Water and Wastewater Rate Study

Township of Lucan Biddulph

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November 8, 2024

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List of Acronyms and Abbreviations

Acronym	Full Description of Acronym
A.M.O.	Association of Municipalities of Ontario
A.W.W.A.	American Water Works Association
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
OLT	Ontario Land Tribunal
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 Lucan Biddulph 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 provides the Township with forecasted water rates and two scenarios for forecasted wastewater rates; the first scenario assumes the Lucan Wastewater Treatment Plant expansion will occur in 2025, while the second scenario assumes the expansion occurs in 2030. 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 inflated 2025 to 2034 capital spending program for water is approximately $4.52 million, and for wastewater is approximately $24.64 million (when the Lucan Wastewater Treatment Plant expansion occurs in 2025), or approximately $26.62 million (when the Lucan Wastewater Treatment Plant expansion occurs in 2030);
- A significant portion of the water capital spending program is related to saving for future lifecycle replacements based on the Township's 2022 Asset Management Plan recommendation of saving $402,697 per year to maintain the current average conditions;
- For wastewater, a significant portion of the capital spending program is related to the Lucan Wastewater Treatment Plant Expansion. As mentioned, two scenarios for rates are provided. The first scenario provides that the Township will begin construction of the project in 2025 with anticipated completion by 2027, and the second scenario provides for the construction of the project in 2030 with anticipated completion by 2032;
- Annual operating expenditures related to wages and salaries are increasing by 2% per annum over the forecast, while expenditures related to utilities, fuels, chemicals and other materials are increasing at 5% per annum;
- The present rate structure for water and wastewater (base monthly charges and a constant volume rate) were reviewed and a new modified rate structure option is proposed. The proposed rate structure option continues to follow the same

general structure (base monthly charges and a constant volume rate) but with new customer categories based on meter sizes (i.e. 5/8" or 3/4", 1", 2", and 3"). In addition, the existing capital levy charge has been combined with the base charge to provide one (1) fixed charge;

- Existing water customers total 1,693 (this total excludes 43 bulk water users); an average of 44 new customers annually is anticipated over the next 10-year period; and
- Existing wastewater customers total 1,580; an average of 44 new customers annually is anticiapted over the next 10-year period.

Moving to the proposed rate structure of the base charge being based on meter size will result in a shift of the recoverable costs away from the typical residential user, to the larger residential and non-residential users (i.e. 1", 2" and 3" meter sizes). For the purposes of the calculations within the report, the 2024 rate calculations provided in Appendix A and B are based on re-stating 2024 values using the proposed methodology.

Based on the above information, under scenario 1, rate changes have been balanced for the combined water/wastewater user to experience an initial decrease of 3% on the combined 2025 bill, followed by a 4% increase in 2026, 3% in 2027, and 2% every year thereafter. Under scenario 2, rate changes have been balanced for the combined water/wastewater user to experience an initial decrease of 4% on the combined 2025 bill, followed by 3% annual increases from 2026 to 2030, and 2% every year thereafter.

Tables ES-1 and ES-2 summarize the recommended water and wastewater rates and average annual bills (assuming an annual volume of 170 cu.m) based on the analysis provided herein over the forecast period.

Table ES-1
Township of Lucan Biddulph
Scenario 1: Average Annual Residential Water and Wastewater Bill (Based on Annual Usage of 170 cu.m)

Scenario 1: Lucan Sewage Treatment Plant Expansion Occurs in 2025											
Annual Bill for Residential Users (5/8" or 3/4" Meter Size) with 170 cu.m Volume	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Water											
Base Charge	400.20	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24
Volume	141.10	149.57	158.54	168.05	178.14	188.82	200.15	212.16	224.89	238.39	252.69
Total Water Bill	**$ 541.30**	**$ 515.80**	**$ 524.78**	**$ 534.29**	**$ 544.37**	**$ 555.06**	**$ 566.39**	**$ 578.40**	**$ 591.13**	**$ 604.62**	**$ 618.93**
Wastewater											
Base Charge	621.60	596.14	625.94	650.98	664.00	677.28	690.83	704.64	718.74	733.11	747.77
Volume	149.02	156.47	164.90	171.70	175.10	178.50	181.90	185.30	188.70	192.10	195.50
Total Wastewater Bill	**$ 770.62**	**$ 752.61**	**$ 790.84**	**$ 822.68**	**$ 839.10**	**$ 855.78**	**$ 872.73**	**$ 889.94**	**$ 907.44**	**$ 925.21**	**$ 943.27**
Total Combined Bill	**$ 1,311.92**	**$ 1,268.41**	**$ 1,315.62**	**$ 1,356.97**	**$ 1,383.47**	**$ 1,410.84**	**$ 1,439.12**	**$ 1,468.34**	**$ 1,498.56**	**$ 1,529.83**	**$ 1,562.20**
Annual Percentage Change		**-3%**	**4%**	**3%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**

Note: the average bill for the typical residential customer would decrease in 2025 due to proposed realignment of categories for the base charge

Table ES-2
Township of Lucan Biddulph
Scenario 2: Average Annual Residential Water and Wastewater Bill (Based on Annual Usage of 170 cu.m)

Scenario 2: Lucan Sewage Treatment Plant Expansion Occurs in 2030											
Annual Bill for Residential Users (5/8" or 3/4" Meter Size) with 170 cu.m Volume	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Water											
Base Charge	400.20	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24
Volume	141.10	149.57	158.54	168.05	178.14	188.82	200.15	212.16	224.89	238.39	252.69
Total Water Bill	**$ 541.30**	**$ 515.80**	**$ 524.78**	**$ 534.29**	**$ 544.37**	**$ 555.06**	**$ 566.39**	**$ 578.40**	**$ 591.13**	**$ 604.62**	**$ 618.93**
Wastewater											
Base Charge	621.60	590.46	614.08	638.64	664.19	690.75	718.38	732.75	747.41	762.35	777.60
Volume	149.02	154.98	161.50	168.30	175.10	181.90	188.70	192.10	195.50	198.90	202.30
Total Wastewater Bill	**$ 770.62**	**$ 745.44**	**$ 775.58**	**$ 806.94**	**$ 839.29**	**$ 872.65**	**$ 907.08**	**$ 924.85**	**$ 942.91**	**$ 961.25**	**$ 979.90**
Total Combined Bill	**$ 1,311.92**	**$ 1,261.24**	**$ 1,300.35**	**$ 1,341.23**	**$ 1,383.66**	**$ 1,427.71**	**$ 1,473.47**	**$ 1,503.25**	**$ 1,534.04**	**$ 1,565.88**	**$ 1,598.83**
Annual Percentage Change		**-4%**	**3%**	**3%**	**3%**	**3%**	**3%**	**2%**	**2%**	**2%**	**2%**

Note: the average bill for the typical residential customer would decrease in 2025 due to proposed realignment of categories for the base charge

Report

Chapter 1
Introduction

1. Introduction

1.1 Background

The Township of Lucan Biddulph is located in Middlesex County, with a population of 5,680 people. The Township services 1,693 water metered customers, 43 bulk water customers, and 1,580 wastewater customers. These customers are comprised of residential, multi-residential, rural, commercial, and industrial accounts. Water supply is provided by the Lake Huron Primary Water Supply System (LHPWSS). The distribution system is comprised of the Lucan William Street Booster Station, the William Street Water Tower, Granton re-chlorination facility and reservoir, and multiple water mains. The Township also supplies water to a portion of the Municipality of North Middlesex. The Township has two (2) wastewater systems; one to service the Lucan area, and the second to service the Granton area. The Lucan system is comprised of the Lucan Wastewater Treatment Plant, two (2) pump stations, and multiple sanitary sewer/force mains. The Granton system is comprised of the Granton RBC Treatment Plant, one pump station, and multiple sanitary sewer/force mains.

The water system is metered and utilizes a rate structure with a monthly base charge, monthly base capital levy charge, as well as a volume charge on a per cubic metre basis. For wastewater customers the charges follow the same structure with a monthly base charge, monthly base capital levy charge, as well as a volume charge on a per cubic metre basis (based on water usage). Table 1-1 provides the 2024 rates.

Table 1-1
Township of Lucan Biddulph
Water and Wastewater Rates – 2024

Township of Lucan Biddulph	
2024 - Water Billing Rates	
Monthly Base Charges	
Residential, Rural, Commercial and Industrial	$ 15.63
Capital Levy Charge	$ 17.72
Miscellaneous - 2 Unit	$ 16.60
Miscellaneous - 3 Unit	$ 17.60
Miscellaneous - 4 Unit	$ 23.44
Miscellaneous - 5 Unit	$ 29.30
Miscellaneous - 8 Unit	$ 46.89
Miscellaneous - 12 Unit	$ 70.34
Miscellaneous - 23 Unit	$ 134.80
Miscellaneous - 28 Unit	$ 164.11
Miscellaneous - 32 Unit	$ 187.56
Miscellaneous - 58 Unit	$ 339.94
Volume Charges (per cu.m.)	
Bulk Water	$ 2.30
Residential, Rural, Commercial and Industrial	$ 0.83

Township of Lucan Biddulph	
2024 - Wastewater Billing Rates	
Monthly Base Charges	
Residential, Rural, Commercial and Industrial	$ 28.16
Capital Levy Charge	$ 23.64
Miscellaneous - 2 Unit	$ 29.68
Miscellaneous - 3 Unit	$ 31.19
Miscellaneous - 4 Unit	$ 41.60
Miscellaneous - 5 Unit	$ 52.00
Miscellaneous - 8 Unit	$ 83.18
Miscellaneous - 12 Unit	$ 124.79
Miscellaneous - 23 Unit	$ 239.20
Miscellaneous - 28 Unit	$ 291.20
Miscellaneous - 32 Unit	$ 332.79
Miscellaneous - 58 Unit	$ 603.20
Volume Charges (per cu.m.)	
Residential, Rural, Commercial and Industrial	$ 0.88

Since the Walkerton crisis, the Province has continued to make legislative changes for municipal water and wastewater systems. Noted below are the historical changes along with pending legislation anticipated to be implemented in the future. Watson & Associates Economists Ltd. (Watson) was retained by the Township of Lucan Biddulph 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 10-year period.

1.2 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 2025 and future years.

1.3 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.

1.4 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 waste water."

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.

1.5 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.

1.6 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;

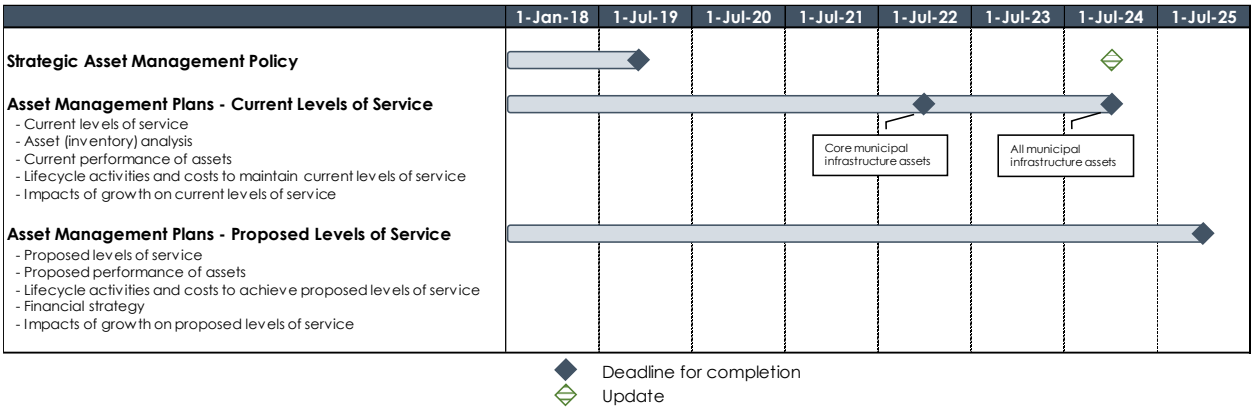
- Contents of the plans;
- Which identified portions of the plan will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.

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.

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

- Phase 1 – Asset Management Plan (by July 1, 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 will need 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.

1.8 Forecast Growth and Servicing Requirements

The Township of Lucan Biddulph services 1,693 water metered customers, 43 bulk water customers, and 1,580 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 amount of 170 cu.m. has been assumed for new water customers. This conservative assumption was based on a review of historical water consumption per customer (excluding water volumes provided to the Municipality of North Middlesex). For forecasting future billable wastewater volumes, an average volume per residential customer of 170 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 Township over the forecast period of 2024 to 2034. The growth forecast utilized in the Township's 2023 Development Charges Background Study was used to estimate future development.

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

Table 1-2
Township of Lucan Biddulph
2024 to 2034 Water System Forecast

Water Users Forecast

Year	Total Users	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2024	30	15	30	30	30	30	30	30	30	30	30	30
2025	29		15	29	29	29	29	29	29	29	29	29
2026	29			15	29	29	29	29	29	29	29	29
2027	29				15	29	29	29	29	29	29	29
2028	52					26	52	52	52	52	52	52
2029	51						26	51	51	51	51	51
2030	51							26	51	51	51	51
2031	51								26	51	51	51
2032	52									26	52	52
2033	52										26	52
2034	52											26
Total	**479**	**15**	**45**	**75**	**104**	**145**	**197**	**248**	**299**	**350**	**402**	**453**
m^3/user	170	170	170	170	170	170	170	170	170	170	170	170
Annual Flow		**2,550**	**7,718**	**12,716**	**17,714**	**24,582**	**33,422**	**42,092**	**50,762**	**59,432**	**68,272**	**77,078**

Water Customer Forecast	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693
New - Growth	15	45	75	104	145	197	248	299	350	402	453
Total	**1,708**	**1,738**	**1,768**	**1,797**	**1,838**	**1,890**	**1,941**	**1,992**	**2,043**	**2,095**	**2,146**

Table 1-2 (Continued)
Township of Lucan Biddulph
2024 to 2034 Water System Forecast

Water Volume Forecast (m^3)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Residential, Rural, Commercial and Industrial											
Existing	318,423	318,423	318,423	318,423	318,423	318,423	318,423	318,423	318,423	318,423	318,423
New	2,550	7,718	12,716	17,714	24,582	33,422	42,092	50,762	59,432	68,272	77,078
Subtotal Residential, Rural, Commercial and Industrial	**320,973**	**326,141**	**331,139**	**336,137**	**343,005**	**351,845**	**360,515**	**369,185**	**377,855**	**386,695**	**395,501**
Bulk Water											
Existing	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Bulk Water	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**	**8,494**
Total	**329,467**	**334,635**	**339,633**	**344,631**	**351,499**	**360,339**	**369,009**	**377,679**	**386,349**	**395,189**	**403,995**

Purchased Water

Water Purchases	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Billable Volumes	329,467	334,635	339,633	344,631	351,499	360,339	369,009	377,679	386,349	395,189	403,995
Water Loss %	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Total Purchased Water	379,584	385,538	391,296	397,055	404,967	415,152	425,141	435,130	445,119	455,303	465,449
Purchased Water Rates	0.5454	0.5727	0.6013	0.6314	0.6630	0.6962	0.7240	0.7530	0.7831	0.8144	0.8470
Total	**207,025**	**220,798**	**235,286**	**250,700**	**268,493**	**289,029**	**307,802**	**327,653**	**348,572**	**370,810**	**394,236**

Table 1-3
Township of Lucan Biddulph
2024 to 2034 Wastewater System Forecast

Wastewater Users Forecast

Year	Total Users	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2024	30	15	30	30	30	30	30	30	30	30	30	30
2025	29		15	29	29	29	29	29	29	29	29	29
2026	29			15	29	29	29	29	29	29	29	29
2027	29				15	29	29	29	29	29	29	29
2028	52					26	52	52	52	52	52	52
2029	51						26	51	51	51	51	51
2030	51							26	51	51	51	51
2031	51								26	51	51	51
2032	52									26	52	52
2033	52										26	52
2034	52											26
Total	**479**	**15**	**45**	**75**	**104**	**145**	**197**	**248**	**299**	**350**	**402**	**453**
m^3/user	170	170	170	170	170	170	170	170	170	170	170	170
Annual Flow		**2,550**	**7,718**	**12,716**	**17,714**	**24,582**	**33,422**	**42,092**	**50,762**	**59,432**	**68,272**	**77,078**

Wastewater Customer Forecast	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580
New - Growth	15	45	75	104	145	197	248	299	350	402	453
Total	**1,595**	**1,625**	**1,655**	**1,684**	**1,725**	**1,777**	**1,828**	**1,879**	**1,930**	**1,982**	**2,033**

Wastewater Flows Forecast (m^3)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Residential, Rural, Commercial and Industrial											
Existing	297,169	297,169	297,169	297,169	297,169	297,169	297,169	297,169	297,169	297,169	297,169
New	2,550	7,718	12,716	17,714	24,582	33,422	42,092	50,762	59,432	68,272	77,078
Total	**299,719**	**304,887**	**309,885**	**314,883**	**321,751**	**330,591**	**339,261**	**347,931**	**356,601**	**365,441**	**374,247**

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, 2-2, and 2-3 (Note: the costs have been provided in uninflated dollars). The basis for these forecasts is the Township's Capital Budgets, projects identified in the Township's 2023 Development Charges Background Study, and capital infrastructure replacement needs based on recommendations from 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. Table 2-1 presents the water capital forecast summary, Table 2-2 presents the Township's wastewater capital forecast summary for scenario 1 which has the Lucan Wastewater treatment plant expansion occurring in 2025 to 2027, and Table 2-3 presents the wastewater scenario 2 capital forecast with the expansion occurring in 2030 to 2032.

Table 2-1
Township of Lucan Biddulph
2025 to 2034 Water Capital Forecast Summary (Uninflated $)

Description	Total 2025 to 2034	Years Undertaken
Capital Expenditures		
Harold Court (Kleinfeldt Avenue to Albert Street)	146,061	2031
Harold Court (Elm Street to Albert Street)	84,701	2033
Lifecycle:		
Savings for Lifecycle Replacement	3,796,208	2025 to 2034
Studies:		
Water Rate Study and Financial Plan	21,998	2029
Total Capital Expenditures	**4,048,968**	

Table 2-2
Township of Lucan Biddulph
Scenario 1 – 2025 to 2034 Wastewater Capital Forecast Summary (Uninflated $)

Description	Total 2025 to 2034	Years Undertaken
Capital Expenditures		
Francis Street (Clarence Street to Saintsbury Line)	150,680	2034
Head Street (Granton Line to King Street)	57,111	2034
Nicoline Avenue (Elm Street to Saintsbury Line)	334,378	2030
Station Street (Queen Street to End)	128,223	2034
Wellington Street (Clarence Street to Saintsbury Line)	135,074	2028
Easement (Head Street to End)	191,490	2030
Easement (Market Street to Alice Street)	87,797	2030
Easement (Albert Street to Princess Street)	15,363	2030
Queen Street (Isabella Street to Station Street)	91,260	2034
Main Street (Wellington Street to Saintsbury Line)	53,367	2027
Easement (Market Street to Stanley Street)	56,420	2030
Ann Street (King Street to Easement)	48,785	2034
Lifecycle:		
Savings for Lifecycle Replacement - Linear	1,819,896	2028, 2029, 2031, 2032, and 2033
Savings for Lifecycle Replacement - Facilities	1,996,680	2028 to 2034
Studies:		
Wastewater Rate Study	14,928	2029
Growth Related:		
Lucan Sewage Treatment Plant Expansion	16,802,290	2025 to 2027
Stanley Street (Main Street to Market Street)	162,000	2030
West Trunk Sewer (Main Street)	840,000	2034
Total Capital Expenditures	**22,985,742**	

Table 2-3
Township of Lucan Biddulph
Scenario 2 – 2025 to 2034 Wastewater Capital Forecast Summary (Uninflated $)

Description	Total 2025 to 2034	Years Undertaken
Capital Expenditures		
Francis Street (Clarence Street to Saintsbury Line)	150,680	2034
Head Street (Granton Line to King Street)	57,111	2034
Nicoline Avenue (Elm Street to Saintsbury Line)	334,378	2030
Station Street (Queen Street to End)	128,223	2034
Wellington Street (Clarence Street to Saintsbury Line)	135,074	2028
Easement (Head Street to End)	191,490	2030
Easement (Market Street to Alice Street)	87,797	2030
Easement (Albert Street to Princess Street)	15,363	2030
Queen Street (Isabella Street to Station Street)	91,260	2034
Main Street (Wellington Street to Saintsbury Line)	53,367	2027
Easement (Market Street to Stanley Street)	56,420	2030
Ann Street (King Street to Easement)	48,785	2034
Lifecycle:		
Savings for Lifecycle Replacement - Linear	2,157,523	2025 to 2029, 2033
Savings for Lifecycle Replacement - Facilities	1,996,680	2025 to 2029, 2033 to 2034
Studies:		
Wastewater Rate Study	14,928	2029
Growth Related:		
Lucan Sewage Treatment Plant Expansion	16,802,290	2030 to 2032
Stanley Street (Main Street to Market Street)	162,000	2030
West Trunk Sewer (Main Street)	840,000	2034
Total Capital Expenditures	**23,323,369**	

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.

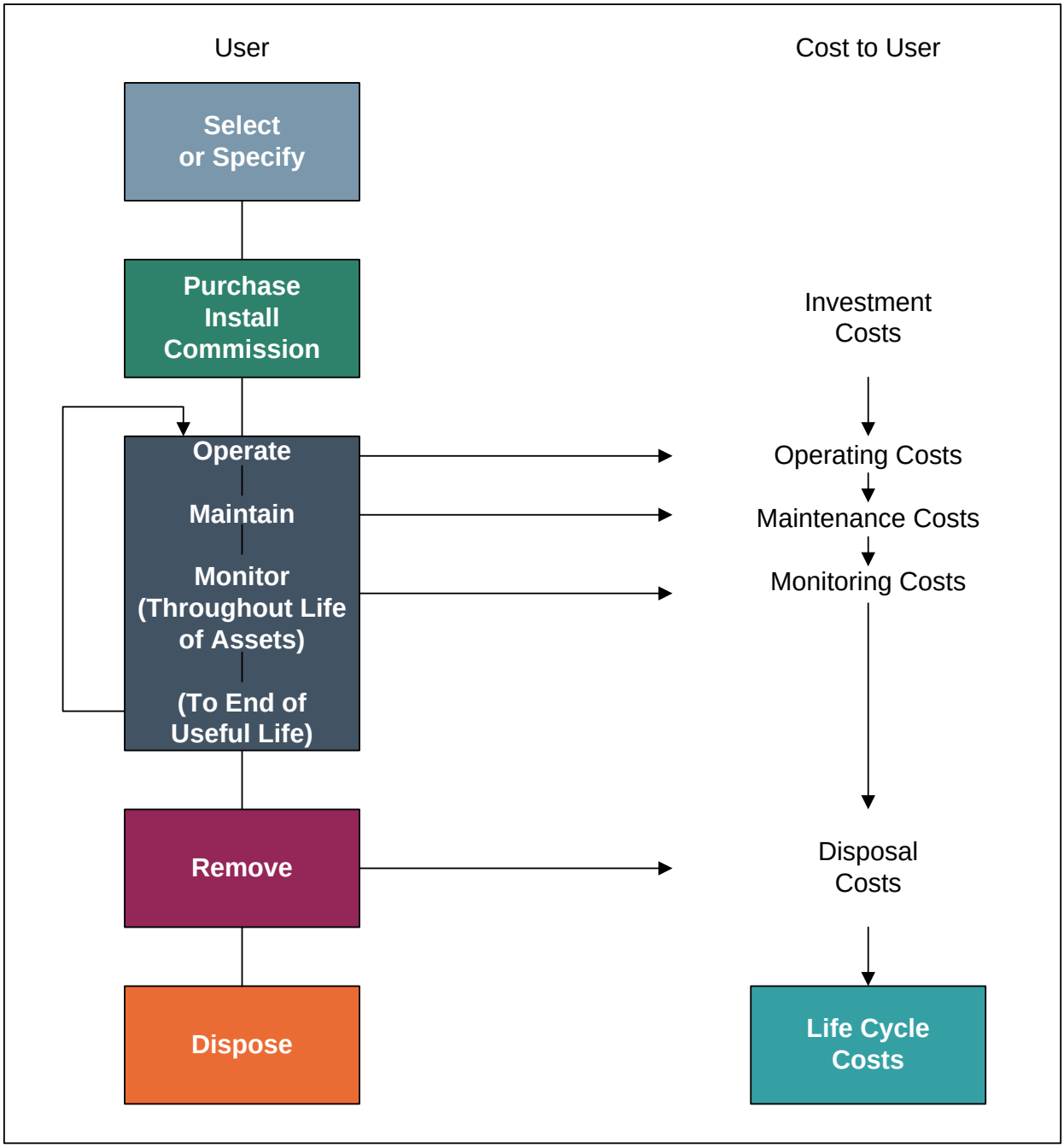
3.1.2 Financing Costs

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 Municipality. Over the past few decades, new financing techniques such as development charges have been employed based on the underlying principle of having tax/rate payers who benefit directly from the service paying for that service. Operating costs which reflect the cost of the service for that year are charged directly to all existing tax/rate payers who have received the benefit. Operating costs are normally charged through the tax base or user rates.

Capital expenditures are recouped through several methods, 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 Municipality to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

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

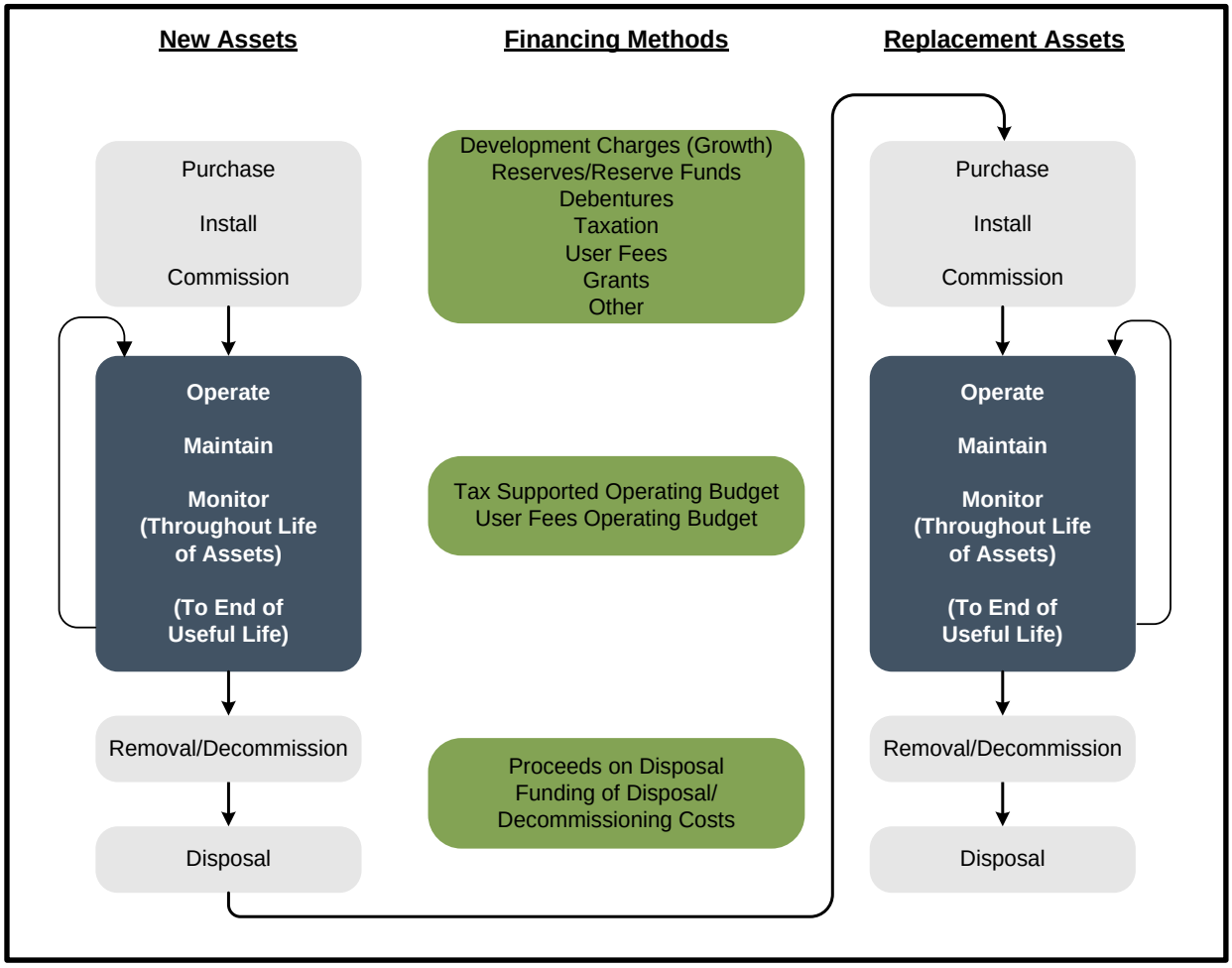
As referred to earlier, growth-related financing methods such as development charges and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of 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

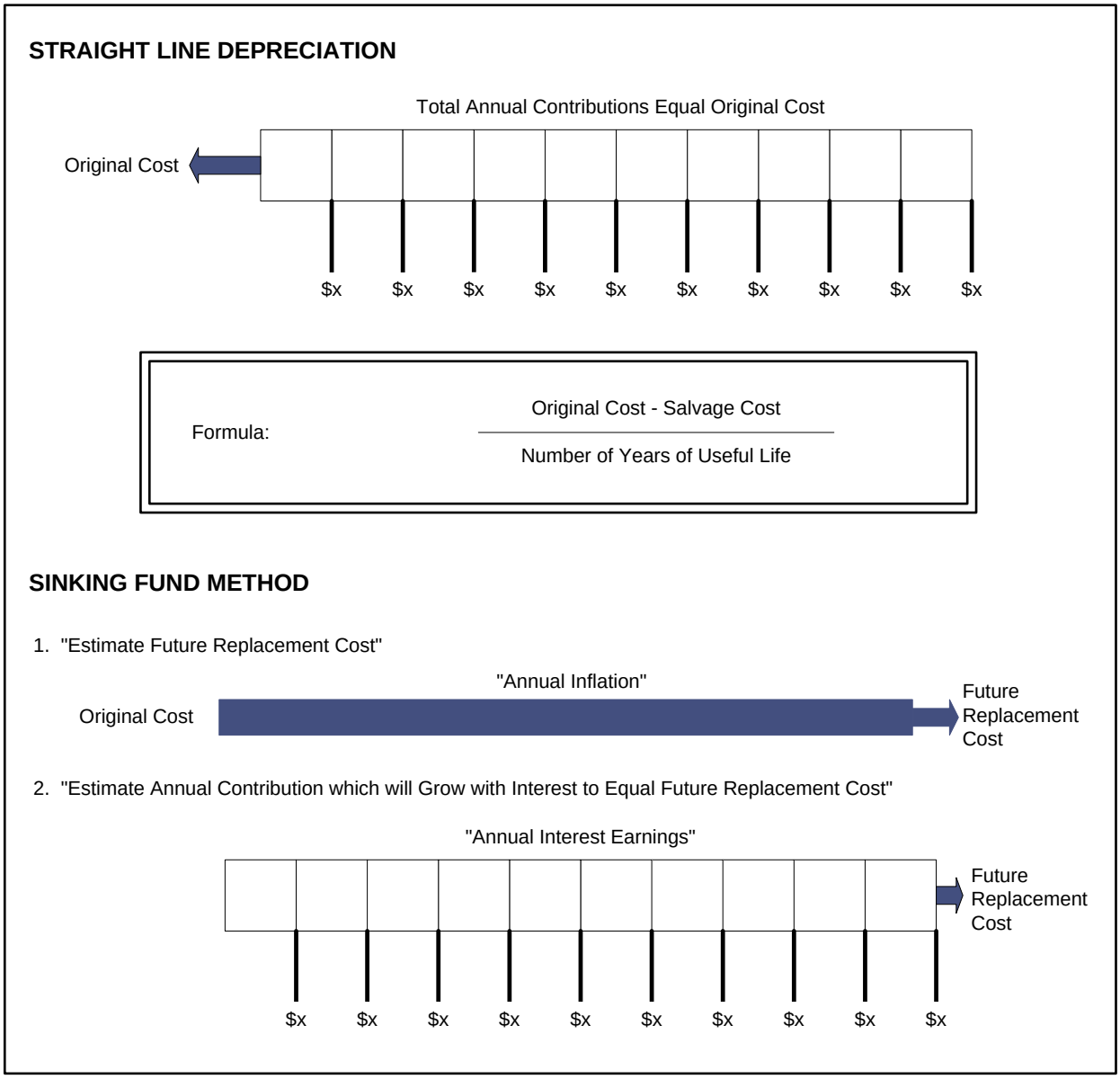
forms of depreciation: the straight-line method and the reducing balance method (shown graphically in Figure 3-3).

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

The Township's Asset Management Plan outlines the total replacement cost of the Township's linear water infrastructure to be approximately $84.15 million, and the water facilities to be approximately $4.43 million. The average annual level of investment recommended for linear water asset lifecycle rehabilitation and replacement needs in the Township's Asset Management Plan is $402,697.

The Township's Asset Management Plan outlines the total replacement cost of the Township's linear wastewater infrastructure to be approximately $56.24 million, and the wastewater facilities to be approximately $14.26 million. The average annual level of investment recommended for linear wastewater asset lifecycle rehabilitation and replacement needs in the Township's Asset Management Plan is $390,994 to maintain the average current condition. The recommended annual level of investment if the Township had an unlimited budget would be approximately $2.14 million annually. The annual level of investment recommended to maintain the current condition level was utilized for the capital forecast. Additionally, the Asset Management Plan recommends the Township invest 2% of the estimated replacement value of the Township's wastewater facilities annually ($285,240).

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 (e.g. Bill 98 in 1997 and Bill 23 in 2022 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

Development charges are a revenue tool used by municipalities to recover the capital costs associated with new development and redevelopment. These costs are in addition to what a developer/builder normally constructs as part of their subdivision (i.e. Local Services). Empowered by the *Development Charges Act, 1997*, municipalities may pass by-laws to impose charges to recover the capital costs associated with development and redevelopment.

The Township currently imposes Development Charges via by-law 26-2023. Capital projects associated with new development were included in the Township's background study (e.g. Lucan Wastewater Treatment Plant Expansion). To the extent these projects are growth-related, this rate study has identified Development Charges as the funding source. The *Development Charges Act* includes a number of mandatory exemptions from the charges and as such, some level of funding from the water rates will be required for financing the growth-related capital projects.

Since the inception of the revised *Development Charges Act*, in 1997, the province has expanded the number of mandatory exemptions and discounts required for new development. Should the mandatory exemptions and discounts continue to change with new legislation, the Township may need to reexamine timing of capital projects to ensure adequate funding is available.

4.3 Municipal Act

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

- "for services or activities provided or done by or on behalf of it;

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

Restrictions are provided to ensure that the form of the charge is not akin to a poll tax. Any charges not paid under this authority may be added to the tax roll and collected in a like manner. The fees and charges imposed under this part are not appealable to the Ontario Land Tribunal ((OLT) formerly Local Planning Appeal Tribunal (LPAT), formerly 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
- OLT 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 OLT 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 OLT, 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 Historical and Current Grant Funding Availability

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 was $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 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.

Canada Community-Building Fund

The Canada Community-Building Fund 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 Canada Community-Building Fund 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. Ontario is providing $825 million over three years towards the Housing-Enabling Water Systems Fund, which will help municipalities repair, rehabilitate and expand drinking water, wastewater and stormwater infrastructure needed to build more homes.

4.5 Existing Reserves/Reserve Funds

The Municipality 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, 2023:

Table 4-1
Water and Wastewater Reserves and Reserve Funds
As of December 31, 2023

Reserve	Dec. 31 2023
Water	
Capital Reserve	**1,163,055**
Lucan Urban Development Charges Reserve Fund	**50,928**
Granton Urban Development Charges Reserve Fund	**12,584**
Wastewater	
Capital Reserve	**2,867,311**
Lucan Urban Development Charges Reserve Fund	**478,091**
Granton Urban Development Charges Reserve Fund	**30,255**

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 Lucan Biddulph's 2024 calculation on debt capacity is provided in the Annual Repayment Limit statement provided by the Province (Ministry of Municipal Affairs and Housing). This calculates to the Township's estimated annual repayment limit of approximately $1.66 million. Based upon 20-year financing at an assumed rate of 4.3%, the available debt for the Municipality is approximately $21.91 million. Although 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, Watson recommends the Township not exceed 20% of revenues. This calculates to the Township's estimated annual repayment limit of approximately $1.18 million. Based upon 20-year financing at an assumed rate of 4.3%, the available debt for the Municipality is approximately $15.62 million.

As part of determining when to expand the Lucan Wastewater Treatment Plant, staff requested 2 scenarios of timing of the expansion to evaluate the financial position of the Township under both (scenario 1: 2025 expansion, scenario 2: 2030 expansion). The analyses assume the growth-related component of the expansion will be financed with debt. The level of debt required under scenario 1 is approximately $14.69 million, which is less than the available debt limit of approximately $15.62 million following the recommended cap of 20% of revenues. Issuing this amount of debt would bring the Municipality to 94% of net revenues vs. the recommended 20%, or 67% of net revenues vs. the maximum 25%). Under scenario 2 the level of debt required is approximately $16.21 million which is only slightly more than the recommended debt limit of approximately $15.62 million. This equates to a debt capacity amount of 20.47%. The Municipality has the capacity under the regulation to issue the required debt under both scenarios, but it is recommended that Council consider the above analysis when determining timing of the Lucan Wastewater Treatment Plant expansion.

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.

As mentioned above, the analysis provided herein assumes that the Township will require growth related debt financing for the capital projects identified. For wastewater

services, approximately $14.69 million (scenario 1) or $16.21 million (scenario 2) for growth-related debt is required.

4.8 Recommended Capital Financing Approach

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

Table 4-2
Township of Lucan Biddulph
Capital Forecasting Financing Sources
Inflated $

Description	Water	Wastewater Scenario 1	Wastewater Scenario 2
Capital Financing			
Provincial/Federal Grants	-	-	-
Lucan Development Charges Reserve Fund	-	1,085,400	1,085,400
Granton Development Charges Reserve Fund	-	-	-
Non-Growth Related Debenture Requirements	-	-	-
Lucan Growth Related Debenture Requirements	-	14,685,720	16,212,840
Granton Growth Related Debenture Requirements	-	-	-
Operating Contributions	-	-	-
Water Reserve	4,523,000	-	-
Wastewater Reserve	-	8,868,880	9,324,760
Total Capital Financing	**4,523,000**	**24,640,000**	**26,623,000**

Tables 4-3, 4-4, and 4-5 provide for the full capital expenditure and funding program by year for water and wastewater, respectively.

Table 4-3
Capital Budget Forecast – Water (inflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Harold Court (Kleinfeldt Avenue to Albert Street)	-	168,000	-	-	-	-	-	-	168,000	-	-	-
Harold Court (Elm Street to Albert Street)	-	101,000	-	-	-	-	-	-	-	-	101,000	-
Water St. Watermain	400,000	-	-	-	-	-	-	-	-	-	-	-
SCADA Upgrade/Computer Upgrade	40,000	-	-	-	-	-	-	-	-	-	-	-
Meter Replacement	10,000	-	-	-	-	-	-	-	-	-	-	-
Computer Upgrade - Booster	158,000	-	-	-	-	-	-	-	-	-	-	-
Booster Station Window	4,000	-	-	-	-	-	-	-	-	-	-	-
Lifecycle:												
Savings for Lifecycle Replacement	-	4,230,000	411,000	419,000	427,000	436,000	445,000	454,000	295,000	472,000	380,000	491,000
Studies:												
Water Rate Study and Financial Plan	21,998	-	-	-	-	-	-	-	-	-	-	-
Water Rate Study and Financial Plan	-	24,000	-	-	-	-	24,000	-	-	-	-	-
Total Capital Expenditures	**633,998**	**4,523,000**	**411,000**	**419,000**	**427,000**	**436,000**	**469,000**	**454,000**	**463,000**	**472,000**	**481,000**	**491,000**
Capital Financing												
Provincial/Federal Grants	-	-										
Lucan Development Charges Reserve Fund	-	-		-	-	-	-	-	-	-	-	-
Granton Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Lucan Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Granton Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	633,998	4,523,000	411,000	419,000	427,000	436,000	469,000	454,000	463,000	472,000	481,000	491,000
Total Capital Financing	**633,998**	**4,523,000**	**411,000**	**419,000**	**427,000**	**436,000**	**469,000**	**454,000**	**463,000**	**472,000**	**481,000**	**491,000**

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

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Francis Street (Clarence Street to Saintsbury Line)	150,680	184,000	-	-	-	-	-	-	-	-	-	184,000
Lewis Avenue (Duchess Avenue to Kent Avenue)	110,433	-	-	-	-	-	-	-	-	-	-	-
Head Street (Granton Line to King Street)	-	70,000	-	-	-	-	-	-	-	-	-	70,000
Nicoline Avenue (Elm Street to Saintsbury Line)	-	377,000	-	-	-	-	-	377,000	-	-	-	-
Station Street (Queen Street to End)	-	156,000	-	-	-	-	-	-	-	-	-	156,000
Wellington Street (Clarence Street to Saintsbury Line)	-	146,000	-	-	-	146,000	-	-	-	-	-	-
Easement (Head Street to End)	-	216,000	-	-	-	-	-	216,000	-	-	-	-
Oak Street (Butler Street to Market Street)	45,700	-	-	-	-	-	-	-	-	-	-	-
Easement (Market Street to Alice Street)	-	99,000	-	-	-	-	-	99,000	-	-	-	-
Easement (Albert Street to Princess Street)	-	17,000	-	-	-	-	-	17,000	-	-	-	-
Queen Street (Isabella Street to Station Street)	-	111,000	-	-	-	-	-	-	-	-	-	111,000
Main Street (Wellington Street to Saintsbury Line)	-	57,000	-	-	57,000	-	-	-	-	-	-	-
Easement (Market Street to Stanley Street)	-	64,000	-	-	-	-	-	64,000	-	-	-	-
Ann Street (King Street to Easement)	-	59,000	-	-	-	-	-	-	-	-	-	59,000
Lucan WWTP Upgrade/Replacement	584,000	-	-	-	-	-	-	-	-	-	-	-
SCADA Upgrade/Computer Upgrade	40,000	-	-	-	-	-	-	-	-	-	-	-
Sanitary Main Modeling - Lucan	24,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP- Blower #3 Replacement	31,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP - Auto Sampler	15,000	-	-	-	-	-	-	-	-	-	-	-
Lifecycle:		-	-	-	-	-	-	-	-	-	-	-
Savings for Lifecycle Replacement - Linear	-	2,083,000	-	-	-	277,000	432,000	-	449,000	458,000	467,000	-
Savings for Lifecycle Replacement - Facilities	-	2,296,000	-	-	-	309,000	315,000	321,000	328,000	334,000	341,000	348,000
Studies:		-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	14,928	-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	-	16,000	-	-	-	-	16,000	-	-	-	-	-
Growth Related:		-	-	-	-	-	-	-	-	-	-	-
Lucan Sewage Treatment Plant Expansion	-	17,483,000	3,428,000	10,489,000	3,566,000	-	-	-	-	-	-	-
Lucan Trunk Sewer Expansions												
Walnut/Stanley Street to Chestnut Sewage Pumping Station	780,000	-	-	-	-	-	-	-	-	-	-	-
Stanley Street (Main Street to Market Street)	-	182,000	-	-	-	-	-	182,000	-	-	-	-
West Trunk Sewer (Main Street)	-	1,024,000	-	-	-	-	-	-	-	-	-	1,024,000
Total Capital Expenditures	**1,795,741**	**24,640,000**	**3,428,000**	**10,489,000**	**3,623,000**	**732,000**	**763,000**	**1,276,000**	**777,000**	**792,000**	**808,000**	**1,952,000**
Capital Financing												
Provincial/Federal Grants		-										
Lucan Development Charges Reserve Fund	702,000	1,085,400	-	-	-	-	-	163,800	-	-	-	921,600
Granton Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Lucan Growth Related Debenture Requirements	-	14,685,720	2,879,520	8,810,760	2,995,440	-	-	-	-	-	-	-
Granton Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	1,093,741	8,868,880	548,480	1,678,240	627,560	732,000	763,000	1,112,200	777,000	792,000	808,000	1,030,400
Total Capital Financing	**1,795,741**	**24,640,000**	**3,428,000**	**10,489,000**	**3,623,000**	**732,000**	**763,000**	**1,276,000**	**777,000**	**792,000**	**808,000**	**1,952,000**

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

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Francis Street (Clarence Street to Saintsbury Line)	-	184,000	-	-	-	-	-	-	-	-	-	184,000
Lewis Avenue (Duchess Avenue to Kent Avenue)	110,433	-	-	-	-	-	-	-	-	-	-	-
Head Street (Granton Line to King Street)	-	70,000	-	-	-	-	-	-	-	-	-	70,000
Nicoline Avenue (Elm Street to Saintsbury Line)	-	377,000	-	-	-	-	-	377,000	-	-	-	-
Station Street (Queen Street to End)	-	156,000	-	-	-	-	-	-	-	-	-	156,000
Wellington Street (Clarence Street to Saintsbury Line)	-	146,000	-	-	-	146,000	-	-	-	-	-	-
Easement (Head Street to End)	-	216,000	-	-	-	-	-	216,000	-	-	-	-
Oak Street (Butler Street to Market Street)	45,700	-	-	-	-	-	-	-	-	-	-	-
Easement (Market Street to Alice Street)	-	99,000	-	-	-	-	-	99,000	-	-	-	-
Easement (Albert Street to Princess Street)	-	17,000	-	-	-	-	-	17,000	-	-	-	-
Queen Street (Isabella Street to Station Street)	-	111,000	-	-	-	-	-	-	-	-	-	111,000
Main Street (Wellington Street to Saintsbury Line)	-	57,000	-	-	57,000	-	-	-	-	-	-	-
Easement (Market Street to Stanley Street)	-	64,000	-	-	-	-	-	64,000	-	-	-	-
Ann Street (King Street to Easement)	-	59,000	-	-	-	-	-	-	-	-	-	59,000
Lucan WWTP Upgrade/Replacement	584,000	-	-	-	-	-	-	-	-	-	-	-
SCADA Upgrade/Computer Upgrade	40,000	-	-	-	-	-	-	-	-	-	-	-
Sanitary Main Modeling - Lucan	24,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP- Blower #3 Replacement	31,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP - Auto Sampler	15,000	-	-	-	-	-	-	-	-	-	-	-
Lifecycle:		-	-	-	-	-	-	-	-	-	-	-
Savings for Lifecycle Replacement - Linear	-	2,340,000	399,000	407,000	358,000	277,000	432,000	-	-	-	467,000	-
Savings for Lifecycle Replacement - Facilities	-	2,204,000	291,000	297,000	303,000	309,000	315,000	-	-	-	341,000	348,000
Studies:		-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	14,928	-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	-	16,000	-	-	-	-	16,000	-	-	-	-	-
Growth Related:												
Lucan Sewage Treatment Plant Expansion	-	19,301,000	-	-	-	-	-	3,784,000	11,580,000	3,937,000	-	-
Lucan Trunk Sewer Expansions												
Walnut/Stanley Street to Chestnut Sewage Pumping Station	780,000	-	-	-	-	-	-	-	-	-	-	-
Stanley Street (Main Street to Market Street)	-	182,000	-	-	-	-	-	182,000	-	-	-	-
West Trunk Sewer (Main Street)	-	1,024,000	-	-	-	-	-	-	-	-	-	1,024,000
Total Capital Expenditures	**1,645,061**	**26,623,000**	**690,000**	**704,000**	**718,000**	**732,000**	**763,000**	**4,739,000**	**11,580,000**	**3,937,000**	**808,000**	**1,952,000**
Capital Financing												
Provincial/Federal Grants		-										
Lucan Development Charges Reserve Fund	702,000	1,085,400	-	-	-	-	-	163,800	-	-	-	921,600
Granton Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Lucan Growth Related Debenture Requirements	-	16,212,840	-	-	-	-	-	3,178,560	9,727,200	3,307,080	-	-
Granton Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	943,061	9,324,760	690,000	704,000	718,000	732,000	763,000	1,396,640	1,852,800	629,920	808,000	1,030,400
Total Capital Financing	**1,645,061**	**26,623,000**	**690,000**	**704,000**	**718,000**	**732,000**	**763,000**	**4,739,000**	**11,580,000**	**3,937,000**	**808,000**	**1,952,000**

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 (2025 to 2034) are based on the 2024 operating budgets. The costs for each component of the operating budget have been reviewed with staff to establish forecast inflationary adjustments. Annual water operating expenditures are assumed to increase by 2% per annum, while expenditures related to utilities, fuels, chemicals and other materials are assumed to increase by 5% per annum.

The Township purchases water from the Lake Huron Primary Water Supply System. Based on existing and future customers over the forecast period, the Township is forecasted to spend approximately $3.01 million over the 10-year forecast period on purchased water.

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.

5.2 Water Operating Revenues

The Municipality has various miscellaneous revenue sources to help contribute towards operating expenditures. These miscellaneous revenues including penalties, water meter fees, administrative fees, etc. are assumed to increase at 2% per year. Staff requested Watson undertake a review of the Township's existing revenue charges to identify potential areas for new system charges. Watson conducted a survey of neighbouring Municipalities to provide staff and council options for implementing new service charges for both water and wastewater. Table 5-1 provides for the results of the survey. Recommendations on additional fees for consideration are provided in Chapter 8.

Contributions from the Lucan and Granton Development Charges reserve funds have been made to the water capital reserve to pay it back for the previously constructed Lucan and Granton water supply facilities, as detailed in the Township's 2023 Development Charges Study. Table 5-2 provides for the operating budget for the water system.

Table 5-1
Survey of Charges – Water and Wastewater

Fee Description	Lucan Biddulph	Thames Centre	Middlesex Centre	Strathroy-Caradoc (Strathroy)	Adelaide Metcalfe	North Middlesex	Southwest Middlesex	Newbury
Water								
Water Connection Fee	$150.00		$70.00			$250.00		
New Water Service Deposit	$1,000.00							
Water Service Connection Fee (right to connect)	Varies based on actual*					$8,150.00	$8,000.00	
Application Fee/Permit (Water Service)	Recommended		$300.00	$234.61	$234.61		$500.00	$50.00
On/Off Fee (during normal hours)	$75.00	$52.00	$35.00	$42.34	$42.34	$30.00	$60.00	$50.00
On/Off Fee (after normal hours)	$150.00	$208.00	$95.00	$167.09	$167.09	Actual cost of time and materials	$200.00	
Water Meter (5/8")	$800.00	$728.00	$520.00	$572.22	$572.22	Actual cost at time of purchase	$500.00	
Water Meter Replacement (5/8")		Cost recovery + 10%	$520.00	$572.22	$572.22	Actual cost at time of purchase	Cost + 10%	
Pressure Reducing Valve	$105.00							
Meter Reading Fee	Recommended	$312.00	$70.00			$300.00	As per collection policy	$20.00
Water Meter Repair/Installation/Inspection Charge	$95.00 + parts	$312.00		$354.78	$354.78		$200.00	$50.00
Backflow Preventor	$90.00					Actual cost at time of purchase		
Minimum Service Call Charge			$70.00					
Tap Watermain 50mm or less			$340.00	$402.84	$402.84			
Tap Watermain over 50mm				$780.30	$780.30			
Meter Tampering	Recommended			$175.10 + estimated water consumption + water meter replacement if required	$175.10 + estimated water consumption + water meter replacement if required	$500.00	$200.00	
Water Meter Removal (during normal hours)				$90.40	$90.40			
Temporary Construction Water	$150.00							
Wastewater								
Wastewater Connection Fee	$100.00		$70.00			$250.00		
New Wastewater Service Deposit	$1,000.00							
Wastewater Service Connection Fee	Varies based on actual*						$7,000.00	$3,000.00
Application Fee/Permit (Wastewater Service)			$300.00					$50.00
Inspection Fee (Wastewater Meter)		$312.00					$200.00	$50.00
Fire								
Private Fire Hydrant Charges				$33.26	$49.89			
Unauthorized Operation of a Fire Hydrant	Recommended	$520.00		$119.86 + estimated water consumption at Bulk Water rate	$119.86 + estimated water consumption at Bulk Water rate	$500.00	$200.00	
Hydrant flow test rate				$140.56	$140.56			

* included under separate Municipal Act By-law

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

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures											
Operating Costs											
SALARY-PUBLICWORKS	88,906	90,700	92,500	94,400	96,300	98,200	100,200	102,200	104,200	106,300	108,400
CPP&EI	5,217	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000	6,100	6,200
GROUP INSURANCE	6,363	6,500	6,600	6,700	6,800	6,900	7,000	7,100	7,200	7,300	7,400
WSIB	2,524	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
EMPLOYERHEALTHTAX	1,539	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
OMERS	7,473	7,600	7,800	8,000	8,200	8,400	8,600	8,800	9,000	9,200	9,400
HYDRO	60,000	63,000	66,200	69,500	73,000	76,700	80,500	84,500	88,700	93,100	97,800
TELEPHONE	3,150	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
AUDIT	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
INSURANCE	19,800	20,200	20,600	21,000	21,400	21,800	22,200	22,600	23,100	23,600	24,100
R&M-EQUIPMENT	12,850	13,100	13,400	13,700	14,000	14,300	14,600	14,900	15,200	15,500	15,800
R&M- BUILDING	25,250	25,800	26,300	26,800	27,300	27,800	28,400	29,000	29,600	30,200	30,800
R&M Water Mains	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800	12,000	12,200
SOFTWARE SUPPORT	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEMBERSHIPS&SUBSCRIPTIONS	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
ASSET MANAGEMENT EXPENSE	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEETINGS/CONFERENCE/TRAINI	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
Purchased Water From LHWPSS	214,000	220,798	235,286	250,700	268,493	289,029	307,802	327,653	348,572	370,810	394,236
ENGINEERING/LEGAL/AUDIT	31,000	31,600	32,200	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700
LABSERVICES	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
MISCELLANEOUS EXPENSE	500	500	500	500	500	500	500	500	500	500	500
ADM. EXPENSE ALLOCATION	7,240	7,400	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100
PROPERTY TAXES	6,500	6,600	6,700	6,800	6,900	7,000	7,100	7,200	7,300	7,400	7,500
METERS	38,000	38,800	39,600	40,400	41,200	42,000	42,800	43,700	44,600	45,500	46,400
CONTRACTED SERVICES	158,075	161,200	164,400	167,700	171,100	174,500	178,000	181,600	185,200	188,900	192,700
Sub Total Operating	**715,087**	**733,698**	**760,286**	**788,200**	**818,893**	**852,529**	**884,802**	**918,553**	**953,672**	**990,510**	**1,028,936**

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

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related											
Lucan Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
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 - Lucan DC - Water Supply Facility	-	68,384	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Transfer to Capital Reserve - Granton DC - Water Supply Facility	-	13,939	-	-	1,172	-	-	-	1,268	-	-
Transfer to Capital Reserve	382,027	400,598	410,041	419,863	434,816	455,549	479,681	504,906	531,719	560,588	591,275
Sub Total Capital Related	**382,027**	**482,921**	**418,417**	**428,397**	**451,425**	**471,294**	**495,735**	**521,294**	**549,711**	**577,689**	**608,713**
Total Expenditures	**1,097,114**	**1,216,618**	**1,178,703**	**1,216,598**	**1,270,319**	**1,323,822**	**1,380,537**	**1,439,847**	**1,503,383**	**1,568,199**	**1,637,649**

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

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Revenues											
Base Charge	702,075	713,209	723,976	734,744	749,540	768,584	787,262	805,940	824,618	843,663	862,634
Other Revenue											
ADMINISTRATIVE FEES	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
PENALTIES	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
BANK INTEREST	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800	14,100	14,400	14,700
WATER TOWER RENT - QUADRO	1,932	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
MISCELLANEOUS	250	300	300	300	300	300	300	300	300	300	300
NAGLE PROJECT INTEREST	4,743	4,524	4,298	4,066	3,828	3,582	3,330	3,070	2,805	2,531	2,249
WATER METERS	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900	46,800	47,700	48,700
WATER METER INSPECTION	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800	11,000
North Middlesex Water Revenue	14,889	15,633	16,415	17,236	18,098	19,002	19,953	20,751	21,581	22,444	23,342
Coin Meter Revenue	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128
Pickard Construction Revenue	9,269	9,454	9,643	9,836	10,033	10,234	10,438	10,647	10,860	11,077	11,299
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Contributions from Lucan DC Reserve Fund - Water Supply Facility	-	68,384	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Contributions from Granton DC Reserve Fund - Water Supply Facility	-	13,939	-	-	1,172	-	-	-	1,268	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**813,287**	**908,972**	**847,937**	**861,044**	**886,235**	**906,875**	**928,365**	**949,725**	**972,384**	**992,943**	**1,014,789**
Water Billing Recovery - Operating	**283,827**	**307,647**	**330,767**	**355,554**	**384,083**	**416,947**	**452,172**	**490,122**	**530,999**	**575,255**	**622,860**
Water Billing Recovery - Total	**283,827**	**307,647**	**330,767**	**355,554**	**384,083**	**416,947**	**452,172**	**490,122**	**530,999**	**575,255**	**622,860**

5.3 Wastewater Operating Expenditures

Annual wastewater operating expenditures are assumed to increase by 2% per annum, while expenditures related to utilities, fuels, chemicals and other materials have been increased at 5% per annum.

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. Revenue is also generated from miscellaneous sources and user fees. Table 5-3 outlines the operating budget for the Lucan Biddulph wastewater system under scenario 1, while Table 5-4 outlines the operating budget for the Lucan Biddulph wastewater system under scenario 2.

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

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures											
Operating Costs											
SALARY-PUBLICWORKS	57,478	58,600	59,800	61,000	62,200	63,400	64,700	66,000	67,300	68,600	70,000
CPP&EI	3,261	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
GROUP INSURANCE	3,780	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800
WSIB	1,786	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
EMPLOYERHEALTHTAX	1,121	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
OMERS	5,591	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400	6,500	6,600
HEAT	7,200	7,600	8,000	8,400	8,800	9,200	9,700	10,200	10,700	11,200	11,800
HYDRO	140,000	147,000	154,400	162,100	170,200	178,700	187,600	197,000	206,900	217,200	228,100
TELEPHONE	9,660	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500	11,700
AUDIT FEES	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
INSURANCE	19,650	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300	23,800
OFFICE SUPPLIES	-	-	-	-	-	-	-	-	-	-	-
R&M - OCWA	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300	26,800
R&M- EQUIPMENT	61,500	62,700	64,000	65,300	66,600	67,900	69,300	70,700	72,100	73,500	75,000
R&M - BUILDING	33,000	33,700	34,400	35,100	35,800	36,500	37,200	37,900	38,700	39,500	40,300
SOFTWARE SUPPORT	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
ASSET MANAGEMENT EXPENSE	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEETINGS/CONFERENCE/TRAINI	500	500	500	500	500	500	500	500	500	500	500
CHEMICALS	60,000	63,000	66,200	69,500	73,000	76,700	80,500	84,500	88,700	93,100	97,800
SLUDGE DISPOSAL	80,000	81,600	83,200	84,900	86,600	88,300	90,100	91,900	93,700	95,600	97,500
LAB SERVICES	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
MISCELLANEOUS EXPENSE	500	500	500	500	500	500	500	500	500	500	500
ADM. EXPENSE ALLOCATION	7,200	7,300	7,400	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900
PROPERTY TAXES	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800	36,500
SEWERMAINTENANCE/REPAIRS	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
CONTRACTED SERVICES	182,960	186,600	190,300	194,100	198,000	202,000	206,000	210,100	214,300	218,600	223,000
Sub Total Operating	**779,686**	**801,300**	**823,800**	**847,000**	**871,000**	**895,800**	**921,600**	**948,200**	**975,700**	**1,004,100**	**1,033,900**

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

Description	Budget	Forecast									
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related											
Lucan Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Principal)	-	-	93,727	384,545	498,581	520,020	542,380	565,703	590,028	615,399	641,861
Lucan New Growth Related Debt (Interest)	-	-	123,819	498,652	610,920	589,481	567,120	543,798	519,473	494,102	467,639
Granton New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
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	572,008	638,221	709,365	770,012	811,458	863,872	916,689	971,000	1,026,759	1,084,943	1,144,033
Sub Total Capital Related	**572,008**	**638,221**	**926,911**	**1,653,209**	**1,920,959**	**1,973,373**	**2,026,190**	**2,080,501**	**2,136,260**	**2,194,444**	**2,253,534**
Total Expenditures	**1,351,694**	**1,439,521**	**1,750,711**	**2,500,209**	**2,791,959**	**2,869,173**	**2,947,790**	**3,028,701**	**3,111,960**	**3,198,544**	**3,287,434**
Revenues											
Base Charge	1,024,220	1,093,553	1,166,634	1,232,438	1,283,913	1,344,809	1,406,938	1,471,013	1,537,089	1,605,953	1,676,806
Licences/Permits/Rents											
FARMPROPERTYRENT	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842
User Fees											
SEWER F&C	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
ADMINISTRATIVE FEES	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
Other Revenue											
PENALTIES	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100	9,300	9,500
BANKINTEREST	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700	16,000
QPA SOLAR REVENUE	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400
Contributions from Development Charges Reserve Fund	-	-	217,547	883,197	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,088,962**	**1,158,895**	**1,450,123**	**2,182,177**	**2,460,555**	**2,522,052**	**2,584,781**	**2,649,456**	**2,716,132**	**2,785,596**	**2,857,049**
Wastewater Billing Recovery - Operating	**262,732**	**280,626**	**300,589**	**318,032**	**331,404**	**347,121**	**363,010**	**379,245**	**395,828**	**412,949**	**430,384**
Wastewater Billing Recovery - Total	**262,732**	**280,626**	**300,589**	**318,032**	**331,404**	**347,121**	**363,010**	**379,245**	**395,828**	**412,949**	**430,384**

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

Description	Budget	Forecast									
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures											
Operating Costs											
SALARY-PUBLICWORKS	57,478	58,600	59,800	61,000	62,200	63,400	64,700	66,000	67,300	68,600	70,000
CPP&EI	3,261	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
GROUP INSURANCE	3,780	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800
WSIB	1,786	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
EMPLOYERHEALTHTAX	1,121	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
OMERS	5,591	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400	6,500	6,600
HEAT	7,200	7,600	8,000	8,400	8,800	9,200	9,700	10,200	10,700	11,200	11,800
HYDRO	140,000	147,000	154,400	162,100	170,200	178,700	187,600	197,000	206,900	217,200	228,100
TELEPHONE	9,660	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500	11,700
AUDIT FEES	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
INSURANCE	19,650	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300	23,800
OFFICE SUPPLIES	-	-	-	-	-	-	-	-	-	-	-
R&M - OCWA	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300	26,800
R&M- EQUIPMENT	61,500	62,700	64,000	65,300	66,600	67,900	69,300	70,700	72,100	73,500	75,000
R&M - BUILDING	33,000	33,700	34,400	35,100	35,800	36,500	37,200	37,900	38,700	39,500	40,300
SOFTWARE SUPPORT	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
ASSET MANAGEMENT EXPENSE	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEETINGS/CONFERENCE/TRAINI	500	500	500	500	500	500	500	500	500	500	500
CHEMICALS	60,000	63,000	66,200	69,500	73,000	76,700	80,500	84,500	88,700	93,100	97,800
SLUDGE DISPOSAL	80,000	81,600	83,200	84,900	86,600	88,300	90,100	91,900	93,700	95,600	97,500
LAB SERVICES	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
MISCELLANEOUS EXPENSE	500	500	500	500	500	500	500	500	500	500	500
ADM. EXPENSE ALLOCATION	7,200	7,300	7,400	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900
PROPERTY TAXES	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800	36,500
SEWERMAINTENANCE/REPAIRS	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
CONTRACTED SERVICES	182,960	186,600	190,300	194,100	198,000	202,000	206,000	210,100	214,300	218,600	223,000
Sub Total Operating	**779,686**	**801,300**	**823,800**	**847,000**	**871,000**	**895,800**	**921,600**	**948,200**	**975,700**	**1,004,100**	**1,033,900**

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

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related											
Lucan Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Principal)	-	-	-	-	-	-	-	103,461	424,527	550,426	574,094
Lucan New Growth Related Debt (Interest)	-	-	-	-	-	-	-	136,678	550,499	674,449	650,780
Granton New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
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	572,008	625,134	681,051	740,351	811,817	897,236	986,383	1,043,597	1,102,338	1,163,623	1,225,891
Sub Total Capital Related	**572,008**	**625,134**	**681,051**	**740,351**	**811,817**	**897,236**	**986,383**	**1,283,736**	**2,077,363**	**2,388,498**	**2,450,766**
Total Expenditures	**1,351,694**	**1,426,434**	**1,504,851**	**1,587,351**	**1,682,817**	**1,793,036**	**1,907,983**	**2,231,936**	**3,053,063**	**3,392,598**	**3,484,666**
Revenues											
Base Charge	1,024,220	1,083,139	1,144,518	1,209,075	1,284,271	1,371,561	1,463,061	1,529,693	1,598,404	1,670,015	1,743,695
Licences/Permits/Rents											
FARMPROPERTYRENT	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842
User Fees											
SEWER F&C	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
ADMINISTRATIVE FEES	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
Other Revenue											
PENALTIES	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100	9,300	9,500
BANKINTEREST	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700	16,000
QPA SOLAR REVENUE	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	240,139	975,026	1,224,874	1,224,874
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,088,962**	**1,148,481**	**1,210,460**	**1,275,617**	**1,351,413**	**1,439,303**	**1,531,403**	**1,838,774**	**2,642,972**	**2,965,031**	**3,039,311**
Wastewater Billing Recovery - Operating	**262,732**	**277,953**	**294,391**	**311,735**	**331,404**	**353,733**	**376,580**	**393,162**	**410,092**	**427,566**	**445,354**
Wastewater Billing Recovery - Total	**262,732**	**277,953**	**294,391**	**311,735**	**331,404**	**353,733**	**376,580**	**393,162**	**410,092**	**427,566**	**445,354**

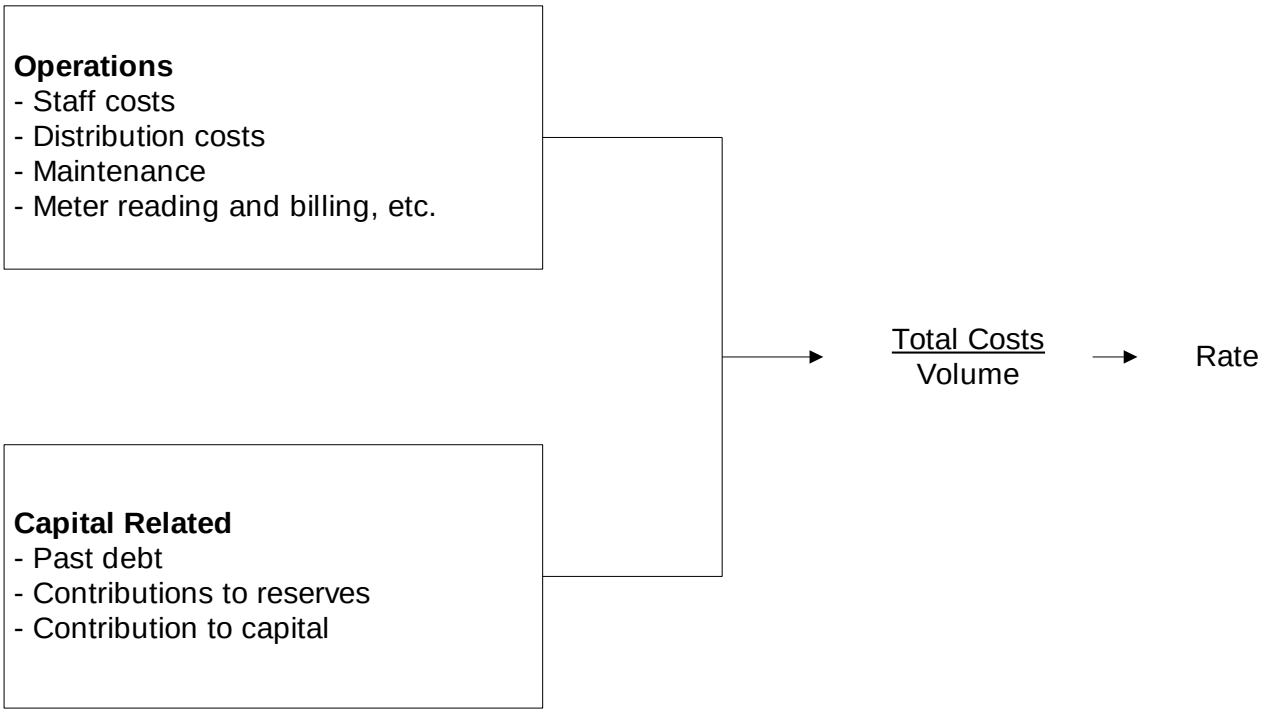
Chapter 6
Pricing Structures

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

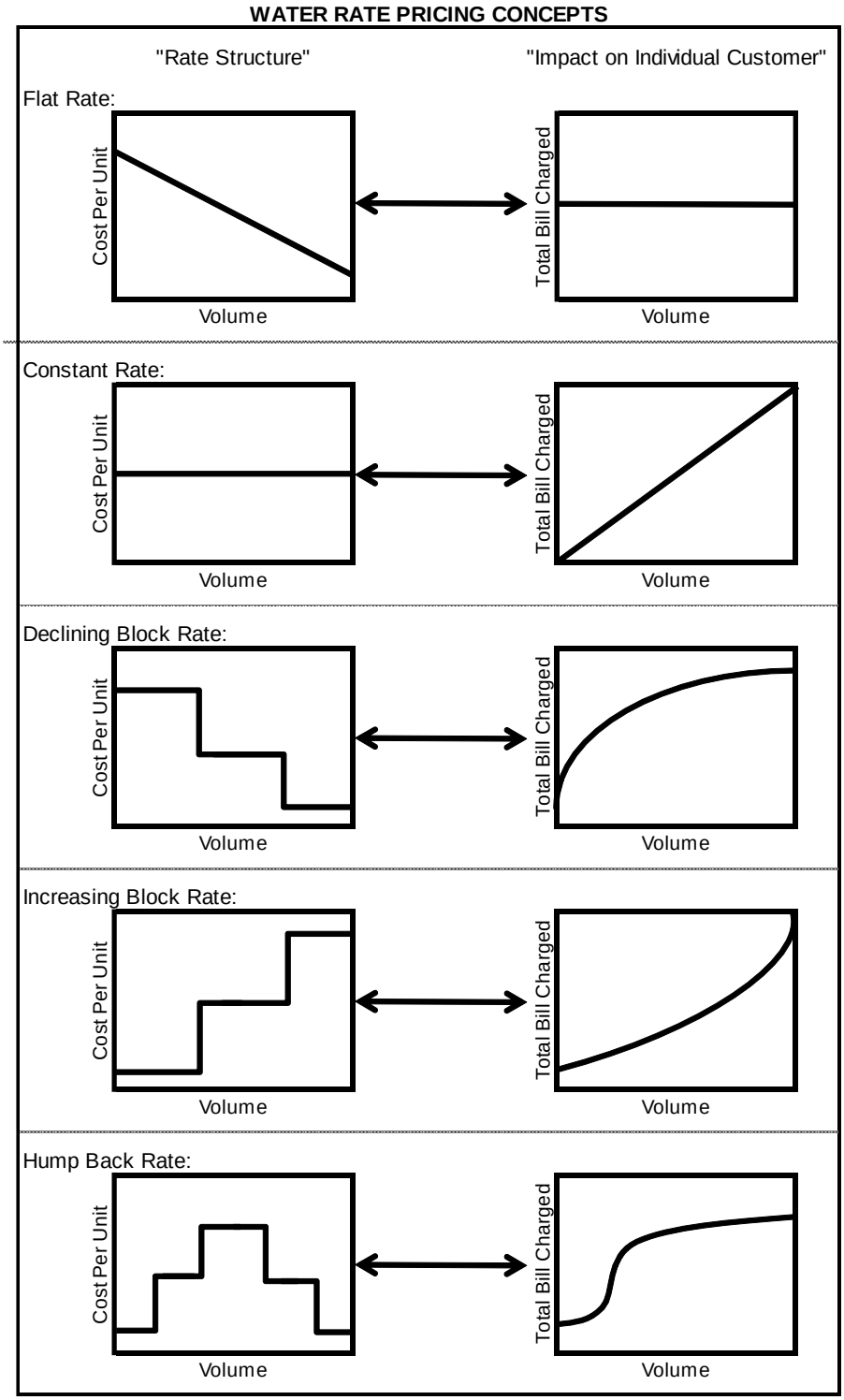

WATER RATE PRICING CONCEPTS
"Rate Structure"
"Impact on Individual Customer"
Flat Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Constant Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Declining Block Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Increasing Block Rate:
Cost Per Unit
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 Township continue the same general rate structure in the future (volume rate and base monthly charge). However, it is recommended that the monthly base charges be re-categorized from the current categories based on type and size of unit (as outlined in section 1.1) to the size of the water meters.

The Township has the following categories of water meters:

- 5/8 and 3/4 inch meters;
- 1 inch meters;
- 2 inch meters; and
- 3 inch meters.

Structuring the monthly base charges based on meter size aligns with the capacity demands the different meter sizes place on the Township's water system. According to the American Water Works Association (A.W.W.A.)[1], one of the advantages of administering charges based on meter size is the ease of administration and customer understanding. As the meter size/capacity demands on the system increase, the relative base charge increases. To achieve this relationship, the Township's larger meter sizes were stated in relation to the standard meter size category of 5/8 and 3/4 inch meters. The meter equivalent ratios published by the A.W.W.A. suggest the following relationships for the categories of meter sizes in the Township:

Meter Size	Meter Size Equivalent Ratio
5/8" and 3/4" Meters	1.00
1" Meters	2.50
2" Meters	8.00
3" Meters	16.00

[1] American Water Works Association, *Principles of Water Rates, Fees, and Charges – Seventh Edition* (Denver: American Water Works Association, 2017), 338.

Further to the above, the monthly base capital levy charge has been incorporated into the base charge for simplicity of billing purposes. The revenues that were previously collected from this charge will now be collected from the monthly base charge based on meter size. Township staff will continue to internally track the amount of revenues directly related to capital (approximately 52% of the base charge and capital infrastructure levy in 2024).

The needs for the water system are relatively minor over the forecast period (averaging approximately $452,300 per year, largely due to asset management requirements). Based on the above and discussions with staff, the monthly base charges for water will remain constant over the forecast period. This strategy will allow for the volume charge (later discussed in chapter 7) to recover an increasing amount of revenue. Thus shifting the customer's average annual bill (assuming 170 cu.m of usage) from approximately 72% base charge/28% volume charge in 2024 to 59% base charge/41% volume charge by the end of the forecast period in 2034. This will allow each water user to have more control over their water bills.

The needs for wastewater are significant over the forecast period, mainly due to the expansion of the Lucan Wastewater Treatment Plant. Additional operating expenditures and the requirement for significant capital expenditures create pressure on the financial sustainability of the wastewater systems. Due to the significant expenditures required, the base charges will need to be increased annually in line with the variable charge for wastewater. Under scenario 1 with the wastewater treatment plant expansion occurring in 2025, the annual base charge rate increases are 5% from 2025 to 2027, 4% in 2028, and 2% every year thereafter. Under scenario 2 with the wastewater treatment plant expansion occurring in 2030, the annual base charge rate increases are 4% from 2025 to 2030, and 2% every year thereafter.

The water reserve fund has a balance of approximately $1.16 million as of December 31, 2023. In order to meet the needs for water, it is recommended that the base rates do not increase over the forecast period, and the volume rates increase by 6% annually. The forecast base charges are presented in Table 6-1. The volume rates are presented in section 7.2.

The wastewater reserve fund has a balance of approximately $2.87 million as of December 31, 2023. In order to meet the needs for wastewater, under scenario 1 it is recommended that both the base and volume rates increase by 5% from 2025 to 2027,

4% in 2028, and 2% every year thereafter. In order to meet the needs for wastewater, under scenario 2 it is recommended that both the base and volume rates increase by 4% from 2025 to 2030, and 2% every year thereafter. As the operating and capital needs are significant for wastewater services, these rate increases, combined with the reserve fund balance, allow the Township to fund capital works and operating expenditures without the need to issue debt for non-growth-related capital projects (under both scenarios). Additionally, these rate increases allow the Township to maintain the balance in the wastewater reserve fund to near the same amount as of December 31, 2023. The forecast base charges are presented in Table 6-2 for scenario 1 and Table 6-3 for scenario 2. The volume rates are presented in section 7.3.

Table 6-1
Township of Lucan Biddulph
Base Charge Forecast – Water

Water	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693	1,693
New	15	45	75	104	145	197	248	299	350	402	453
Total Customers	**1,708**	**1,738**	**1,768**	**1,797**	**1,838**	**1,890**	**1,941**	**1,992**	**2,043**	**2,095**	**2,146**
Total Annual Revenue	**$702,075**	**$713,209**	**$723,976**	**$734,744**	**$749,540**	**$768,584**	**$787,262**	**$805,940**	**$824,618**	**$843,663**	**$862,634**

5/8" or 3/4" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665
New	15	45	75	104	145	197	248	299	350	402	453
Subtotal Customers	**1,680**	**1,710**	**1,740**	**1,769**	**1,810**	**1,862**	**1,913**	**1,964**	**2,015**	**2,067**	**2,118**
Monthly Base Charge	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52
Annual Base Charge	$366.24	$366.24	$366.24	$366.24	$366.24	$366.24	$366.24	$366.24	$366.24	$366.24	$366.24
Total Annual Revenue	**$615,277**	**$626,411**	**$637,178**	**$647,946**	**$662,742**	**$681,786**	**$700,464**	**$719,142**	**$737,820**	**$756,864**	**$775,836**

1" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	2	2	2	2	2	2	2	2	2	2	2
New											
Subtotal Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Monthly Base Charge	$76.30	$76.30	$76.30	$76.30	$76.30	$76.30	$76.30	$76.30	$76.30	$76.30	$76.30
Annual Base Charge	$915.59	$915.59	$915.59	$915.59	$915.59	$915.59	$915.59	$915.59	$915.59	$915.59	$915.59
Total Annual Revenue	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**	**$1,831**

2" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	23	23	23	23	23	23	23	23	23	23	23
New											
Subtotal Customers	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**
Monthly Base Charge	$244.16	$244.16	$244.16	$244.16	$244.16	$244.16	$244.16	$244.16	$244.16	$244.16	$244.16
Annual Base Charge	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89	$2,929.89
Total Annual Revenue	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**	**$67,388**

3" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	3	3	3	3	3	3	3	3	3	3	3
New											
Subtotal Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Monthly Base Charge	$488.32	$488.32	$488.32	$488.32	$488.32	$488.32	$488.32	$488.32	$488.32	$488.32	$488.32
Annual Base Charge	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78	$5,859.78
Total Annual Revenue	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**	**$17,579**

Table 6-2
Township of Lucan Biddulph
Scenario 1: Base Charge Forecast – Wastewater

Wastewater	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580
New	15	45	75	104	145	197	248	299	350	402	453
Subtotal Customers	**1,595**	**1,625**	**1,655**	**1,684**	**1,725**	**1,777**	**1,828**	**1,879**	**1,930**	**1,982**	**2,033**
Total Annual Revenue	**$1,024,220**	**$1,093,553**	**$1,166,634**	**$1,232,438**	**$1,283,913**	**$1,344,809**	**$1,406,938**	**$1,471,013**	**$1,537,089**	**$1,605,953**	**$1,676,806**

5/8" or 3/4" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552
New	15	45	75	104	145	197	248	299	350	402	453
Subtotal Customers	**1,567**	**1,597**	**1,627**	**1,656**	**1,697**	**1,749**	**1,800**	**1,851**	**1,902**	**1,954**	**2,005**
Monthly Base Charge	$47.31	$49.68	$52.16	$54.25	$55.33	$56.44	$57.57	$58.72	$59.89	$61.09	$62.31
Annual Base Charge	$567.75	$596.14	$625.94	$650.98	$664.00	$677.28	$690.83	$704.64	$718.74	$733.11	$747.77
Total Annual Revenue	**$889,663**	**$952,269**	**$1,018,285**	**$1,078,155**	**$1,126,544**	**$1,184,294**	**$1,243,212**	**$1,304,013**	**$1,366,749**	**$1,432,205**	**$1,499,584**

1" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	2	2	2	2	2	2	2	2	2	2	2
New											
Subtotal Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Monthly Base Charge	$118.28	$124.20	$130.40	$135.62	$138.33	$141.10	$143.92	$146.80	$149.74	$152.73	$155.79
Annual Base Charge	$1,419.37	$1,490.34	$1,564.86	$1,627.45	$1,660.00	$1,693.20	$1,727.07	$1,761.61	$1,796.84	$1,832.78	$1,869.43
Total Annual Revenue	**$2,839**	**$2,981**	**$3,130**	**$3,255**	**$3,320**	**$3,386**	**$3,454**	**$3,523**	**$3,594**	**$3,666**	**$3,739**

2" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	23	23	23	23	23	23	23	23	23	23	23
New											
Subtotal Customers	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**
Monthly Base Charge	$378.50	$397.42	$417.30	$433.99	$442.67	$451.52	$460.55	$469.76	$479.16	$488.74	$498.52
Annual Base Charge	$4,542.00	$4,769.09	$5,007.55	$5,207.85	$5,312.01	$5,418.25	$5,526.61	$5,637.15	$5,749.89	$5,864.89	$5,982.18
Total Annual Revenue	**$104,466**	**$109,689**	**$115,174**	**$119,781**	**$122,176**	**$124,620**	**$127,112**	**$129,654**	**$132,247**	**$134,892**	**$137,590**

3" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	3	3	3	3	3	3	3	3	3	3	3
New											
Subtotal Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Monthly Base Charge	$757.00	$794.85	$834.59	$867.98	$885.33	$903.04	$921.10	$939.52	$958.31	$977.48	$997.03
Annual Base Charge	$9,083.99	$9,538.19	$10,015.10	$10,415.70	$10,624.02	$10,836.50	$11,053.23	$11,274.29	$11,499.78	$11,729.77	$11,964.37
Total Annual Revenue	**$27,252**	**$28,615**	**$30,045**	**$31,247**	**$31,872**	**$32,509**	**$33,160**	**$33,823**	**$34,499**	**$35,189**	**$35,893**

Table 6-3
Township of Lucan Biddulph
Scenario 2: Base Charge Forecast – Wastewater

Wastewater	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580
New	15	45	75	104	145	197	248	299	350	402	453
Subtotal Customers	**1,595**	**1,625**	**1,655**	**1,684**	**1,725**	**1,777**	**1,828**	**1,879**	**1,930**	**1,982**	**2,033**
Total Annual Revenue	**$1,024,220**	**$1,083,139**	**$1,144,518**	**$1,209,075**	**$1,284,271**	**$1,371,561**	**$1,463,061**	**$1,529,693**	**$1,598,404**	**$1,670,015**	**$1,743,695**

5/8" or 3/4" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552	1,552
New	15	45	75	104	145	197	248	299	350	402	453
Subtotal Customers	**1,567**	**1,597**	**1,627**	**1,656**	**1,697**	**1,749**	**1,800**	**1,851**	**1,902**	**1,954**	**2,005**
Monthly Base Charge	$47.31	$49.20	$51.17	$53.22	$55.35	$57.56	$59.87	$61.06	$62.28	$63.53	$64.80
Annual Base Charge	$567.75	$590.46	$614.08	$638.64	$664.19	$690.75	$718.38	$732.75	$747.41	$762.35	$777.60
Total Annual Revenue	**$889,663**	**$943,200**	**$998,982**	**$1,057,717**	**$1,126,859**	**$1,207,852**	**$1,292,804**	**$1,356,030**	**$1,421,269**	**$1,489,337**	**$1,559,403**

1" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	2	2	2	2	2	2	2	2	2	2	2
New											
Subtotal Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Monthly Base Charge	$118.28	$123.01	$127.93	$133.05	$138.37	$143.91	$149.66	$152.66	$155.71	$158.82	$162.00
Annual Base Charge	$1,419.37	$1,476.15	$1,535.19	$1,596.60	$1,660.47	$1,726.88	$1,795.96	$1,831.88	$1,868.52	$1,905.89	$1,944.01
Total Annual Revenue	**$2,839**	**$2,952**	**$3,070**	**$3,193**	**$3,321**	**$3,454**	**$3,592**	**$3,664**	**$3,737**	**$3,812**	**$3,888**

2" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	23	23	23	23	23	23	23	23	23	23	23
New											
Subtotal Customers	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**
Monthly Base Charge	$378.50	$393.64	$409.39	$425.76	$442.79	$460.50	$478.92	$488.50	$498.27	$508.24	$518.40
Annual Base Charge	$4,542.00	$4,723.68	$4,912.62	$5,109.13	$5,313.49	$5,526.03	$5,747.07	$5,862.01	$5,979.25	$6,098.84	$6,220.82
Total Annual Revenue	**$104,466**	**$108,645**	**$112,990**	**$117,510**	**$122,210**	**$127,099**	**$132,183**	**$134,826**	**$137,523**	**$140,273**	**$143,079**

3" Meter Size	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing	3	3	3	3	3	3	3	3	3	3	3
New											
Subtotal Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Monthly Base Charge	$757.00	$787.28	$818.77	$851.52	$885.58	$921.01	$957.85	$977.00	$996.54	$1,016.47	$1,036.80
Annual Base Charge	$9,083.99	$9,447.35	$9,825.24	$10,218.25	$10,626.98	$11,052.06	$11,494.15	$11,724.03	$11,958.51	$12,197.68	$12,441.63
Total Annual Revenue	**$27,252**	**$28,342**	**$29,476**	**$30,655**	**$31,881**	**$33,156**	**$34,482**	**$35,172**	**$35,876**	**$36,593**	**$37,325**

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, as well as growth related debt for wastewater will be the predominant basis for financing future capital. 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 adjust the base charge structure, the rates are calculated by taking the net recoverable amounts from Table 5-2 (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. Moving to the proposed rate structure of the base charge being based on meter size will result in a shift of the recoverable costs away from the typical residential user, to the larger residential and non-residential users (i.e. 1”, 2” and 3” meter sizes).

The volume rates are anticipated to increase at a rate of 6% per year over the entire forecast period. Based on the above, the initial change in a typical residential water bill is a 5% decrease in 2025, and then a 2% increase every year thereafter. The volume rates are presented in Table 7-1. Detailed calculations of the volume rates are provided in Appendix A. A summary of the recommended base charge and volume rates along

with the total annual bill for an average residential user who consumes 170 cu.m. per year are as follows:

Table 7-1
Township of Lucan Biddulph
Average Annual Residential Water Bill (Based on an Annual Usage of 170 cu.m)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Monthly Base Charge (5/8" or 3/4" Meter Size)	$15.63	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52	$30.52
Capital Levy Charge*	$17.72	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Base Charge	**$400.20**	**$366.24**	**$366.24**	**$366.24**	**$366.24**	**$366.24**	**$366.24**	**$366.24**	**$366.24**	**$366.24**	**$366.24**
Volume Charge	0.83	0.88	0.93	0.99	1.05	1.11	1.18	1.25	1.32	1.40	1.49
Annual Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$141.10**	**$149.57**	**$158.54**	**$168.05**	**$178.14**	**$188.82**	**$200.15**	**$212.16**	**$224.89**	**$238.39**	**$252.69**
Total Annual Bill (5/8" or 3/4" Meter Size)	**$541.30**	**$515.80**	**$524.78**	**$534.29**	**$544.37**	**$555.06**	**$566.39**	**$578.40**	**$591.13**	**$604.62**	**$618.93**
% Increase - Total Annual Bill		-5%	2%	2%	2%	2%	2%	2%	2%	2%	2%

* The capital levy charge has been combined with the base charge to provide one (1) fixed charge

7.3 Wastewater Rates

Similar to water, the calculation of the wastewater rates takes the net recoverable amounts from Tables 5-3 and 5-4 and completes the calculation by dividing them by the volumes, resulting in the forecast rates. Moving to the proposed rate structure of the base charge being based on meter size will result in a shift of the recoverable costs away from the typical residential user, to the larger residential and non-residential users (i.e. 1", 2" and 3" meter sizes). Detailed calculations are provided in Appendix B.

Based on the timing of the capital needs, coupled with growth-related debt to fund the Lucan Wastewater Treatment Plant Expansion, the wastewater base and volume rates under scenario 1 are anticipated to decrease by 2% in 2025, increase by 5% in 2026, increase by 4% in 2027, and increase by 2% every year thereafter. Under scenario 2, the wastewater base and volume rates are anticipated to decrease by 3% in 2025, increase by 4% in years 2026 to 2030, and increase by 2% every year thereafter.

The following summarizes the recommended rates for wastewater and provides the average annual bill for a residential customer who uses 170 cu.m. per year:

Table 7-2
Township of Lucan Biddulph
Scenario 1: Average Annual Residential Wastewater Bill (Based on an Annual Usage of 170 cu.m)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Monthly Base Charge (5/8" or 3/4" Meter Size)	$ 28.16	$49.68	$52.16	$54.25	$55.33	$56.44	$57.57	$58.72	$59.89	$61.09	$62.31
Capital Levy Charge*	$23.64	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Base Charge	**$621.60**	**$596.14**	**$625.94**	**$650.98**	**$664.00**	**$677.28**	**$690.83**	**$704.64**	**$718.74**	**$733.11**	**$747.77**
Volume Charge	0.88	0.92	0.97	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15
Annual Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$149.02**	**$156.47**	**$164.90**	**$171.70**	**$175.10**	**$178.50**	**$181.90**	**$185.30**	**$188.70**	**$192.10**	**$195.50**
Total Annual Bill (5/8" or 3/4" Meter Size)	**$770.62**	**$752.61**	**$790.84**	**$822.68**	**$839.10**	**$855.78**	**$872.73**	**$889.94**	**$907.44**	**$925.21**	**$943.27**
% Increase - Total Annual Bill		-2%	5%	4%	2%	2%	2%	2%	2%	2%	2%

* The capital levy charge has been combined with the base charge to provide one (1) fixed charge

Table 7-3
Township of Lucan Biddulph
Scenario 2: Average Annual Residential Wastewater Bill (Based on an Annual Usage of 170 cu.m)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Monthly Base Charge (5/8" or 3/4" Meter Size)	$28.16	$49.20	$51.17	$53.22	$55.35	$57.56	$59.87	$61.06	$62.28	$63.53	$64.80
Capital Levy Charge*	$23.64	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Base Charge	**$621.60**	**$590.46**	**$614.08**	**$638.64**	**$664.19**	**$690.75**	**$718.38**	**$732.75**	**$747.41**	**$762.35**	**$777.60**
Volume Charge	0.88	0.91	0.95	0.99	1.03	1.07	1.11	1.13	1.15	1.17	1.19
Annual Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$149.02**	**$154.98**	**$161.50**	**$168.30**	**$175.10**	**$181.90**	**$188.70**	**$192.10**	**$195.50**	**$198.90**	**$202.30**
Total Annual Bill (5/8" or 3/4" Meter Size)	**$770.62**	**$745.44**	**$775.58**	**$806.94**	**$839.29**	**$872.65**	**$907.08**	**$924.85**	**$942.91**	**$961.25**	**$979.90**
% Increase - Total Annual Bill		-3%	4%	4%	4%	4%	4%	2%	2%	2%	2%

* The capital levy charge has been combined with the base charge to provide one (1) fixed charge

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 an initial 3% decrease on the combined bill in 2025, a 4% increase in 2026, a 3% increase in 2027, and a 2% annual increase every year thereafter for residential customers under scenario 1. The combined impact of the water and wastewater base charge and volume rate charges equal to an initial 4% decrease on the combined bill in 2025, a 3% annual increase from 2026 to 2030, and a 2% annual increase every year thereafter for residential customers under scenario 2. Table 7-4 and 7-5 present the forecasted combined annual bills for customers based on an annual usage of 170 cu.m.

Table 7-4
Township of Lucan Biddulph
Annual Average Water and Wastewater Bill Based on 170 cu.m.

Scenario 1: Lucan Sewage Treatment Plant Expansion Occurs in 2025											
Annual Bill for Residential Users (5/8" or 3/4" Meter Size) with 170 cu.m Volume	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Water											
Base Charge	400.20	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24
Volume	141.10	149.57	158.54	168.05	178.14	188.82	200.15	212.16	224.89	238.39	252.69
Total Water Bill	**$ 541.30**	**$ 515.80**	**$ 524.78**	**$ 534.29**	**$ 544.37**	**$ 555.06**	**$ 566.39**	**$ 578.40**	**$ 591.13**	**$ 604.62**	**$ 618.93**
Wastewater											
Base Charge	621.60	596.14	625.94	650.98	664.00	677.28	690.83	704.64	718.74	733.11	747.77
Volume	149.02	156.47	164.90	171.70	175.10	178.50	181.90	185.30	188.70	192.10	195.50
Total Wastewater Bill	**$ 770.62**	**$ 752.61**	**$ 790.84**	**$ 822.68**	**$ 839.10**	**$ 855.78**	**$ 872.73**	**$ 889.94**	**$ 907.44**	**$ 925.21**	**$ 943.27**
Total Combined Bill	**$1,311.92**	**$1,268.41**	**$1,315.62**	**$1,356.97**	**$1,383.47**	**$1,410.84**	**$1,439.12**	**$1,468.34**	**$1,498.56**	**$1,529.83**	**$1,562.20**
Annual Percentage Change		**-3%**	**4%**	**3%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**

Note: the average bill for the typical residential customer would decrease in 2025 due to proposed realignment of categories for the base charge

Table 7-5
Township of Lucan Biddulph
Annual Average Water and Wastewater Bill Based on 170 cu.m.

Scenario 2: Lucan Sewage Treatment Plant Expansion Occurs in 2030											
Annual Bill for Residential Users (5/8" or 3/4" Meter Size) with 170 cu.m Volume	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Water											
Base Charge	400.20	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24	366.24
Volume	141.10	149.57	158.54	168.05	178.14	188.82	200.15	212.16	224.89	238.39	252.69
Total Water Bill	**$ 541.30**	**$ 515.80**	**$ 524.78**	**$ 534.29**	**$ 544.37**	**$ 555.06**	**$ 566.39**	**$ 578.40**	**$ 591.13**	**$ 604.62**	**$ 618.93**
Wastewater											
Base Charge	621.60	590.46	614.08	638.64	664.19	690.75	718.38	732.75	747.41	762.35	777.60
Volume	149.02	154.98	161.50	168.30	175.10	181.90	188.70	192.10	195.50	198.90	202.30
Total Wastewater Bill	**$ 770.62**	**$ 745.44**	**$ 775.58**	**$ 806.94**	**$ 839.29**	**$ 872.65**	**$ 907.08**	**$ 924.85**	**$ 942.91**	**$ 961.25**	**$ 979.90**
Total Combined Bill	**$1,311.92**	**$1,261.24**	**$1,300.35**	**$1,341.23**	**$1,383.66**	**$1,427.71**	**$1,473.47**	**$1,503.25**	**$1,534.04**	**$1,565.88**	**$1,598.83**
Annual Percentage Change		**-4%**	**3%**	**3%**	**3%**	**3%**	**3%**	**2%**	**2%**	**2%**	**2%**

Note: the average bill for the typical residential customer would decrease in 2025 due to proposed realignment of categories for the base charge

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 the Township's 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 Plans for water and wastewater as provided in Tables 2-1, 2-2, and 2-3 and the associated Capital Financing Plan as set out in Tables 4-3, 4-4, and 4-5.

3. That Council consider the base charges provided in Table 6-1 for water and Tables 6-2 and 6-3 for wastewater.

4. That Council consider the volume rates for water and wastewater as provided in Tables 7-1 through 7-5 respectively.

5. That Council consider the recommended revenue system charges as provided in Table 5-1.

Appendices

Appendix A
Detailed Water Rate Calculations

Appendix A: Detailed Water Rate Calculations

Table A-1
Township of Lucan Biddulph
Capital Budget Forecast (Uninflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Harold Court (Kleinfeldt Avenue to Albert Street)		146,061							146,061			
Harold Court (Elm Street to Albert Street)		84,701									84,701	
Water St. Watermain	400,000	-										
SCADA Upgrade/Computer Upgrade	40,000	-										
Meter Replacement	10,000	-										
Computer Upgrade - Booster	158,000	-										
Booster Station Window	4,000	-										
Lifecycle:												
Savings for Lifecycle Replacement	-	3,796,208	402,697	402,697	402,697	402,697	402,697	402,697	256,636	402,697	317,996	402,697
Studies:												
Water Rate Study and Financial Plan	21,998	-										
Water Rate Study and Financial Plan		21,998					21,998					
Total Capital Expenditures	**633,998**	**4,048,968**	**402,697**	**402,697**	**402,697**	**402,697**	**424,695**	**402,697**	**402,697**	**402,697**	**402,697**	**402,697**

Table A-2
Township of Lucan Biddulph
Capital Budget Forecast (Inflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Harold Court (Kleinfeldt Avenue to Albert Street)	-	168,000	-	-	-	-	-	-	168,000	-	-	-
Harold Court (Elm Street to Albert Street)	-	101,000	-	-	-	-	-	-	-	-	101,000	-
Water St. Watermain	400,000	-	-	-	-	-	-	-	-	-	-	-
SCADA Upgrade/Computer Upgrade	40,000	-	-	-	-	-	-	-	-	-	-	-
Meter Replacement	10,000	-	-	-	-	-	-	-	-	-	-	-
Computer Upgrade - Booster	158,000	-	-	-	-	-	-	-	-	-	-	-
Booster Station Window	4,000	-	-	-	-	-	-	-	-	-	-	-
Lifecycle:												
Savings for Lifecycle Replacement	-	4,230,000	411,000	419,000	427,000	436,000	445,000	454,000	295,000	472,000	380,000	491,000
Studies:												
Water Rate Study and Financial Plan	21,998	-	-	-	-	-	-	-	-	-	-	-
Water Rate Study and Financial Plan	-	24,000	-	-	-	-	24,000	-	-	-	-	-
Total Capital Expenditures	**633,998**	**4,523,000**	**411,000**	**419,000**	**427,000**	**436,000**	**469,000**	**454,000**	**463,000**	**472,000**	**481,000**	**491,000**
Capital Financing												
Provincial/Federal Grants	-	-										
Lucan Development Charges Reserve Fund	-	-		-	-	-	-	-	-	-	-	-
Granton Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Lucan Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Granton Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	633,998	4,523,000	411,000	419,000	427,000	436,000	469,000	454,000	463,000	472,000	481,000	491,000
Total Capital Financing	**633,998**	**4,523,000**	**411,000**	**419,000**	**427,000**	**436,000**	**469,000**	**454,000**	**463,000**	**472,000**	**481,000**	**491,000**

Table A-3
Township of Lucan Biddulph
Schedule of Non-Growth-Related Debenture Repayments

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table A-4
Township of Lucan Biddulph
Schedule of Growth-Related Debenture Repayments - Lucan

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table A-5
Township of Lucan Biddulph
Schedule of Growth-Related Debenture Repayments – Granton

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table A-6
Township of Lucan Biddulph
Water Capital Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	1,163,055	911,085	983,006	982,423	983,820	999,245	1,001,539	1,043,274	1,101,568	1,179,279	1,275,968
Transfer from Operating	382,027	400,598	410,041	419,863	434,816	455,549	479,681	504,906	531,719	560,588	591,275
Transfer from Lucan DC Reserve Fund		68,384	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Transfer from Granton DC Reserve Fund		13,939	-	-	1,172	-	-	-	1,268	-	-
Transfer to Capital	633,998	411,000	419,000	427,000	436,000	469,000	454,000	463,000	472,000	481,000	491,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**911,085**	**983,006**	**982,423**	**983,820**	**999,245**	**1,001,539**	**1,043,274**	**1,101,568**	**1,179,279**	**1,275,968**	**1,393,681**
Interest											

Table A-7
Township of Lucan Biddulph
Lucan Water Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	50,928	60,167	-	-	-	-	-	-	-	-	-
Development Charge Proceeds	8,059	8,217	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Transfer to Capital	-		-	-	-	-	-	-	-	-	-
Transfer to Operating - Payback Water Supply		68,384	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**58,987**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Interest	1,180	-	-	-	-	-	-	-	-	-	-
Required from Development Charges	-	-	-	-	-	-	-	-	-	-	-

Table A-8
Township of Lucan Biddulph
Granton Water Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	12,584	13,939	-	-	-	-	-	-	-	-	-
Development Charge Proceeds	1,082	-	-	-	1,172	-	-	-	1,268	-	-
Transfer to Capital	-		-	-	-	-	-	-	-	-	-
Transfer to Operating - Payback Water Supply		13,939			1,172				1,268		
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**13,666**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Interest	273	-	-	-	-	-	-	-	-	-	-
Required from Development Charges	-	-	-	-	-	-	-	-	-	-	-

Table A-9
Township of Lucan Biddulph
Operating Budget Forecast
(Inflated $)

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures											
Operating Costs											
SALARY-PUBLICWORKS	88,906	90,700	92,500	94,400	96,300	98,200	100,200	102,200	104,200	106,300	108,400
CPP&EI	5,217	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000	6,100	6,200
GROUP INSURANCE	6,363	6,500	6,600	6,700	6,800	6,900	7,000	7,100	7,200	7,300	7,400
WSIB	2,524	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
EMPLOYERHEALTHTAX	1,539	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
OMERS	7,473	7,600	7,800	8,000	8,200	8,400	8,600	8,800	9,000	9,200	9,400
HYDRO	60,000	63,000	66,200	69,500	73,000	76,700	80,500	84,500	88,700	93,100	97,800
TELEPHONE	3,150	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
AUDIT	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
INSURANCE	19,800	20,200	20,600	21,000	21,400	21,800	22,200	22,600	23,100	23,600	24,100
R&M-EQUIPMENT	12,850	13,100	13,400	13,700	14,000	14,300	14,600	14,900	15,200	15,500	15,800
R&M- BUILDING	25,250	25,800	26,300	26,800	27,300	27,800	28,400	29,000	29,600	30,200	30,800
R&M Water Mains	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800	12,000	12,200
SOFTWARE SUPPORT	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEMBERSHIPS&SUBSCRIPTIONS	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
ASSET MANAGEMENT EXPENSE	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEETINGS/CONFERENCE/TRAINI	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
Purchased Water From LHWPSS	214,000	220,798	235,286	250,700	268,493	289,029	307,802	327,653	348,572	370,810	394,236
ENGINEERING/LEGAL/AUDIT	31,000	31,600	32,200	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700
LABSERVICES	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
MISCELLANEOUS EXPENSE	500	500	500	500	500	500	500	500	500	500	500
ADM. EXPENSE ALLOCATION	7,240	7,400	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100
PROPERTY TAXES	6,500	6,600	6,700	6,800	6,900	7,000	7,100	7,200	7,300	7,400	7,500
METERS	38,000	38,800	39,600	40,400	41,200	42,000	42,800	43,700	44,600	45,500	46,400
CONTRACTED SERVICES	158,075	161,200	164,400	167,700	171,100	174,500	178,000	181,600	185,200	188,900	192,700
Sub Total Operating	**715,087**	**733,698**	**760,286**	**788,200**	**818,893**	**852,529**	**884,802**	**918,553**	**953,672**	**990,510**	**1,028,936**

Table A-9 (Continued)
Township of Lucan Biddulph
Operating Budget Forecast
(Inflated $)

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related											
Lucan Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
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 - Lucan DC - Water Supply Facility	-	68,384	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Transfer to Capital Reserve - Granton DC - Water Supply Facility	-	13,939	-	-	1,172	-	-	-	1,268	-	-
Transfer to Capital Reserve	382,027	400,598	410,041	419,863	434,816	455,549	479,681	504,906	531,719	560,588	591,275
Sub Total Capital Related	**382,027**	**482,921**	**418,417**	**428,397**	**451,425**	**471,294**	**495,735**	**521,294**	**549,711**	**577,689**	**608,713**
Total Expenditures	**1,097,114**	**1,216,618**	**1,178,703**	**1,216,598**	**1,270,319**	**1,323,822**	**1,380,537**	**1,439,847**	**1,503,383**	**1,568,199**	**1,637,649**

Table A-9 (Continued)
Township of Lucan Biddulph
Operating Budget Forecast
(Inflated $)

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Revenues											
Base Charge	702,075	713,209	723,976	734,744	749,540	768,584	787,262	805,940	824,618	843,663	862,634
Other Revenue											
ADMINISTRATIVE FEES	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
PENALTIES	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
BANK INTEREST	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800	14,100	14,400	14,700
WATER TOWER RENT - QUADRO	1,932	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
MISCELLANEOUS	250	300	300	300	300	300	300	300	300	300	300
NAGLE PROJECT INTEREST	4,743	4,524	4,298	4,066	3,828	3,582	3,330	3,070	2,805	2,531	2,249
WATER METERS	40,000	40,800	41,600	42,400	43,200	44,100	45,000	45,900	46,800	47,700	48,700
WATER METER INSPECTION	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800	11,000
North Middlesex Water Revenue	14,889	15,633	16,415	17,236	18,098	19,002	19,953	20,751	21,581	22,444	23,342
Coin Meter Revenue	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128	8,128
Pickard Construction Revenue	9,269	9,454	9,643	9,836	10,033	10,234	10,438	10,647	10,860	11,077	11,299
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Contributions from Lucan DC Reserve Fund - Water Supply Facility	-	68,384	8,376	8,534	15,437	15,745	16,054	16,389	16,724	17,101	17,438
Contributions from Granton DC Reserve Fund - Water Supply Facility	-	13,939	-	-	1,172	-	-	-	1,268	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**813,287**	**908,972**	**847,937**	**861,044**	**886,235**	**906,875**	**928,365**	**949,725**	**972,384**	**992,943**	**1,014,789**
Water Billing Recovery - Operating	**283,827**	**307,647**	**330,767**	**355,554**	**384,083**	**416,947**	**452,172**	**490,122**	**530,999**	**575,255**	**622,860**
Water Billing Recovery - Total	**283,827**	**307,647**	**330,767**	**355,554**	**384,083**	**416,947**	**452,172**	**490,122**	**530,999**	**575,255**	**622,860**

Table A-10
Township of Lucan Biddulph
Water Rate Forecast
(Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Water Billing Recovery	283,827	307,647	330,767	355,554	384,083	416,947	452,172	490,122	530,999	575,255	622,860
Total Volume (m^3)*	295,711	300,879	305,877	310,875	317,743	326,583	335,253	343,923	352,593	361,433	370,239
Constant Rate											
Volume Forecast (cu.m)											
Bulk Water	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494	8,494
Residential, Rural, Commercial and Industrial	318,423	326,141	331,139	336,137	343,005	351,845	360,515	369,185	377,855	386,695	395,501
Total Volume Forecast	**326,917**	**334,635**	**339,633**	**344,631**	**351,499**	**360,339**	**369,009**	**377,679**	**386,349**	**395,189**	**403,995**
Rates ($ per cu.m)											
Bulk Water	2.30	2.44	2.58	2.74	2.90	3.08	3.26	3.46	3.67	3.89	4.12
Residential, Rural, Commercial and Industrial	0.83	0.88	0.93	0.99	1.05	1.11	1.18	1.25	1.32	1.40	1.49
Annual Percentage Change											
Bulk Water		**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**
Residential, Rural, Commercial and Industrial		**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**

Appendix B
Detailed Wastewater Rate Calculations

B.1 – Scenario 1: 2025 Lucan Wastewater Treatment Plant Expansion

Table B-1.1
Township of Lucan Biddulph
Capital Budget Forecast (Uninflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Francis Street (Clarence Street to Saintsbury Line)		150,680										150,680
Lewis Avenue (Duchess Avenue to Kent Avenue)	110,433	-										
Head Street (Granton Line to King Street)		57,111										57,111
Nicoline Avenue (Elm Street to Saintsbury Line)		334,378						334,378				
Station Street (Queen Street to End)		128,223										128,223
Wellington Street (Clarence Street to Saintsbury Line)		135,074				135,074						
Easement (Head Street to End)		191,490						191,490				
Oak Street (Butler Street to Market Street)	45,700	-										
Easement (Market Street to Alice Street)		87,797						87,797				
Easement (Albert Street to Princess Street)		15,363						15,363				
Queen Street (Isabella Street to Station Street)		91,260										91,260
Main Street (Wellington Street to Saintsbury Line)		53,367			53,367							
Easement (Market Street to Stanley Street)		56,420						56,420				
Ann Street (King Street to Easement)		48,785										48,785
Lucan WWTP Upgrade/Replacement	584,000	-										
SCADA Upgrade/Computer Upgrade	40,000	-										
Sanitary Main Modeling - Lucan	24,000	-										
LWWTP- Blower #3 Replacement	31,000	-										
LWWTP - Auto Sampler	15,000	-										
Lifecycle:												
Savings for Lifecycle Replacement - Linear	-	1,819,896	-	-	-	255,920	390,994	-	390,994	390,994	390,994	-
Savings for Lifecycle Replacement - Facilities	-	1,996,680	-	-	-	285,240	285,240	285,240	285,240	285,240	285,240	285,240
Studies:												
Wastewater Rate Study	14,928	-										
Wastewater Rate Study		14,928					14,928					
Growth Related:												
Lucan Sewage Treatment Plant Expansion		16,802,290	3,360,458	10,081,374	3,360,458							
Lucan Trunk Sewer Expansions												
Walnut/Stanley Street to Chestnut Sewage Pumping Statio	780,000	-										
Stanley Street (Main Street to Market Street)		162,000						162,000				
West Trunk Sewer (Main Street)		840,000										840,000
Total Capital Expenditures	**1,645,061**	**22,985,742**	**3,360,458**	**10,081,374**	**3,413,825**	**676,234**	**691,162**	**1,132,688**	**676,234**	**676,234**	**676,234**	**1,601,299**

Table B-1.2
Township of Lucan Biddulph
Capital Budget Forecast (Inflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Francis Street (Clarence Street to Saintsbury Line)	-	184,000	-	-	-	-	-	-	-	-	-	184,000
Lewis Avenue (Duchess Avenue to Kent Avenue)	110,433	-	-	-	-	-	-	-	-	-	-	-
Head Street (Granton Line to King Street)	-	70,000	-	-	-	-	-	-	-	-	-	70,000
Nicoline Avenue (Elm Street to Saintsbury Line)	-	377,000	-	-	-	-	-	377,000	-	-	-	-
Station Street (Queen Street to End)	-	156,000	-	-	-	-	-	-	-	-	-	156,000
Wellington Street (Clarence Street to Saintsbury Line)	-	146,000	-	-	-	146,000	-	-	-	-	-	-
Easement (Head Street to End)	-	216,000	-	-	-	-	-	216,000	-	-	-	-
Oak Street (Butler Street to Market Street)	45,700	-	-	-	-	-	-	-	-	-	-	-
Easement (Market Street to Alice Street)	-	99,000	-	-	-	-	-	99,000	-	-	-	-
Easement (Albert Street to Princess Street)	-	17,000	-	-	-	-	-	17,000	-	-	-	-
Queen Street (Isabella Street to Station Street)	-	111,000	-	-	-	-	-	-	-	-	-	111,000
Main Street (Wellington Street to Saintsbury Line)	-	57,000	-	-	57,000	-	-	-	-	-	-	-
Easement (Market Street to Stanley Street)	-	64,000	-	-	-	-	-	64,000	-	-	-	-
Ann Street (King Street to Easement)	-	59,000	-	-	-	-	-	-	-	-	-	59,000
Lucan WWTP Upgrade/Replacement	584,000	-	-	-	-	-	-	-	-	-	-	-
SCADA Upgrade/Computer Upgrade	40,000	-	-	-	-	-	-	-	-	-	-	-
Sanitary Main Modeling - Lucan	24,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP- Blower #3 Replacement	31,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP - Auto Sampler	15,000	-	-	-	-	-	-	-	-	-	-	-
Lifecycle:		-	-	-	-	-	-	-	-	-	-	-
Savings for Lifecycle Replacement - Linear	-	2,340,000	399,000	407,000	358,000	277,000	432,000	-	-	-	467,000	-
Savings for Lifecycle Replacement - Facilities	-	2,204,000	291,000	297,000	303,000	309,000	315,000	-	-	-	341,000	348,000
Studies:		-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	14,928	-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	-	16,000	-	-	-	-	16,000	-	-	-	-	-
Growth Related:												
Lucan Sewage Treatment Plant Expansion	-	19,301,000	-	-	-	-	-	3,784,000	11,580,000	3,937,000	-	-
Lucan Trunk Sewer Expansions												
Walnut/Stanley Street to Chestnut Sewage Pumping Station	780,000	-	-	-	-	-	-	-	-	-	-	-
Stanley Street (Main Street to Market Street)	-	182,000	-	-	-	-	-	182,000	-	-	-	-
West Trunk Sewer (Main Street)	-	1,024,000	-	-	-	-	-	-	-	-	-	1,024,000
Total Capital Expenditures	**1,645,061**	**26,623,000**	**690,000**	**704,000**	**718,000**	**732,000**	**763,000**	**4,739,000**	**11,580,000**	**3,937,000**	**808,000**	**1,952,000**

Table B-1.2 (Continued)
Township of Lucan Biddulph
Capital Budget Forecast (Inflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Financing												
Provincial/Federal Grants		-										
Lucan Development Charges Reserve Fund	702,000	1,085,400	-	-	-	-	-	163,800	-	-	-	921,600
Granton Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Lucan Growth Related Debenture Requirements	-	16,212,840	-	-	-	-	-	3,178,560	9,727,200	3,307,080	-	-
Granton Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	943,061	9,324,760	690,000	704,000	718,000	732,000	763,000	1,396,640	1,852,800	629,920	808,000	1,030,400
Total Capital Financing	**1,645,061**	**26,623,000**	**690,000**	**704,000**	**718,000**	**732,000**	**763,000**	**4,739,000**	**11,580,000**	**3,937,000**	**808,000**	**1,952,000**

Table B-1.3
Township of Lucan Biddulph
Schedule of Non-Growth-Related Debenture Repayments

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table B-1.4
Township of Lucan Biddulph
Schedule of Growth-Related Debenture Repayments - Lucan

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		2,879,520		217,547	217,547	217,547	217,547	217,547	217,547	217,547	217,547	217,547
2026		8,810,760			665,650	665,650	665,650	665,650	665,650	665,650	665,650	665,650
2027		2,995,440				226,304	226,304	226,304	226,304	226,304	226,304	226,304
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**14,685,720**	-	217,547	883,197	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501

Table B-1.5
Township of Lucan Biddulph
Schedule of Growth-Related Debenture Repayments – Granton

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table B-1.6
Township of Lucan Biddulph
Wastewater Capital Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	2,867,311	2,345,579	2,468,565	1,499,690	1,642,142	1,724,134	1,825,006	1,629,496	1,823,496	2,060,998	2,337,941
Transfer from Operating	572,008	638,221	709,365	770,012	811,458	863,872	916,689	971,000	1,026,759	1,084,943	1,144,033
Transfer from Granton DC Reserve Fund	-	33,246	-	-	2,533	-	-	-	2,743	-	-
Transfer to Capital	1,093,741	548,480	1,678,240	627,560	732,000	763,000	1,112,200	777,000	792,000	808,000	1,030,400
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**2,345,579**	**2,468,565**	**1,499,690**	**1,642,142**	**1,724,134**	**1,825,006**	**1,629,496**	**1,823,496**	**2,060,998**	**2,337,941**	**2,451,574**
Interest											

Table B-1.7
Township of Lucan Biddulph
Lucan Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	478,091	471,166	1,194,131	1,723,926	1,599,922	1,830,972	2,093,260	2,220,884	2,545,826	2,905,506	3,312,458
Development Charge Proceeds	685,836	699,550	713,540	727,821	1,304,650	1,330,745	1,357,378	1,384,525	1,412,210	1,451,503	1,480,515
Transfer to Capital	702,000						163,800				921,600
Transfer to Operating	-	-	217,547	883,197	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501
Closing Balance	**461,928**	**1,170,716**	**1,690,124**	**1,568,551**	**1,795,071**	**2,052,216**	**2,177,337**	**2,495,908**	**2,848,535**	**3,247,508**	**2,761,873**
Interest	9,239	23,414	33,802	31,371	35,901	41,044	43,547	49,918	56,971	64,950	55,237
Required from Development Charges	702,000	2,879,520	8,810,760	2,995,440	-	-	163,800	-	-	-	921,600

Table B-1.8
Township of Lucan Biddulph
Granton Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	30,255	33,246	-	-	-	-	-	-	-	-	-
Development Charge Proceeds	2,339	-	-	-	2,533	-	-	-	2,743	-	-
Transfer to Capital	-		-	-	-	-	-	-	-	-	-
Transfer to Wastewater Reserve - Payback Granton Sewage Treatment	-	33,246			2,533				2,743		
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**32,594**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Interest	652	-	-	-	-	-	-	-	-	-	-
Required from Development Charges	-	-	-	-	-	-	-	-	-	-	-

Table B-1.9
Township of Lucan Biddulph
Operating Budget Forecast (Inflated $)

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures											
Operating Costs											
SALARY-PUBLICWORKS	57,478	58,600	59,800	61,000	62,200	63,400	64,700	66,000	67,300	68,600	70,000
CPP&EI	3,261	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
GROUP INSURANCE	3,780	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800
WSIB	1,786	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
EMPLOYERHEALTHTAX	1,121	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
OMERS	5,591	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400	6,500	6,600
HEAT	7,200	7,600	8,000	8,400	8,800	9,200	9,700	10,200	10,700	11,200	11,800
HYDRO	140,000	147,000	154,400	162,100	170,200	178,700	187,600	197,000	206,900	217,200	228,100
TELEPHONE	9,660	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500	11,700
AUDIT FEES	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
INSURANCE	19,650	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300	23,800
OFFICE SUPPLIES	-	-	-	-	-	-	-	-	-	-	-
R&M - OCWA	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300	26,800
R&M- EQUIPMENT	61,500	62,700	64,000	65,300	66,600	67,900	69,300	70,700	72,100	73,500	75,000
R&M - BUILDING	33,000	33,700	34,400	35,100	35,800	36,500	37,200	37,900	38,700	39,500	40,300
SOFTWARE SUPPORT	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
ASSET MANAGEMENT EXPENSE	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEETINGS/CONFERENCE/TRAINI	500	500	500	500	500	500	500	500	500	500	500
CHEMICALS	60,000	63,000	66,200	69,500	73,000	76,700	80,500	84,500	88,700	93,100	97,800
SLUDGE DISPOSAL	80,000	81,600	83,200	84,900	86,600	88,300	90,100	91,900	93,700	95,600	97,500
LAB SERVICES	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
MISCELLANEOUS EXPENSE	500	500	500	500	500	500	500	500	500	500	500
ADM. EXPENSE ALLOCATION	7,200	7,300	7,400	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900
PROPERTY TAXES	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800	36,500
SEWERMAINTENANCE/REPAIRS	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
CONTRACTED SERVICES	182,960	186,600	190,300	194,100	198,000	202,000	206,000	210,100	214,300	218,600	223,000
Sub Total Operating	**779,686**	**801,300**	**823,800**	**847,000**	**871,000**	**895,800**	**921,600**	**948,200**	**975,700**	**1,004,100**	**1,033,900**

Table B-1.9 (Cont'd)
Township of Lucan Biddulph
Operating Budget Forecast (Inflated $)

Description	Budget	Forecast									
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related											
Lucan Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Principal)	-	-	93,727	384,545	498,581	520,020	542,380	565,703	590,028	615,399	641,861
Lucan New Growth Related Debt (Interest)	-	-	123,819	498,652	610,920	589,481	567,120	543,798	519,473	494,102	467,639
Granton New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
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	572,008	638,221	709,365	770,012	811,458	863,872	916,689	971,000	1,026,759	1,084,943	1,144,033
Sub Total Capital Related	**572,008**	**638,221**	**926,911**	**1,653,209**	**1,920,959**	**1,973,373**	**2,026,190**	**2,080,501**	**2,136,260**	**2,194,444**	**2,253,534**
Total Expenditures	**1,351,694**	**1,439,521**	**1,750,711**	**2,500,209**	**2,791,959**	**2,869,173**	**2,947,790**	**3,028,701**	**3,111,960**	**3,198,544**	**3,287,434**
Revenues											
Base Charge	1,024,220	1,093,553	1,166,634	1,232,438	1,283,913	1,344,809	1,406,938	1,471,013	1,537,089	1,605,953	1,676,806
Licences/Permits/Rents											
FARMPROPERTYRENT	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842
User Fees											
SEWER F&C	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
ADMINISTRATIVE FEES	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
Other Revenue											
PENALTIES	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100	9,300	9,500
BANKINTEREST	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700	16,000
QPA SOLAR REVENUE	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400
Contributions from Development Charges Reserve Fund	-	-	217,547	883,197	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501	1,109,501
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,088,962**	**1,158,895**	**1,450,123**	**2,182,177**	**2,460,555**	**2,522,052**	**2,584,781**	**2,649,456**	**2,716,132**	**2,785,596**	**2,857,049**
Wastewater Billing Recovery - Operating	**262,732**	**280,626**	**300,589**	**318,032**	**331,404**	**347,121**	**363,010**	**379,245**	**395,828**	**412,949**	**430,384**
Wastewater Billing Recovery - Total	**262,732**	**280,626**	**300,589**	**318,032**	**331,404**	**347,121**	**363,010**	**379,245**	**395,828**	**412,949**	**430,384**

Table B-1.10
Township of Lucan Biddulph
Wastewater Rate Forecast
(Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Wastewater Billing Recovery	262,732	280,626	300,589	318,032	331,404	347,121	363,010	379,245	395,828	412,949	430,384
Total Volume (m^3)	299,719	304,887	309,885	314,883	321,751	330,591	339,261	347,931	356,601	365,441	374,247
Constant Rate	**0.88**	**0.92**	**0.97**	**1.01**	**1.03**	**1.05**	**1.07**	**1.09**	**1.11**	**1.13**	**1.15**
Annual Percentage Change		**5%**	**5%**	**4%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**

B.2 – Scenario 2: 2030 Lucan Wastewater Treatment Plant Expansion

Table B-2.1
Township of Lucan Biddulph
Capital Budget Forecast (Uninflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Francis Street (Clarence Street to Saintsbury Line)		150,680										150,680
Lewis Avenue (Duchess Avenue to Kent Avenue)	110,433	-										
Head Street (Granton Line to King Street)		57,111										57,111
Nicoline Avenue (Elm Street to Saintsbury Line)		334,378						334,378				
Station Street (Queen Street to End)		128,223										128,223
Wellington Street (Clarence Street to Saintsbury Line)		135,074				135,074						
Easement (Head Street to End)		191,490						191,490				
Oak Street (Butler Street to Market Street)	45,700	-										
Easement (Market Street to Alice Street)		87,797						87,797				
Easement (Albert Street to Princess Street)		15,363						15,363				
Queen Street (Isabella Street to Station Street)		91,260										91,260
Main Street (Wellington Street to Saintsbury Line)		53,367			53,367							
Easement (Market Street to Stanley Street)		56,420						56,420				
Ann Street (King Street to Easement)		48,785										48,785
Lucan WWTP Upgrade/Replacement	584,000	-										
SCADA Upgrade/Computer Upgrade	40,000	-										
Sanitary Main Modeling - Lucan	24,000	-										
LWWTP- Blower #3 Replacement	31,000	-										
LWWTP - Auto Sampler	15,000	-										
Lifecycle:												
Savings for Lifecycle Replacement - Linear	-	2,157,523	390,994	390,994	337,627	255,920	390,994	-	-	-	390,994	-
Savings for Lifecycle Replacement - Facilities		1,996,680	285,240	285,240	285,240	285,240	285,240	-	-	-	285,240	285,240
Studies:												
Wastewater Rate Study	14,928	-										
Wastewater Rate Study		14,928					14,928					
Growth Related:												
Lucan Sewage Treatment Plant Expansion		16,802,290						3,360,458	10,081,374	3,360,458		
Lucan Trunk Sewer Expansions												
Walnut/Stanley Street to Chestnut Sewage Pumping Statio	780,000	-										
Stanley Street (Main Street to Market Street)		162,000						162,000				
West Trunk Sewer (Main Street)		840,000										840,000
Total Capital Expenditures	**1,645,061**	**23,323,369**	**676,234**	**676,234**	**676,234**	**676,234**	**691,162**	**4,207,906**	**10,081,374**	**3,360,458**	**676,234**	**1,601,299**

Table B-2.2
Township of Lucan Biddulph
Capital Budget Forecast (Inflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures												
Francis Street (Clarence Street to Saintsbury Line)	-	184,000	-	-	-	-	-	-	-	-	-	184,000
Lewis Avenue (Duchess Avenue to Kent Avenue)	110,433	-	-	-	-	-	-	-	-	-	-	-
Head Street (Granton Line to King Street)	-	70,000	-	-	-	-	-	-	-	-	-	70,000
Nicoline Avenue (Elm Street to Saintsbury Line)	-	377,000	-	-	-	-	-	377,000	-	-	-	-
Station Street (Queen Street to End)	-	156,000	-	-	-	-	-	-	-	-	-	156,000
Wellington Street (Clarence Street to Saintsbury Line)	-	146,000	-	-	-	146,000	-	-	-	-	-	-
Easement (Head Street to End)	-	216,000	-	-	-	-	-	216,000	-	-	-	-
Oak Street (Butler Street to Market Street)	45,700	-	-	-	-	-	-	-	-	-	-	-
Easement (Market Street to Alice Street)	-	99,000	-	-	-	-	-	99,000	-	-	-	-
Easement (Albert Street to Princess Street)	-	17,000	-	-	-	-	-	17,000	-	-	-	-
Queen Street (Isabella Street to Station Street)	-	111,000	-	-	-	-	-	-	-	-	-	111,000
Main Street (Wellington Street to Saintsbury Line)	-	57,000	-	-	57,000	-	-	-	-	-	-	-
Easement (Market Street to Stanley Street)	-	64,000	-	-	-	-	-	64,000	-	-	-	-
Ann Street (King Street to Easement)	-	59,000	-	-	-	-	-	-	-	-	-	59,000
Lucan WWTP Upgrade/Replacement	584,000	-	-	-	-	-	-	-	-	-	-	-
SCADA Upgrade/Computer Upgrade	40,000	-	-	-	-	-	-	-	-	-	-	-
Sanitary Main Modeling - Lucan	24,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP- Blower #3 Replacement	31,000	-	-	-	-	-	-	-	-	-	-	-
LWWTP - Auto Sampler	15,000	-	-	-	-	-	-	-	-	-	-	-
Lifecycle:		-	-	-	-	-	-	-	-	-	-	-
Savings for Lifecycle Replacement - Linear	-	2,340,000	399,000	407,000	358,000	277,000	432,000	-	-	-	467,000	-
Savings for Lifecycle Replacement - Facilities	-	2,204,000	291,000	297,000	303,000	309,000	315,000	-	-	-	341,000	348,000
Studies:		-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	14,928	-	-	-	-	-	-	-	-	-	-	-
Wastewater Rate Study	-	16,000	-	-	-	-	16,000	-	-	-	-	-
Growth Related:												
Lucan Sewage Treatment Plant Expansion	-	19,301,000	-	-	-	-	-	3,784,000	11,580,000	3,937,000	-	-
Lucan Trunk Sewer Expansions												
Walnut/Stanley Street to Chestnut Sewage Pumping Station	780,000	-	-	-	-	-	-	-	-	-	-	-
Stanley Street (Main Street to Market Street)	-	182,000	-	-	-	-	-	182,000	-	-	-	-
West Trunk Sewer (Main Street)	-	1,024,000	-	-	-	-	-	-	-	-	-	1,024,000
Total Capital Expenditures	**1,645,061**	**26,623,000**	**690,000**	**704,000**	**718,000**	**732,000**	**763,000**	**4,739,000**	**11,580,000**	**3,937,000**	**808,000**	**1,952,000**

Table B-2.2 (Continued)
Township of Lucan Biddulph
Capital Budget Forecast (Inflated $)

Description	Budget 2024	Total	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Financing												
Provincial/Federal Grants		-										
Lucan Development Charges Reserve Fund	702,000	1,085,400	-	-	-	-	-	163,800	-	-	-	921,600
Granton Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Lucan Growth Related Debenture Requirements	-	16,212,840	-	-	-	-	-	3,178,560	9,727,200	3,307,080	-	-
Granton Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	943,061	9,324,760	690,000	704,000	718,000	732,000	763,000	1,396,640	1,852,800	629,920	808,000	1,030,400
Total Capital Financing	**1,645,061**	**26,623,000**	**690,000**	**704,000**	**718,000**	**732,000**	**763,000**	**4,739,000**	**11,580,000**	**3,937,000**	**808,000**	**1,952,000**

Table B-2.3
Township of Lucan Biddulph
Schedule of Non-Growth-Related Debenture Repayments

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table B-2.4
Township of Lucan Biddulph
Schedule of Growth-Related Debenture Repayments - Lucan

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		3,178,560							240,139	240,139	240,139	240,139
2031		9,727,200								734,887	734,887	734,887
2032		3,307,080									249,849	249,849
2033		-										-
2034		-										
Total Annual Debt Charges	-	**16,212,840**	-	-	-	-	-	-	240,139	975,026	1,224,874	1,224,874

Table B-2.5
Township of Lucan Biddulph
Schedule of Growth-Related Debenture Repayments – Granton

Debenture Year	2024	Principal (Inflated)	Forecast									
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025		-		-	-	-	-	-	-	-	-	-
2026		-			-	-	-	-	-	-	-	-
2027		-				-	-	-	-	-	-	-
2028		-					-	-	-	-	-	-
2029		-						-	-	-	-	-
2030		-							-	-	-	-
2031		-								-	-	-
2032		-									-	-
2033		-										-
2034		-										
Total Annual Debt Charges	-	**-**	-	-	-	-	-	-	-	-	-	-

Table B-2.6
Township of Lucan Biddulph
Wastewater Capital Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	2,867,311	2,496,259	2,464,638	2,441,689	2,464,041	2,546,391	2,680,626	2,270,370	1,461,167	1,936,328	2,291,951
Transfer from Operating	572,008	625,134	681,051	740,351	811,817	897,236	986,383	1,043,597	1,102,338	1,163,623	1,225,891
Transfer from Granton DC Reserve Fund	-	33,246	-	-	2,533	-	-	-	2,743	-	-
Transfer to Capital	943,061	690,000	704,000	718,000	732,000	763,000	1,396,640	1,852,800	629,920	808,000	1,030,400
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**2,496,259**	**2,464,638**	**2,441,689**	**2,464,041**	**2,546,391**	**2,680,626**	**2,270,370**	**1,461,167**	**1,936,328**	**2,291,951**	**2,487,442**
Interest											

Table B-2.7
Township of Lucan Biddulph
Lucan Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	478,091	471,166	1,194,131	1,945,824	2,727,118	4,112,403	5,552,011	6,880,500	8,185,384	8,795,020	9,202,082
Development Charge Proceeds	685,836	699,550	713,540	727,821	1,304,650	1,330,745	1,357,378	1,384,525	1,412,210	1,451,503	1,480,515
Transfer to Capital	702,000						163,800	-	-	-	921,600
Transfer to Operating	-	-	-	-	-	-	-	240,139	975,026	1,224,874	1,224,874
Closing Balance	**461,928**	**1,170,716**	**1,907,671**	**2,673,645**	**4,031,768**	**5,443,148**	**6,745,589**	**8,024,886**	**8,622,568**	**9,021,649**	**8,536,123**
Interest	9,239	23,414	38,153	53,473	80,635	108,863	134,912	160,498	172,451	180,433	170,722
Required from Development Charges	702,000	-	-	-	-	-	3,342,360	9,727,200	3,307,080	-	921,600

Table B-2.8
Township of Lucan Biddulph
Granton Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	30,255	33,246	-	-	-	-	-	-	-	-	-
Development Charge Proceeds	2,339	-	-	-	2,533	-	-	-	2,743	-	-
Transfer to Capital	-		-	-	-	-	-	-	-	-	-
Transfer to Wastewater Reserve - Payback Granton Sewage Treatment	-	33,246			2,533				2,743		
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**32,594**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Interest	652	-	-	-	-	-	-	-	-	-	-
Required from Development Charges	-	-	-	-	-	-	-	-	-	-	-

Table B-2.9
Township of Lucan Biddulph
Operating Budget Forecast (Inflated $)

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures											
Operating Costs											
SALARY-PUBLICWORKS	57,478	58,600	59,800	61,000	62,200	63,400	64,700	66,000	67,300	68,600	70,000
CPP&EI	3,261	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
GROUP INSURANCE	3,780	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800
WSIB	1,786	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
EMPLOYERHEALTHTAX	1,121	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
OMERS	5,591	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400	6,500	6,600
HEAT	7,200	7,600	8,000	8,400	8,800	9,200	9,700	10,200	10,700	11,200	11,800
HYDRO	140,000	147,000	154,400	162,100	170,200	178,700	187,600	197,000	206,900	217,200	228,100
TELEPHONE	9,660	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500	11,700
AUDIT FEES	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100
INSURANCE	19,650	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300	23,800
OFFICE SUPPLIES	-	-	-	-	-	-	-	-	-	-	-
R&M - OCWA	22,000	22,400	22,800	23,300	23,800	24,300	24,800	25,300	25,800	26,300	26,800
R&M- EQUIPMENT	61,500	62,700	64,000	65,300	66,600	67,900	69,300	70,700	72,100	73,500	75,000
R&M - BUILDING	33,000	33,700	34,400	35,100	35,800	36,500	37,200	37,900	38,700	39,500	40,300
SOFTWARE SUPPORT	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
ASSET MANAGEMENT EXPENSE	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000
MEETINGS/CONFERENCE/TRAINI	500	500	500	500	500	500	500	500	500	500	500
CHEMICALS	60,000	63,000	66,200	69,500	73,000	76,700	80,500	84,500	88,700	93,100	97,800
SLUDGE DISPOSAL	80,000	81,600	83,200	84,900	86,600	88,300	90,100	91,900	93,700	95,600	97,500
LAB SERVICES	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
MISCELLANEOUS EXPENSE	500	500	500	500	500	500	500	500	500	500	500
ADM. EXPENSE ALLOCATION	7,200	7,300	7,400	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900
PROPERTY TAXES	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800	36,500
SEWERMAINTENANCE/REPAIRS	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
CONTRACTED SERVICES	182,960	186,600	190,300	194,100	198,000	202,000	206,000	210,100	214,300	218,600	223,000
Sub Total Operating	**779,686**	**801,300**	**823,800**	**847,000**	**871,000**	**895,800**	**921,600**	**948,200**	**975,700**	**1,004,100**	**1,033,900**

Table B-2.9 (Cont'd)
Township of Lucan Biddulph
Operating Budget Forecast (Inflated $)

Description	Budget 2024	Forecast 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related											
Lucan Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Granton Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Lucan New Growth Related Debt (Principal)	-	-	-	-	-	-	-	103,461	424,527	550,426	574,094
Lucan New Growth Related Debt (Interest)	-	-	-	-	-	-	-	136,678	550,499	674,449	650,780
Granton New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
Granton New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
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	572,008	625,134	681,051	740,351	811,817	897,236	986,383	1,043,597	1,102,338	1,163,623	1,225,891
Sub Total Capital Related	**572,008**	**625,134**	**681,051**	**740,351**	**811,817**	**897,236**	**986,383**	**1,283,736**	**2,077,363**	**2,388,498**	**2,450,766**
Total Expenditures	**1,351,694**	**1,426,434**	**1,504,851**	**1,587,351**	**1,682,817**	**1,793,036**	**1,907,983**	**2,231,936**	**3,053,063**	**3,392,598**	**3,484,666**
Revenues											
Base Charge	1,024,220	1,083,139	1,144,518	1,209,075	1,284,271	1,371,561	1,463,061	1,529,693	1,598,404	1,670,015	1,743,695
Licences/Permits/Rents											
FARMPROPERTYRENT	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842
User Fees											
SEWER F&C	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
ADMINISTRATIVE FEES	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
Other Revenue											
PENALTIES	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100	9,300	9,500
BANKINTEREST	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700	16,000
QPA SOLAR REVENUE	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	240,139	975,026	1,224,874	1,224,874
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**1,088,962**	**1,148,481**	**1,210,460**	**1,275,617**	**1,351,413**	**1,439,303**	**1,531,403**	**1,838,774**	**2,642,972**	**2,965,031**	**3,039,311**
Wastewater Billing Recovery - Operating	**262,732**	**277,953**	**294,391**	**311,735**	**331,404**	**353,733**	**376,580**	**393,162**	**410,092**	**427,566**	**445,354**
Wastewater Billing Recovery - Total	**262,732**	**277,953**	**294,391**	**311,735**	**331,404**	**353,733**	**376,580**	**393,162**	**410,092**	**427,566**	**445,354**

Table B-2.10
Township of Lucan Biddulph
Wastewater Rate Forecast
(Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Wastewater Billing Recovery	262,732	277,953	294,391	311,735	331,404	353,733	376,580	393,162	410,092	427,566	445,354
Total Volume (m^3)	299,719	304,887	309,885	314,883	321,751	330,591	339,261	347,931	356,601	365,441	374,247
Constant Rate	**0.88**	**0.91**	**0.95**	**0.99**	**1.03**	**1.07**	**1.11**	**1.13**	**1.15**	**1.17**	**1.19**
Annual Percentage Change		**4%**	**4%**	**4%**	**4%**	**4%**	**4%**	**2%**	**2%**	**2%**	**2%**