-
8046	884	PVC	8	150	1999	75	2074	1,295	10,984	51	423	-
8047	20	PVC	18	250	1999	75	2074	1,295	23,432	51	903	-
8048	888	PVC	119	250	1999	75	2074	1,295	153,493	51	5,915	-
8049	889	PVC	107	250	1999	75	2074	1,295	138,412	51	5,334	-
8050	114	PVC	10	150	1999	75	2074	1,295	13,016	51	502	-
8051	115	PVC	18	150	1999	75	2074	1,295	22,793	51	878	-
8052	885	PVC	8	150	1999	75	2074	1,295	9,867	51	380	-
8053	81	PVC	3	100	2000	75	2075	1,295	4,000	52	153	-
8054	82	PVC	5	100	2000	75	2075	1,295	5,852	52	224	-
8055	83	PVC	196	150	2000	75	2075	1,295	253,718	52	9,696	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8056	84	PVC	2	300	2000	75	2075	1,295	2,796	52	107	-
8057	85	PVC	1	300	2000	75	2075	1,295	777	52	30	-
8058	86	PVC	94	300	2000	75	2075	1,295	121,279	52	4,635	-
8059	87	PVC	3	150	2000	75	2075	1,295	3,254	52	124	-
8060	88	PVC	1	150	2000	75	2075	1,295	1,125	52	43	-
8061	108	PVC	106	150	2000	75	2075	1,295	137,133	52	5,241	-
8062	120	PVC	7	100	2000	75	2075	1,295	8,656	52	331	-
8063	121	PVC	3	100	2000	75	2075	1,295	3,959	52	151	-
8064	122	PVC	25	150	2000	75	2075	1,295	32,128	52	1,228	-
8065	165	PVC	12	50	2000	75	2075	1,295	15,407	52	589	-
8066	186	PVC	18	50	2000	75	2075	1,295	23,377	52	893	-
8067	187	PVC	12	150	2000	75	2075	1,295	15,237	52	582	-
8068	203	PVC	14	150	2000	75	2075	1,295	18,613	52	711	-
8069	204	PVC	289	150	2000	75	2075	1,295	374,817	52	14,324	-
8070	205	PVC	23	150	2000	75	2075	1,295	29,324	52	1,121	-
8071	206	PVC	175	150	2000	75	2075	1,295	227,085	52	8,679	-
8072	228	PVC	9	150	2000	75	2075	1,295	11,736	52	449	-
8073	229	PVC	13	150	2000	75	2075	1,295	16,334	52	624	-
8074	230	PVC	73	150	2000	75	2075	1,295	94,730	52	3,620	-
8075	231	PVC	75	150	2000	75	2075	1,295	97,574	52	3,729	-
8076	249	PVC	4	150	2000	75	2075	1,295	4,636	52	177	-
8077	250	PVC	38	150	2000	75	2075	1,295	49,654	52	1,898	-
8078	251	PVC	1	150	2000	75	2075	1,296	749	52	29	-
8079	252	PVC	12	150	2000	75	2075	1,295	15,198	52	581	-
8080	592	PVC	1	150	2000	75	2075	1,296	854	52	33	-
8081	593	PVC	83	150	2000	75	2075	1,295	107,704	52	4,116	-
8082	969	PVC	163	150	2000	75	2075	1,295	211,698	52	8,090	-
8083	970	PVC	2	150	2000	75	2075	1,295	2,390	52	91	-
8084	33	PVC	41	200	2001	75	2076	1,295	53,598	53	2,032	-
8085	109	PVC	3	150	2001	75	2076	1,295	4,527	53	172	-
8086	343	PVC	20	150	2001	75	2076	1,295	26,153	53	992	-
8087	344	PVC	14	150	2001	75	2076	1,295	17,587	53	667	-
8088	347	PVC	273	150	2001	75	2076	1,295	353,948	53	13,420	-
8089	358	PVC	30	200	2001	75	2076	1,295	38,615	53	1,464	-
8090	359	PVC	13	200	2001	75	2076	1,295	17,148	53	650	-
8091	360	PVC	55	200	2001	75	2076	1,295	71,784	53	2,722	-
8092	361	PVC	57	150	2001	75	2076	1,295	73,458	53	2,785	-
8093	362	PVC	6	200	2001	75	2076	1,295	7,629	53	289	-
8094	363	PVC	6	150	2001	75	2076	1,295	7,536	53	286	-
8095	366	PVC	93	200	2001	75	2076	1,295	120,344	53	4,563	-
8096	367	PVC	7	150	2001	75	2076	1,295	8,480	53	322	-
8097	368	PVC	17	150	2001	75	2076	1,295	21,440	53	813	-
8098	369	PVC	9	150	2001	75	2076	1,295	11,870	53	450	-
8099	374	PVC	18	200	2001	75	2076	1,295	23,333	53	885	-
8100	375	PVC	19	200	2001	75	2076	1,295	24,021	53	911	-
8101	377	PVC	28	200	2001	75	2076	1,295	36,199	53	1,372	-
8102	378	PVC	77	150	2001	75	2076	1,295	99,820	53	3,785	-
8103	379	PVC	101	150	2001	75	2076	1,295	130,961	53	4,965	-
8104	380	PVC	27	150	2001	75	2076	1,295	35,552	53	1,348	-
8105	381	PVC	202	150	2001	75	2076	1,295	262,148	53	9,939	-
8106	383	PVC	90	200	2001	75	2076	1,295	116,625	53	4,422	-
8107	384	PVC	283	200	2001	75	2076	1,295	366,887	53	13,910	-
8108	385	PVC	12	200	2001	75	2076	1,295	15,030	53	570	-
8109	386	PVC	18	200	2001	75	2076	1,295	23,565	53	893	-
8110	387	PVC	122	200	2001	75	2076	1,295	157,521	53	5,972	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8111	388	PVC	32	200	2001	75	2076	1,295	41,578	53	1,576	-
8112	389	PVC	26	200	2001	75	2076	1,295	33,412	53	1,267	-
8113	390	PVC	15	200	2001	75	2076	1,295	19,017	53	721	-
8114	392	PVC	7	150	2001	75	2076	1,295	8,917	53	338	-
8115	395	PVC	30	150	2001	75	2076	1,295	38,817	53	1,472	-
8116	694	PVC	7	150	2001	75	2076	1,295	9,500	53	360	-
8117	695	PVC	3	200	2001	75	2076	1,295	3,247	53	123	-
8118	696	PVC	129	150	2001	75	2076	1,295	166,459	53	6,311	-
8119	697	PVC	70	150	2001	75	2076	1,295	90,461	53	3,430	-
8120	17	PVC	0	200	2001	75	2076	1,296	537	53	20	-
8121	232	PVC	60	200	2001	75	2076	1,295	77,352	53	2,933	-
8122	255	PVC	178	150	2001	75	2076	1,295	230,287	53	8,731	-
8123	259	PVC	59	200	2001	75	2076	1,295	76,273	53	2,892	-
8124	261	PVC	22	200	2001	75	2076	1,295	29,103	53	1,103	-
8125	264	PVC	79	200	2001	75	2076	1,295	102,586	53	3,890	-
8126	265	PVC	61	150	2001	75	2076	1,295	79,109	53	2,999	-
8127	266	PVC	34	150	2001	75	2076	1,295	44,439	53	1,685	-
8128	267	PVC	6	150	2001	75	2076	1,295	7,853	53	298	-
8129	270	PVC	10	200	2001	75	2076	1,295	13,125	53	498	-
8130	332	PVC	214	150	2001	75	2076	1,295	277,177	53	10,509	-
8131	333	PVC	8	150	2001	75	2076	1,295	10,096	53	383	-
8132	335	PVC	13	150	2001	75	2076	1,295	16,264	53	617	-
8133	337	PVC	95	150	2001	75	2076	1,295	123,608	53	4,687	-
8134	338	PVC	71	150	2001	75	2076	1,295	92,380	53	3,503	-
8135	339	PVC	71	200	2001	75	2076	1,295	92,178	53	3,495	-
8136	348	PVC	6	200	2001	75	2076	1,295	7,269	53	276	-
8137	356	PVC	4	150	2001	75	2076	1,295	4,685	53	178	-
8138	357	PVC	112	150	2001	75	2076	1,295	145,235	53	5,507	-
8139	415	PVC	9	200	2001	75	2076	1,295	11,556	53	438	-
8140	416	PVC	6	200	2001	75	2076	1,295	7,270	53	276	-
8141	580	PVC	14	200	2001	75	2076	1,295	17,768	53	674	-
8142	256	PVC	109	150	2001	75	2076	1,295	141,414	53	5,362	-
8143	271	PVC	106	150	2001	75	2076	1,295	137,435	53	5,211	-
8144	331	PVC	32	150	2001	75	2076	1,295	41,951	53	1,591	-
8145	336	PVC	98	150	2001	75	2076	1,295	127,217	53	4,823	-
8146	417	PVC	18	150	2001	75	2076	1,295	23,598	53	895	-
8147	418	PVC	122	150	2001	75	2076	1,295	157,680	53	5,978	-
8148	13	PVC	5	200	2002	75	2077	1,295	6,993	54	263	-
8149	14	PVC	19	200	2002	75	2077	1,295	24,925	54	938	-
8150	36	PVC	5	150	2002	75	2077	1,295	6,085	54	229	-
8151	110	PVC	2	150	2002	75	2077	1,295	2,757	54	104	-
8152	879	PVC	1	200	2002	75	2077	1,296	741	54	28	-
8153	880	PVC	702	200	2002	75	2077	1,295	908,872	54	34,197	-
8154	967	PVC	12	150	2002	75	2077	1,295	15,196	54	572	-
8155	968	PVC	2	150	2002	75	2077	1,295	2,818	54	106	-
8156	401	PVC	156	50	2002	75	2077	1,295	201,601	54	7,585	-
8157	492	PVC	202	150	2002	75	2077	1,295	261,419	54	9,836	-
8158	493	PVC	167	150	2002	75	2077	1,295	216,874	54	8,160	-
8159	505	PVC	175	150	2002	75	2077	1,295	226,949	54	8,539	-
8160	567	PVC	175	50	2002	75	2077	1,295	226,962	54	8,540	-
8161	590	PVC	34	150	2002	75	2077	1,295	43,599	54	1,640	-
8162	591	PVC	23	150	2002	75	2077	1,295	29,574	54	1,113	-
8163	618	PVC	17	150	2002	75	2077	1,295	22,450	54	845	-
8164	619	PVC	16	150	2002	75	2077	1,295	21,231	54	799	-
8165	620	PVC	17	150	2002	75	2077	1,295	21,725	54	817	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8166	621	PVC	35	150	2002	75	2077	1,295	45,172	54	1,700	-
8167	622	PVC	13	150	2002	75	2077	1,295	16,834	54	633	-
8168	623	PVC	15	150	2002	75	2077	1,295	19,808	54	745	-
8169	624	PVC	29	150	2002	75	2077	1,295	37,560	54	1,413	-
8170	625	PVC	0	150	2002	75	2077	1,288	85	54	3	-
8171	626	PVC	170	150	2002	75	2077	1,295	219,570	54	8,261	-
8172	627	PVC	6	150	2002	75	2077	1,295	8,184	54	308	-
8173	628	PVC	23	150	2002	75	2077	1,295	29,458	54	1,108	-
8174	667	PVC	120	150	2002	75	2077	1,295	155,400	54	5,847	-
8175	668	PVC	7	150	2002	75	2077	1,295	8,797	54	331	-
8176	763	PVC	65	150	2002	75	2077	1,295	84,413	54	3,176	-
8177	764	PVC	29	150	2002	75	2077	1,295	37,092	54	1,396	-
8178	765	PVC	91	150	2002	75	2077	1,295	118,102	54	4,444	-
8179	766	PVC	63	150	2002	75	2077	1,295	80,972	54	3,047	-
8180	767	PVC	7	150	2002	75	2077	1,295	8,804	54	331	-
8181	768	PVC	6	150	2002	75	2077	1,295	7,697	54	290	-
8182	769	PVC	26	150	2002	75	2077	1,295	34,149	54	1,285	-
8183	770	PVC	97	150	2002	75	2077	1,295	125,219	54	4,711	-
8184	771	PVC	145	150	2002	75	2077	1,295	187,645	54	7,060	-
8185	772	PVC	6	150	2002	75	2077	1,295	8,133	54	306	-
8186	773	PVC	255	150	2002	75	2077	1,295	329,788	54	12,408	-
8187	774	PVC	82	150	2002	75	2077	1,295	105,640	54	3,975	-
8188	775	PVC	7	150	2002	75	2077	1,295	8,847	54	333	-
8189	776	PVC	12	150	2002	75	2077	1,295	15,050	54	566	-
8190	777	PVC	40	150	2002	75	2077	1,295	52,413	54	1,972	-
8191	778	PVC	22	150	2002	75	2077	1,295	28,780	54	1,083	-
8192	779	PVC	33	150	2002	75	2077	1,295	42,166	54	1,587	-
8193	782	PVC	181	150	2002	75	2077	1,295	234,738	54	8,832	-
8194	838	PVC	37	150	2002	75	2077	1,295	48,065	54	1,808	-
8195	839	PVC	26	150	2002	75	2077	1,295	34,067	54	1,282	-
8196	843	PVC	9	150	2002	75	2077	1,295	11,052	54	416	-
8197	844	PVC	36	150	2002	75	2077	1,295	46,736	54	1,758	-
8198	845	PVC	295	150	2002	75	2077	1,295	382,505	54	14,392	-
8199	849	PVC	52	150	2002	75	2077	1,295	67,417	54	2,537	-
8200	851	PVC	9	150	2002	75	2077	1,295	11,858	54	446	-
8201	291	PVC	47	150	2002	75	2077	1,295	60,671	54	2,283	-
8202	657	PVC	50	150	2002	75	2077	1,295	65,205	54	2,453	-
8203	598	PVC	23	150	2003	75	2078	1,295	30,031	55	1,122	-
8204	599	PVC	30	150	2003	75	2078	1,295	38,408	55	1,435	-
8205	600	PVC	24	150	2003	75	2078	1,295	31,552	55	1,178	-
8206	607	PVC	14	150	2003	75	2078	1,295	18,641	55	696	-
8207	608	PVC	16	150	2003	75	2078	1,295	20,499	55	766	-
8208	631	PVC	150	150	2003	75	2078	1,295	194,688	55	7,271	-
8209	495	PVC	20	100	2003	75	2078	1,295	25,867	55	966	-
8210	496	PVC	35	150	2003	75	2078	1,295	45,337	55	1,693	-
8211	497	PVC	11	150	2003	75	2078	1,295	14,383	55	537	-
8212	498	PVC	82	100	2003	75	2078	1,295	106,373	55	3,973	-
8213	499	PVC	82	150	2003	75	2078	1,295	105,570	55	3,943	-
8214	272	PVC	85	150	2003	75	2078	1,295	110,346	55	4,121	-
8215	349	PVC	28	150	2003	75	2078	1,295	36,737	55	1,372	-
8216	350	PVC	26	150	2003	75	2078	1,295	33,905	55	1,266	-
8217	351	PVC	64	150	2003	75	2078	1,295	82,965	55	3,099	-
8218	352	PVC	83	150	2003	75	2078	1,295	107,057	55	3,998	-
8219	353	PVC	38	150	2003	75	2078	1,295	48,700	55	1,819	-
8220	581	PVC	43	150	2003	75	2078	1,295	55,156	55	2,060	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8221	582	PVC	56	150	2003	75	2078	1,295	71,878	55	2,685	-
8222	584	PVC	228	150	2003	75	2078	1,295	295,600	55	11,040	-
8223	586	PVC	227	150	2003	75	2078	1,295	294,082	55	10,984	-
8224	748	PVC	158	150	2003	75	2078	1,295	204,169	55	7,626	-
8225	848	PVC	222	150	2003	75	2078	1,295	287,344	55	10,732	-
8226	802	PVC	30	150	2003	75	2078	1,295	38,774	55	1,448	-
8227	830	PVC	107	150	2003	75	2078	1,295	139,096	55	5,195	-
8228	71	PVC	25	200	2004	75	2079	1,295	32,038	56	1,188	-
8229	744	PVC	12	150	2004	75	2079	1,295	15,457	56	573	-
8230	745	PVC	11	150	2004	75	2079	1,295	14,293	56	530	-
8231	128	PVC	288	250	2004	75	2079	1,295	373,204	56	13,840	-
8232	129	PVC	24	250	2004	75	2079	1,295	30,510	56	1,131	-
8233	707	PVC	299	150	2004	75	2079	1,295	387,043	56	14,353	-
8234	708	PVC	130	150	2004	75	2079	1,295	167,940	56	6,228	-
8235	709	PVC	111	150	2004	75	2079	1,295	143,678	56	5,328	-
8236	710	PVC	190	150	2004	75	2079	1,295	245,524	56	9,105	-
8237	732	PVC	10	150	2004	75	2079	1,295	12,591	56	467	-
8238	733	PVC	336	150	2004	75	2079	1,295	435,042	56	16,133	-
8239	734	PVC	83	150	2004	75	2079	1,295	107,900	56	4,001	-
8240	735	PVC	32	150	2004	75	2079	1,295	41,566	56	1,541	-
8241	736	PVC	41	150	2004	75	2079	1,295	53,385	56	1,980	-
8242	737	PVC	138	250	2004	75	2079	1,295	178,304	56	6,612	-
8243	738	PVC	153	250	2004	75	2079	1,295	197,650	56	7,330	-
8244	739	PVC	896	150	2004	75	2079	1,295	1,159,930	56	43,015	-
8245	803	PVC	885	200	2004	75	2079	1,295	1,146,238	56	42,508	-
8246	804	PVC	7	150	2004	75	2079	1,295	9,431	56	350	-
8247	805	PVC	115	150	2004	75	2079	1,295	149,034	56	5,527	-
8248	806	PVC	191	150	2004	75	2079	1,295	246,883	56	9,156	-
8249	807	PVC	123	250	2004	75	2079	1,295	159,801	56	5,926	-
8250	808	PVC	66	150	2004	75	2079	1,295	85,676	56	3,177	-
8251	809	PVC	22	150	2004	75	2079	1,295	29,090	56	1,079	-
8252	810	PVC	315	250	2004	75	2079	1,295	407,856	56	15,125	-
8253	811	PVC	10	150	2004	75	2079	1,295	13,287	56	493	-
8254	812	PVC	137	150	2004	75	2079	1,295	176,788	56	6,556	-
8255	813	PVC	153	150	2004	75	2079	1,295	198,551	56	7,363	-
8256	814	PVC	219	150	2004	75	2079	1,295	283,875	56	10,527	-
8257	815	PVC	153	150	2004	75	2079	1,295	198,566	56	7,364	-
8258	816	PVC	110	150	2004	75	2079	1,295	141,869	56	5,261	-
8259	817	PVC	229	150	2004	75	2079	1,295	296,485	56	10,995	-
8260	829	PVC	235	250	2004	75	2079	1,295	304,375	56	11,288	-
8261	986	PVC	218	250	2004	75	2079	1,295	282,086	56	10,461	-
8262	1,348	PVC	159	150	2004	75	2079	1,295	206,025	56	7,640	-
8263	1,042		5	200	2006	75	2081	1,295	7,031	58	257	-
8264	1,043		153	200	2006	75	2081	1,295	198,191	58	7,251	-
8265	1,044		4	0	2006	75	2081	1,295	4,570	58	167	-
8266	1,045		169	300	2006	75	2081	1,295	218,978	58	8,012	-
8267	1,046		301	300	2006	75	2081	1,295	389,998	58	14,269	-
8268	1,048		81	300	2006	75	2081	1,295	104,248	58	3,814	-
8269	1,049		135	300	2006	75	2081	1,295	175,096	58	6,406	-
8270	1,050		12	300	2006	75	2081	1,295	14,968	58	548	-
8271	1,051		77	300	2006	75	2081	1,295	100,211	58	3,667	-
8272	1,052		300	300	2006	75	2081	1,295	387,926	58	14,194	-
8273	1,053		237	300	2006	75	2081	1,295	306,693	58	11,221	-
8274	1,105	PVC	2	200	2014	75	2089	1,295	2,350	66	82	-
8275	1,106		137	200	2014	75	2089	1,295	177,450	66	6,206	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8276	1,108	PVC	6	200	2014	75	2089	1,295	7,327	66	256	-
8277	1,109	PVC	13	200	2014	75	2089	1,295	16,194	66	566	-
8278	1,110	PVC	18	200	2014	75	2089	1,295	23,924	66	837	-
8279	1,111	PVC	5	200	2014	75	2089	1,295	6,843	66	239	-
8280	1,112	PVC	107	200	2014	75	2089	1,295	138,394	66	4,840	-
8281	1,114	PVC	100	200	2014	75	2089	1,295	130,137	66	4,551	-
8282	1,116	PVC	104	200	2014	75	2089	1,295	134,676	66	4,710	-
8283	1,117	PVC	25	200	2014	75	2089	1,295	32,787	66	1,147	-
8284	1,119	PVC	67	200	2014	75	2089	1,295	87,371	66	3,055	-
8285	1,122	PVC	41	200	2014	75	2089	1,295	53,377	66	1,867	-
8286	1,123	PVC	6	200	2014	75	2089	1,295	7,154	66	250	-
8287	1,124	PVC	165	200	2014	75	2089	1,295	214,146	66	7,489	-
8288	1,125	PVC	36	200	2014	75	2089	1,295	46,478	66	1,625	-
8289	1,127	PVC	1	200	2014	75	2089	1,295	1,367	66	48	-
8290	1,128	PVC	77	150	2014	75	2089	1,295	100,310	66	3,508	-
8291	1,130	PVC	33	150	2014	75	2089	1,295	42,458	66	1,485	-
8292	1,131	PVC	37	150	2014	75	2089	1,295	47,974	66	1,678	-
8293	1,133	PVC	87	150	2014	75	2089	1,295	112,578	66	3,937	-
8294	1,104	PVC	6	200	2015	75	2090	1,295	7,768	67	270	-
8295	1,169		608	200	2017	75	2092	1,295	786,995	69	27,140	-
8296	1,214	PVC	154	150	2018	75	2093	1,295	199,993	70	6,867	-
8297	3	PVC	24	200	1996	75	2071	1,295	31,434	48	1,244	-
8298	4	PVC	16	150	1996	75	2071	1,295	20,854	48	825	-
8299	5	PVC	421	200	1996	75	2071	1,295	545,813	48	21,602	-
8300	6	PVC	179	150	1996	75	2071	1,295	232,124	48	9,187	-
8301	7	PVC	119	150	1996	75	2071	1,295	153,511	48	6,076	-
8302	8	PVC	37	150	1996	75	2071	1,295	48,182	48	1,907	-
8303	9	PVC	48	150	1996	75	2071	1,295	61,897	48	2,450	-
8304	10	PVC	142	150	1996	75	2071	1,295	183,324	48	7,256	-
8305	11	PVC	40	250	1996	75	2071	1,295	51,423	48	2,035	-
8306	15	PVC	378	200	1996	75	2071	1,295	489,519	48	19,374	-
8307	16	PVC	370	150	1996	75	2071	1,295	478,596	48	18,942	-
8308	18	PVC	82	150	1996	75	2071	1,295	106,234	48	4,205	-
8309	19	PVC	87	150	1996	75	2071	1,295	112,137	48	4,438	-
8310	21	PVC	199	150	1996	75	2071	1,295	257,923	48	10,208	-
8311	22	PVC	118	150	1996	75	2071	1,295	153,347	48	6,069	-
8312	23	PVC	66	150	1996	75	2071	1,295	86,115	48	3,408	-
8313	24	PVC	226	200	1996	75	2071	1,295	292,975	48	11,595	-
8314	25	PVC	17	150	1996	75	2071	1,295	22,296	48	882	-
8315	26	PVC	67	150	1996	75	2071	1,295	86,867	48	3,438	-
8316	27	PVC	193	150	1996	75	2071	1,295	249,951	48	9,893	-
8317	28	PVC	18	150	1996	75	2071	1,295	23,680	48	937	-
8318	29	PVC	54	200	1996	75	2071	1,295	69,697	48	2,758	-
8319	31	PVC	39	150	1996	75	2071	1,295	50,277	48	1,990	-
8320	32	PVC	254	150	1996	75	2071	1,295	328,640	48	13,007	-
8321	37	PVC	131	150	1996	75	2071	1,295	170,013	48	6,729	-
8322	38	PVC	45	150	1996	75	2071	1,295	57,999	48	2,295	-
8323	39	PVC	4	150	1996	75	2071	1,295	5,468	48	216	-
8324	40	PVC	31	150	1996	75	2071	1,295	40,546	48	1,605	-
8325	41	PVC	123	150	1996	75	2071	1,295	159,805	48	6,325	-
8326	42	PVC	142	150	1996	75	2071	1,295	183,507	48	7,263	-
8327	43	PVC	222	150	1996	75	2071	1,295	287,560	48	11,381	-
8328	44	PVC	12	150	1996	75	2071	1,295	15,458	48	612	-
8329	45	PVC	222	250	1996	75	2071	1,295	287,551	48	11,381	-
8330	46	PVC	116	200	1996	75	2071	1,295	149,801	48	5,929	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8331	47	PVC	250	200	1996	75	2071	1,295	323,591	48	12,807	-
8332	48	PVC	331	200	1996	75	2071	1,295	428,643	48	16,965	-
8333	49	PVC	0	150	1996	75	2071	1,295	515	48	20	-
8334	50	PVC	160	250	1996	75	2071	1,295	206,894	48	8,188	-
8335	51	PVC	121	200	1996	75	2071	1,295	156,067	48	6,177	-
8336	55	PVC	31	150	1996	75	2071	1,295	40,144	48	1,589	-
8337	56	PVC	189	200	1996	75	2071	1,295	245,248	48	9,706	-
8338	58	PVC	346	150	1996	75	2071	1,295	448,376	48	17,746	-
8339	60	PVC	91	200	1996	75	2071	1,295	117,536	48	4,652	-
8340	61	PVC	20	200	1996	75	2071	1,295	25,862	48	1,024	-
8341	62	PVC	18	200	1996	75	2071	1,295	22,677	48	898	-
8342	63	PVC	26	200	1996	75	2071	1,295	34,077	48	1,349	-
8343	64	PVC	8	200	1996	75	2071	1,295	10,309	48	408	-
8344	65	PVC	21	200	1996	75	2071	1,295	27,467	48	1,087	-
8345	66	PVC	100	200	1996	75	2071	1,295	129,291	48	5,117	-
8346	68	PVC	100	200	1996	75	2071	1,295	129,686	48	5,133	-
8347	69	PVC	1	150	1996	75	2071	1,295	1,611	48	64	-
8348	70	PVC	58	200	1996	75	2071	1,295	75,133	48	2,974	-
8349	72	PVC	2	150	1996	75	2071	1,295	3,117	48	123	-
8350	73	PVC	115	150	1996	75	2071	1,295	148,454	48	5,875	-
8351	91	PVC	40	150	1996	75	2071	1,295	51,294	48	2,030	-
8352	92	PVC	421	150	1996	75	2071	1,295	545,392	48	21,585	-
8353	93	PVC	17	150	1996	75	2071	1,295	21,383	48	846	-
8354	97	PVC	429	150	1996	75	2071	1,295	554,915	48	21,962	-
8355	98	PVC	10	150	1996	75	2071	1,295	13,366	48	529	-
8356	99	PVC	35	150	1996	75	2071	1,295	44,910	48	1,777	-
8357	100	PVC	188	150	1996	75	2071	1,295	243,912	48	9,653	-
8358	101	PVC	95	150	1996	75	2071	1,295	122,628	48	4,853	-
8359	102	PVC	4	150	1996	75	2071	1,295	4,948	48	196	-
8360	103	PVC	9	150	1996	75	2071	1,295	11,108	48	440	-
8361	104	PVC	363	150	1996	75	2071	1,295	469,778	48	18,593	-
8362	106	PVC	67	150	1996	75	2071	1,295	87,225	48	3,452	-
8363	107	PVC	528	200	1996	75	2071	1,295	683,493	48	27,051	-
8364	111	PVC	86	150	1996	75	2071	1,295	110,926	48	4,390	-
8365	112	PVC	151	150	1996	75	2071	1,295	194,986	48	7,717	-
8366	116	PVC	3	150	1996	75	2071	1,295	3,874	48	153	-
8367	118	PVC	100	200	1996	75	2071	1,295	129,521	48	5,126	-
8368	119	PVC	111	150	1996	75	2071	1,295	144,295	48	5,711	-
8369	123	PVC	4	150	1996	75	2071	1,295	4,836	48	191	-
8370	127	PVC	134	150	1996	75	2071	1,295	173,257	48	6,857	-
8371	130	PVC	2	150	1996	75	2071	1,295	2,590	48	103	-
8372	131	PVC	3	200	1996	75	2071	1,295	3,584	48	142	-
8373	132	PVC	2	150	1996	75	2071	1,295	2,392	48	95	-
8374	134	PVC	81	150	1996	75	2071	1,295	104,765	48	4,146	-
8375	136	PVC	0	150	1996	75	2071	#DIV/0!	-	48	-	-
8376	137	PVC	41	150	1996	75	2071	1,295	52,957	48	2,096	-
8377	138	PVC	103	150	1996	75	2071	1,295	133,243	48	5,273	-
8378	141	PVC	2	150	1996	75	2071	1,295	2,897	48	115	-
8379	151	PVC	79	150	1996	75	2071	1,295	101,688	48	4,025	-
8380	152	PVC	271	150	1996	75	2071	1,295	351,055	48	13,894	-
8381	156	PVC	144	150	1996	75	2071	1,295	186,935	48	7,398	-
8382	160	PVC	24	150	1996	75	2071	1,295	31,635	48	1,252	-
8383	173	PVC	60	150	1996	75	2071	1,295	77,973	48	3,086	-
8384	174	PVC	45	150	1996	75	2071	1,295	58,225	48	2,304	-
8385	175	PVC	3	150	1996	75	2071	1,295	4,013	48	159	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8386	176	PVC	148	200	1996	75	2071	1,295	191,100	48	7,563	-
8387	177	PVC	9	150	1996	75	2071	1,295	11,581	48	458	-
8388	178	PVC	168	200	1996	75	2071	1,295	217,838	48	8,622	-
8389	185	PVC	105	150	1996	75	2071	1,295	135,786	48	5,374	-
8390	190	PVC	18	150	1996	75	2071	1,295	23,409	48	926	-
8391	193	PVC	29	150	1996	75	2071	1,295	37,664	48	1,491	-
8392	194	PVC	201	150	1996	75	2071	1,295	260,247	48	10,300	-
8393	195	PVC	296	150	1996	75	2071	1,295	382,760	48	15,149	-
8394	198	PVC	3	150	1996	75	2071	1,295	3,460	48	137	-
8395	199	PVC	137	150	1996	75	2071	1,295	177,449	48	7,023	-
8396	200	PVC	118	150	1996	75	2071	1,295	152,824	48	6,048	-
8397	201	PVC	103	150	1996	75	2071	1,295	133,134	48	5,269	-
8398	202	PVC	250	150	1996	75	2071	1,295	323,220	48	12,792	-
8399	210	PVC	274	150	1996	75	2071	1,295	354,650	48	14,036	-
8400	211	PVC	237	150	1996	75	2071	1,295	307,370	48	12,165	-
8401	212	PVC	304	150	1996	75	2071	1,295	393,455	48	15,572	-
8402	213	PVC	223	150	1996	75	2071	1,295	288,435	48	11,416	-
8403	214	PVC	21	150	1996	75	2071	1,295	27,435	48	1,086	-
8404	215	PVC	29	150	1996	75	2071	1,295	38,137	48	1,509	-
8405	216	PVC	149	150	1996	75	2071	1,295	193,373	48	7,653	-
8406	217	PVC	2	150	1996	75	2071	1,295	2,332	48	92	-
8407	218	PVC	367	150	1996	75	2071	1,295	475,070	48	18,802	-
8408	219	PVC	51	150	1996	75	2071	1,295	65,533	48	2,594	-
8409	220	PVC	21	150	1996	75	2071	1,295	27,582	48	1,092	-
8410	221	PVC	63	150	1996	75	2071	1,295	82,157	48	3,252	-
8411	222	PVC	48	150	1996	75	2071	1,295	61,779	48	2,445	-
8412	223	PVC	9	150	1996	75	2071	1,295	11,466	48	454	-
8413	235	PVC	402	250	1996	75	2071	1,295	520,183	48	20,588	-
8414	238	PVC	81	150	1996	75	2071	1,295	104,415	48	4,132	-
8415	239	PVC	33	150	1996	75	2071	1,295	43,210	48	1,710	-
8416	240	PVC	301	200	1996	75	2071	1,295	389,883	48	15,431	-
8417	241	PVC	78	250	1996	75	2071	1,295	101,390	48	4,013	-
8418	242	PVC	95	150	1996	75	2071	1,295	122,605	48	4,852	-
8419	243	PVC	210	150	1996	75	2071	1,295	271,812	48	10,758	-
8420	244	PVC	210	250	1996	75	2071	1,295	271,727	48	10,754	-
8421	254	PVC	24	150	1996	75	2071	1,295	31,337	48	1,240	-
8422	260	PVC	6	150	1996	75	2071	1,295	7,592	48	300	-
8423	268	PVC	14	150	1996	75	2071	1,295	17,817	48	705	-
8424	269	PVC	25	150	1996	75	2071	1,295	31,940	48	1,264	-
8425	273	PVC	26	150	1996	75	2071	1,295	33,721	48	1,335	-
8426	279	PVC	4	150	1996	75	2071	1,295	4,563	48	181	-
8427	280	PVC	3	150	1996	75	2071	1,295	4,117	48	163	-
8428	281	PVC	60	150	1996	75	2071	1,295	77,083	48	3,051	-
8429	282	PVC	38	150	1996	75	2071	1,295	49,620	48	1,964	-
8430	283	PVC	67	150	1996	75	2071	1,295	86,601	48	3,427	-
8431	284	PVC	2	150	1996	75	2071	1,295	2,331	48	92	-
8432	285	PVC	201	150	1996	75	2071	1,295	260,422	48	10,307	-
8433	286	PVC	100	150	1996	75	2071	1,295	129,075	48	5,109	-
8434	287	PVC	57	150	1996	75	2071	1,295	73,965	48	2,927	-
8435	288	PVC	18	150	1996	75	2071	1,295	23,677	48	937	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8436	292	PVC	10	150	1996	75	2071	1,295	13,374	48	529	-
8437	293	PVC	9	150	1996	75	2071	1,295	11,628	48	460	-
8438	294	PVC	92	150	1996	75	2071	1,295	118,658	48	4,696	-
8439	295	PVC	69	150	1996	75	2071	1,295	89,017	48	3,523	-
8440	296	PVC	13	150	1996	75	2071	1,295	17,366	48	687	-
8441	297	PVC	9	150	1996	75	2071	1,295	11,685	48	462	-
8442	298	PVC	8	150	1996	75	2071	1,295	9,730	48	385	-
8443	299	PVC	18	150	1996	75	2071	1,295	23,480	48	929	-
8444	300	PVC	6	150	1996	75	2071	1,295	8,320	48	329	-
8445	301	PVC	19	150	1996	75	2071	1,295	24,405	48	966	-
8446	302	PVC	2	150	1996	75	2071	1,295	2,309	48	91	-
8447	314	PVC	201	150	1996	75	2071	1,295	260,842	48	10,324	-
8448	315	PVC	102	150	1996	75	2071	1,295	132,329	48	5,237	-
8449	316	PVC	11	150	1996	75	2071	1,295	13,686	48	542	-
8450	317	PVC	14	150	1996	75	2071	1,295	18,047	48	714	-
8451	318	PVC	5	150	1996	75	2071	1,295	7,060	48	279	-
8452	319	PVC	38	50	1996	75	2071	1,295	48,690	48	1,927	-
8453	320	PVC	83	150	1996	75	2071	1,295	107,067	48	4,237	-
8454	321	PVC	148	150	1996	75	2071	1,295	191,742	48	7,589	-
8455	322	PVC	15	150	1996	75	2071	1,295	19,460	48	770	-
8456	323	PVC	111	150	1996	75	2071	1,295	143,764	48	5,690	-
8457	324	PVC	12	150	1996	75	2071	1,295	14,926	48	591	-
8458	325	PVC	25	150	1996	75	2071	1,295	32,425	48	1,283	-
8459	326	DI	294	250	1996	75	2071	1,295	380,943	48	15,077	-
8460	327	DI	110	250	1996	75	2071	1,295	142,525	48	5,641	-
8461	328	CI	7	150	1996	75	2071	1,295	8,869	48	351	-
8462	329	DI	11	150	1996	75	2071	1,295	14,056	48	556	-
8463	330	DI	247	200	1996	75	2071	1,295	319,235	48	12,635	-
8464	334	PVC	8	150	1996	75	2071	1,295	10,629	48	421	-
8465	346	PVC	27	200	1996	75	2071	1,295	35,359	48	1,399	-
8466	376	PVC	9	150	1996	75	2071	1,295	11,317	48	448	-
8467	396	PVC	123	150	1996	75	2071	1,295	159,736	48	6,322	-
8468	397	PVC	16	200	1996	75	2071	1,295	21,303	48	843	-
8469	400	PVC	119	150	1996	75	2071	1,295	154,289	48	6,106	-
8470	403	PVC	127	150	1996	75	2071	1,295	164,238	48	6,500	-
8471	406	PVC	145	150	1996	75	2071	1,295	187,408	48	7,417	-
8472	408	PVC	5	150	1996	75	2071	1,295	6,844	48	271	-
8473	409	PVC	5	150	1996	75	2071	1,295	6,016	48	238	-
8474	410	PVC	15	150	1996	75	2071	1,295	20,038	48	793	-
8475	411	PVC	209	150	1996	75	2071	1,295	270,580	48	10,709	-
8476	412	PVC	6	150	1996	75	2071	1,295	7,435	48	294	-
8477	413	PVC	642	150	1996	75	2071	1,295	832,000	48	32,929	-
8478	414	PVC	83	150	1996	75	2071	1,295	107,659	48	4,261	-
8479	430	PVC	60	150	1996	75	2071	1,295	77,430	48	3,065	-
8480	431	PVC	71	150	1996	75	2071	1,295	92,414	48	3,658	-
8481	432	PVC	9	150	1996	75	2071	1,295	12,278	48	486	-
8482	433	PVC	29	150	1996	75	2071	1,295	37,874	48	1,499	-
8483	434	PVC	96	150	1996	75	2071	1,295	124,941	48	4,945	-
8484	435	PVC	119	150	1996	75	2071	1,295	154,149	48	6,101	-
8485	440	PVC	151	150	1996	75	2071	1,295	195,115	48	7,722	-
8486	441	PVC	143	150	1996	75	2071	1,295	184,656	48	7,308	-
8487	443	PVC	2	150	1996	75	2071	1,295	2,912	48	115	-
8488	444	PVC	19	150	1996	75	2071	1,295	24,115	48	954	-
8489	449	PVC	58	150	1996	75	2071	1,295	75,338	48	2,982	-
8490	450	PVC	39	150	1996	75	2071	1,295	50,162	48	1,985	-
8491	451	PVC	2	150	1996	75	2071	1,295	2,484	48	98	-
8492	454	PVC	1	150	1996	75	2071	1,295	1,899	48	75	-
8493	455	PVC	128	150	1996	75	2071	1,295	165,888	48	6,565	-
8494	456	PVC	267	150	1996	75	2071	1,295	345,571	48	13,677	-
8495	457	PVC	7	150	1996	75	2071	1,295	8,811	48	349	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8496	458	PVC	226	150	1996	75	2071	1,295	293,304	48	11,608	-
8497	459	DI	92	250	1996	75	2071	1,295	118,730	48	4,699	-
8498	460	PVC	9	150	1996	75	2071	1,295	11,661	48	462	-
8499	461	PVC	22	150	1996	75	2071	1,295	28,164	48	1,115	-
8500	462	DI	7	250	1996	75	2071	1,295	9,639	48	382	-
8501	463	PVC	12	150	1996	75	2071	1,295	16,115	48	638	-
8502	464	DI	4	200	1996	75	2071	1,295	5,741	48	227	-
8503	465	PVC	38	150	1996	75	2071	1,295	49,853	48	1,973	-
8504	466	PVC	10	150	1996	75	2071	1,295	12,722	48	503	-
8505	468	PVC	154	150	1996	75	2071	1,295	200,012	48	7,916	-
8506	469	PVC	36	150	1996	75	2071	1,295	46,905	48	1,856	-
8507	470	PVC	18	150	1996	75	2071	1,295	23,667	48	937	-
8508	471	PVC	342	150	1996	75	2071	1,295	442,581	48	17,516	-
8509	472	PVC	5	150	1996	75	2071	1,295	5,986	48	237	-
8510	473	PVC	118	150	1996	75	2071	1,295	153,052	48	6,057	-
8511	474	PVC	14	150	1996	75	2071	1,295	18,384	48	728	-
8512	475	PVC	16	150	1996	75	2071	1,295	20,310	48	804	-
8513	476	PVC	19	150	1996	75	2071	1,295	24,300	48	962	-
8514	477	PVC	15	150	1996	75	2071	1,295	19,742	48	781	-
8515	478	PVC	3	150	1996	75	2071	1,295	4,090	48	162	-
8516	479	PVC	111	150	1996	75	2071	1,295	143,123	48	5,665	-
8517	480	PVC	7	150	1996	75	2071	1,295	8,457	48	335	-
8518	481	PVC	15	150	1996	75	2071	1,295	19,569	48	774	-
8519	482	PVC	36	150	1996	75	2071	1,295	46,833	48	1,854	-
8520	483	PVC	50	150	1996	75	2071	1,295	64,781	48	2,564	-
8521	484	PVC	32	150	1996	75	2071	1,295	41,737	48	1,652	-
8522	485	PVC	253	38	1996	75	2071	1,295	327,487	48	12,961	-
8523	486	PVC	4	150	1996	75	2071	1,295	4,939	48	195	-
8524	487	PVC	3	150	1996	75	2071	1,295	3,253	48	129	-
8525	488	PVC	12	150	1996	75	2071	1,295	14,893	48	589	-
8526	489	PVC	21	150	1996	75	2071	1,295	26,600	48	1,053	-
8527	490	PVC	3	150	1996	75	2071	1,295	4,233	48	168	-
8528	491	PVC	126	150	1996	75	2071	1,295	163,250	48	6,461	-
8529	494	PVC	9	150	1996	75	2071	1,295	12,086	48	478	-
8530	500	PVC	275	150	1996	75	2071	1,295	356,206	48	14,098	-
8531	501	PVC	11	150	1996	75	2071	1,295	14,274	48	565	-
8532	502	PVC	10	150	1996	75	2071	1,295	12,818	48	507	-
8533	503	PVC	121	150	1996	75	2071	1,295	156,459	48	6,192	-
8534	504	PVC	2	150	1996	75	2071	1,295	2,597	48	103	-
8535	506	PVC	32	150	1996	75	2071	1,295	41,995	48	1,662	-
8536	507	PVC	9	150	1996	75	2071	1,295	11,699	48	463	-
8537	508	PVC	93	150	1996	75	2071	1,295	120,132	48	4,755	-
8538	509	PVC	5	150	1996	75	2071	1,295	6,134	48	243	-
8539	510	PVC	32	150	1996	75	2071	1,295	41,080	48	1,626	-
8540	511	PVC	11	150	1996	75	2071	1,295	14,014	48	555	-
8541	512	PVC	319	150	1996	75	2071	1,295	412,508	48	16,326	-
8542	513	DI	227	250	1996	75	2071	1,295	293,760	48	11,626	-
8543	514	DI	79	250	1996	75	2071	1,295	102,527	48	4,058	-
8544	515	DI	15	200	1996	75	2071	1,295	19,012	48	752	-
8545	516	DI	42	200	1996	75	2071	1,295	54,416	48	2,154	-
8546	517	DI	4	200	1996	75	2071	1,295	4,674	48	185	-
8547	518	DI	311	250	1996	75	2071	1,295	402,107	48	15,915	-
8548	519	PVC	120	150	1996	75	2071	1,295	154,877	48	6,130	-
8549	520	PVC	220	150	1996	75	2071	1,295	285,540	48	11,301	-
8550	521	PVC	2	250	1996	75	2071	1,295	2,328	48	92	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8551	522	PVC	129	250	1996	75	2071	1,295	166,734	48	6,599	-
8552	523	PVC	3	150	1996	75	2071	1,295	3,675	48	145	-
8553	524	PVC	2	150	1996	75	2071	1,295	3,047	48	121	-
8554	525	PVC	8	250	1996	75	2071	1,295	10,233	48	405	-
8555	526	DI	5	250	1996	75	2071	1,295	7,000	48	277	-
8556	527	DI	118	250	1996	75	2071	1,295	152,237	48	6,025	-
8557	528	PVC	109	250	1996	75	2071	1,295	140,825	48	5,574	-
8558	529	PVC	282	250	1996	75	2071	1,295	365,335	48	14,459	-
8559	530	PVC	22	150	1996	75	2071	1,295	28,361	48	1,122	-
8560	531	PVC	15	150	1996	75	2071	1,295	19,771	48	782	-
8561	532	PVC	18	250	1996	75	2071	1,295	23,714	48	939	-
8562	533	PVC	218	150	1996	75	2071	1,295	282,483	48	11,180	-
8563	534	PVC	111	150	1996	75	2071	1,295	144,240	48	5,709	-
8564	535	PVC	35	200	1996	75	2071	1,295	45,628	48	1,806	-
8565	536	PVC	9	200	1996	75	2071	1,295	12,259	48	485	-
8566	537	PVC	131	200	1996	75	2071	1,295	170,132	48	6,733	-
8567	538	PVC	68	150	1996	75	2071	1,295	88,553	48	3,505	-
8568	539	PVC	125	150	1996	75	2071	1,295	161,537	48	6,393	-
8569	540	DI	14	250	1996	75	2071	1,295	18,043	48	714	-
8570	541	DI	109	250	1996	75	2071	1,295	141,400	48	5,596	-
8571	542	DI	18	250	1996	75	2071	1,295	23,731	48	939	-
8572	543	PVC	6	200	1996	75	2071	1,295	7,677	48	304	-
8573	544	PVC	41	200	1996	75	2071	1,295	53,223	48	2,106	-
8574	545	PVC	3	200	1996	75	2071	1,295	4,467	48	177	-
8575	546	DI	6	200	1996	75	2071	1,295	7,171	48	284	-
8576	547	DI	12	200	1996	75	2071	1,295	15,431	48	611	-
8577	548	DI	3	200	1996	75	2071	1,295	3,840	48	152	-
8578	549	PVC	10	150	1996	75	2071	1,295	13,439	48	532	-
8579	550	DI	20	250	1996	75	2071	1,295	25,348	48	1,003	-
8580	551	DI	84	250	1996	75	2071	1,295	108,499	48	4,294	-
8581	552	DI	1	250	1996	75	2071	1,296	927	48	37	-
8582	553	DI	17	250	1996	75	2071	1,295	22,012	48	871	-
8583	554	PVC	168	150	1996	75	2071	1,295	217,052	48	8,590	-
8584	555	PVC	82	150	1996	75	2071	1,295	106,313	48	4,208	-
8585	556	PVC	22	200	1996	75	2071	1,295	28,044	48	1,110	-
8586	557	PVC	183	200	1996	75	2071	1,295	237,015	48	9,381	-
8587	558	PVC	9	200	1996	75	2071	1,295	12,203	48	483	-
8588	559	PVC	9	150	1996	75	2071	1,295	12,170	48	482	-
8589	560	PVC	8	150	1996	75	2071	1,295	9,722	48	385	-
8590	561	PVC	71	150	1996	75	2071	1,295	91,499	48	3,621	-
8591	562	PVC	219	150	1996	75	2071	1,295	283,871	48	11,235	-
8592	564	PVC	18	150	1996	75	2071	1,295	23,716	48	939	-
8593	566	PVC	8	150	1996	75	2071	1,295	10,719	48	424	-
8594	572	PVC	34	150	1996	75	2071	1,295	43,945	48	1,739	-
8595	573	PVC	421	150	1996	75	2071	1,295	545,198	48	21,578	-
8596	574	PVC	418	150	1996	75	2071	1,295	541,617	48	21,436	-
8597	575	PVC	2	150	1996	75	2071	1,295	2,330	48	92	-
8598	576	PVC	4	150	1996	75	2071	1,295	4,659	48	184	-
8599	579	PVC	2	150	1996	75	2071	1,295	2,336	48	92	-
8600	583	PVC	5	150	1996	75	2071	1,295	7,090	48	281	-
8601	585	PVC	80	150	1996	75	2071	1,295	103,521	48	4,097	-
8602	589	PVC	17	150	1996	75	2071	1,295	22,463	48	889	-
8603	594	PVC	4	300	1996	75	2071	1,295	5,246	48	208	-
8604	595	PVC	3	300	1996	75	2071	1,295	3,891	48	154	-
8605	596	PVC	3	300	1996	75	2071	1,295	3,886	48	154	-
8606	597	PVC	6	300	1996	75	2071	1,295	7,423	48	294	-
8607	601	PVC	5	150	1996	75	2071	1,295	7,039	48	279	-
8608	602	PVC	122	150	1996	75	2071	1,295	157,859	48	6,248	-
8609	603	PVC	31	150	1996	75	2071	1,295	40,403	48	1,599	-
8610	604	PVC	6	150	1996	75	2071	1,295	7,738	48	306	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8611	605	PVC	19	150	1996	75	2071	1,295	24,668	48	976	-
8612	606	PVC	136	150	1996	75	2071	1,295	176,141	48	6,971	-
8613	630	PVC	0	150	1996	75	2071	#DIV/0!	-	48	-	-
8614	632	PVC	9	150	1996	75	2071	1,295	11,219	48	444	-
8615	633	PVC	37	150	1996	75	2071	1,295	47,954	48	1,898	-
8616	634	PVC	20	150	1996	75	2071	1,295	26,386	48	1,044	-
8617	640	PVC	0	150	1996	75	2071	#DIV/0!	-	48	-	-
8618	645	PVC	87	150	1996	75	2071	1,295	112,864	48	4,467	-
8619	646	PVC	146	150	1996	75	2071	1,295	189,057	48	7,482	-
8620	647	PVC	47	150	1996	75	2071	1,295	61,447	48	2,432	-
8621	648	DI	146	250	1996	75	2071	1,295	188,840	48	7,474	-
8622	649	PVC	18	150	1996	75	2071	1,295	23,674	48	937	-
8623	650	PVC	55	200	1996	75	2071	1,295	71,208	48	2,818	-
8624	651	PVC	25	200	1996	75	2071	1,295	31,798	48	1,258	-
8625	652	PVC	285	150	1996	75	2071	1,295	368,527	48	14,585	-
8626	656	PVC	124	150	1996	75	2071	1,295	160,660	48	6,359	-
8627	658	PVC	25	150	1996	75	2071	1,295	31,897	48	1,262	-
8628	659	PVC	158	150	1996	75	2071	1,295	205,059	48	8,116	-
8629	660	PVC	24	150	1996	75	2071	1,295	31,055	48	1,229	-
8630	661	PVC	21	150	1996	75	2071	1,295	26,617	48	1,053	-
8631	662	PVC	123	150	1996	75	2071	1,295	159,561	48	6,315	-
8632	663	PVC	162	150	1996	75	2071	1,295	209,670	48	8,298	-
8633	664	PVC	15	150	1996	75	2071	1,295	19,263	48	762	-
8634	665	PVC	102	150	1996	75	2071	1,295	132,276	48	5,235	-
8635	666	PVC	6	150	1996	75	2071	1,295	8,409	48	333	-
8636	681	PVC	20	150	1996	75	2071	1,295	25,586	48	1,013	-
8637	682	PVC	77	150	1996	75	2071	1,295	99,544	48	3,940	-
8638	683	PVC	42	150	1996	75	2071	1,295	54,513	48	2,157	-
8639	684	PVC	19	150	1996	75	2071	1,295	25,024	48	990	-
8640	685	PVC	84	150	1996	75	2071	1,295	108,752	48	4,304	-
8641	686	PVC	152	150	1996	75	2071	1,295	197,156	48	7,803	-
8642	688	PVC	91	150	1996	75	2071	1,295	117,984	48	4,670	-
8643	689	PVC	43	150	1996	75	2071	1,295	55,622	48	2,201	-
8644	690	PVC	18	150	1996	75	2071	1,295	22,889	48	906	-
8645	691	PVC	40	150	1996	75	2071	1,295	51,846	48	2,052	-
8646	704	PVC	2	150	1996	75	2071	1,295	2,465	48	98	-
8647	711	PVC	76	150	1996	75	2071	1,295	98,070	48	3,881	-
8648	712	PVC	183	150	1996	75	2071	1,295	237,187	48	9,387	-
8649	749	PVC	158	150	1996	75	2071	1,295	205,205	48	8,122	-
8650	750	PVC	18	150	1996	75	2071	1,295	23,762	48	940	-
8651	751	PVC	38	150	1996	75	2071	1,295	49,288	48	1,951	-
8652	752	PVC	8	150	1996	75	2071	1,295	10,248	48	406	-
8653	753	PVC	7	150	1996	75	2071	1,295	9,616	48	381	-
8654	754	PVC	87	150	1996	75	2071	1,295	112,873	48	4,467	-
8655	755	PVC	25	150	1996	75	2071	1,295	32,326	48	1,279	-
8656	756	PVC	9	150	1996	75	2071	1,295	11,218	48	444	-
8657	757	PVC	7	150	1996	75	2071	1,295	9,116	48	361	-
8658	758	PVC	117	150	1996	75	2071	1,295	151,289	48	5,988	-
8659	759	PVC	53	150	1996	75	2071	1,295	68,634	48	2,716	-
8660	760	PVC	39	150	1996	75	2071	1,295	50,103	48	1,983	-
8661	761	PVC	52	150	1996	75	2071	1,295	66,773	48	2,643	-
8662	762	PVC	772	38	1996	75	2071	1,295	999,864	48	39,572	-
8663	780	PVC	216	150	1996	75	2071	1,295	279,451	48	11,060	-
8664	781	PVC	83	150	1996	75	2071	1,295	107,377	48	4,250	-
8665	783	PVC	101	150	1996	75	2071	1,295	130,615	48	5,169	-
8666	784	PVC	9	150	1996	75	2071	1,295	11,790	48	467	-
8667	785	PVC	26	150	1996	75	2071	1,295	34,266	48	1,356	-
8668	834	PVC	29	150	1996	75	2071	1,295	37,301	48	1,476	-
8669	835	PVC	9	150	1996	75	2071	1,295	11,791	48	467	-
8670	836	PVC	26	150	1996	75	2071	1,295	34,008	48	1,346	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8671	837	PVC	9	150	1996	75	2071	1,295	11,494	48	455	-
8672	840	PVC	177	150	1996	75	2071	1,295	229,676	48	9,090	-
8673	841	PVC	7	150	1996	75	2071	1,295	9,373	48	371	-
8674	842	PVC	1	150	1996	75	2071	1,295	1,256	48	50	-
8675	846	PVC	57	150	1996	75	2071	1,295	73,899	48	2,925	-
8676	847	PVC	6	150	1996	75	2071	1,295	8,162	48	323	-
8677	850	PVC	127	150	1996	75	2071	1,295	164,017	48	6,491	-
8678	852	PVC	9	150	1996	75	2071	1,295	11,967	48	474	-
8679	853	PVC	109	150	1996	75	2071	1,295	141,362	48	5,595	-
8680	854	PVC	30	150	1996	75	2071	1,295	39,496	48	1,563	-
8681	855	PVC	11	150	1996	75	2071	1,295	14,767	48	584	-
8682	856	PVC	26	150	1996	75	2071	1,295	33,828	48	1,339	-
8683	857	PVC	9	150	1996	75	2071	1,295	11,830	48	468	-
8684	858	PVC	30	150	1996	75	2071	1,295	38,592	48	1,527	-
8685	859	PVC	138	150	1996	75	2071	1,295	178,972	48	7,083	-
8686	860	PVC	92	150	1996	75	2071	1,295	119,580	48	4,733	-
8687	861	PVC	91	150	1996	75	2071	1,295	117,849	48	4,664	-
8688	862	PVC	5	150	1996	75	2071	1,295	6,375	48	252	-
8689	863	PVC	90	150	1996	75	2071	1,295	116,637	48	4,616	-
8690	864	DI	60	200	1996	75	2071	1,295	77,455	48	3,066	-
8691	865	DI	198	200	1996	75	2071	1,295	255,984	48	10,131	-
8692	878	PVC	0	150	1996	75	2071	1,296	499	48	20	-
8693	881	PVC	12	200	1996	75	2071	1,295	15,609	48	618	-
8694	883	PVC	31	150	1996	75	2071	1,295	40,052	48	1,585	-
8695	890	PVC	2	150	1996	75	2071	1,295	2,003	48	79	-
8696	891	PVC	89	150	1996	75	2071	1,295	114,670	48	4,538	-
8697	892	PVC	2	150	1996	75	2071	1,295	2,130	48	84	-
8698	893	PVC	11	150	1996	75	2071	1,295	14,136	48	559	-
8699	894	PVC	110	150	1996	75	2071	1,295	143,086	48	5,663	-
8700	898	PVC	179	150	1996	75	2071	1,295	231,675	48	9,169	-
8701	899	PVC	9	150	1996	75	2071	1,295	11,741	48	465	-
8702	900	PVC	108	150	1996	75	2071	1,295	139,370	48	5,516	-
8703	901	PVC	94	150	1996	75	2071	1,295	121,361	48	4,803	-
8704	902	PVC	31	150	1996	75	2071	1,295	39,699	48	1,571	-
8705	903	PVC	8	150	1996	75	2071	1,295	10,373	48	411	-
8706	904	PVC	196	150	1996	75	2071	1,295	254,321	48	10,065	-
8707	905	PVC	138	200	1996	75	2071	1,295	179,025	48	7,085	-
8708	906	PVC	1	150	1996	75	2071	1,295	1,345	48	53	-
8709	907	PVC	110	150	1996	75	2071	1,295	141,877	48	5,615	-
8710	908	PVC	82	150	1996	75	2071	1,295	105,552	48	4,178	-
8711	909	PVC	55	150	1996	75	2071	1,295	70,832	48	2,803	-
8712	910	PVC	21	150	1996	75	2071	1,295	27,169	48	1,075	-
8713	911	PVC	2	150	1996	75	2071	1,295	2,285	48	90	-
8714	912	PVC	6	150	1996	75	2071	1,295	8,209	48	325	-
8715	913	PVC	42	150	1996	75	2071	1,295	54,339	48	2,151	-
8716	914	PVC	9	150	1996	75	2071	1,295	11,567	48	458	-
8717	915	PVC	17	150	1996	75	2071	1,295	21,849	48	865	-
8718	916	PVC	224	150	1996	75	2071	1,295	290,566	48	11,500	-
8719	917	PVC	89	150	1996	75	2071	1,295	114,835	48	4,545	-
8720	918	PVC	60	150	1996	75	2071	1,295	77,120	48	3,052	-
8721	919	DI	56	250	1996	75	2071	1,295	72,110	48	2,854	-
8722	920	PVC	14	150	1996	75	2071	1,295	18,665	48	739	-
8723	921	PVC	16	150	1996	75	2071	1,295	21,092	48	835	-
8724	925	PVC	23	150	1996	75	2071	1,295	29,794	48	1,179	-
8725	927	PVC	399	150	1996	75	2071	1,295	516,818	48	20,454	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8726	928	PVC	7	150	1996	75	2071	1,295	9,438	48	374	-
8727	929	PVC	114	150	1996	75	2071	1,295	147,220	48	5,827	-
8728	930	PVC	9	150	1996	75	2071	1,295	12,051	48	477	-
8729	931	PVC	215	150	1996	75	2071	1,295	278,308	48	11,015	-
8730	932	PVC	25	150	1996	75	2071	1,295	33,001	48	1,306	-
8731	933	PVC	25	150	1996	75	2071	1,295	32,987	48	1,306	-
8732	936	PVC	14	150	1996	75	2071	1,295	18,693	48	740	-
8733	945	PVC	23	150	1996	75	2071	1,295	30,187	48	1,195	-
8734	946	PVC	54	150	1996	75	2071	1,295	69,283	48	2,742	-
8735	949	PVC	3	150	1996	75	2071	1,295	3,350	48	133	-
8736	953	PVC	16	150	1996	75	2071	1,295	20,760	48	822	-
8737	954	PVC	6	150	1996	75	2071	1,295	7,600	48	301	-
8738	955	PVC	92	150	1996	75	2071	1,295	118,670	48	4,697	-
8739	964	PVC	3	150	1996	75	2071	1,295	3,419	48	135	-
8740	965	PVC	120	150	1996	75	2071	1,295	154,987	48	6,134	-
8741	966	DI	16	200	1996	75	2071	1,295	20,502	48	811	-
8742	977	PVC	68	25	1996	75	2071	1,295	87,417	48	3,460	-
8743	978	PVC	145	250	1996	75	2071	1,295	188,172	48	7,447	-
8744	979	PVC	63	150	1996	75	2071	1,295	81,095	48	3,210	-
8745	980	PVC	74	150	1996	75	2071	1,295	95,219	48	3,769	-
8746	981	PVC	51	150	1996	75	2071	1,295	66,280	48	2,623	-
8747	982	PVC	229	150	1996	75	2071	1,295	295,934	48	11,712	-
8748	984	PVC	640	200	1996	75	2071	1,295	828,744	48	32,800	-
8749	1,355	PVC	106	150	1996	75	2071	1,295	137,677	48	5,449	-
8750	1,357	PVC	17	200	1996	75	2071	1,295	22,384	48	886	-
8751	1,361	PVC	25	150	1996	75	2071	1,295	31,952	48	1,265	-
8752	985	PVC	227	150	1996	75	2071	1,295	293,611	48	11,620	-
8753	987	PVC	173	150	1996	75	2071	1,295	224,290	48	8,877	-
8754	988		544	150	1996	75	2071	1,295	704,939	48	27,900	-
8755	989		78	200	1996	75	2071	1,295	101,039	48	3,999	-
8756	990		80	200	1996	75	2071	1,295	103,839	48	4,110	-
8757	991		322	150	1996	75	2071	1,295	416,485	48	16,484	-
8758	992		256	150	1996	75	2071	1,295	332,009	48	13,140	-
8759	993		65	150	1996	75	2071	1,295	83,857	48	3,319	-
8760	994		226	200	1996	75	2071	1,295	292,218	48	11,565	-
8761	995		170	200	1996	75	2071	1,295	219,719	48	8,696	-
8762	996		402	200	1996	75	2071	1,295	520,568	48	20,603	-
8763	997		543	150	1996	75	2071	1,295	702,605	48	27,808	-
8764	998		335	150	1996	75	2071	1,295	433,770	48	17,168	-
8765	999		78	0	1996	75	2071	1,295	100,623	48	3,982	-
8766	1,000		453	150	1996	75	2071	1,295	586,929	48	23,229	-
8767	1,001		212	150	1996	75	2071	1,295	274,009	48	10,845	-
8768	1,002		213	150	1996	75	2071	1,295	275,905	48	10,920	-
8769	1,003		195	150	1996	75	2071	1,295	251,904	48	9,970	-
8770	1,004		332	150	1996	75	2071	1,295	429,467	48	16,997	-
8771	1,005		286	150	1996	75	2071	1,295	370,817	48	14,676	-
8772	1,006		657	150	1996	75	2071	1,295	850,225	48	33,650	-
8773	1,007		147	150	1996	75	2071	1,295	189,856	48	7,514	-
8774	1,008		75	150	1996	75	2071	1,295	97,005	48	3,839	-
8775	1,009		113	150	1996	75	2071	1,295	146,238	48	5,788	-
8776	1,010		90	150	1996	75	2071	1,295	116,495	48	4,611	-
8777	1,011		633	150	1996	75	2071	1,295	819,232	48	32,423	-
8778	1,012		99	200	1996	75	2071	1,295	128,508	48	5,086	-
8779	1,013		140	150	1996	75	2071	1,295	181,824	48	7,196	-
8780	1,014		30	150	1996	75	2071	1,295	38,330	48	1,517	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8780	1,014		30	150	1996	75	2071	1,295	38,330	48	1,517	-
8781	1,015		120	200	1996	75	2071	1,295	155,459	48	6,153	-
8782	1,016		2,029	0	1996	75	2071	1,295	2,627,329	48	103,984	-
8783	1,017		794	0	1996	75	2071	1,295	1,028,250	48	40,696	-
8784	1,018		172	150	1996	75	2071	1,295	222,554	48	8,808	-
8785	1,019		114	200	1996	75	2071	1,295	147,827	48	5,851	-
8786	1,020		36	200	1996	75	2071	1,295	46,389	48	1,836	-
8787	1,021		19	0	1996	75	2071	1,295	24,143	48	956	-
8788	1,022		13	0	1996	75	2071	1,295	16,942	48	671	-
8789	1,023		68	200	1996	75	2071	1,295	88,568	48	3,505	-
8790	1,024		88	200	1996	75	2071	1,295	113,406	48	4,488	-
8791	1,025		166	150	1996	75	2071	1,295	214,544	48	8,491	-
8792	1,026		22	150	1996	75	2071	1,295	27,904	48	1,104	-
8793	1,027		13	150	1996	75	2071	1,295	16,722	48	662	-
8794	1,028		13	200	1996	75	2071	1,295	16,876	48	668	-
8795	1,029		171	150	1996	75	2071	1,295	221,102	48	8,751	-
8796	1,030		167	200	1996	75	2071	1,295	216,774	48	8,579	-
8797	1,031		154	150	1996	75	2071	1,295	199,858	48	7,910	-
8798	1,032		131	150	1996	75	2071	1,295	169,849	48	6,722	-
8799	1,033		379	200	1996	75	2071	1,295	490,281	48	19,404	-
8800	1,034		70	200	1996	75	2071	1,295	90,291	48	3,574	-
8801	1,035		281	200	1996	75	2071	1,295	363,438	48	14,384	-
8802	1,036		119	150	1996	75	2071	1,295	154,099	48	6,099	-
8803	1,037		5	0	1996	75	2071	1,295	6,840	48	271	-
8804	1,038		138	250	1996	75	2071	1,295	178,639	48	7,070	-
8805	1,039		155	300	1996	75	2071	1,295	201,213	48	7,964	-
8806	1,040		18	200	1996	75	2071	1,295	23,882	48	945	-
8807	1,041		41	300	1996	75	2071	1,295	53,642	48	2,123	-
8808	1,047		2	0	1996	75	2071	1,295	2,869	48	114	-
8809	1,054		65	300	1996	75	2071	1,295	84,211	48	3,333	-
8810	1,055		301	300	1996	75	2071	1,295	389,283	48	15,407	-
8811	1,056		300	300	1996	75	2071	1,295	388,444	48	15,374	-
8812	1,057		316	300	1996	75	2071	1,295	409,195	48	16,195	-
8813	1,058		1	0	1996	75	2071	1,295	1,885	48	75	-
8814	1,059		11	250	1996	75	2071	1,295	14,719	48	583	-
8815	1,060		61	250	1996	75	2071	1,295	78,610	48	3,111	-
8816	1,061		118	250	1996	75	2071	1,295	153,393	48	6,071	-
8817	1,062		82	250	1996	75	2071	1,295	106,021	48	4,196	-
8818	1,063		40	250	1996	75	2071	1,295	51,938	48	2,056	-
8819	1,064		122	250	1996	75	2071	1,295	157,926	48	6,250	-
8820	1,065		63	250	1996	75	2071	1,295	81,926	48	3,242	-
8821	1,066		102	250	1996	75	2071	1,295	131,915	48	5,221	-
8822	1,067		191	250	1996	75	2071	1,295	246,761	48	9,766	-
8823	1,068		3	0	1996	75	2071	1,295	4,113	48	163	-
8824	1,069		25	0	1996	75	2071	1,295	32,788	48	1,298	-
8825	1,070		72	0	1996	75	2071	1,295	93,592	48	3,704	-
8826	1,071		20	0	1996	75	2071	1,295	26,486	48	1,048	-
8827	1,072		53	0	1996	75	2071	1,295	68,226	48	2,700	-
8828	1,073		21	0	1996	75	2071	1,295	27,073	48	1,071	-
8829	1,074		112	0	1996	75	2071	1,295	144,478	48	5,718	-
8830	1,076		42	150	1996	75	2071	1,295	53,945	48	2,135	-
8831	1,077		157	150	1996	75	2071	1,295	202,984	48	8,034	-
8832	1,078		27	150	1996	75	2071	1,295	34,999	48	1,385	-
8833	1,079		11	150	1996	75	2071	1,295	14,711	48	582	-
8834	1,080		164	150	1996	75	2071	1,295	211,735	48	8,380	-
8835	1,081		14	50	1996	75	2071	1,295	18,068	48	715	-
8836	1,082		8	0	1996	75	2071	1,295	9,948	48	394	-
8837	1,083		7	0	1996	75	2071	1,295	9,404	48	372	-
8838	1,084		6	0	1996	75	2071	1,295	7,744	48	307	-
8839	1,085		6	0	1996	75	2071	1,295	7,126	48	282	-
8840	1,086		5	0	1996	75	2071	1,295	6,775	48	268	-

Table A-2 (Cont'd)
Township of Springwater
Watermain Inventory

Asset ID	Name	Material	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
8841	1,087		6	0	1996	75	2071	1,295	8,198	48	324	-
8842	1,088		6	0	1996	75	2071	1,295	8,055	48	319	-
8843	1,089		4	0	1996	75	2071	1,295	5,212	48	206	-
8844	1,090		4	0	1996	75	2071	1,295	5,660	48	224	-
8845	1,091		4	0	1996	75	2071	1,295	5,756	48	228	-
8846	1,092		2	0	1996	75	2071	1,295	2,189	48	87	-
8847	1,093		2	0	1996	75	2071	1,295	2,144	48	85	-
8848	1,094		6	0	1996	75	2071	1,295	7,874	48	312	-
8849	1,095		2	0	1996	75	2071	1,295	2,970	48	118	-
8850	1,096		96	0	1996	75	2071	1,295	124,547	48	4,929	-
8851	1,097		3	0	1996	75	2071	1,295	3,895	48	154	-
8852	1,098		5	0	1996	75	2071	1,295	6,129	48	243	-
8853	1,099		8	0	1996	75	2071	1,295	9,823	48	389	-
8854	1,100		13	0	1996	75	2071	1,295	16,338	48	647	-
8855	1,101		4	0	1996	75	2071	1,295	4,584	48	181	-
8856	1,102		22	0	1996	75	2071	1,295	28,783	48	1,139	-
8857	1,103	PVC	40	150	1996	75	2071	1,295	51,906	48	2,054	-
8858	1,107		7	0	1996	75	2071	1,295	9,106	48	360	-
8859	1,113		7	0	1996	75	2071	1,295	9,470	48	375	-
8860	1,115		7	0	1996	75	2071	1,295	9,009	48	357	-
8861	1,118		5	0	1996	75	2071	1,295	7,013	48	278	-
8862	1,120		8	0	1996	75	2071	1,295	10,296	48	407	-
8863	1,121		10	0	1996	75	2071	1,295	13,395	48	530	-
8864	1,126		151	150	1996	75	2071	1,295	195,489	48	7,737	-
8865	1,129		4	0	1996	75	2071	1,295	4,964	48	196	-
8866	1,132		8	0	1996	75	2071	1,295	9,985	48	395	-
8867	1,134		4	0	1996	75	2071	1,295	5,815	48	230	-
8868	1,135		33	0	1996	75	2071	1,295	42,538	48	1,684	-
8869	1,136		33	0	1996	75	2071	1,295	42,635	48	1,687	-
8870	1,137		635	200	1996	75	2071	1,295	821,727	48	32,522	-
8871	1,138		127	300	1996	75	2071	1,295	163,900	48	6,487	-
8872	1,139		248	250	1996	75	2071	1,295	321,234	48	12,714	-
8873	1,140		124	300	1996	75	2071	1,295	160,901	48	6,368	-
8874	1,141		253	200	1996	75	2071	1,295	327,798	48	12,974	-
8875	1,142		299	150	1996	75	2071	1,295	386,656	48	15,303	-
8876	1,143		139	150	1996	75	2071	1,295	179,368	48	7,099	-
8877	1,144		106	300	1996	75	2071	1,295	137,082	48	5,425	-
8878	1,145		172	150	1996	75	2071	1,295	223,061	48	8,828	-
8879	1,146		106	200	1996	75	2071	1,295	137,408	48	5,438	-
8880	1,147		102	200	1996	75	2071	1,295	131,943	48	5,222	-
8881	1,148		71	300	1996	75	2071	1,295	91,881	48	3,636	-
8882	1,149		115	300	1996	75	2071	1,295	148,507	48	5,878	-
8883	1,150		499	150	1996	75	2071	1,295	646,537	48	25,588	-
8884	1,151		220	200	1996	75	2071	1,295	285,023	48	11,281	-
8885	1,152		320	250	1996	75	2071	1,295	414,202	48	16,393	-
8886	1,153		129	300	1996	75	2071	1,295	166,659	48	6,596	-
8887	1,154		142	150	1996	75	2071	1,295	183,954	48	7,280	-
8888	1,155		29	150	1996	75	2071	1,295	37,026	48	1,465	-
8889	1,156		134	150	1996	75	2071	1,295	173,705	48	6,875	-
8890	1,157		51	150	1996	75	2071	1,295	65,594	48	2,596	-
8891	1,158		91	150	1996	75	2071	1,295	117,726	48	4,659	-
8892	1,159		199	150	1996	75	2071	1,295	257,532	48	10,193	-
8893	1,160	PVC	221	200	1996	75	2071	1,295	286,605	48	11,343	-
8894	1,161		122	150	1996	75	2071	1,295	157,465	48	6,232	-
8895	1,162		118	0	1996	75	2071	1,295	152,733	48	6,045	-
8896	1,163		113	0	1996	75	2071	1,295	146,523	48	5,799	-
8897	1,164		6	0	1996	75	2071	1,295	7,717	48	305	-
8898	1,165		21	0	1996	75	2071	1,295	26,859	48	1,063	-
8899	1,166		18	0	1996	75	2071	1,295	23,568	48	933	-
8900	1,167		17	0	1996	75	2071	1,295	22,618	48	895	-