



Water and Wastewater Rate Study

Township of West Lincoln

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Watson & Associates Economists Ltd.
905-272-3600
info@watsonecon.ca

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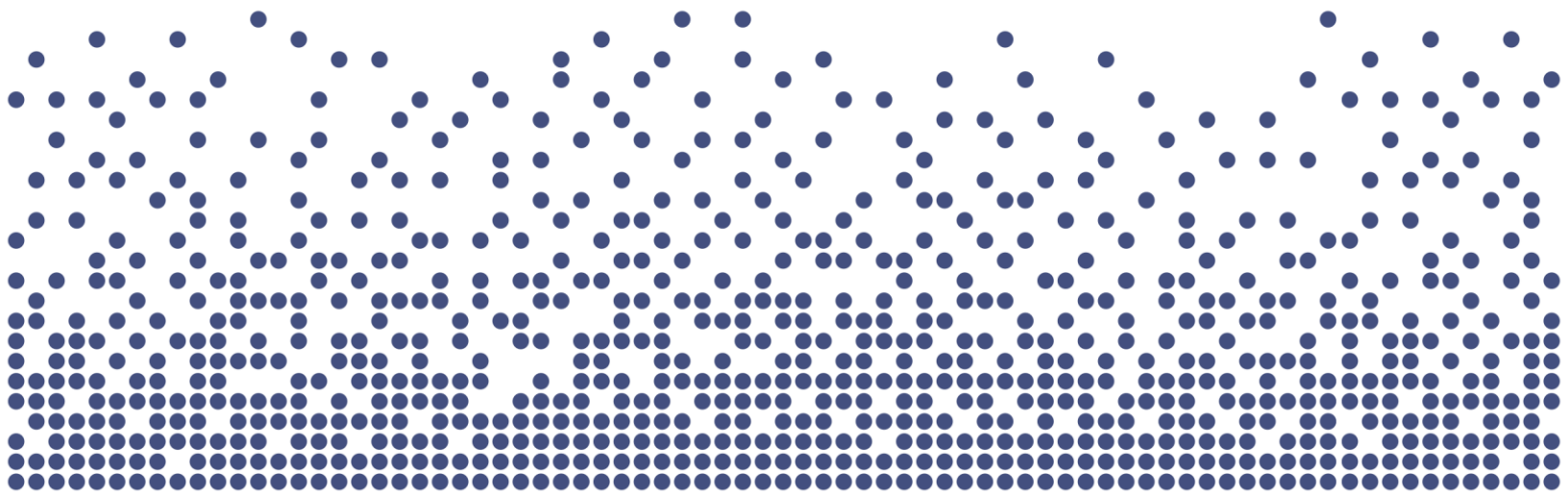
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List of Acronyms and Abbreviations

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



Executive Summary



Executive Summary

The Township of West Lincoln retained Watson & Associates Economists Ltd. (Watson) to undertake a water and wastewater rate study. This study aims to analyse capital and operating forecasts, costing for lifecycle requirements, current volumes and customer profiles. The results of this analysis provide updated water and wastewater base charges and volume rates for customers within the Township of West Lincoln. The rate analysis contained herein continues to provide fiscally responsible practices that are in line with current provincial legislation at a level of rate increases that are reasonable.

The analysis presented herein provides the following:

- The 2021 to 2030 capital spending program for water and wastewater is \$9.16 million and \$3.27 million (inflated), respectively;
- Expenditures related to the purchase of treated water and wastewater treatment from Niagara Region have been increased by 5% annually. Additionally, the volumes associated with new customers have also been added as purchased amounts required from the Region;
- The operating expenditures related to salaries have been assumed to increase by 2% annually. Additionally, the Township has indicated the need to add one new water/wastewater staff for 2021 and another in 2024. Their salaries have been added to the forecast and split between water and wastewater;
- The operating expenditures related to fuel and hydro have been increased at 5% per annum, while all other operating expenditures are assumed to increase by 3% per annum;
- The current rate structure (quarterly base charge and a constant volume rate) for both water and wastewater is continued;
- Existing customers total 2,437 for water and 2,426 for wastewater;
- New water and wastewater customers are forecasted to increase by 1,217 customers over the forecast period.

Based on the above information, rate increases for the Township's water system has been calculated with an annual increase of 5% to the base charges and volume rate (including bulk water).

For wastewater, the base charges are proposed to increase at 5% per year over the forecast period while the volume rate has been calculated to increase at 5% for 2021



and 2% per year from 2022 to 2030. This provides for a 5% increase to the wastewater bill for 2021 and 4% annually thereafter.

Table ES-1 summarizes the recommended water rates and average annual bill (assuming an annual volume of 161 m³) for customers based on the analysis provided herein over the forecast period.

Table ES-2 summarizes the recommended bulk water rates.

Table ES-3 summarizes the recommended wastewater rates and average annual bill (assuming an annual volume of 161 m³) for customers based on the analysis provided herein over the forecast period.



Table ES-1
Township of West Lincoln
Annual Customer Water Bill – Based on 161 m³ of usage and 5/8" or 3/4" meter

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Quarterly Base Charge (Jan-June)	\$37.60	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25
Quarterly Base Charge (July-Dec)	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25	\$64.31
Constant Rate (m ³) - January to June	\$1.34	\$1.41	\$1.48	\$1.55	\$1.63	\$1.71	\$1.80	\$1.89	\$1.98	\$2.08	\$2.19
Constant Rate (m ³) - July to December	\$1.41	\$1.48	\$1.55	\$1.63	\$1.71	\$1.80	\$1.89	\$1.98	\$2.08	\$2.19	\$2.30
Annual Base Charge Bill	\$154.16	\$161.87	\$169.96	\$178.46	\$187.38	\$196.75	\$206.59	\$216.92	\$227.76	\$239.15	\$251.11
January to June Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
July to December Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
Annual Volume Bill	\$221.38	\$232.69	\$244.32	\$256.54	\$269.36	\$282.83	\$296.97	\$311.82	\$327.41	\$343.78	\$360.97
Total Annual Bill	\$375.54	\$394.55	\$414.28	\$434.99	\$456.74	\$479.58	\$503.56	\$528.74	\$555.18	\$582.93	\$612.08
% Increase - Base Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
% Increase - Volume Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
% Increase - Total Annual Bill		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

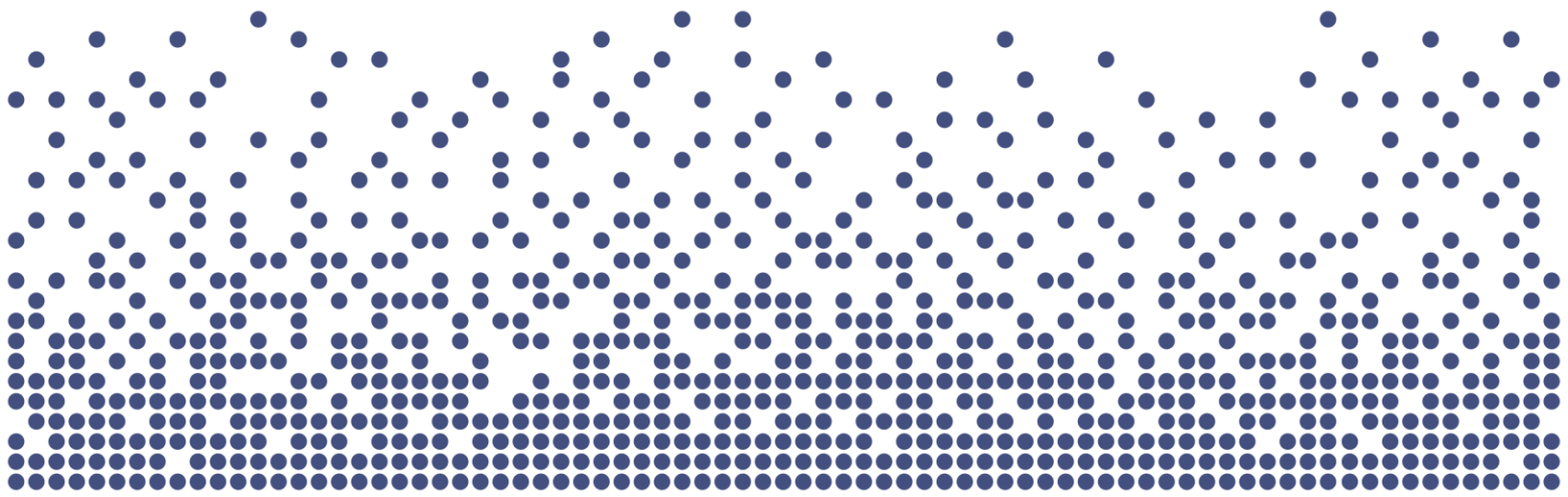
Table ES-2
Township of West Lincoln
Bulk Water Rates

Bulk Water Rate	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Constant Rate (m ³) - January to June	\$1.81	\$1.90	\$2.00	\$2.10	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96
Constant Rate (m ³) - July to December	\$1.90	\$2.00	\$2.10	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.11
% Increase - Volume Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%



Table ES-3
Township of West Lincoln
Annual Customer Wastewater Bill – Based on 161 m³ of usage and 5/8" or 3/4" meter

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Quarterly Base Charge (Jan-June)	\$86.68	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19
Quarterly Base Charge (July-Dec)	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19	\$148.25
Constant Rate (m ³) - January to June	\$1.73	\$1.82	\$1.86	\$1.89	\$1.93	\$1.97	\$2.01	\$2.05	\$2.09	\$2.13	\$2.18
Constant Rate (m ³) - July to December	\$1.82	\$1.86	\$1.89	\$1.93	\$1.97	\$2.01	\$2.05	\$2.09	\$2.13	\$2.18	\$2.22
Annual Base Rate Bill	\$355.38	\$373.14	\$391.80	\$411.39	\$431.96	\$453.56	\$476.23	\$500.04	\$525.05	\$551.30	\$578.86
January to June Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
July to December Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
Annual Volume Bill	\$285.78	\$295.95	\$301.87	\$307.91	\$314.06	\$320.35	\$326.75	\$333.29	\$339.95	\$346.75	\$353.69
Total Annual Bill	\$641.16	\$669.09	\$693.67	\$719.29	\$746.02	\$773.90	\$802.99	\$833.33	\$865.00	\$898.05	\$932.55
% Increase - Base Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
% Increase - Volume Rate		5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
% Increase - Total Annual Bill		5%	4%	4%	4%	4%	4%	4%	4%	4%	4%



Report



Chapter 1

Introduction



1. Introduction

1.1 Background

The Township of West Lincoln currently services 2,437 metered water customers and 2,426 wastewater customers. The Township's water comes from the Smithville water distribution system and is supplied via a connection to the Grimsby Water Treatment Plant, which is owned by the Region of Niagara.

The water and wastewater systems are metered and utilize rate structures with a quarterly base charge as well as a volume charge on a per cubic metre basis. The Township also provides bulk water services on a per cubic metre basis charge. Table 1-1 provides the existing rates currently in effect, as of July 1, 2020.

Table 1-1
Township of West Lincoln
Water and Wastewater Rates – 2020

2020 - Water Billing Rates			2020 - Wastewater Billing Rates		
Base Charge - Per quarter			Base Charge - Per quarter		
5/8"		39.48	5/8"		91.01
3/4"		39.48	3/4"		91.01
1"		98.69	1"		227.54
1 1/4"		148.03	1 1/4"		341.29
1 1/2"		197.38	1 1/2"		455.07
2"		315.80	2"		728.09
3"		631.61	3"		1,456.19
4"		986.90	4"		2,275.29
6"		1,973.77	6"		4,550.58
8"		3,158.03	8"		7,280.93
Volume Charge			Volume Charge		
\$	1.410	per m ³	\$	1.820	per m ³
Volume Charge (Bulk Water)					
\$	1.900	per m ³			

With the legislative changes being made across Ontario as a result of the Walkerton crisis, municipalities will be required to conform to new statutes governing the management of water and wastewater systems. Watson & Associates Economists Ltd. (Watson) was retained by the Township of West Lincoln to assist in addressing these changes in a proactive manner as they relate to the water and wastewater systems. The assessment provided herein addresses changes recommended to the water and



wastewater rates based on the most current information and forecasts the implications over the next ten-year period.

1.2 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 ten 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 2021 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. 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.

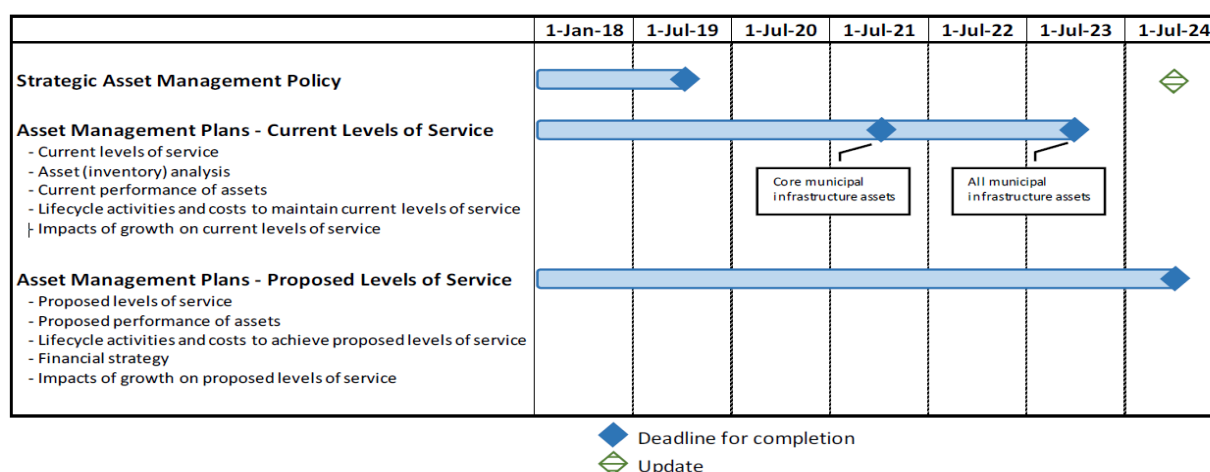
Regulations will prescribe:

- 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:



Every municipality in Ontario was required 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, 2021):
 - 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, 2023):
 - Same steps as Phase 1 but for all assets.
- Phase 3 – Asset Management Plan (by July 1, 2024):
 - 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, 2021 (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.

Upon completion of the asset management plan for water and wastewater services, the Township will need to consider the impacts on the capital plan provided herein.

1.8 Forecast Growth and Servicing Requirements

As mentioned earlier, the Township of West Lincoln services 2,437 water customers and 2,426 wastewater customers. Information on the existing number of customers and existing billable volumes was obtained from the Township.

For future water and wastewater customers to be added to the systems, consideration has been given to development potential within the serviced areas of the Township over the forecast period 2021 to 2030. Based on the information provided by staff, the Township is forecasted to generate 1,217 additional customers by 2030.

Based on historical information, the Township's volumes per customer is 161m³ per year. For forecasting purposes, the assumed billable volumes per customer will be based on that figure.

Tables 1-2 and 1-3 provide for the forecast of water and wastewater users and volumes within the Township, respectively.



Table 1-2
Township of West Lincoln
Water System Forecast

Water Users Forecast

Year	Total Users	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2020	77	39	77	77	77	77	77	77	77	77	77	77
2021	77		39	77	77	77	77	77	77	77	77	77
2022	77			39	77	77	77	77	77	77	77	77
2023	89				45	89	89	89	89	89	89	89
2024	101					51	101	101	101	101	101	101
2025	114						57	114	114	114	114	114
2026	126							63	126	126	126	126
2027	139								70	139	139	139
2028	139									70	139	139
2029	139										70	139
2030	139											70
Total	1,217	39	116	193	276	371	479	598	731	870	1,009	1,148
m ³ /user	161	161	161	161	161	161	161	161	161	161	161	161
Annual Flow		6,279	18,676	31,073	44,436	59,763	77,055	96,310	117,691	140,070	162,449	184,828

Water Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437
New - Growth	39	116	193	276	371	479	598	731	870	1,009	1,148
Total	2,476	2,553	2,630	2,713	2,808	2,916	3,035	3,168	3,307	3,446	3,585

Water Volume Forecast (m ³)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Volumes											
Existing	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720
New	6,279	18,676	31,073	44,436	59,763	77,055	96,310	117,691	140,070	162,449	184,828
Total	579,999	592,396	604,793	618,156	633,483	650,775	670,030	691,411	713,790	736,169	758,548



Table 1-3
Township of West Lincoln
Wastewater System Forecast

Wastewater Users Forecast

Year	Total Users	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2020	77	39	77	77	77	77	77	77	77	77	77	77
2021	77		39	77	77	77	77	77	77	77	77	77
2022	77			39	77	77	77	77	77	77	77	77
2023	89				45	89	89	89	89	89	89	89
2024	101					51	101	101	101	101	101	101
2025	114						57	114	114	114	114	114
2026	126							63	126	126	126	126
2027	139								70	139	139	139
2028	139									70	139	139
2029	139										70	139
2030	139											70
Total	1,217	39	116	193	276	371	479	598	731	870	1,009	1,148
m ³ /user	161	161	161	161	161	161	161	161	161	161	161	161
Annual Flow		6,279	18,676	31,073	44,436	59,763	77,055	96,310	117,691	140,070	162,449	184,828

Wastewater Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426
New - Growth	39	116	193	276	371	479	598	731	870	1,009	1,148
Total	2,465	2,542	2,619	2,702	2,797	2,905	3,024	3,157	3,296	3,435	3,574

Wastewater Flows Forecast (m ³)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Volumes											
Existing	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720	573,720
New	6,279	18,676	31,073	44,436	59,763	77,055	96,310	117,691	140,070	162,449	184,828
Total	579,999	592,396	604,793	618,156	633,483	650,775	670,030	691,411	713,790	736,169	758,548



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 on Tables 2-1 and 2-2 (note: the costs are in inflated dollars). The basis for these forecasts is the Township's capital budget.

A summary of the capital works related to the water and wastewater services is provided on the following tables.



Table 2-1
Township of West Lincoln
2021 to 2030 Water Capital Forecast Summary (Inflated \$)

Description	Forecast 2021-2030	Timing
Capital Expenditures		
Water Meters - Replacement Program	376,000	2021-2029
Rolling Stock - 2025 - 3/4 Ton Van - To replace 2007 Chevrolet	43,000	2025
Facilities - 2027 - Bulk Water Station - Replace roof shingles	11,000	2027
Main - Replace - Construction - 2022 - Brock St - From: RR 20 To: North End	515,000	2022
Main - Replace - Construction - 2029 - Wade Road N - From: West Street To: South Limit	837,000	2029
Equipment - Miscellaneous Water Equipment	50,000	2021-2029
Water Meters - New Installation	369,000	2021-2029
Facilities - 2027 - Bulk Water Building - New Building	345,000	2027
Studies:		
Operating-Study - Water Loss Study	51,000	2021
Operating-Study - Water Distribution System - Leak detection program	281,000	2024-2028
Operating-Other - Water Loss Program	161,000	2025-2026
Growth Related:		
Main - Upsize and Replace - Design - 2022 - Spring Creek Rd - From: Station St To: Hornak Rd	13,000	2022
Main - New - Design - 2022 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5	66,000	2022
Main - New - Design - 2022 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6	40,000	2022
Main - New - Design - 2022 - South Grimsby Rd 5 - From: Spring Creek Rd To: Northridge Dr	40,000	2022
Main - Upsize and Replace - Design - 2022 - South Grimsby Rd 5 - From: Northridge Dr To: HWY 20	28,000	2022
Main - New - Design - 2022 - South Grimsby Rd 6 - Extension - From: Spring Creek Rd To: HWY 20	28,000	2022
Main - Upsize and Replace - Constuction - 2023 - Sping Creek Rd - From: Station St To: Hornak Rd	125,000	2023
Main - New - Construction - 2023 - SG RD 5 - From: Spring Creek Rd To: Northridge Dr	468,000	2023
Main - Upsize and Replace - Constuction - 2023 - SG RD 5 - From: Northridge Dr To: HWY 20	334,000	2023
Main - New - Construction - 2023 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5	805,000	2023
Main - New - Construction - 2023 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6	416,000	2023
Main - New - Construction - 2023 - SG RD 6 - From: Spring Creek Rd To: HWY 20	377,000	2023
Main - Upsize and Replace - Design - 2023 - Van Woudenberg Way - From: Station St To: West Boundary Limits	42,000	2023
Main - Upsize and Replace - Constuction - 2024 - Van Woudenberg Way - From: Station St To: West Boundary Limits	383,000	2024
Main - Upsize and Replace - Design - 2024 - St. Catherines St - From: Industrial Park Rd To: Frank St	71,000	2024
Main - New - Design - 2024 - St. Catherines St - From: Frank St To: Griffin St	8,000	2024
Main - Upsize and Replace - Design - 2024 - Griffin St. N - From: Griffin St To: Station & West St	17,000	2024
Main - New - Construction - 2024 - Industrial Park Rd - From: London Rd To: Spring Creek Rd	612,000	2024
Main - Upsize and Replace - Constuction - 2025 - St. Catherines St. - From: Industrial Park Rd To: Frank St	794,000	2025
Main - New - Construction - 2025 - St. Catherines St. - From: Frank St To: Griffin St	119,000	2025
Main - Upsize and Replace - Constuction - 2025 - Griffin St. N - From: Griffin St To: Station St	148,000	2025
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary	441,000	2025
Main - Replace - Design - 2026 - Colver St - From: RR14 To: Wade Rd	48,000	2026
Main - Replace - Construction - 2027 - Colver St - From: RR14 To: Wade Rd	701,000	2027
Total Capital Expenditures	9,163,000	



Table 2-2
Township of West Lincoln
2021 to 2030 Wastewater Capital Forecast Summary (Inflated \$)

Description	Forecast 2021-2030	Timing
Capital Expenditures		
Lifecycle:		
Equipment - Miscellaneous Wastewater Equipment	50,000	2021-2029
Equipment - 2021 - Smoke Tester - To replace 2006 Hurco	4,000	2021
Studies:		
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program	152,000	2028
New/Growth Related:		
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	204,000	2021
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	104,000	2022
Operating-Study - Extraneous Flow Reduction Program - Flow Monitoring Study	120,000	2022
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program	127,000	2023
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	106,000	2023
Main - Upsize and Replace - Design - 2023 - Hornak Rd & Van Woudenberg Way - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)	37,000	2023
Main - Upsize and Replace - Design - 2023 - Van Woudenberg Way - From: Hornak Rd (MH 454) To: Las Rd (MH 340)	23,000	2023
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	108,000	2024
Main - Upsize and Replace - Constuction - 2024 - Van Woudenberg Way/Hornak Rd - From: Hornak Rd (MH 454) To: Las Rd (MH 340)	381,000	2024
Main - Upsize and Replace - Constuction - 2024 - Hornak Rd - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)	595,000	2024
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary	743,000	2025
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	110,000	2025
Main - Upsize and Replace - Design - 2026 - Anderson Court - From: MH 230 To: MH 1	25,000	2026
Main - Upsize and Replace - Constuction - 2027 - Anderson Court - From: MH 230 To: MH 1	381,000	2027
Total Capital Expenditures	3,270,000	



Chapter 3

Lifecycle Costing



3. Lifecycle Costing

3.1 Overview of Lifecycle Costing

3.1.1 *Definition*

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

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

3.1.2 *Financing Costs*

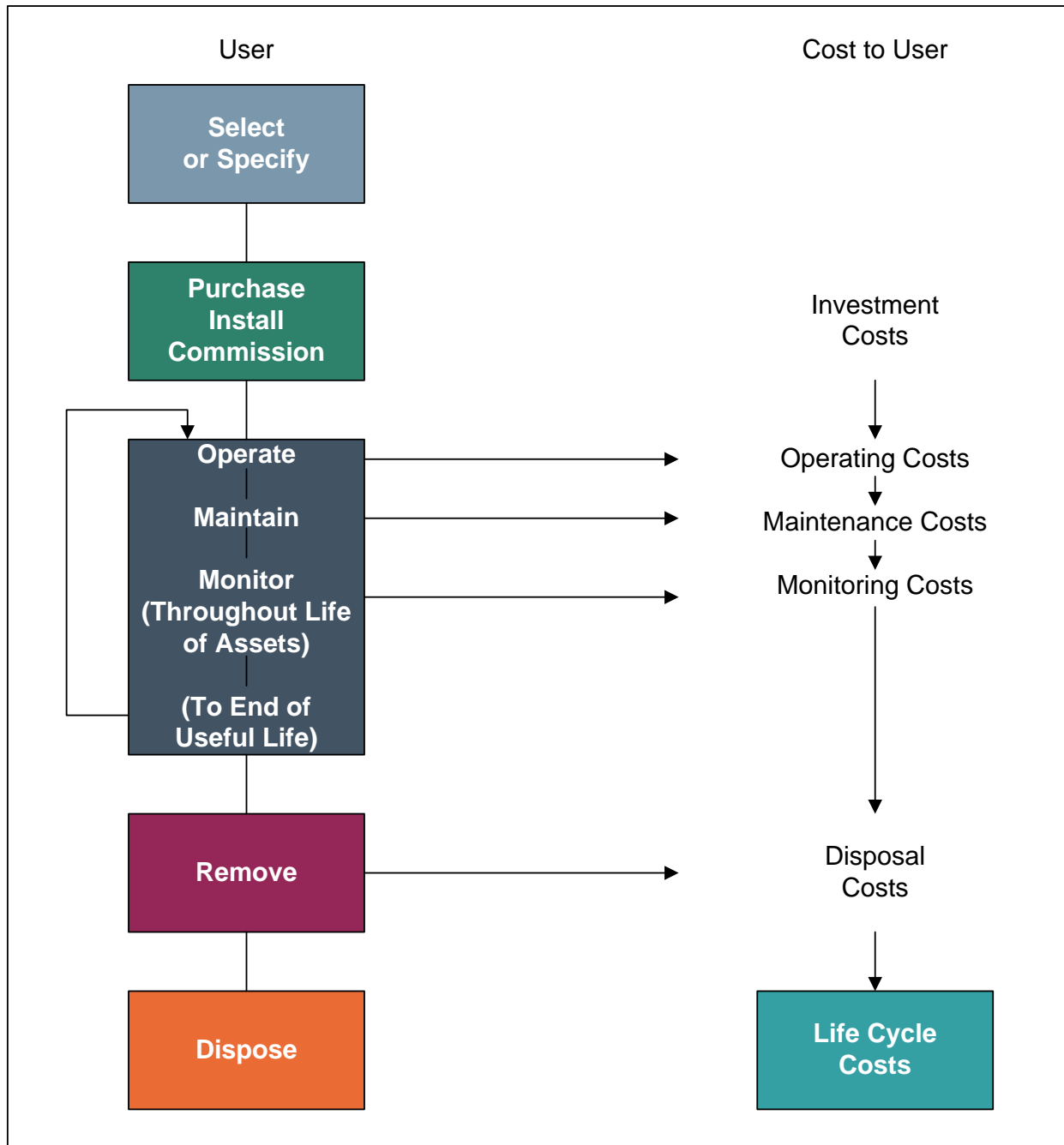
This section will focus on financing mechanisms in place to fund the costs incurred throughout the asset's life.

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

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



Figure 3-1
Lifecycle Costing



New construction related to growth could produce development charges and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are



being acquired to allow growth within the Township to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

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

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

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

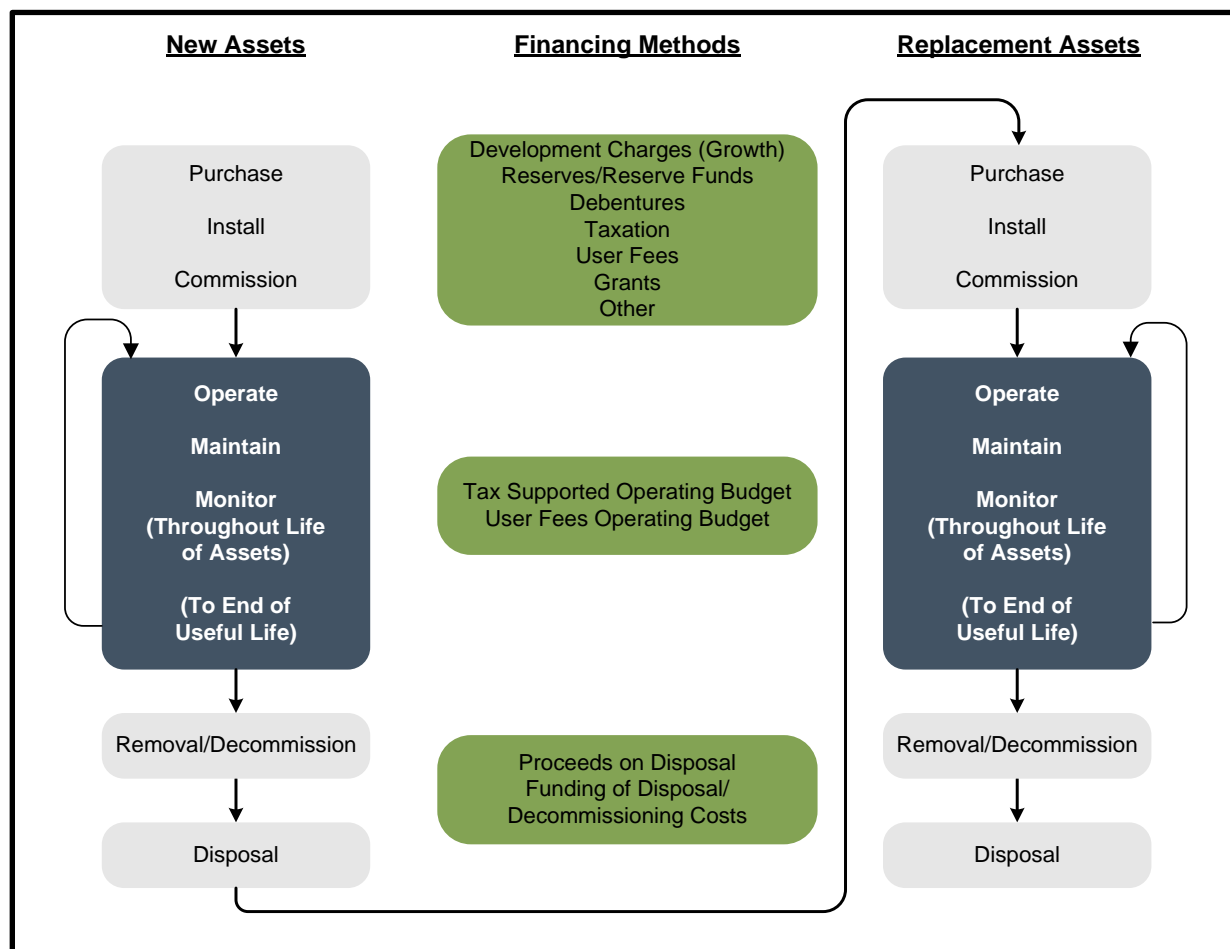
When the asset requires replacement, the sources of financing will be limited to reserves, debentures and contributions from the operating budget. At this point, the question is raised: "If the cost of replacement is to be assessed against the tax/rate payer who benefits from the replacement of the asset,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

Charging for the cost of using up an asset is the fundamental concept behind depreciation methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms



part of the product's selling price and, hence, end-users are charged for the asset's depreciation. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.

Figure 3-2
Financing Lifecycle Costs



3.1.3 Costing Methods

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Depreciation Method. This method recognizes the reduction in the value of the asset through wear and tear and aging. There are two commonly used



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

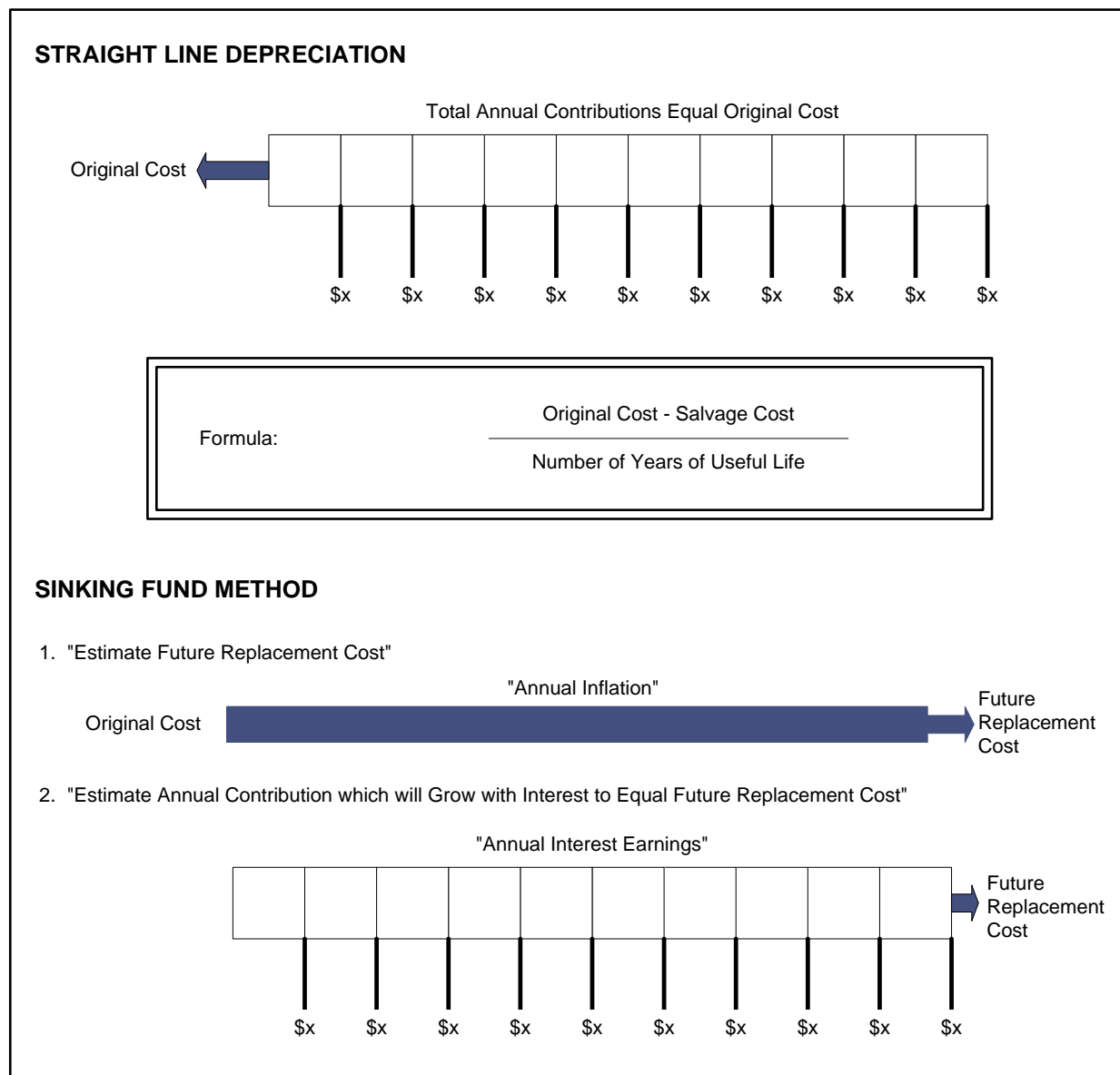
The straight-line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing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

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

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



Figure 3-3



3.2 Impact on Budgets

Detailed water and wastewater systems inventory information was obtained from the Township. The age of the water system dates back to the early 1950s. The wastewater system dates back to the early 1960s. The total value of existing water infrastructure is \$26.3 million, and the value of existing wastewater infrastructure is \$30.6 million.



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

Figure 3-4
Township of West Lincoln
Summary of Water and Wastewater Infrastructure

Area	Total Replacement Value	Suggested amount to be included in 10-year forecast based on estimated life	Amount included in capital forecast (Non-Growth Related)	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water					
Water Facilities	74,434	74,434	4,759,344	21,563,706	-
Water Meters	684,879	682,362			227
Watermains	22,310,387	-			716,111
Hydrants	1,295,136	173,884			40,897
Hydrant Leads	1,224,179	169,059			39,072
Curb Stops	257,760	-			9,733
Water Valves	399,949	206,878			10,169
Water Vehicles and Equipment	76,326	76,001			27
Total Water	26,323,050	1,382,618	4,759,344	21,563,706	816,237
Wastewater					
Sewer Main Inventory	19,103,838	7,133,185	1,762,188	28,859,230	533,704
Sewer Manhole Inventory	3,053,485	870,540			96,731
Sewer Laterals Inventory	8,451,755	-			315,830
Sewer Equipment	12,340	12,340			-
Total Wastewater	30,621,418	8,016,064	1,762,188	28,859,230	946,265
Total	56,944,468	9,398,682	6,521,532	50,422,936	1,762,502

Investment per customer is \$10,801 for water and \$12,622 for wastewater

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

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

Summaries of both water and wastewater assets are shown on Figures 3-5 and 3-6. These figures show when the assets are coming due and the cost of replacement in 2020 dollars.



Figure 3-5
Township of West Lincoln
Summary of Water Infrastructure Replacement Years (2020 \$)

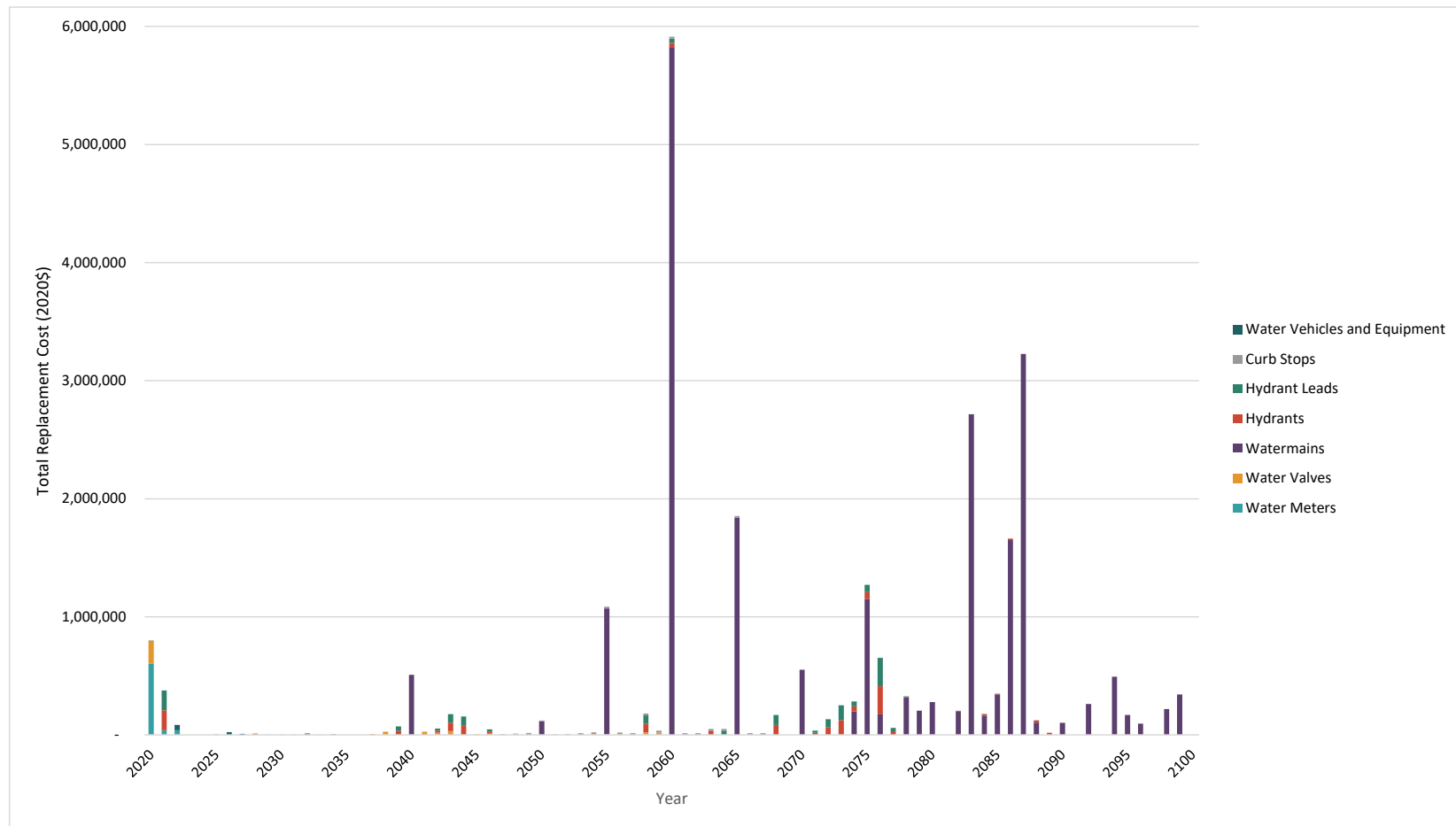
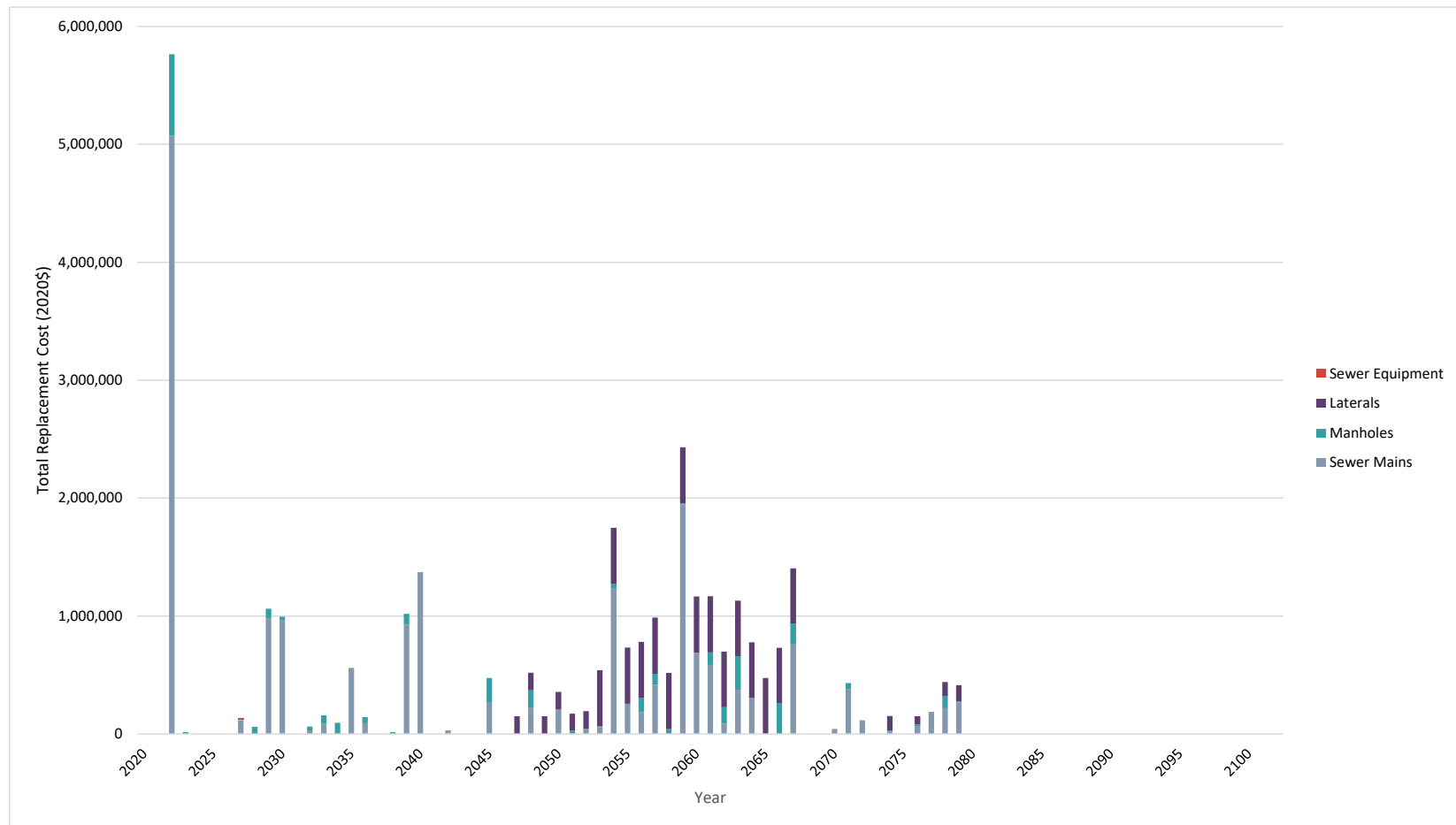




Figure 3-5
Township of West Lincoln
Summary of Wastewater Infrastructure Replacement Years (2020 \$)





Chapter 4

Capital Cost Financing Options



4. Capital Cost Financing Options

4.1 Summary of Capital Cost Financing Alternatives

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

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

Under s.484 of *Municipal Act, 2001*, the *Local Improvement Act* was repealed with the in-force date of the *Municipal Act* (January 1, 2003). The municipal powers granted under the *Local Improvement Act* now fall under the jurisdiction of the *Municipal Act*. To this end, on December 20, 2002, O.Reg. 390/02 was filed, which allowed for the *Local Improvement Act* to be deemed to remain in force until April 1, 2003. O.Reg. 119/03 was enacted on April 19, 2003, which restored many of the previous *Local Improvement Act* provisions; however, the authority is now provided under the *Municipal Act*.

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

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



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

4.2 Development Charges Act, 1997

In November, 1996, the Ontario Government introduced Bill 98, a new *Development Charges Act*. The Province's stated intentions were to "create new construction jobs and make home ownership more affordable" by reducing the charges and to "make municipal Council decisions more accountable and more cost effective." The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality. Generally, the Act provided the following changes to the former Act:

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



developer for the costs the municipality would have incurred if the project had been financed from the development charge reserve fund;

- Set out provisions for front-end financing capital projects (limited to essential services) required to service new development; and
- Set out provisions for appeals and complaints.

In late 2015, the Province approved amendments to the D.C.A. through the *Smart Growth for Our Communities Act, 2015*. With respect to water and wastewater, the only changes are for the municipality to provide an asset management calculation for the growth-related works and for the Council to consider (but not necessarily approve) area-specific rates. The D.C.A. was further amended with the *More Homes, More Choice Act, 2019* and the *COVID-19 Economic Recovery Act, 2020*. However, these amendments did not impact water or wastewater.

4.3 Municipal Act

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

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

Restrictions are provided to ensure that the form of the charge is not akin to a poll tax. Any charges not paid under this authority may be added to the tax roll and collected in a like manner. The fees and charges imposed under this part are not appealable to the Local Planning Appeal Tribunal (LPAT, formerly known as the O.M.B.).

Section 221 of the previous *Municipal Act* permitted municipalities to impose charges, by by-law, on owners or occupants of land who would or might derive benefit from the construction of sewage (storm and sanitary) or water works being authorized (in a specific benefit area). For a by-law imposed under this section of the previous Act:



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

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

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

Under the previous *Local Improvement Act*:

- A variety of different types of works could be undertaken, such as watermain, storm and sanitary sewer projects, supply of electrical light or power, bridge construction, sidewalks, road widening and paving;



- Council could pass a by-law for undertaking such work on petition of a majority of benefiting taxpayers, on a 2/3 vote of Council and on sanitary grounds, based on the recommendation of the Minister of Health. The by-law was required to go to the LPAT, which might hold hearings and alter the by-law, particularly if there were objections;
- The entire cost of a work was assessed only upon the lots abutting directly on the work, according to the extent of their respective frontages, using an equal special rate per metre of frontage; and
- As noted, this Act was repealed as of April 1, 2003; however, O.Reg. 119/03 was enacted on April 19, 2003 which restores many of the previous *Local Improvement Act* provisions; however, the authority is now provided under the *Municipal Act*.

4.4 Historical Grant Funding Availability

Federal Infrastructure Funding

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

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

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

Phase 2: Next Steps

The federal government announced Phase 2 of its infrastructure funding plan with a total of \$180 billion spent over 11 years. In addition to the balance of funding for



previous green, social, and public transit infrastructure funds (\$20 billion each, including Phase 1), the government has added \$10.1 billion for trade and transportation infrastructure and \$2 billion for rural and northern communities. This funding must be implemented by agreements with each Province and Territory.

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

Federal Gas Tax

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

Ontario Government

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

4.5 Existing Reserves/Reserve Funds

The Township has established reserves and reserve funds for water and wastewater costs. The following table summarizes the water and wastewater reserves utilized in this analysis and their respective balances at December 31, 2019:



Reserve	Dec. 31 2019
Water	
Capital Reserve	567,764
Development Charges Reserve Fund	532,026
Wastewater	
Capital Reserve	867,287
Development Charges Reserve Fund	646,544

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 West Lincoln's 2018 calculation on Debt Capacity is shown on Schedule 81 of the Township's most recent Financial Information Return (F.I.R.). This calculates to the Township's estimated annual repayment limit of approximately \$2.72 million. Based upon 20-year financing at an assumed rate of 3.25%, the available debt for the Township is approximately \$39.5 million.

4.7 Infrastructure Ontario

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

I.O. provides access to infrastructure capital that would not otherwise be available to smaller borrowers. Larger borrowers receive a longer term on their loans than they



could obtain in the financial markets, and can also benefit from significant savings on transaction costs such as legal costs and underwriting commissions. Under the I.O. approach, all borrowers receive the same low interest rate. I.O. will enter into a financial agreement with each municipality subject to technical and credit reviews, for a loan up to the maximum amount of the loan request.

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

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

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

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

The analysis provided herein assumes that the Township will borrow approximately \$1.10 million for non-growth-related water capital over the forecast, for a 20-year term.

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 West Lincoln for the capital expenditures (inflated) provided in Chapter 2:



Description	Water 2021-2030	Wastewater 2021-2030
Capital Financing		
Provincial/Federal Grants	-	-
Development Charges Reserve Fund	4,272,456	1,782,932
Non-Growth Related Debenture Requirements	1,096,474	-
Growth Related Debenture Requirements	-	-
Operating Contributions	-	-
Lifecycle Reserve Fund	-	-
Water/Wastewater Reserve	3,794,071	1,487,068
Total Capital Financing	9,163,000	3,270,000

Tables 4-1 and 4-2 provide for the full capital expenditure and funding program by year for water and wastewater, respectively.



Table 4-1
Township of West Lincoln
Capital Budget Forecast – Water (inflated \$)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Lifecycle:												
Water Meters - Replacement Program	30,000	376,000	31,000	52,000	32,000	32,000	55,000	34,000	69,000	35,000	36,000	-
Rolling Stock - 2025 - 3/4 Ton Van - To replace 2007 Chevrolet	-	43,000	-	-	-	-	43,000	-	-	-	-	-
Main - Replace - Design - 2020 - Brock St - From: RR 20 To: North End	35,000	-	-	-	-	-	-	-	-	-	-	-
Facilities - 2027 - Bulk Water Station - Replace roof shingles	-	11,000	-	-	-	-	-	-	11,000	-	-	-
Main - Upsize and Replace - Construction - 2020 - Griffin St. N - From: RR20 and RR14 Intersection	160,000	-	-	-	-	-	-	-	-	-	-	-
Main - Replace - Construction - 2022 - Brock St - From: RR 20 To: North End	-	515,000	-	515,000	-	-	-	-	-	-	-	-
Main - Replace - Construction - 2029 - Wade Road N - From: West Street To: South Limit	-	837,000	-	-	-	-	-	-	-	-	837,000	-
Equipment - Miscellaneous Water Equipment	5,000	50,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000	-
Water Meters - New Installation	31,800	369,000	33,000	35,000	37,000	39,000	41,000	43,000	45,000	47,000	49,000	-
Facilities - 2027 - Bulk Water Building - New Building	-	345,000	-	-	-	-	-	-	345,000	-	-	-
Studies:												
Operating-Study - Water Loss Study	-	51,000	51,000	-	-	-	-	-	-	-	-	-
Operating-Study - Water Distribution System - Leak detection program	-	281,000	-	-	-	54,000	55,000	56,000	57,000	59,000	-	-
Operating-Other - Water Loss Program	-	161,000	-	-	-	-	77,000	84,000	-	-	-	-
Growth Related:												
Main - Replace - Construction - 2020 - West Street - From: South Grimsby Rd 5 To: Wade Rd	200,000	-	-	-	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2022 - Spring Creek Rd - From: Station St To: Hornak Rd	-	13,000	-	13,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5	-	66,000	-	66,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6	-	40,000	-	40,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - South Grimsby Rd 5 - From: Spring Creek Rd To: Northridge Dr	-	40,000	-	40,000	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2022 - South Grimsby Rd 5 - From: Northridge Dr To: HWY 20	-	28,000	-	28,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - South Grimsby Rd 6 - Extension - From: Spring Creek Rd To: HWY 20	-	28,000	-	28,000	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Construction - 2023 - Spring Creek Rd - From: Station St To: Hornak Rd	-	125,000	-	-	125,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - SG RD 5 - From: Spring Creek Rd To: Northridge Dr	-	468,000	-	-	468,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Construction - 2023 - SG RD 5 - From: Northridge Dr To: HWY 20	-	334,000	-	-	334,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5	-	805,000	-	-	805,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6	-	416,000	-	-	416,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - SG RD 6 - From: Spring Creek Rd To: HWY 20	-	377,000	-	-	377,000	-	-	-	-	-	-	-



Table 4-1
Township of West Lincoln
Capital Budget Forecast – Water (inflated \$) (Cont'd)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Main - Upsize and Replace - Design - 2023 - Van Woudenberg Way - From: Station St To: West Boundary Limits	-	42,000	-	-	42,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2024 - Van Woudenberg Way - From: Station St To: West Boundary Limits	-	383,000	-	-	-	383,000	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2024 - St. Catherines St - From: Industrial Park Rd To: Frank St	-	71,000	-	-	-	71,000	-	-	-	-	-	-
Main - New - Design - 2024 - St. Catherines St - From: Frank St To: Griffin St	-	8,000	-	-	-	8,000	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2024 - Griffin St. N - From: Griffin St To: Station & West St	-	17,000	-	-	-	17,000	-	-	-	-	-	-
Main - New - Construction - 2024 - Industrial Park Rd - From: London Rd To: Spring Creek Rd	-	612,000	-	-	-	612,000	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2025 - St. Catherines St. - From: Industrial Park Rd To: Frank St	-	794,000	-	-	-	-	794,000	-	-	-	-	-
Main - New - Construction - 2025 - St. Catherines St. - From: Frank St To: Griffin St	-	119,000	-	-	-	-	119,000	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2025 - Griffin St. N - From: Griffin St To: Station St	-	148,000	-	-	-	-	148,000	-	-	-	-	-
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary	-	441,000	-	-	-	-	441,000	-	-	-	-	-
Main - Replace - Design - 2026 - Colver St - From: RR14 To: Wade Rd	-	48,000	-	-	-	-	-	48,000	-	-	-	-
Main - Replace - Construction - 2027 - Colver St - From: RR14 To: Wade Rd	-	701,000	-	-	-	-	-	-	701,000	-	-	-
Total Capital Expenditures	461,800	9,163,000	120,000	822,000	2,641,000	1,221,000	1,779,000	271,000	1,234,000	147,000	928,000	-
Capital Financing												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	100,000	4,272,456	-	160,929	1,914,026	851,500	971,500	24,000	350,500	-	-	-
Non-Growth Related Debenture Requirements	-	1,096,474	-	-	726,974	369,500	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	361,800	3,794,071	120,000	661,071	-	-	807,500	247,000	883,500	147,000	928,000	-
Total Capital Financing	461,800	9,163,000	120,000	822,000	2,641,000	1,221,000	1,779,000	271,000	1,234,000	147,000	928,000	-



Table 4-2
Township of West Lincoln
Capital Budget Forecast – Wastewater (inflated \$)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Lifecycle:												
Equipment - Miscellaneous Wastewater Equipment	5,000	50,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000	-
Equipment - 2021 - Smoke Tester - To replace 2006 Hurco	-	4,000	4,000	-	-	-	-	-	-	-	-	-
Studies:												
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program	-	152,000	-	-	-	-	-	-	-	152,000	-	-
Operating-Study - 2020 - Condition Assessments for Sewers	200,000	-	-	-	-	-	-	-	-	-	-	-
New/Growth Related:												
Main - Upsize and Replace - Constuction - 2020 - Wade Road N - From: HWY 20 West St To: South Limit	600,000	-	-	-	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2020 - West Street - From: South Grimsby Rd 5 To: Wade Street N	150,000	-	-	-	-	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	204,000	204,000	-	-	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	104,000	-	104,000	-	-	-	-	-	-	-	-
Operating-Study - Extraneous Flow Reduction Program - Flow Monitoring Study	-	120,000	-	120,000	-	-	-	-	-	-	-	-
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program	-	127,000	-	-	127,000	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	106,000	-	-	106,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2023 - Hornak Rd & Van Woudenberg Way - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)	-	37,000	-	-	37,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2023 - Van Woudenberg Way - From: Hornak Rd (MH 454) To: Las Rd (MH 340)	-	23,000	-	-	23,000	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	108,000	-	-	-	108,000	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2024 - Van Woudenberg Way/Hornak Rd - From: Hornak Rd (MH 454) To: Las Rd (MH 340)	-	381,000	-	-	-	381,000	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2024 - Hornak Rd - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)	-	595,000	-	-	-	595,000	-	-	-	-	-	-
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary	-	743,000	-	-	-	-	743,000	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	110,000	-	-	-	-	110,000	-	-	-	-	-
Main - Upsize and Replace - Design - 2026 - Anderson Court - From: MH 230 To: MH 1	-	25,000	-	-	-	-	-	25,000	-	-	-	-
Main - Upsize and Replace - Constuction - 2027 - Anderson Court - From: MH 230 To: MH 1	-	381,000	-	-	-	-	-	-	381,000	-	-	-
Total Capital Expenditures	955,000	3,270,000	213,000	229,000	298,000	1,089,000	859,000	31,000	387,000	158,000	6,000	-
Capital Financing												
Provincial/Federal Grants	100,000	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	375,000	1,782,932	63,240	68,762	102,230	521,480	777,100	12,500	190,500	47,120	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	480,000	1,487,068	149,760	160,238	195,770	567,520	81,900	18,500	196,500	110,880	6,000	-
Total Capital Financing	955,000	3,270,000	213,000	229,000	298,000	1,089,000	859,000	31,000	387,000	158,000	6,000	-



Chapter 5

Overview of Expenditures and Revenues



5. Overview of Expenditures and Revenues

5.1 Water Operating Expenditures

In this report, the water operating forecast (2021 to 2030) are based on the 2020 operating budgets. The costs for each component of the operating budget have been reviewed with staff to establish forecast inflationary adjustments. The largest component of the operating expenditures is the purchased water from Niagara Region (which represents 51% of operating costs for 2020). The purchased water cost has a variable and fixed charge component, which have both been assumed to increase at a rate of 5%. Additionally, the volumes associated with new customers have also been included as part of the purchased water from the Region. Staffing related expenses have been assumed to increase at a rate of 2% over the forecast period, however, the Township has indicated the need to add one new water/wastewater staff member in 2021 and another in 2024. The incremental salary costs for these two staff members have been added in the respective years and split equally amongst the water and wastewater operating budgets. Operating expenditures that involve fuel and hydro have been inflated by 5.0% annually. The balance of the operating expenditures has been assumed to increase at a rate of 3.0% annually.

In addition, contributions to the water capital reserve have been included. The water capital reserve transfers are used to fund the water capital program identified in Chapter 2, with additional contributions being made annually in order to fund the future replacement of existing water infrastructure as identified in section 3.2. Finally, debentures related to non-growth-related expenditures have also been included.

5.2 Water Operating Revenues

The Township's fixed revenue sources are generated primarily from base charges and service fees to help contribute towards operating expenditures. The water base charges are calculated to increase by 5% annually over the forecast period, while the service fees have been assumed to remain constant. The base charges are further discussed in section 6.5 of this study.



Additionally, the Township generates revenues from bulk water sales. The bulk water rates have been assumed to increase at 5% per year (this is discussed further in Chapter 7).

Note that the operating revenue presented herein represents the fixed component of the total operating revenue (except for bulk water). The shortfall of the fixed revenue from the operating expenditures is what is used to calculate the recovery from the water volume rates, which is presented in Chapter 7. Table 5-1 provides for the water operating budget for the Township.



Table 5-1
Township of West Lincoln
Operating Budget Forecast – Water (inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures											
Operating Costs											
WAT-UTLY-SALARY	56,600	100,200	102,200	104,200	148,800	151,800	154,800	157,900	161,100	164,300	167,600
WAT-UTLY-WAGES	91,800	93,600	95,500	97,400	99,300	101,300	103,300	105,400	107,500	109,700	111,900
WAT-UTLY-WAGES OT	18,400	18,800	19,200	19,600	20,000	20,400	20,800	21,200	21,600	22,000	22,400
WAT-UTLY-CPP	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
WAT-UTLY-EI	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
WAT-UTLY-EHT	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
WAT-UTLY-WSIB	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700
WAT-UTLY-OMERS	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
WAT-UTLY-GROUP BENEFITS	18,400	18,800	19,200	19,600	20,000	20,400	20,800	21,200	21,600	22,000	22,400
WAT-UTLY-TRAINING	9,800	10,100	10,400	10,700	11,000	11,300	11,600	11,900	12,300	12,700	13,100
WAT-UTLY-OFFICE SUPPLIES	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
WAT-UTLY-POSTAGE	4,700	4,800	4,900	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
WAT-UTLY-UNIFORMS	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000	3,100
WAT-UTLY-SMALL TOOLS	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
WAT-UTLY-FUEL	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400
PURCHASED WATER FROM REGION	752,997	800,328	850,510	904,542	963,626	1,028,221	1,098,825	1,176,143	1,259,542	1,348,341	1,442,872
WAT-UTLY-R&M EQUIPMENT	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
WAT-UTLY-R&M ENVIRON INFRSTRCT	31,700	32,700	33,700	34,700	35,700	36,800	37,900	39,000	40,200	41,400	42,600
WAT-UTLY-WATER	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
WAT-UTLY-COMMUNICATION	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
WAT-UTLY-INSURANCE	20,800	21,400	22,000	22,700	23,400	24,100	24,800	25,500	26,300	27,100	27,900
WAT-UTLY-SOFTWARE FEES	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
WAT-UTLY-CONSULTANT FEES	10,400	10,700	11,000	11,300	11,600	11,900	12,300	12,700	13,100	13,500	13,900
WAT-UTLY-OUTSIDE SERVICES	23,600	24,300	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700
WAT-UTLY-EQUIPMENT ALLOCATIN	21,400	22,000	22,700	23,400	24,100	24,800	25,500	26,300	27,100	27,900	28,700
WAT-UTLY-ALLOCTN OF PRGM SUP	287,500	296,100	305,000	314,200	323,600	333,300	343,300	353,600	364,200	375,100	386,400
WAT-BLK-R&M FACILITIES	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
WAT-BLK-R&M ENVIRON INFRSTRCT	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700
WAT-BLK-HYDRO	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
WAT-BLK-COMMUNICATION	900	900	900	900	900	900	900	900	900	900	900
WAT-BLK-OUTSIDE SERVICES	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600
WAT-BLK-EQUIPMENT ALLOCATIN	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
WAT-UTLY-ADVERTISING	500	500	500	500	500	500	500	500	500	500	500
WAT-DIST-WATER RATE STUDY & FIN PLAN	65,000	-	-	-	-	75,000	-	-	-	-	-
Sub Total Operating	1,472,697	1,515,028	1,584,110	1,657,542	1,778,926	1,939,721	1,956,925	2,056,443	2,162,842	2,275,041	2,393,572



Table 5-1 (Cont'd)
Township of West Lincoln
Operating Budget Forecast – Water (inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)		-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related											
Existing Debt (Interest) - Non-Growth Related											
New Non-Growth Related Debt (Principal)		-	-	-	26,374	40,636	41,957	43,320	44,728	46,182	47,683
New Non-Growth Related Debt (Interest)		-	-	-	23,627	34,778	33,458	32,094	30,686	29,232	27,731
Transfer to Capital		-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	239,683	229,333	277,480	331,343	300,947	345,702	425,832	517,059	617,649	726,354	844,462
Sub Total Capital Related	239,683	229,333	277,480	331,343	350,947	421,116	501,246	592,473	693,064	801,768	919,876
Total Expenditures	1,712,380	1,744,362	1,861,590	1,988,885	2,129,873	2,360,837	2,458,171	2,648,916	2,855,906	3,076,809	3,313,447
Revenues											
Base Charge	424,165	457,838	493,817	533,320	577,824	627,847	683,947	746,951	815,958	889,998	969,402
Other Revenue		-	-	-	-	-	-	-	-	-	-
WAT-UTLY-P&I	14,000										
WAT-UTLY-WATER SERVICES FEES	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600
WAT-BLK-VARIABLE CHARGES	364,116	382,764	402,392	423,003	444,595	467,168	490,723	515,259	540,776	567,275	595,737
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	65,000	-	-	-	-	75,000	-	-	-	-	-
Total Operating Revenue	914,881	888,201	943,809	1,003,922	1,070,019	1,217,614	1,222,270	1,309,810	1,404,334	1,504,873	1,612,740
Water Billing Recovery - Operating	797,498	856,160	917,781	984,962	1,059,854	1,143,223	1,235,901	1,339,106	1,451,572	1,571,936	1,700,708
Water Billing Recovery - Total	797,498	856,160	917,781	984,962	1,059,854	1,143,223	1,235,901	1,339,106	1,451,572	1,571,936	1,700,708



5.3 Wastewater Operating Expenditures

Similar to water, the largest component of the wastewater operating expenditures is the purchased wastewater treatment from Niagara Region (73% of wastewater operating costs). In 2020, the costs related to the purchased wastewater treatment from the Region represented 172% of the purchased water costs. This proportion has been assumed to continue over the forecast period so that the costs of purchased water and treated wastewater increase at the same rate. Staffing related expenses have been assumed to increase at a rate of 2% over the forecast period, however, as mentioned in section 5.1, the Township has indicated the to add one new water/wastewater staff member in 2021 and another in 2024. The incremental salary costs for these two staff members have been added in the respective years and split equally amongst water and wastewater. The balance of the operating expenditures has been assumed to increase at a rate of 3% annually.

In addition, contributions to the wastewater capital reserve have been included. The wastewater capital reserve transfers are used to fund the wastewater capital program identified in Chapter 2, with additional contributions being made annually in order to fund the future replacement of existing water infrastructure as identified in section 3.2.

5.4 Wastewater Operating Revenues

The wastewater operating revenue for the Township comes mainly from base charges along with volumetric revenue from customers. A small amount of revenue is also generated from service fees and the Ontario Clean Water Agency (both have been assumed to remain constant over the forecast period). The wastewater base charges have been calculated to increase at 5% per year (discussed further in Chapter 6), while the volume rates are proposed to increase by 5% for 2021, and then dropping to 2% per year over the remainder of the forecast period (discussed in Chapter 7).

Table 5-2 outlines the wastewater operating budget for West Lincoln.



Table 5-2
Township of West Lincoln
Operating Budget Forecast – Wastewater (inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures											
<u>Operating Costs</u>											
WW-COLL-SALARY	36,900	80,100	81,700	83,300	127,500	130,100	132,700	135,400	138,100	140,900	143,700
WW-COLL-WAGES	51,400	52,400	53,400	54,500	55,600	56,700	57,800	59,000	60,200	61,400	62,600
WW-COLL-WAGES OT	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500	11,700	11,900
WW-COLL-CPP	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500
WW-COLL-EI	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
WW-COLL-EHT	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
WW-COLL-WSIB	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800
WW-COLL-OMERS	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800	11,000
WW-COLL-GROUP BENEFITS	10,900	11,100	11,300	11,500	11,700	11,900	12,100	12,300	12,500	12,800	13,100
WW-COLL-OFFICE SUPPLIES	800	800	800	800	800	800	800	800	800	800	800
WW-COLL-POSTAGE	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900	5,000	5,200
WW-COLL-FUEL	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
WW-COLL-R&M ENVIRON INFRSTRCT	9,600	9,900	10,200	10,500	10,800	11,100	11,400	11,700	12,100	12,500	12,900
WW-COLL-INSURANCE	17,200	17,700	18,200	18,700	19,300	19,900	20,500	21,100	21,700	22,400	23,100
WW-COLL-SOFTWARE FEES	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
WW-COLL-OUTSIDE SERVICES	59,400	61,200	63,000	64,900	66,800	68,800	70,900	73,000	75,200	77,500	79,800
WW-COLL-EQUIPMENT ALLOCATIN	8,700	9,000	9,300	9,600	9,900	10,200	10,500	10,800	11,100	11,400	11,700
WW-COLL-ALLOCTN OF PRGM SUP	251,000	258,500	266,300	274,300	282,500	291,000	299,700	308,700	318,000	327,500	337,300
WW-TREAT-OUTSIDE SERVICES	1,298,700	1,375,505	1,461,751	1,554,614	1,656,160	1,767,179	1,888,524	2,021,408	2,164,745	2,317,361	2,479,828
Sub Total Operating	1,779,800	1,912,105	2,012,551	2,120,014	2,279,060	2,406,379	2,544,324	2,694,308	2,855,245	3,026,061	3,207,128
<u>Capital-Related</u>											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)		-	-	-	-	-	-	-	-	-	-
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	231,566	235,697	262,569	293,730	290,112	336,481	392,055	457,946	531,103	608,403	690,304
Sub Total Capital Related	231,566	235,697	262,569	293,730	290,112	336,481	392,055	457,946	531,103	608,403	690,304
Total Expenditures	2,011,366	2,147,801	2,275,120	2,413,744	2,569,171	2,742,860	2,936,379	3,152,254	3,386,348	3,634,464	3,897,432
Revenues											
Base Charge	965,568	1,042,559	1,124,855	1,215,243	1,317,128	1,431,696	1,560,238	1,704,656	1,862,870	2,032,645	2,214,739
Other Revenue											
Service Fees	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ontario Clean Water Agency	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	981,868	1,058,859	1,141,155	1,231,543	1,333,428	1,447,996	1,576,538	1,720,956	1,879,170	2,048,945	2,231,039
Wastewater Billing Recovery - Operating	1,029,498	1,088,942	1,133,965	1,182,201	1,235,744	1,294,864	1,359,841	1,431,298	1,507,178	1,585,520	1,666,393
Wastewater Billing Recovery - Total	1,029,498	1,088,942	1,133,965	1,182,201	1,235,744	1,294,864	1,359,841	1,431,298	1,507,178	1,585,520	1,666,393



Chapter 6

Pricing Structures

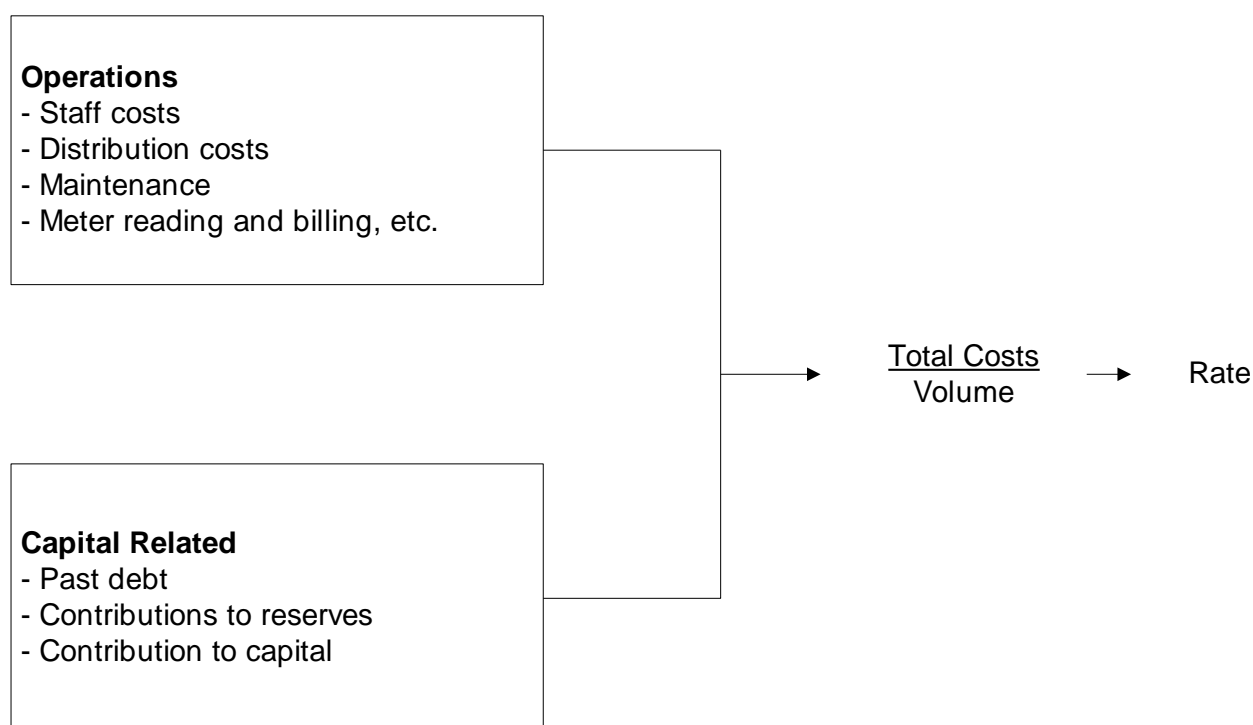


6. Pricing Structures

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.

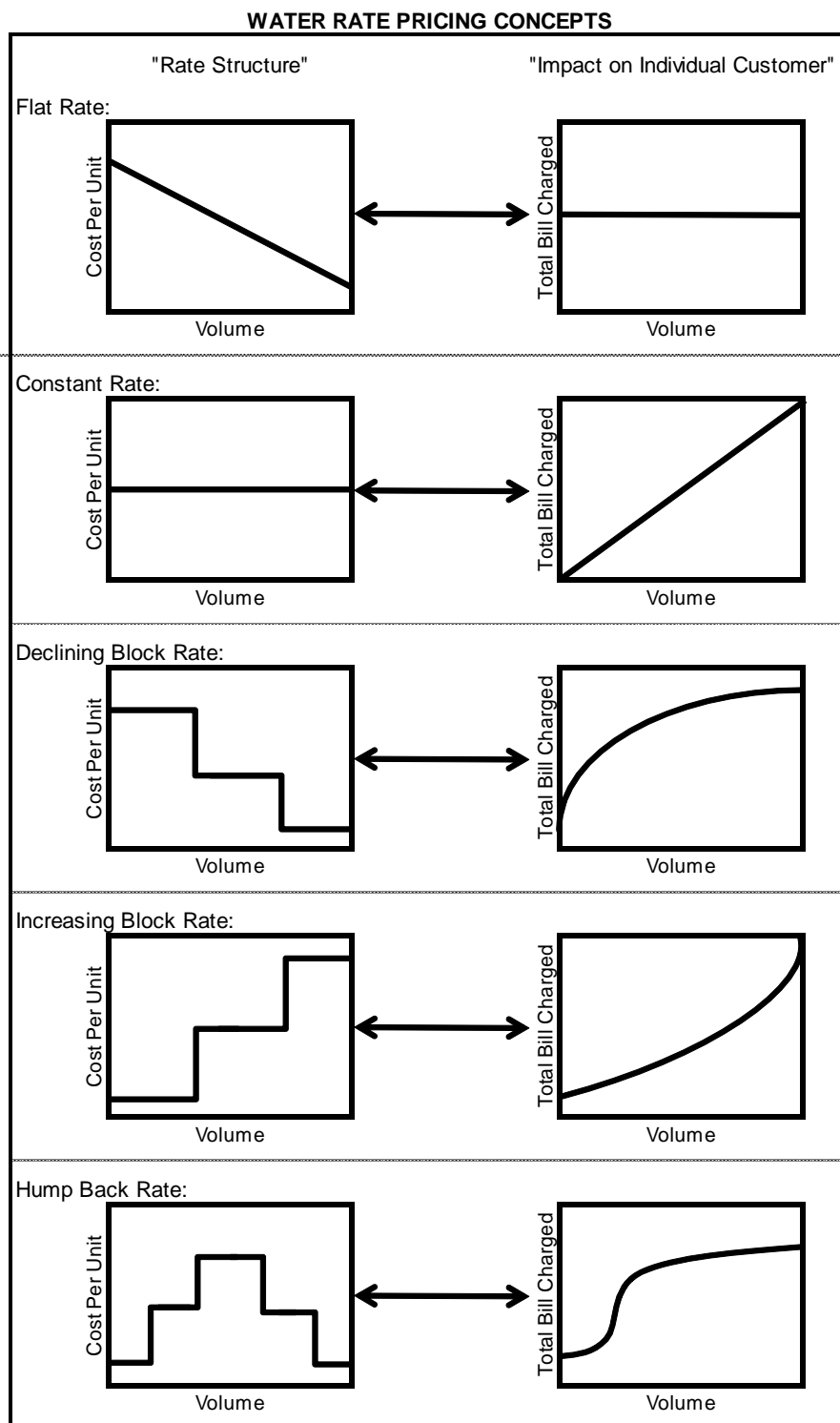
The Constant Rate structure presents the customer with a linear relationship between consumption and the cost thereof. As the consumer pays a fixed cost per unit, his bill will vary directly with the amount consumed. This method presents tangible incentive for consumers to conserve water. As metering 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





RATE STRUCTURE	COST PER UNIT AS VOLUME CONSUMPTION INCREASES	IMPACT ON CUSTOMER BILL AS VOLUME CONSUMPTION 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 increases
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	Bill increases at a faster rate at the lower consumption amounts and then slows as volumes increase

6.4 Rate Structures in Ontario

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

Historically, the development of a base charge often reflected either the recovery of meter reading/billing/collection costs, plus administration or those costs plus certain fixed costs (such as capital contributions or reserve contributions). More recently, many municipalities have started to establish base charges based on ensuring a secure portion of the revenue stream which does not vary with volume consumption. Selection of the quantum of the base charge is a matter of policy selected by individual municipalities.



6.5 Recommended Rate Structures

Based on the foregoing, it is recommended that the same rate structures be continued in the future. The Township currently utilizes a quarterly base charge and constant volume rate for both water and wastewater.

6.5.1 Water Base Charges

In order to meet the needs for water, it is recommended that the base charges be increased by 5% annually over the forecast period. The revenue collected from the water base charges currently recovers 25% of the operating expenditures. With the 5% annual increases, the water base charges should reflect approximately 30% by the end of the forecast period. This practice is to ensure that the Township will have secured revenue should fluctuations in volumes occur. The forecasted water base charges for the different meter sizes are presented in Table 6-1.

6.5.2 Wastewater Base Charges

With respect to wastewater, it is recommended that the base charges be increased at the same percentage as water, which is 5% annually over the forecast period. The revenue collected from the wastewater base charges currently recovers 48% of the operating expenditures. With the 5% annual increases, the wastewater base charges should reflect approximately 57% by the end of the forecast period. As mentioned above, this practice is to ensure that the Township will have secured revenue should fluctuations in volumes occur. The forecasted wastewater base charges for the different meter sizes are presented in Table 6-2.



Table 6-1
Township of West Lincoln
Base Charge Forecast – Water

Water	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437	2,437
New	39	116	193	276	371	479	598	731	870	1,009	1,148
Total Customers	2,476	2,553	2,630	2,713	2,808	2,916	3,035	3,168	3,307	3,446	3,585
Total Annual Revenue	\$424,165	\$457,838	\$493,817	\$533,320	\$577,824	\$627,847	\$683,947	\$746,951	\$815,958	\$889,998	\$969,402

5/8" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,388	2,388	2,388	2,388	2,388	2,388	2,388	2,388	2,388	2,388	2,388
New	39	116	193	276	371	479	598	731	870	1,009	1,148
Subtotal Customers	2,427	2,504	2,581	2,664	2,759	2,867	2,986	3,119	3,258	3,397	3,536
Quarterly Base Charge (Jan-June)	\$37.60	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25
Quarterly Base Charge (July-Dec)	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25	\$64.31
Annual Base Charge	\$154.16	\$161.87	\$169.96	\$178.46	\$187.38	\$196.75	\$206.59	\$216.92	\$227.76	\$239.15	\$251.11
Total Annual Revenue	\$374,146	\$405,317	\$438,670	\$475,416	\$517,026	\$564,008	\$616,917	\$676,569	\$742,057	\$812,402	\$887,926

¾" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$37.60	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25
Quarterly Base Charge (July-Dec)	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25	\$64.31
Annual Base Charge	\$154.16	\$161.87	\$169.96	\$178.46	\$187.38	\$196.75	\$206.59	\$216.92	\$227.76	\$239.15	\$251.11
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

1" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	11	11	11	11	11	11	11	11	11	11	11
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	11	11	11	11	11	11	11	11	11	11	11
Quarterly Base Charge (Jan-June)	\$93.99	\$98.69	\$103.62	\$108.81	\$114.25	\$119.96	\$125.96	\$132.25	\$138.87	\$145.81	\$153.10
Quarterly Base Charge (July-Dec)	\$98.69	\$103.62	\$108.81	\$114.25	\$119.96	\$125.96	\$132.25	\$138.87	\$145.81	\$153.10	\$160.76
Annual Base Charge	\$385.36	\$404.63	\$424.86	\$446.10	\$468.41	\$491.83	\$516.42	\$542.24	\$569.35	\$597.82	\$627.71
Total Annual Revenue	\$4,239	\$4,451	\$4,673	\$4,907	\$5,152	\$5,410	\$5,681	\$5,965	\$6,263	\$6,576	\$6,905

1 ¼" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$140.98	\$148.03	\$155.43	\$163.20	\$171.36	\$179.93	\$188.93	\$198.37	\$208.29	\$218.71	\$229.64
Quarterly Base Charge (July-Dec)	\$148.03	\$155.43	\$163.20	\$171.36	\$179.93	\$188.93	\$198.37	\$208.29	\$218.71	\$229.64	\$241.13
Annual Base Charge	\$578.02	\$606.92	\$637.27	\$669.13	\$702.59	\$737.72	\$774.60	\$813.33	\$854.00	\$896.70	\$941.54
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

1 ½" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	16	16	16	16	16	16	16	16	16	16	16
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	16	16	16	16	16	16	16	16	16	16	16
Quarterly Base Charge (Jan-June)	\$187.98	\$197.38	\$207.25	\$217.61	\$228.49	\$239.92	\$251.91	\$264.51	\$277.73	\$291.62	\$306.20
Quarterly Base Charge (July-Dec)	\$197.38	\$207.25	\$217.61	\$228.49	\$239.92	\$251.91	\$264.51	\$277.73	\$291.62	\$306.20	\$321.51
Annual Base Charge	\$770.72	\$809.26	\$849.72	\$892.21	\$936.82	\$983.66	\$1,032.84	\$1,084.48	\$1,138.71	\$1,195.64	\$1,255.42
Total Annual Revenue	\$12,332	\$12,948	\$13,596	\$14,275	\$14,989	\$15,739	\$16,525	\$17,352	\$18,219	\$19,130	\$20,087

2" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	18	18	18	18	18	18	18	18	18	18	18
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	18	18	18	18	18	18	18	18	18	18	18
Quarterly Base Charge (Jan-June)	\$300.76	\$315.80	\$331.59	\$348.17	\$365.58	\$383.86	\$403.05	\$423.20	\$444.36	\$466.58	\$489.91
Quarterly Base Charge (July-Dec)	\$315.80	\$331.59	\$348.17	\$365.58	\$383.86	\$403.05	\$423.20	\$444.36	\$466.58	\$489.91	\$514.40
Annual Base Charge	\$1,233.12	\$1,294.78	\$1,359.52	\$1,427.49	\$1,498.87	\$1,573.81	\$1,652.50	\$1,735.13	\$1,821.89	\$1,912.98	\$2,008.63
Total Annual Revenue	\$22,196	\$23,306	\$24,471	\$25,695	\$26,980	\$28,329	\$29,745	\$31,232	\$32,794	\$34,434	\$36,155

3" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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
Quarterly Base Charge (Jan-June)	\$601.53	\$631.61	\$663.19	\$696.35	\$731.17	\$767.73	\$806.11	\$846.42	\$888.74	\$933.18	\$979.83
Quarterly Base Charge (July-Dec)	\$631.61	\$663.19	\$696.35	\$731.17	\$767.73	\$806.11	\$846.42	\$888.74	\$933.18	\$979.83	\$1,028.83
Annual Base Charge	\$2,466.28	\$2,589.60	\$2,719.08	\$2,855.04	\$2,997.79	\$3,147.68	\$3,305.06	\$3,470.31	\$3,643.83	\$3,826.02	\$4,017.32
Total Annual Revenue	\$7,399	\$7,769	\$8,157	\$8,565	\$8,993	\$9,443	\$9,915	\$10,411	\$10,931	\$11,478	\$12,052

4" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	1	1	1	1	1	1	1	1	1	1	1
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	1	1	1	1	1	1	1	1	1	1	1
Quarterly Base Charge (Jan-June)	\$939.90	\$986.90	\$1,036.25	\$1,088.06	\$1,142.46	\$1,199.58	\$1,259.56	\$1,322.54	\$1,388.67	\$1,458.10	\$1,531.01
Quarterly Base Charge (July-Dec)	\$986.90	\$1,036.25	\$1,088.06	\$1,142.46	\$1,199.58	\$1,259.56	\$1,322.54	\$1,388.67	\$1,458.10	\$1,531.01	\$1,607.56
Annual Base Charge	\$3,853.60	\$4,046.29	\$4,248.60	\$4,461.03	\$4,684.09	\$4,918.29	\$5,164.21	\$5,422.42	\$5,693.54	\$5,978.21	\$6,277.12
Total Annual Revenue	\$3,854	\$4,046	\$4,249	\$4,461	\$4,684	\$4,918	\$5,164	\$5,422	\$5,694	\$5,978	\$6,277

6" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$1,879.78	\$1,973.77	\$2,072.46	\$2,176.08	\$2,284.89	\$2,399.13	\$2,519.09	\$2,645.04	\$2,777.29	\$2,916.16	\$3,061.97
Quarterly Base Charge (July-Dec)	\$1,973.77	\$2,072.46	\$2,176.08	\$2,284.89	\$2,399.13	\$2,519.09	\$2,645.04	\$2,777.29	\$2,916.16	\$3,061.97	\$3,215.06
Annual Base Charge	\$7,707.10	\$8,092.46	\$8,497.08	\$8,921.93	\$9,368.03	\$9,836.43	\$10,328.25	\$10,844.67	\$11,386.90	\$11,956.24	\$12,554.06
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

8" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$3,007.65	\$3,158.03	\$3,315.93	\$3,481.73	\$3,655.81	\$3,838.61	\$4,030.54	\$4,232.06	\$4,443.67	\$4,665.85	\$4,899.14
Quarterly Base Charge (July-Dec)	\$3,158.03	\$3,315.93	\$3,481.73	\$3,655.81	\$3,838.61	\$4,030.54	\$4,232.06	\$4,443.67	\$4,665.85	\$4,899.14	\$5,144.10
Annual Base Charge	\$12,331.36	\$12,947.92	\$13,595.32	\$14,275.09	\$14,988.84	\$15,738.28	\$16,525.20	\$17,351.46	\$18,219.03	\$19,129.98	\$20,086.48
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Table 6-2
Township of West Lincoln
Base Charge Forecast – Wastewater

Wastewater	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426	2,426
New	39	116	193	276	371	479	598	731	870	1,009	1,148
Subtotal Customers	2,465	2,542	2,619	2,702	2,797	2,905	3,024	3,157	3,296	3,435	3,574
Total Annual Revenue	\$965,568	\$1,042,559	\$1,124,855	\$1,215,243	\$1,317,128	\$1,431,696	\$1,560,238	\$1,704,656	\$1,862,870	\$2,032,645	\$2,214,739

5/8" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,382	2,382	2,382	2,382	2,382	2,382	2,382	2,382	2,382	2,382	2,382
New	39	116	193	276	371	479	598	731	870	1,009	1,148
Subtotal Customers	2,421	2,498	2,575	2,658	2,753	2,861	2,980	3,113	3,252	3,391	3,530
Quarterly Base Charge (Jan-June)	\$66.68	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19
Quarterly Base Charge (July-Dec)	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19	\$148.25
Annual Base Charge	\$355.38	\$373.14	\$391.80	\$411.39	\$431.96	\$453.56	\$476.23	\$500.04	\$525.05	\$551.30	\$578.86
Total Annual Revenue	\$860,375	\$932,106	\$1,008,880	\$1,093,469	\$1,189,265	\$1,297,440	\$1,419,270	\$1,556,639	\$1,707,452	\$1,869,456	\$2,043,390

¾" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$86.68	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19
Quarterly Base Charge (July-Dec)	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19	\$148.25
Annual Base Charge	\$355.38	\$373.14	\$391.80	\$411.39	\$431.96	\$453.56	\$476.23	\$500.04	\$525.05	\$551.30	\$578.86
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

1" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	10	10	10	10	10	10	10	10	10	10	10
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	10	10	10	10	10	10	10	10	10	10	10
Quarterly Base Charge (Jan-June)	\$216.70	\$227.54	\$238.92	\$250.86	\$263.41	\$276.58	\$290.41	\$304.93	\$320.17	\$336.18	\$352.99
Quarterly Base Charge (July-Dec)	\$227.54	\$238.92	\$250.86	\$263.41	\$276.58	\$290.41	\$304.93	\$320.17	\$336.18	\$352.99	\$370.64
Annual Base Charge	\$888.48	\$932.91	\$979.56	\$1,028.54	\$1,079.96	\$1,133.96	\$1,190.66	\$1,250.19	\$1,312.70	\$1,378.34	\$1,447.26
Total Annual Revenue	\$8,885	\$9,329	\$9,796	\$10,285	\$10,800	\$11,340	\$11,907	\$12,502	\$13,127	\$13,783	\$14,473

1 ¼" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$325.04	\$341.29	\$358.35	\$376.27	\$395.09	\$414.84	\$435.58	\$457.36	\$480.23	\$504.24	\$529.45
Quarterly Base Charge (July-Dec)	\$341.29	\$358.35	\$376.27	\$395.09	\$414.84	\$435.58	\$457.36	\$480.23	\$504.24	\$529.45	\$555.93
Annual Base Charge	\$1,332.66	\$1,399.29	\$1,469.25	\$1,542.72	\$1,619.85	\$1,700.84	\$1,785.89	\$1,875.18	\$1,968.94	\$2,067.39	\$2,170.76
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

1 ½" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	14	14	14	14	14	14	14	14	14	14	14
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	14	14	14	14	14	14	14	14	14	14	14
Quarterly Base Charge (Jan-June)	\$433.40	\$455.07	\$477.82	\$501.71	\$526.80	\$553.14	\$580.80	\$609.84	\$640.33	\$672.35	\$705.96
Quarterly Base Charge (July-Dec)	\$455.07	\$477.82	\$501.71	\$526.80	\$553.14	\$580.80	\$609.84	\$640.33	\$672.35	\$705.96	\$741.26
Annual Base Charge	\$1,776.94	\$1,865.79	\$1,959.08	\$2,057.03	\$2,159.88	\$2,267.88	\$2,381.27	\$2,500.33	\$2,625.35	\$2,756.62	\$2,894.45
Total Annual Revenue	\$24,877	\$26,121	\$27,427	\$28,798	\$30,238	\$31,750	\$33,338	\$35,005	\$36,755	\$38,593	\$40,522

2" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	16	16	16	16	16	16	16	16	16	16	16
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	16	16	16	16	16	16	16	16	16	16	16
Quarterly Base Charge (Jan-June)	\$693.42	\$728.09	\$764.49	\$802.72	\$842.86	\$885.00	\$929.25	\$975.71	\$1,024.50	\$1,075.72	\$1,129.51
Quarterly Base Charge (July-Dec)	\$728.09	\$764.49	\$802.72	\$842.86	\$885.00	\$929.25	\$975.71	\$1,024.50	\$1,075.72	\$1,129.51	\$1,185.98
Annual Base Charge	\$2,843.02	\$2,985.17	\$3,134.43	\$3,291.15	\$3,455.71	\$3,628.49	\$3,809.92	\$4,000.41	\$4,200.43	\$4,410.45	\$4,630.98
Total Annual Revenue	\$45,488	\$47,763	\$50,151	\$52,658	\$55,291	\$58,056	\$60,959	\$64,007	\$67,207	\$70,567	\$74,096

3" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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
Quarterly Base Charge (Jan-June)	\$1,386.85	\$1,456.19	\$1,529.00	\$1,605.45	\$1,685.72	\$1,770.01	\$1,858.51	\$1,951.43	\$2,049.01	\$2,151.46	\$2,259.03
Quarterly Base Charge (July-Dec)	\$1,456.19	\$1,529.00	\$1,605.45	\$1,685.72	\$1,770.01	\$1,858.51	\$1,951.43	\$2,049.01	\$2,151.46	\$2,259.03	\$2,371.98
Annual Base Charge	\$5,686.08	\$5,970.38	\$6,268.90	\$6,582.34	\$6,911.46	\$7,257.08	\$7,619.88	\$8,000.88	\$8,400.92	\$8,820.97	\$9,262.02
Total Annual Revenue	\$17,058	\$17,911	\$18,807	\$19,747	\$20,734	\$21,771	\$22,860	\$24,003	\$25,203	\$26,463	\$27,786

4" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	1	1	1	1	1	1	1	1	1	1	1
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	1	1	1	1	1	1	1	1	1	1	1
Quarterly Base Charge (Jan-June)	\$2,166.94	\$2,275.29	\$2,389.05	\$2,508.51	\$2,633.93	\$2,765.63	\$2,903.91	\$3,049.11	\$3,201.56	\$3,361.64	\$3,529.72
Quarterly Base Charge (July-Dec)	\$2,275.29	\$2,389.05	\$2,508.51	\$2,633.93	\$2,765.63	\$2,903.91	\$3,049.11	\$3,201.56	\$3,361.64	\$3,529.72	\$3,706.21
Annual Base Charge	\$8,884.46	\$9,328.69	\$9,795.12	\$10,284.88	\$10,799.12	\$11,339.08	\$11,906.03	\$12,501.34	\$13,126.40	\$13,782.72	\$14,471.86
Total Annual Revenue	\$8,884	\$9,329	\$9,795	\$10,285	\$10,799	\$11,339	\$11,906	\$12,501	\$13,126	\$13,783	\$14,472

6" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$4,333.89	\$4,550.58	\$4,778.11	\$5,017.01	\$5,267.87	\$5,531.26	\$5,807.82	\$6,098.21	\$6,403.12	\$6,723.28	\$7,059.44
Quarterly Base Charge (July-Dec)	\$4,550.58	\$4,778.11	\$5,017.01	\$5,267.87	\$5,531.26	\$5,807.82	\$6,098.21	\$6,403.12	\$6,723.28	\$7,059.44	\$7,412.42
Annual Base Charge	\$17,768.94	\$18,657.38	\$19,590.25	\$20,569.76	\$21,598.25	\$22,678.16	\$23,812.07	\$25,002.67	\$26,252.80	\$27,565.44	\$28,943.72
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

8" Meter Size	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	0	0	0	0	0	0	0	0	0	0	0
New	-	-	-	-	-	-	-	-	-	-	-
Subtotal Customers	-	-	-	-	-	-	-	-	-	-	-
Quarterly Base Charge (Jan-June)	\$6,934.22	\$7,280.93	\$7,644.98	\$8,027.23	\$8,428.59	\$8,850.02	\$9,292.52	\$9,757.14	\$10,245.00	\$10,757.25	\$11,295.11
Quarterly Base Charge (July-Dec)	\$7,280.93	\$7,644.98	\$8,027.23	\$8,428.59	\$8,850.02	\$9,292.52	\$9,757.14	\$10,245.00	\$10,757.25	\$11,295.11	\$11,859.87
Annual Base Charge	\$28,430.30	\$29,851.81	\$31,344.40	\$32,911.62	\$34,557.21	\$36,285.07	\$38,099.32	\$40,004.28	\$42,004.50	\$44,104.72	\$46,309.96
Total Annual Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Chapter 7

Analysis of Water and Wastewater Rates and Policy Matters



7. Analysis of Water and Wastewater Rates and Policy Matters

7.1 Introduction

To summarize the analysis undertaken thus far, Chapter 2 reviewed capital-related issues and responds to the provincial directives to maintain and upgrade infrastructure to required levels. Chapter 4 provided a review of capital financing options to which water and wastewater reserve contributions will be the predominant basis for financing future capital replacement. Chapter 5 established the 10-year operating forecast of expenditures including an annual capital reserve contribution. The base charge revenues identified in Chapter 6 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 volumes forecast and wastewater volumes provided in section 1.8.

7.2 Water Rates

Based on the discussion of rate structures provided in section 6.5 and the recommendation to continue with the present structures, the rates are calculated by taking the net recoverable amounts from Table 5-1 (the product of total expenditures less non-rate revenues and deduct the base charge amounts provided in section 6.5) and completes the calculation by dividing them by the volumes resulting in the forecasted rates. This results in a water volume rate that is calculated increase by 5% per year over the forecast period.

With respect to bulk water, the calculations have assumed that the volumes will remain constant over the forecast period and that the proposed rates increase at 5% per year (to reflect the same increases to the water volume rates).

Detailed calculations of the volume rates are provided in Appendix C. A summary of the recommended base charge and volume rates along with the total annual bill for an average residential user who consumes 161 m³ per year are provided in Table 7-1. Table 7-2 provides the bulk water rate forecast.



Table 7-1
Township of West Lincoln
Average Annual Water Bill
(Based on an Annual Usage of 161 m³ and 5/8" or 3/4" meter)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Quarterly Base Charge (Jan-June)	\$37.60	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25
Quarterly Base Charge (July-Dec)	\$39.48	\$41.45	\$43.53	\$45.70	\$47.99	\$50.39	\$52.91	\$55.55	\$58.33	\$61.25	\$64.31
Constant Rate (m ³) - January to June	\$1.34	\$1.41	\$1.48	\$1.55	\$1.63	\$1.71	\$1.80	\$1.89	\$1.98	\$2.08	\$2.19
Constant Rate (m ³) - July to December	\$1.41	\$1.48	\$1.55	\$1.63	\$1.71	\$1.80	\$1.89	\$1.98	\$2.08	\$2.19	\$2.30
Annual Base Charge Bill	\$154.16	\$161.87	\$169.96	\$178.46	\$187.38	\$196.75	\$206.59	\$216.92	\$227.76	\$239.15	\$251.11
January to June Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
July to December Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
Annual Volume Bill	\$221.38	\$232.69	\$244.32	\$256.54	\$269.36	\$282.83	\$296.97	\$311.82	\$327.41	\$343.78	\$360.97
Total Annual Bill	\$375.54	\$394.55	\$414.28	\$434.99	\$456.74	\$479.58	\$503.56	\$528.74	\$555.18	\$582.93	\$612.08
% Increase - Base Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
% Increase - Volume Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
% Increase - Total Annual Bill		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

Table 7-2
Township of West Lincoln
Bulk Water Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Bulk Water Billing Recovery											
Total Volume (m ³) - January to June	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145
Total Volume (m ³) - July to December	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145
Check Total Volume	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289
Bulk Water Rates (\$/m³)											
Constant Rate (m ³) - January to June	1.81	1.90	2.00	2.10	2.21	2.32	2.44	2.56	2.69	2.82	2.96
Constant Rate (m ³) - July to December	1.90	2.00	2.10	2.21	2.32	2.44	2.56	2.69	2.82	2.96	3.11
Total Water Billing Recovery											
January to June	177,642	186,475	196,289	206,103	216,899	227,695	239,473	251,250	264,009	276,767	290,508
July to December	186,475	196,289	206,103	216,899	227,695	239,473	251,250	264,009	276,767	290,508	305,229
Total Water Billing Recovery	364,116	382,764	402,392	423,003	444,595	467,168	490,723	515,259	540,776	567,275	595,737
Annual Percentage Change		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%



7.3 Wastewater Rates

Similar to water, the calculation of the wastewater rates takes the net recoverable amounts from Table 5-2 and completes the calculation by dividing them by the volumes, resulting in the forecast rates. Detailed calculations are provided in Appendix D.

The rate calculations result in a wastewater volume rate that is calculated to increase by 5% in 2021, and subsequent increases of 2% per year over the remainder of the forecast period.

Table 7-3 summarizes the recommended rates for wastewater and provides the average annual bill for a residential customer who uses 161 m³ per year.



Table 7-3
Township of West Lincoln
Average Annual Wastewater Bill
(Based on an Annual Usage of 161 m³ and 5/8" or 3/4" meter)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Quarterly Base Charge (Jan-June)	\$86.68	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19
Quarterly Base Charge (July-Dec)	\$91.01	\$95.56	\$100.34	\$105.36	\$110.62	\$116.15	\$121.96	\$128.06	\$134.46	\$141.19	\$148.25
Constant Rate (m ³) - January to June	\$1.73	\$1.82	\$1.86	\$1.89	\$1.93	\$1.97	\$2.01	\$2.05	\$2.09	\$2.13	\$2.18
Constant Rate (m ³) - July to December	\$1.82	\$1.86	\$1.89	\$1.93	\$1.97	\$2.01	\$2.05	\$2.09	\$2.13	\$2.18	\$2.22
Annual Base Rate Bill	\$355.38	\$373.14	\$391.80	\$411.39	\$431.96	\$453.56	\$476.23	\$500.04	\$525.05	\$551.30	\$578.86
January to June Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
July to December Volume (m ³)	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
Annual Volume Bill	\$285.78	\$295.95	\$301.87	\$307.91	\$314.06	\$320.35	\$326.75	\$333.29	\$339.95	\$346.75	\$353.69
Total Annual Bill	\$641.16	\$669.09	\$693.67	\$719.29	\$746.02	\$773.90	\$802.99	\$833.33	\$865.00	\$898.05	\$932.55
% Increase - Base Rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
% Increase - Volume Rate		5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
% Increase - Total Annual Bill		5%	4%	4%	4%	4%	4%	4%	4%	4%	4%



Chapter 8

Recommendations

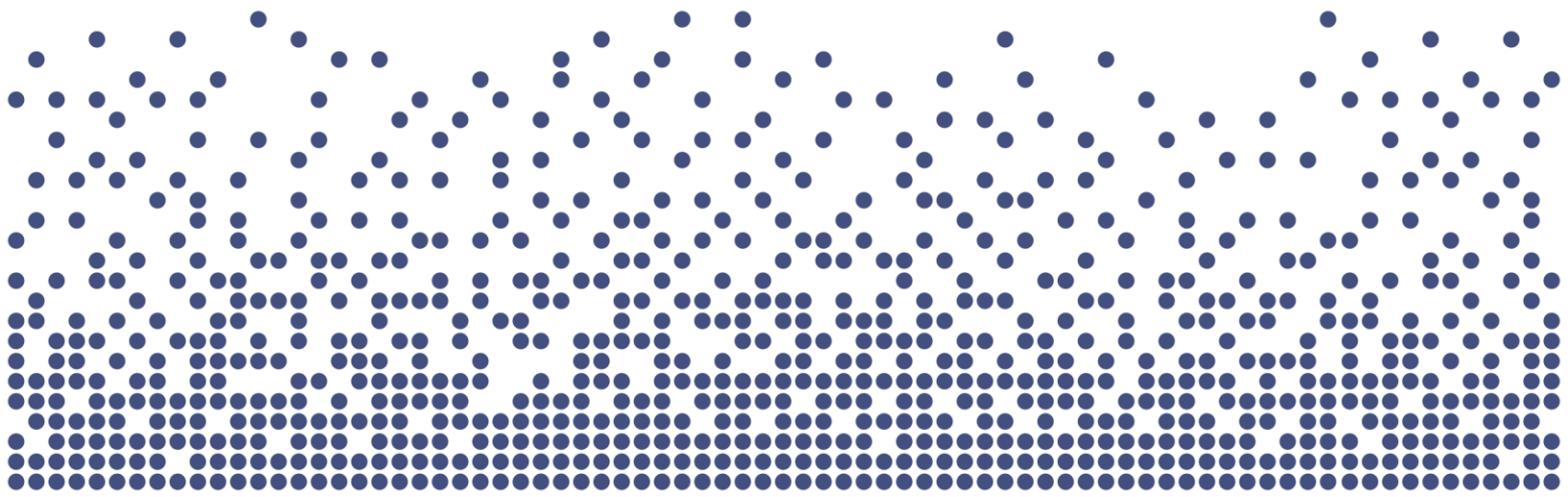


8. Recommendations

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

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

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



Appendices



Appendix A

Water System Inventory Data



Appendix A: Water System Inventory Data

Detailed water system inventory information available under separate cover (Technical Appendix).



Appendix B

Wastewater System Inventory Data



Appendix B: Wastewater System Inventory Data

Detailed water system inventory information available under separate cover (Technical Appendix).



Appendix C

Detailed Water Rate Calculations



Appendix C: Detailed Water Rate Calculations

Table C-1
Township of West Lincoln
Capital Budget Forecast (Uninflated \$)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Lifecycle:												
Water Meters - Replacement Program	30,000	340,000	30,000	50,000	30,000	30,000	50,000	30,000	60,000	30,000	30,000	
Rolling Stock - 2025 - 3/4 Ton Van - To replace 2007 Chevrolet		38,500					38,500					
Main - Replace - Design - 2020 - Brock St - From: RR 20 To: North End	35,000	-										
Facilities - 2027 - Bulk Water Station - Replace roof shingles		10,000							10,000			
Main - Upsize and Replace - Constuction - 2020 - Griffin St. N - From: RR20 and RR14 Intersection	160,000	-										
Main - Replace - Construction - 2022 - Brock St - From: RR 20 To: North End		495,000		495,000								
Main - Replace - Construction - 2029 - Wade Road N - From: West Street To: South Limit		700,000									700,000	
Equipment - Miscellaneous Water Equipment	5,000	45,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	
Water Meters - New Installation	31,800	332,400	32,800	33,800	34,800	35,800	36,900	38,000	39,100	40,200	41,000	
Facilities - 2027 - Bulk Water Building - New Building		300,000							300,000			
Studies:												
Operating-Study - Water Loss Study		50,000	50,000									
Operating-Study - Water Distribution System - Leak detection program		250,000				50,000	50,000	50,000	50,000	50,000		
Operating-Other - Water Loss Program		145,000					70,000	75,000				
Growth Related:												
Main - Replace - Construction - 2020 - West Street - From: South Grimsby Rd 5 To: Wade Rd	200,000	-										
Main - Upsize and Replace - Design - 2022 - Spring Creek Rd - From: Station St To: Hornak Rd		12,500		12,500								
Main - New - Design - 2022 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5		63,200		63,200								
Main - New - Design - 2022 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6		38,000		38,000								
Main - New - Design - 2022 - South Grimsby Rd 5 - From: Spring Creek Rd To: Northridge Dr		38,600		38,600								
Main - Upsize and Replace - Design - 2022 - South Grimsby Rd 5 - From: Northridge Dr To: HWY 20		27,000		27,000								
Main - New - Design - 2022 - South Grimsby Rd 6 - Extension - From: Spring Creek Rd To: HWY 20		27,000		27,000								
Main - Upsize and Replace - Constuction - 2023 - Spring Creek Rd - From: Station St To: Hornak Rd		117,500			117,500							
Main - New - Construction - 2023 - SG RD 5 - From: Spring Creek Rd To: Northridge Dr		441,000			441,000							
Main - Upsize and Replace - Constuction - 2023 - SG RD 5 - From: Northridge Dr To: HWY 20		315,000			315,000							
Main - New - Construction - 2023 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5		758,200			758,200							
Main - New - Construction - 2023 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6		392,200			392,200							
Main - New - Construction - 2023 - SG RD 6 - From: Spring Creek Rd To: HWY 20		355,000			355,000							
Main - Upsize and Replace - Design - 2023 - Van Wouderberg Way - From: Station St To: West Boundary Limits		39,250			39,250							
Main - Upsize and Replace - Constuction - 2024 - Van Wouderberg Way - From: Station St To: West Boundary Limits		353,500				353,500						
Main - Upsize and Replace - Design - 2024 - St. Catherines St - From: Industrial Park Rd To: Frank St		65,400				65,400						
Main - New - Design - 2024 - St. Catherines St - From: Frank St To: Griffin St		7,000				7,000						
Main - Upsize and Replace - Design - 2024 - Griffin St. N - From: Griffin St To: Station & West St		16,000				16,000						
Main - New - Construction - 2024 - Industrial Park Rd - From: London Rd To: Spring Creek Rd		565,400				565,400						
Main - Upsize and Replace - Constuction - 2025 - St. Catherines St. - From: Industrial Park Rd To: Frank St		719,600					719,600					
Main - New - Construction - 2025 - St. Catherines St. - From: Frank St To: Griffin St		108,000					108,000					
Main - Upsize and Replace - Constuction - 2025 - Griffin St. N - From: Griffin St To: Station St		134,000					134,000					
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary		399,800					399,800					
Main - Replace - Design - 2026 - Colver St - From: RR14 To: Wade Rd		42,200						42,200				
Main - Replace - Construction - 2027 - Colver St - From: RR14 To: Wade Rd		610,000							610,000			
Total Capital Expenditures	461,800	8,351,250	117,800	790,100	2,487,950	1,128,100	1,611,800	240,200	1,074,100	125,200	776,000	-



Table C-2
Township of West Lincoln
Capital Budget Forecast (Inflated \$)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Lifecycle:												
Water Meters - Replacement Program	30,000	376,000	31,000	52,000	32,000	32,000	55,000	34,000	69,000	35,000	36,000	-
Rolling Stock - 2025 - 3/4 Ton Van - To replace 2007 Chevrolet	-	43,000	-	-	-	-	43,000	-	-	-	-	-
Main - Replace - Design - 2020 - Brock St - From: RR 20 To: North End	35,000	-	-	-	-	-	-	-	-	-	-	-
Facilities - 2027 - Bulk Water Station - Replace roof shingles	-	11,000	-	-	-	-	-	-	11,000	-	-	-
Main - Upsize and Replace - Construction - 2020 - Griffin St. N - From: RR20 and RR14 Intersection	160,000	-	-	-	-	-	-	-	-	-	-	-
Main - Replace - Construction - 2022 - Brock St - From: RR 20 To: North End	-	515,000	-	515,000	-	-	-	-	-	-	-	-
Main - Replace - Construction - 2029 - Wade Road N - From: West Street To: South Limit	-	837,000	-	-	-	-	-	-	-	-	837,000	-
Equipment - Miscellaneous Water Equipment	5,000	50,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000	-
Water Meters - New Installation	31,800	369,000	33,000	35,000	37,000	39,000	41,000	43,000	45,000	47,000	49,000	-
Facilities - 2027 - Bulk Water Building - New Building	-	345,000	-	-	-	-	-	-	345,000	-	-	-
Studies:												
Operating-Study - Water Loss Study	-	51,000	51,000	-	-	-	-	-	-	-	-	-
Operating-Study - Water Distribution System - Leak detection program	-	281,000	-	-	-	54,000	55,000	56,000	57,000	59,000	-	-
Operating-Other - Water Loss Program	-	161,000	-	-	-	-	77,000	84,000	-	-	-	-
Growth Related:												
Main - Replace - Construction - 2020 - West Street - From: South Grimsby Rd 5 To: Wade Rd	200,000	-	-	-	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2022 - Spring Creek Rd - From: Station St To: Hornak Rd	-	13,000	-	13,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5	-	66,000	-	66,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6	-	40,000	-	40,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - South Grimsby Rd 5 - From: Spring Creek Rd To: Northridge Dr	-	40,000	-	40,000	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2022 - South Grimsby Rd 5 - From: Northridge Dr To: HWY 20	-	28,000	-	28,000	-	-	-	-	-	-	-	-
Main - New - Design - 2022 - South Grimsby Rd 6 - Extension - From: Spring Creek Rd To: HWY 20	-	28,000	-	28,000	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Construction - 2023 - Spring Creek Rd - From: Station St To: Hornak Rd	-	125,000	-	-	125,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - SG RD 5 - From: Spring Creek Rd To: Northridge Dr	-	468,000	-	-	468,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Construction - 2023 - SG RD 5 - From: Northridge Dr To: HWY 20	-	334,000	-	-	334,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - Spring Creek Rd - From: Hornak Rd To: SG Rd 5	-	805,000	-	-	805,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - Spring Creek Rd - From: SG Rd 5 To: SG Rd 6	-	416,000	-	-	416,000	-	-	-	-	-	-	-
Main - New - Construction - 2023 - SG RD 6 - From: Spring Creek Rd To: HWY 20	-	377,000	-	-	377,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2023 - Van Wouderberg Way - From: Station St To: West Boundary Limits	-	42,000	-	-	42,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Construction - 2024 - Van Wouderberg Way - From: Station St To: West Boundary Limits	-	383,000	-	-	-	383,000	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2024 - St. Catherine's St - From: Industrial Park Rd To: Frank St	-	71,000	-	-	-	71,000	-	-	-	-	-	-
Main - New - Design - 2024 - St. Catherine's St - From: Frank St To: Griffin St	-	8,000	-	-	-	8,000	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2024 - Griffin St. N - From: Griffin St To: Station & West St	-	17,000	-	-	-	17,000	-	-	-	-	-	-
Main - New - Construction - 2024 - Industrial Park Rd - From: London Rd To: Spring Creek Rd	-	612,000	-	-	-	612,000	-	-	-	-	-	-
Main - Upsize and Replace - Construction - 2025 - St. Catherine's St - From: Industrial Park Rd To: Frank St	-	794,000	-	-	-	-	794,000	-	-	-	-	-
Main - New - Construction - 2025 - St. Catherine's St - From: Frank St To: Griffin St	-	119,000	-	-	-	-	119,000	-	-	-	-	-
Main - Upsize and Replace - Construction - 2025 - Griffin St. N - From: Griffin St To: Station St	-	148,000	-	-	-	-	148,000	-	-	-	-	-
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary	-	441,000	-	-	-	-	441,000	-	-	-	-	-
Main - Replace - Design - 2026 - Colver St - From: RR14 To: Wade Rd	-	48,000	-	-	-	-	-	48,000	-	-	-	-
Main - Replace - Construction - 2027 - Colver St - From: RR14 To: Wade Rd	-	701,000	-	-	-	-	-	-	701,000	-	-	-
Total Capital Expenditures	461,800	9,163,000	120,000	822,000	2,641,000	1,221,000	1,779,000	271,000	1,234,000	147,000	928,000	-
Capital Financing												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	100,000	4,272,456	-	160,929	1,914,026	851,500	971,500	24,000	350,500	-	-	-
Non-Growth Related Debt Service Requirements	-	1,096,474	-	-	726,974	369,500	-	-	-	-	-	-
Growth Related Debt Service Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	361,800	3,794,071	120,000	661,071	-	-	807,500	247,000	883,500	147,000	928,000	-
Total Capital Financing	461,800	9,163,000	120,000	822,000	2,641,000	1,221,000	1,779,000	271,000	1,234,000	147,000	928,000	-



Table C-3
Township of West Lincoln
Schedule of Non-Growth Related Debenture Repayments (Inflated \$)

Debenture Year	2020	Principal (Inflated)	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2021		-	-	-	-	-	-	-	-	-	-	-
2022		-	-	-	-	-	-	-	-	-	-	-
2023		726,974				50,000	50,000	50,000	50,000	50,000	50,000	50,000
2024		369,500					25,414	25,414	25,414	25,414	25,414	25,414
2025		-					-	-	-	-	-	-
2026		-						-	-	-	-	-
2027		-							-	-	-	-
2028		-								-	-	-
2029		-									-	-
2030		-										-
Total Annual Debt Charges	-	1,096,474	-	-	-	50,000	75,414	75,414	75,414	75,414	75,414	75,414

Table C-4
Township of West Lincoln
Schedule of Growth Related Debenture Repayments

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

Table C-5
Township of West Lincoln
Water Capital Reserve Continuity (Inflated \$)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	567,764	380,647	489,981	106,390	437,733	738,679	201,881	380,713	14,272	484,921	283,275
Transfer from Operating	239,683	229,333	277,480	331,343	300,947	345,702	425,832	517,059	617,649	726,354	844,462
Transfer to Capital	361,800	120,000	661,071	-	-	807,500	247,000	883,500	147,000	928,000	-
Transfer to Operating	65,000	-	-	-	-	75,000	-	-	-	-	-
Closing Balance	380,647	489,981	106,390	437,733	738,679	201,881	380,713	14,272	484,921	283,275	1,127,737

Table C-6
Township of West Lincoln
Water Development Charges Reserve Fund Continuity (Inflated \$)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	532,026	682,736	943,315	1,075,700	(545,541)	(1,082,401)	(1,718,156)	(1,364,685)	(1,230,309)	(847,756)	(386,982)
Development Charge Proceeds	237,322	242,083	272,222	303,482	335,864	369,434	404,229	450,176	459,175	468,362	477,692
Transfer to Capital	100,000	-	160,929	1,914,026	851,500	971,500	24,000	350,500	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	669,349	924,819	1,054,608	(534,844)	(1,061,177)	(1,684,467)	(1,337,926)	(1,265,009)	(831,134)	(379,394)	90,710
Interest	13,387	18,496	21,092	(10,697)	(21,224)	(33,689)	(26,759)	(25,300)	(16,623)	(7,588)	1,814
Required from Development Charges	100,000	-	160,929	1,914,026	851,500	971,500	24,000	350,500	-	-	-



Table C-7
Township of West Lincoln
Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures											
Operating Costs											
WAT-UTLY-SALARY	56,600	100,200	102,200	104,200	148,800	151,800	154,800	157,900	161,100	164,300	167,600
WAT-UTLY-WAGES	91,800	93,600	95,500	97,400	99,300	101,300	103,300	105,400	107,500	109,700	111,900
WAT-UTLY-WAGES OT	18,400	18,800	19,200	19,600	20,000	20,400	20,800	21,200	21,600	22,000	22,400
WAT-UTLY-CPP	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900	7,000
WAT-UTLY-EI	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
WAT-UTLY-EHT	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200
WAT-UTLY-WSIB	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700
WAT-UTLY-OMERS	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
WAT-UTLY-GROUP BENEFITS	18,400	18,800	19,200	19,600	20,000	20,400	20,800	21,200	21,600	22,000	22,400
WAT-UTLY-TRAINING	9,800	10,100	10,400	10,700	11,000	11,300	11,600	11,900	12,300	12,700	13,100
WAT-UTLY-OFFICE SUPPLIES	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
WAT-UTLY-POSTAGE	4,700	4,800	4,900	5,000	5,200	5,400	5,600	5,800	6,000	6,200	6,400
WAT-UTLY-UNIFORMS	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000	3,100
WAT-UTLY-SMALL TOOLS	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
WAT-UTLY-FUEL	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400
PURCHASED WATER FROM REGION	752,997	800,328	850,510	904,542	963,626	1,028,221	1,098,825	1,176,143	1,259,542	1,348,341	1,442,872
WAT-UTLY-R&M EQUIPMENT	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
WAT-UTLY-R&M ENVIRON INFRSTRCT	31,700	32,700	33,700	34,700	35,700	36,800	37,900	39,000	40,200	41,400	42,600
WAT-UTLY-WATER	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500
WAT-UTLY-COMMUNICATION	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
WAT-UTLY-INSURANCE	20,800	21,400	22,000	22,700	23,400	24,100	24,800	25,500	26,300	27,100	27,900
WAT-UTLY-SOFTWARE FEES	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
WAT-UTLY-CONSULTANT FEES	10,400	10,700	11,000	11,300	11,600	11,900	12,300	12,700	13,100	13,500	13,900
WAT-UTLY-OUTSIDE SERVICES	23,600	24,300	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700
WAT-UTLY-EQUIPMENT ALLOCATIN	21,400	22,000	22,700	23,400	24,100	24,800	25,500	26,300	27,100	27,900	28,700
WAT-UTLY-ALLOCTN OF PRGM SUP	287,500	296,100	305,000	314,200	323,600	333,300	343,300	353,600	364,200	375,100	386,400
WAT-BLK-R&M FACILITIES	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
WAT-BLK-R&M ENVIRON INFRSTRCT	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700
WAT-BLK-HYDRO	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
WAT-BLK-COMMUNICATION	900	900	900	900	900	900	900	900	900	900	900
WAT-BLK-OUTSIDE SERVICES	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600
WAT-BLK-EQUIPMENT ALLOCATIN	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
WAT-UTLY-ADVERTISING	500	500	500	500	500	500	500	500	500	500	500
WAT-DIST-WATER RATE STUDY & FIN PLAN	65,000	-	-	-	-	75,000	-	-	-	-	-
Sub Total Operating	1,472,697	1,515,028	1,584,110	1,657,542	1,778,926	1,939,721	1,956,925	2,056,443	2,162,842	2,275,041	2,393,572
Capital-Related											
Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	-	-	-	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Non-Growth Related	-	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Principal)	-	-	-	-	26,374	40,636	41,957	43,320	44,728	46,182	47,683
New Non-Growth Related Debt (Interest)	-	-	-	-	23,627	34,778	33,458	32,094	30,686	29,232	27,731
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	239,683	229,333	277,480	331,343	300,947	345,702	425,832	517,059	617,649	726,354	844,462
Sub Total Capital Related	239,683	229,333	277,480	331,343	350,947	421,116	501,246	592,473	693,064	801,768	919,876
Total Expenditures	1,712,380	1,744,362	1,861,590	1,988,885	2,129,873	2,360,837	2,458,171	2,648,916	2,855,906	3,076,809	3,313,447
Revenues											
Base Charge	424,165	457,838	493,817	533,320	577,824	627,847	683,947	746,951	815,958	889,998	969,402
Other Revenue	14,000	-	-	-	-	-	-	-	-	-	-
WAT-UTLY-P&I	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600	47,600
WAT-BLK-VARIABLE CHARGES	364,116	382,764	402,392	423,003	444,595	467,168	490,723	515,259	540,776	567,275	595,737
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	65,000	-	-	-	-	75,000	-	-	-	-	-
Total Operating Revenue	914,881	888,201	943,809	1,003,922	1,070,019	1,217,614	1,222,270	1,309,810	1,404,334	1,504,873	1,612,740
Water Billing Recovery - Operating	797,498	856,160	917,781	984,962	1,059,854	1,143,223	1,235,901	1,339,106	1,451,572	1,571,936	1,700,708
Water Billing Recovery - Total	797,498	856,160	917,781	984,962	1,059,854	1,143,223	1,235,901	1,339,106	1,451,572	1,571,936	1,700,708



Table C-8
Township of West Lincoln
Bulk Water Rate Forecast (Inflated \$)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Bulk Water Billing Recovery											
Total Volume (m ³) - January to June	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145
Total Volume (m ³) - July to December	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145	98,145
Check Total Volume	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289	196,289
Bulk Water Rates (\$/m³)											
Constant Rate (m ³) - January to June	1.81	1.90	2.00	2.10	2.21	2.32	2.44	2.56	2.69	2.82	2.96
Constant Rate (m ³) - July to December	1.90	2.00	2.10	2.21	2.32	2.44	2.56	2.69	2.82	2.96	3.11
Total Water Billing Recovery											
January to June	177,642	186,475	196,289	206,103	216,899	227,695	239,473	251,250	264,009	276,767	290,508
July to December	186,475	196,289	206,103	216,899	227,695	239,473	251,250	264,009	276,767	290,508	305,229
Total Water Billing Recovery	364,116	382,764	402,392	423,003	444,595	467,168	490,723	515,259	540,776	567,275	595,737
Annual Percentage Change		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

Table C-9
Township of West Lincoln
Water Rate Forecast (Inflated \$)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Water Billing Recovery	797,498	856,160	917,781	984,962	1,059,854	1,143,223	1,235,901	1,339,106	1,451,572	1,571,936	1,700,708
Total Water Billing Recovery											
Total Volume (m ³) - January to June	290,000	296,198	302,397	309,078	316,742	325,387	335,015	345,706	356,895	368,085	379,274
Total Volume (m ³) - July to December	290,000	296,198	302,397	309,078	316,742	325,387	335,015	345,706	356,895	368,085	379,274
Check Total Volume	579,999	592,396	604,793	618,156	633,483	650,775	670,030	691,411	713,790	736,169	758,548
Water Rates (\$/m³)											
Constant Rate (m ³) - January to June	1.34	1.41	1.48	1.55	1.63	1.71	1.80	1.89	1.98	2.08	2.19
Constant Rate (m ³) - July to December	1.41	1.48	1.55	1.63	1.71	1.80	1.89	1.98	2.08	2.19	2.30
Total Water Billing Recovery											
January to June	388,599	417,639	447,698	480,469	517,002	557,670	602,879	653,223	708,084	766,798	829,614
July to December	408,899	438,521	470,083	504,493	542,852	585,553	633,023	685,884	743,488	805,138	871,094
Total Water Billing Recovery	797,499	856,160	917,781	984,962	1,059,854	1,143,223	1,235,901	1,339,106	1,451,572	1,571,936	1,700,708
Annual Percentage Change		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%



Appendix D

Detailed Wastewater Rate Calculations



Appendix D: Detailed Wastewater Rate Calculations

Table D-1
Township of West Lincoln
Capital Budget Forecast (Uninflated \$)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Lifecycle:		-										
Equipment - Miscellaneous Wastewater Equipment	5,000	45,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	
Equipment - 2021 - Smoke Tester - To replace 2006 Hurco		4,200	4,200									
Studies:		-										
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program		130,000								130,000		
Operating-Study - 2020 - Condition Assessments for Sewers	200,000	-										
New/Growth Related:		-										
Main - Upsize and Replace - Constuction - 2020 - Wade Road N - From: HWY 20 West St To: South Limit	600,000	-										
Main - Upsize and Replace - Constuction - 2020 - West Street - From: South Grimsby Rd 5 To: Wade Street N	150,000	-										
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works		200,000	200,000									
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works		100,000		100,000								
Operating-Study - Extraneous Flow Reduction Program - Flow Monitoring Study		115,000		115,000								
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program		120,000			120,000							
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works		100,000			100,000							
Main - Upsize and Replace - Design - 2023 - Hornak Rd & Van Woudenberg Way - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)		35,000			35,000							
Main - Upsize and Replace - Design - 2023 - Van Woudenberg Way - From: Hornak Rd (MH 454) To: Las Rd (MH 340)		22,000			22,000							
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works		100,000				100,000						
Main - Upsize and Replace - Constuction - 2024 - Van Woudenberg Way/Hornak Rd - From: Hornak Rd (MH 454) To: Las Rd (MH 340)		352,000				352,000						
Main - Upsize and Replace - Constuction - 2024 - Hornak Rd - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)		550,000				550,000						
Main - New - Construction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary		673,100					673,100					
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works		100,000					100,000					
Main - Upsize and Replace - Design - 2026 - Anderson Court - From: MH 230 To: MH 1		22,000						22,000				
Main - Upsize and Replace - Constuction - 2027 - Anderson Court - From: MH 230 To: MH 1		332,000							332,000			
Total Capital Expenditures	955,000	3,000,300	209,200	220,000	282,000	1,007,000	778,100	27,000	337,000	135,000	5,000	-



Table D-2
Township of West Lincoln
Capital Budget Forecast (Inflated \$)

Description	Budget 2020	Total	Forecast									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures												
Lifecycle:												
Equipment - Miscellaneous Wastewater Equipment	5,000	50,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000	-
Equipment - 2021 - Smoke Tester - To replace 2006 Hurco	-	4,000	4,000	-	-	-	-	-	-	-	-	-
Studies:												
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program	-	152,000	-	-	-	-	-	-	-	152,000	-	-
Operating-Study - 2020 - Condition Assessments for Sewers	200,000	-	-	-	-	-	-	-	-	-	-	-
New/Growth Related:												
Main - Upsize and Replace - Constuction - 2020 - Wade Road N - From: HWY 20 West St. To: South Limit	600,000	-	-	-	-	-	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2020 - West Street - From: South Grimsby Rd 5 To: Wade Street N	150,000	-	-	-	-	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	204,000	204,000	-	-	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	104,000	-	104,000	-	-	-	-	-	-	-	-
Operating-Study - Extraneous Flow Reduction Program - Flow Monitoring Study	-	120,000	-	120,000	-	-	-	-	-	-	-	-
Operating-Study - Pollution Control Plan - CSO Study - Extraneous Flow Reduction Program	-	127,000	-	-	127,000	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	106,000	-	-	106,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2023 - Hornak Rd & Van Woudenberg Way - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)	-	37,000	-	-	37,000	-	-	-	-	-	-	-
Main - Upsize and Replace - Design - 2023 - Van Woudenberg Way - From: Hornak Rd (MH 454) To: Las Rd (MH 340)	-	23,000	-	-	23,000	-	-	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	108,000	-	-	-	108,000	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2024 - Van Woudenberg Way/Hornak Rd - From: Hornak Rd (MH 454) To: Las Rd (MH 340)	-	381,000	-	-	-	381,000	-	-	-	-	-	-
Main - Upsize and Replace - Constuction - 2024 - Hornak Rd - From: Station St (MH 167) To: Van Woudenberg Way (MH 340)	-	595,000	-	-	-	595,000	-	-	-	-	-	-
Main - New - Constuction - 2025 - Industrial Park Rd - From: Pearson Rd To: Urban Boundary	-	743,000	-	-	-	-	743,000	-	-	-	-	-
Operating-Other - Inflow & Infiltration Reduction Program - Remedial Property Disconnection Works	-	110,000	-	-	-	-	110,000	-	-	-	-	-
Main - Upsize and Replace - Design - 2026 - Anderson Court - From: MH 230 To: MH 1	-	25,000	-	-	-	-	-	25,000	-	-	-	-
Main - Upsize and Replace - Constuction - 2027 - Anderson Court - From: MH 230 To: MH 1	-	381,000	-	-	-	-	-	-	381,000	-	-	-
Total Capital Expenditures	955,000	3,270,000	213,000	229,000	298,000	1,089,000	859,000	31,000	387,000	158,000	6,000	-
Capital Financing												
Provincial/Federal Grants	100,000	-										
Development Charges Reserve Fund	375,000	1,782,932	63,240	68,762	102,230	521,480	777,100	12,500	190,500	47,120	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	480,000	1,487,068	149,760	160,238	195,770	567,520	81,900	18,500	196,500	110,880	6,000	-
Total Capital Financing	955,000	3,270,000	213,000	229,000	298,000	1,089,000	859,000	31,000	387,000	158,000	6,000	-



Table D-3
Township of West Lincoln
Schedule of Non-Growth Related Debenture Requirements

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

Table D-4
Township of West Lincoln
Schedule of Growth Related Debenture Requirements

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

Table D-5
Township of West Lincoln
Wastewater Capital Reserve Continuity (Inflated \$)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	867,287	618,853	704,789	807,120	905,080	627,672	882,253	1,255,808	1,517,255	1,937,478	2,539,881
Transfer from Operating	231,566	235,697	262,569	293,730	290,112	336,481	392,055	457,946	531,103	608,403	690,304
Transfer to Capital	480,000	149,760	160,238	195,770	567,520	81,900	18,500	196,500	110,880	6,000	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	618,853	704,789	807,120	905,080	627,672	882,253	1,255,808	1,517,255	1,937,478	2,539,881	3,230,185

Table D-6
Township of West Lincoln
Wastewater Development Charges Reserve Fund Continuity (Inflated \$)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	646,544	379,825	427,822	484,316	521,428	145,766	(483,473)	(330,255)	(335,733)	(191,143)	8,345
Development Charge Proceeds	100,834	102,848	115,760	129,118	142,959	157,341	172,194	191,606	195,457	199,325	203,313
Transfer to Capital	375,000	63,240	68,762	102,230	521,480	777,100	12,500	190,500	47,120	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	372,377	419,433	474,820	511,204	142,907	(473,994)	(323,780)	(329,150)	(187,395)	8,182	211,659
Interest	7,448	8,389	9,496	10,224	2,858	(9,480)	(6,476)	(6,583)	(3,748)	164	4,233
Required from Development Charges	375,000	63,240	68,762	102,230	521,480	777,100	12,500	190,500	47,120	-	-



Table D-7
Township of West Lincoln
Operating Budget Forecast (Inflated \$)

Description	Budget 2020	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures											
Operating Costs											
WW-COLL-SALARY	36,900	80,100	81,700	83,300	127,500	130,100	132,700	135,400	138,100	140,900	143,700
WW-COLL-WAGES	51,400	52,400	53,400	54,500	55,600	56,700	57,800	59,000	60,200	61,400	62,600
WW-COLL-WAGES OT	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500	11,700	11,900
WW-COLL-CPP	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500
WW-COLL-EI	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
WW-COLL-EHT	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
WW-COLL-WSIB	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800
WW-COLL-OMERS	9,000	9,200	9,400	9,600	9,800	10,000	10,200	10,400	10,600	10,800	11,000
WW-COLL-GROUP BENEFITS	10,900	11,100	11,300	11,500	11,700	11,900	12,100	12,300	12,500	12,800	13,100
WW-COLL-OFFICE SUPPLIES	800	800	800	800	800	800	800	800	800	800	800
WW-COLL-POSTAGE	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900	5,000	5,200
WW-COLL-FUEL	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
WW-COLL-R&M ENVIRON INFRSTRUCT	9,600	9,900	10,200	10,500	10,800	11,100	11,400	11,700	12,100	12,500	12,900
WW-COLL-INSURANCE	17,200	17,700	18,200	18,700	19,300	19,900	20,500	21,100	21,700	22,400	23,100
WW-COLL-SOFTWARE FEES	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
WW-COLL-OUTSIDE SERVICES	59,400	61,200	63,000	64,900	66,800	68,800	70,900	73,000	75,200	77,500	79,800
WW-COLL-EQUIPMENT ALLOCATIN	8,700	9,000	9,300	9,600	9,900	10,200	10,500	10,800	11,100	11,400	11,700
WW-COLL-ALLOCTN OF PRGM SUP	251,000	258,500	266,300	274,300	282,500	291,000	299,700	308,700	318,000	327,500	337,300
WW-TREAT-OUTSIDE SERVICES	1,298,700	1,375,505	1,461,751	1,554,614	1,656,160	1,767,179	1,888,524	2,021,408	2,164,745	2,317,361	2,479,828
Sub Total Operating	1,779,800	1,912,105	2,012,551	2,120,014	2,279,060	2,406,379	2,544,324	2,694,308	2,855,245	3,026,061	3,207,128
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
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	231,566	235,697	262,569	293,730	290,112	336,481	392,055	457,946	531,103	608,403	690,304
Sub Total Capital Related	231,566	235,697	262,569	293,730	290,112	336,481	392,055	457,946	531,103	608,403	690,304
Total Expenditures	2,011,366	2,147,801	2,275,120	2,413,744	2,569,171	2,742,860	2,936,379	3,152,254	3,386,348	3,634,464	3,897,432
Revenues											
Base Charge	965,568	1,042,559	1,124,855	1,215,243	1,317,128	1,431,696	1,560,238	1,704,656	1,862,870	2,032,645	2,214,739
Other Revenue	-	-	-	-	-	-	-	-	-	-	-
Service Fees	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ontario Clean Water Agency	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	981,868	1,058,859	1,141,155	1,231,543	1,333,428	1,447,996	1,576,538	1,720,956	1,879,170	2,048,945	2,231,039
Wastewater Billing Recovery - Operating	1,029,498	1,088,942	1,133,965	1,182,201	1,235,744	1,294,864	1,359,841	1,431,298	1,507,178	1,585,520	1,666,393
Wastewater Billing Recovery - Total	1,029,498	1,088,942	1,133,965	1,182,201	1,235,744	1,294,864	1,359,841	1,431,298	1,507,178	1,585,520	1,666,393

Table D-8
Township of West Lincoln
Wastewater Rate Forecast

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Wastewater Billing Recovery	1,029,498	1,088,942	1,133,965	1,182,201	1,235,744	1,294,864	1,359,841	1,431,298	1,507,178	1,585,520	1,666,393
Total Wastewater Billing Recovery											
Total Volume (m ³) - January to June	290,000	296,198	302,397	309,078	316,742	325,387	335,015	345,706	356,895	368,085	379,274
Total Volume (m ³) - July to December	290,000	296,198	302,397	309,078	316,742	325,387	335,015	345,706	356,895	368,085	379,274
Check Total Volume	579,999	592,396	604,793	618,156	633,483	650,775	670,030	691,411	713,790	736,169	758,548
Wastewater Rates (\$/m³)											
Constant Rate (m ³) - January to June	1.73	1.82	1.86	1.89	1.93	1.97	2.01	2.05	2.09	2.13	2.18
Constant Rate (m ³) - July to December	1.82	1.86	1.89	1.93	1.97	2.01	2.05	2.09	2.13	2.18	2.22
Total Water Billing Recovery											
January to June	501,699	539,080	561,369	585,248	611,754	641,022	673,188	708,563	746,128	784,911	824,947
July to December	527,799	549,862	572,596	596,953	623,989	653,842	686,652	722,735	761,050	800,609	841,446
Total Wastewater Billing Recovery	1,029,498	1,088,942	1,133,965	1,182,201	1,235,744	1,294,864	1,359,841	1,431,298	1,507,178	1,585,520	1,666,393
Annual Percentage Change		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%