FINAL REPORT

PREPARED BY HEMSON FOR TOWNSHIP OF RAMARA

TOWNSHIP OF RAMARA WATER AND WASTEWATER RATE STUDY

December 1st 2021

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EXECUTIVE SUMMARY

A. BACKGROUND AND STUDY OBJECTIVE

The Township of Ramara last completed a comprehensive Water and Wastewater Rate Study in 2014 with a view that the study be updated every five years, however, due to the COVID-19 pandemic and the transition of water and wastewater operations to the Ontario Clean Water Agency (OCWA), the project was paused until OCWA was fully integrated and the pandemic eased on municipal resources. The 2014 study recommended utility rate increase in order to fund the non-growth capital plan, asset repair and replacement costs and on-going operating costs of the system.

Since the five-year review period is complete and OCWA now being fully integrated with the Townships operations, the Township of Ramara has reinitiated this Water and Wastewater Rate Study. The scope of the assignment will be to deliver a long-term water and wastewater financial recovery plan to fund current and future operations (direct and indirect), growth related capital expansion (and associated financing costs), and the rehabilitation and eventual replacement of existing infrastructure. Furthermore, the analysis will ensure that the water and wastewater rate structure will allow the Township to meet its financial obligations and ensure long-term sustainability. In addition to the financial analysis, this study was to review the user rate structure and recommend new water and wastewater rates that address the following:

- Water consumption and wastewater usage by different types of users;
- Total anticipated water and wastewater demand;
- Full recovery of system operating costs;
- Full recovery of capital infrastructure financing needs; and
- Establishment of reserves to fund the rehabilitation and replacement of infrastructure.

In undertaking the analysis, a long-term financial planning model covering a ten-year period from 2022 to 2031 was developed, with 2021 as a budget base year. It is recommended that the Township review the rate study in the next three-to-five years to ensure sufficient revenues are generated to fund the projected expenses. Although this analysis includes the ten-year period, Township staff and Council should consider the immediate three-to-five years for rate setting purposes. The full cost analysis reveals that:

- The required water user rate revenue in 2022 is forecast to be $1.50 million. This is the amount of revenue that must be collected through the sale of water to fully recover the operating, capital, rehabilitation and replacement costs of the water system.

- The required wastewater user rate revenue in 2022 is forecast to be $1.60 million. This is the amount of revenue that must be collected through the wastewater rates to fully recover the operating, capital, rehabilitation and replacement costs of the wastewater system.

- Over the long-term, the net rate funding requirements for both the Township's water and wastewater systems are expected to increase. The cost increases can largely be attributed to increasing utility operational costs as well as annual debt payments, as the Township will require additional financing to fund future capital. The water and wastewater net rate funding requirements are projected to increase to $1.94 million and $2.16 million respectively by 2031.

- In order for the Township to recover the costs associated with providing these services, necessary adjustments to the utility rates are required. The changes to water and wastewater rates begin in 2022 and are projected to increase moving forward (post 2022) to ensure long-term fiscal stability of the services. The table below provides a snapshot of the calculated 2022 utility rates required, which mirrors the current user rate structure in force.

CALCULATED 2022 UTILITY RATES		
All Accounts	**Water**	**Wastewater**
Fixed Charge: $/Quarter		
1" or less	$124.66	$172.65
1"	$174.53	$241.70
1.5"	$224.40	$310.76
2"	$361.53	$500.67
3"	$1,371.31	$1,899.10
Consumption Charge: $/m³	$2.69	$3.60

- The table below outlines the proposed utility rates required over the immediate 5-year period to support the system. In general, the water and wastewater rates (fixed and variable) are projected to increase by 2.0% per annum from 2022-2031.

CALCULATED UTILITY RATES: 5-YEAR PROJECTION						
Water Services (All Accounts)	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Fixed Charge: $/Quarter						
1" or less	$122.22	$124.66	$127.16	$129.70	$132.29	$134.94
1"	$171.11	$174.53	$178.02	$181.58	$185.21	$188.92
1.5"	$220.00	$224.40	$228.89	$233.47	$238.14	$242.90
2"	$354.44	$361.53	$368.76	$376.13	$383.66	$391.33
3"	$1,344.42	$1,371.31	$1,398.73	$1,426.71	$1,455.24	$1,484.35
Change (%)	-	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Consumption Charge: $/m³	$2.64	$2.69	$2.75	$2.80	$2.86	$2.91
Change (%)	-	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Wastewater Services (All Accounts)	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Fixed Charge: $/Quarter						
1" or less	$169.26	$172.65	$176.10	$179.62	$183.21	$186.88
1"	$236.96	$241.70	$246.53	$251.46	$256.49	$261.62
1.5"	$304.67	$310.76	$316.98	$323.32	$329.78	$336.38
2"	$490.85	$500.67	$510.68	$520.89	$531.31	$541.94
3"	$1,861.86	$1,899.10	$1,937.08	$1,975.82	$2,015.34	$2,055.64
Change (%)	-	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Consumption Charge: $/m³	$3.53	$3.60	$3.67	$3.75	$3.82	$3.90
Change (%)	-	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*

A typical household (averaging 200 m^3 per year) will see their annual water bill increase by 2.0 per cent, or $21, and their annual wastewater bill increase by 2.0 per cent, or $27 for a combined total of $48 in 2022. This typical bill is expected to continue to increase by approximately 2.0% onwards.

Staff have been provided with the utility rate setting full costing model to monitor costs and revenues and assist with future fee updates. It is recommended the Township undertake a comprehensive review every three to five years to ensure that a nexus between costs and revenues is maintained over time and that rates remain competitive with surrounding municipalities. This is very important as at the time this document was prepared, the full impact and fiscal ramifications of COVID-19 were (and remain) unknown; as such, the utility rates should be closely monitored to ensure revenues are sufficient to cover costs.

1. BACKGROUND AND STUDY OBJECTIVE

A. BACKGROUND

The Township of Ramara is located on the North East shore of Lake Simcoe in the County Simcoe. Based on the 2019 Development Charges Study, the 2021 estimated population is 10,300 persons. The Ramara water system has approximately 1,900 billable connections. The environmental services department consists of 7 water systems and 2 wastewater treatment systems.

In 2011, the Township of Ramara undertook a water and wastewater rate study to complement the municipal water meters installed in 2010. This study identified a new billing structure and recommended rate increases covering the period of 2011 to 2020. Since the completion of the 2011 and 2014 studies, there have been changes to the pattern of water consumption in the Township. Furthermore, the Township's water and wastewater system operating and capital costs have changed with the transition to OCWA operating the systems in 2020. It is in this context, the Township deemed it necessary to review and update the water and wastewater rate study to ensure sufficient revenues were raised to fund the system.

B. STUDY OBJECTIVE

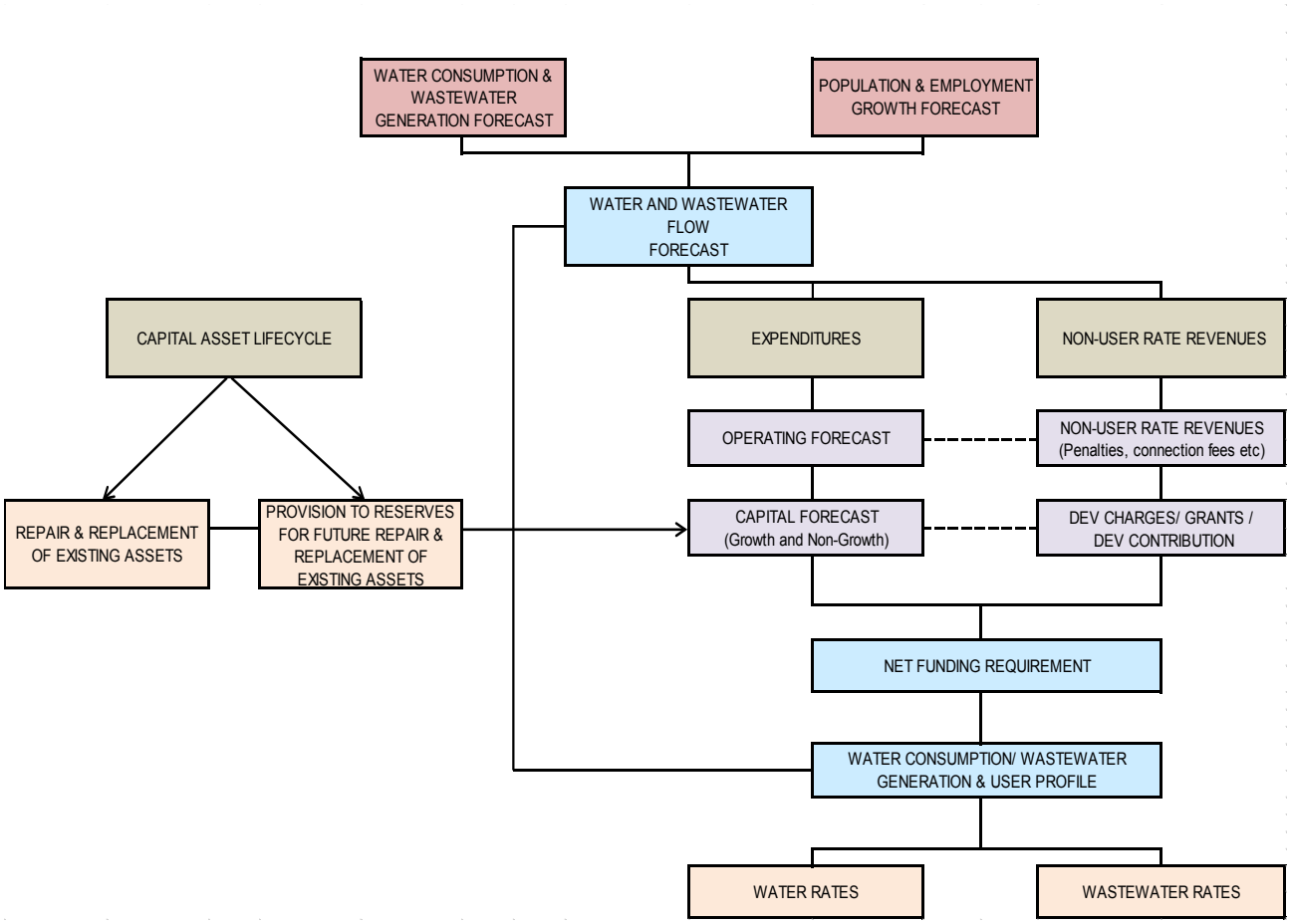
The objective of this study was to review the existing rate structure and calculate full cost recovery rates consistent with the Township's overall cost recovery policies. The first step in a study of this nature is to establish a forecast of new users, as this is the basis for determining anticipated water consumption and wastewater generation levels. The study period examines the period from 2022 through 2031. However, it should be noted that the study and analysis was prepared using 2021 budget information and uses 2021 as a base year.

Following the demographic analysis, the current water and wastewater rates, reserves and annual operating and capital budgets are analyzed. Based on this analysis, the financial position of the Township's water and wastewater systems is determined.

The next step in the study process is to examine the existing rate structure and calculate full cost recovery rates. The final step in the process is to evaluate the impacts of implementing the full cost recovery rates to the residents of the Township.

In undertaking this analysis, a financial model was developed and serves as a dynamic rate setting tool. Using the model, the Township is able to perform sensitivity analyses of water and wastewater rates, rate structures and also future phase-in options. The model calculates future capital expenditure requirements and projects future operating and maintenance costs. It also calculates the water and wastewater rates necessary to recover the full costs of the water and wastewater systems. The following diagram (Figure 1) illustrates the overall approach. The detailed calculations of the water and wastewater rates are outlined in Appendix A.

Figure 1: Utility Rate Setting Model



2. DEMAND ANALYSIS

Future costs of the Township's water and wastewater systems will largely be driven by demands placed on the system by water consumers. A forecast of future consumption demands must therefore be developed.

A. PROJECTION OF NEW CONNECTIONS

The population and employment projections were used to help inform the development projects contained in this study. Primarily, these projections were finalized through discussions with Township staff regarding anticipated development activity and those projections outlined in the DC Study. Recent trends also helped inform the projection of users.

As of 2021, the Township has 1,915 equivalent connections[1] that receive water and wastewater services and it is anticipated that the Town will bill 1,954 equivalent connections for both water wastewater services in 2022. For the purposes of this study, it is assumed that most new households will be connected to both water and wastewater services. By the end of the planning period, in 2031, it is expected that the number of connections will increase to about 2,275, averaging about 36 new connections per year. For the purposes of this analysis, the number of new water customers does not always translate into the number of wastewater connections as some areas in the municipality are serviced water only. Therefore, the wastewater billable connection is forecast to increase by about 31 new connections per year.

B. WATER CONSUMPTION FORECAST

The water demand forecast over the planning period of 2021-2031 was developed using actual 2017 to 2020 metered consumption data as well as discussions with Township staff.

In our most recent water and wastewater rate studies, we have found that customer profiles have been changing over time: generally, water consumption patterns have been declining,

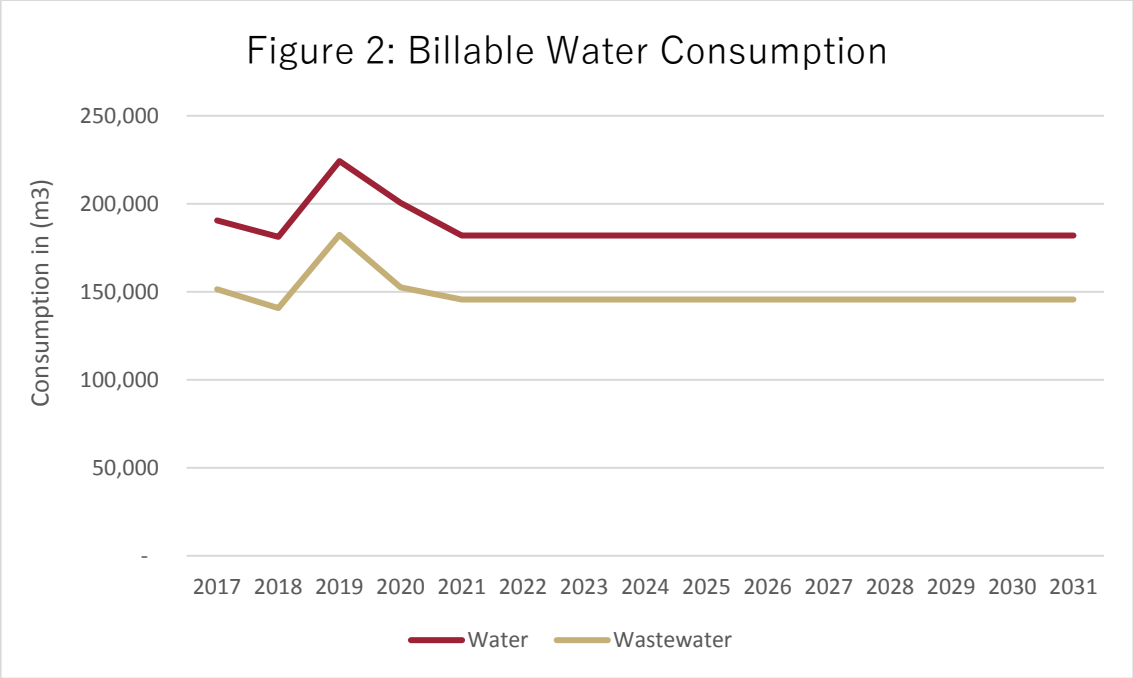
[1] Equivalent connections represent the total number of connections equivalent to the "less than 1" (residential) meter size category. For Example: one 3" inch meter size is equivalent to 11 residential "Less than 1" meter size connections. The factors are consistent with those identified by the AWWA/CWWA and the Township's current factors applied for billing.

even with the addition of new residential and non-residential units. This trend can be seen in the Township and other jurisdictions across the Province. The reduced level of water consumption can largely be related to:

- Demographic changes and household formation sizes – there are fewer people residing in each dwelling unit, ultimately reducing the water use in each household;
- Initiatives by industrial/commercial operations – non-residential users continue to adapt their business processes to be more efficient and environmentally friendly; and
- Efficiency improvements for household appliances – technological improvements have noticeably reduced demand; present-day dishwashers and washing machines are very economical in terms of water use.

For the purpose of setting a utility rate, only the water that is billed to the end-user is incorporated into the analysis and used to calculate utility rates. This is referred to as billable (or metered) water and includes all residential and non-residential consumption. Overall, total billed water is moderated in the early years of the forecast to reflect recent trends and billable consumption is projected to remain constant over the planning period. Thus, consumption on a per connection basis continues to decline as an overall decline in water consumption from the existing base continues to be realized. Figure 2 illustrates the historical pattern and forecast of metered water throughout the planning period to 2031. In 2020, the Township billed approximately 180,000 m^3 of water for both residential and non-residential users. This level of consumption is used as a benchmark for future trends.

Figure 2 illustrates the historical pattern and forecast of metered water throughout the planning period to 2031.



Note: The "spike" in consumption in 2019 is related to a known leak and this water was not billed. Therefore, for forecasting purposes, the anomaly is excluded from the analysis.

3. OPERATION AND MAINTENANCE COSTS

Based on the future demands to be placed on the system, the anticipated operating costs of the Township's water and wastewater systems are projected in this section using historical budget data supplemented with Township staff discussions.

A. OPERATING EXPENDITURES

The Township of Ramara incurs costs to ensure the utility systems are operated in accordance to provincial legislation that guarantees safety and quality. Operating expenditures include salaries/wage/benefits, contracted services, supplies/materials, utility/fuel, maintenance, miscellaneous expenses, and annual debt payments. The total operating expenditures for the water system in 2022 are expected to be $1.36 million and are anticipated to increase to $1.68 million by 2031. The total operating expenditures for the wastewater system in 2022 are expected to be $1.42 million and are expected to increase to $1.77 million by 2031. The escalation in costs for both water and wastewater can generally be attributed to a general increase in operational expenditures and an increase in debt payments associated to financing requirements needed to undertake the rate funded capital program.

Table 1 below summarizes the total forecasted operating expenditures for water and wastewater services. The transfers to reserves and in-year rate funded capital requirements are identified separately and can be found in Section IV of this report.

TABLE 1: ANTICIPATED OPERATING EXPENSES ($000)

	2022	2026	2031
Water	$1,358.9	$1,524.7	$1,675.9
Wastewater	$1,419.4	$1,543.1	$1,767.5

i. General Operating Expenditures

Using the Township's 2021 operating budget, most operating expenditures are assumed to increase at a rate of 2.0 per cent annually to account for inflation. Hydro and utility costs are assumed to increase at 5.0 per cent annually to reflect higher historical costs.

ii. Debt-Principal and Interest Payments

As of December 31st, 2020, the Township had an outstanding debt on both the water and wastewater systems. The annual financing costs associated with this existing debt is anticipated to be funded through the water and wastewater rates and development charges (where applicable). The existing debt payments in 2022 total approximately $16,800 and $455,100 respectively for the water and wastewater systems. A portion of the wastewater debt is to be funded by development charges as DC receipts are received.

To carry-out the 10-year non-growth rate funded capital program, the Township will require additional debt as the existing reserves would be insufficient to help fund all the projects. Therefore, it has been assumed that approximately $1.00 million for water and $2.80 million for wastewater in external financing will be required to fund the capital program. Please note, the quantum of external financing required would be determined by staff and council through the budget process at the time of expenditure and is included in this study for financial planning purposes. Importantly, the annual debt payments (principal and interest combined) have been included in the utility rates to 2031 (the terms of debenture are: 25 years; 2.64% interest; payment per annum)

B. NON-USER RATE REVENUES

Non-user rate revenues are budget items, which decrease the net operating budget and are not covered through the Township's water or wastewater user rates. For the purposes of this report, the revenue received from investment income, utilities, water tower, etc. are considered to be non-user rate revenue. In addition to traditional non-user rate revenues listed above, development charge revenues are assumed to offset a small portion of the water capital program which could be attributable to growth plus development charges received to fund a share of the annual debenture payments associated wastewater system.

Table 2 shows the Township expecting to recover approximately $115,600 for the water system and approximately $154,000 for the wastewater system though non-user rate revenues in 2022. By 2031, the amounts are anticipated increase to approximately $131,300 and $204,000 for the water and wastewater systems respectively.

TABLE 2: PROJECTED NON-USER RATE REVENUES ($000)

	2022	2026	2031
Water	$115.6	$122.2	$131.3
Wastewater	$154.0	$204.0	$204.0

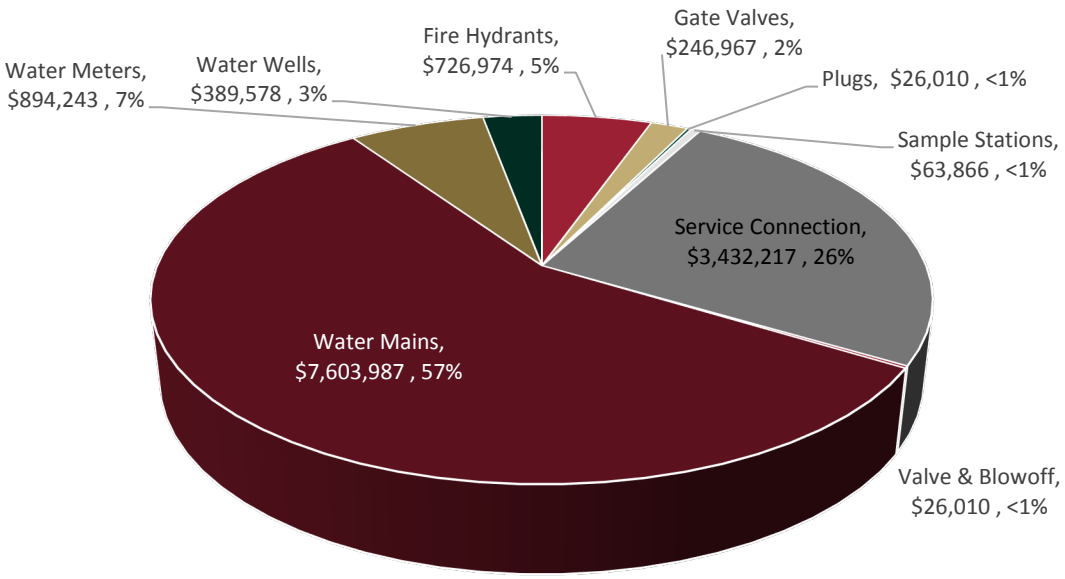
4. INFRASTRUCTURE AND CAPITAL

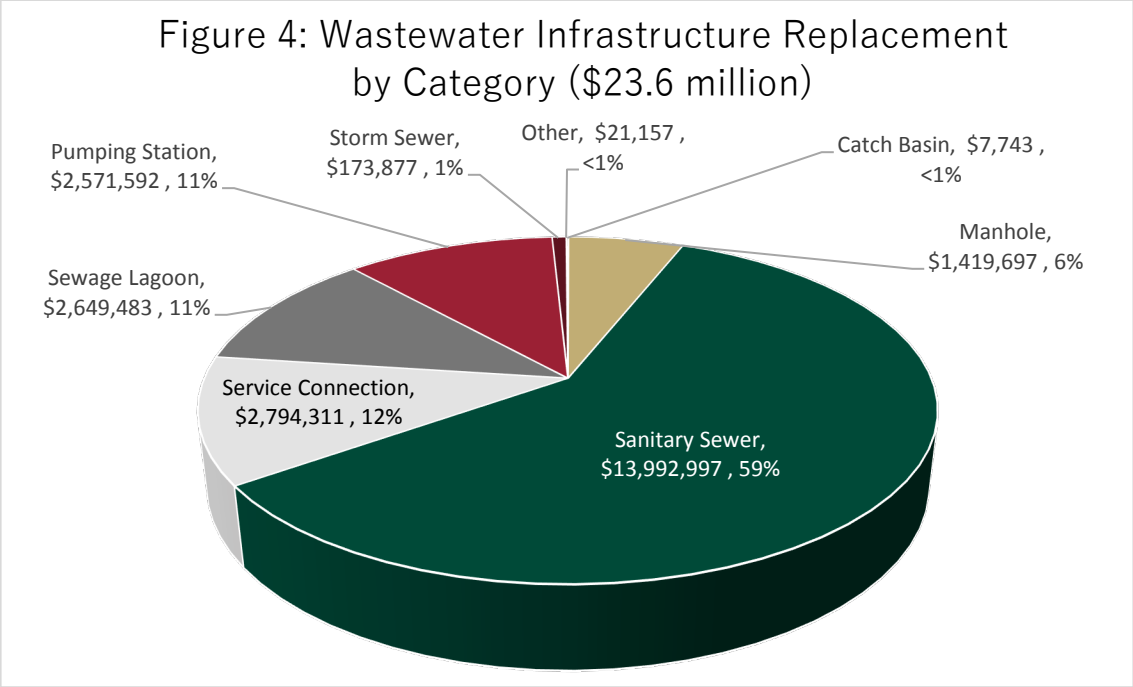
A. WATER AND WASTEWATER INFRASTRUCTURE

The information contained in the analysis was gathered from the Township's tangible capital asset database. The information is used not only to describe, but also define the quantity, age and replacement value of the existing infrastructure. The inventory was grouped into seventeen main asset categories, nine of which relate to water servicing and the remaining eight to wastewater servicing.

The Township's entire water and wastewater systems have a replacement value of about $37 million. Figure 3 and 4 below provides the breakdown, by category, of the replacement value of the infrastructure between both service categories.

Figure 3: Water Infrastructure Replacement by Category ($13.4 million)





Please note that from an asset management and utility rate setting perspective, 'replacement values' should be used as the basis to estimate the cost of replacing an asset when it reaches the end of its engineered design life. This figure is much different than the 'Net Book Value' which is consistent with the financial accounting practices defined by the Public Sector Accounting Board and is reported on the Township's financial statements.

The Net Book Value is the original acquisition cost less accumulated depreciation, depletion or amortization. It is reported on annually in accordance with reporting standards established by the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants. The Township's 2020 estimated Net Book Value of the Township's Tangible Capital Assets as of December 31, 2020 at $17.83 million for both water and wastewater. Under the financial accounting approach, many assets may be fully depreciated, yet remain in use across the Township. Net Book Value is not the appropriate methodology to be employed for infrastructure renewal planning.

According to the Township's asset useful life assumptions, approximately 3% of the water infrastructure assets have a remaining useful life of 50 years or more (Table 3). The majority of the assets, about 63% (or $8.430 million) have a remaining useful life of 10-19 years. Only about 6% (or $811,700) of the Township's water infrastructure is overdue for replacement with a remaining useful life of less than one year and a further 20% (or $2.65 million) is identified for replacement in the next ten years. The remaining useful life information is helpful from a corporate planning perspective but as the Township's asset management practices continue to evolve and more condition assessment data is available

this information will help further improve the timing of asset replacement needs and will help supplement the capital budgeting preparations identified by OCWA.

TABLE 3: WATER ASSETS – REMAINING USEFUL LIVES		
Remaining Useful Life	**Replacement Value ($000)**	**Percentage of Total**
Overdue	$811.7	6%
0-9 Years	$2,646.1	20%
10-19 Years	$8,428.9	63%
20-29 Years	$376.0	3%
30-39 Years	$139.2	1%
40-49 Years	$588.0	4%
>50 Years	$450.0	3%
Total	**$13,409.9**	**100%**

Conversely, wastewater assets in the Township are relatively older. As indicated in Table 4 below, only approximately 2% (or $375,500) of the Township's wastewater assets have a remaining useful life of 50 years or more. About 10% (or $2.28 million) are considered overdue by virtue of their design life.

TABLE 4: WASTEWATER ASSETS – REMAINING USEFUL LIVES		
Remaining Useful Life	**Replacement Value ($000)**	**Percentage of Total**
Overdue	$2,279.5	10%
0-9 Years	$5,379.4	23%
10-19 Years	$3,998.3	17%
20-29 Years	$440.5	2%
30-39 Years	$5,676.6	24%
40-49 Years	$5,481.0	23%
>50 Years	$375.5	2%
Total	**$23,630.9**	**100%**

B. CAPITAL AND CONTRIBUTIONS TO RESERVES

The capital expenditure forecast has been developed based on the capital requirements outlined by the Ontario Clean Water Agency (OCWA) supplemented by discussions with Township staff. A detailed list of capital works included in the Analysis can be found in Appendix B.

i. Projected Capital Expenditures

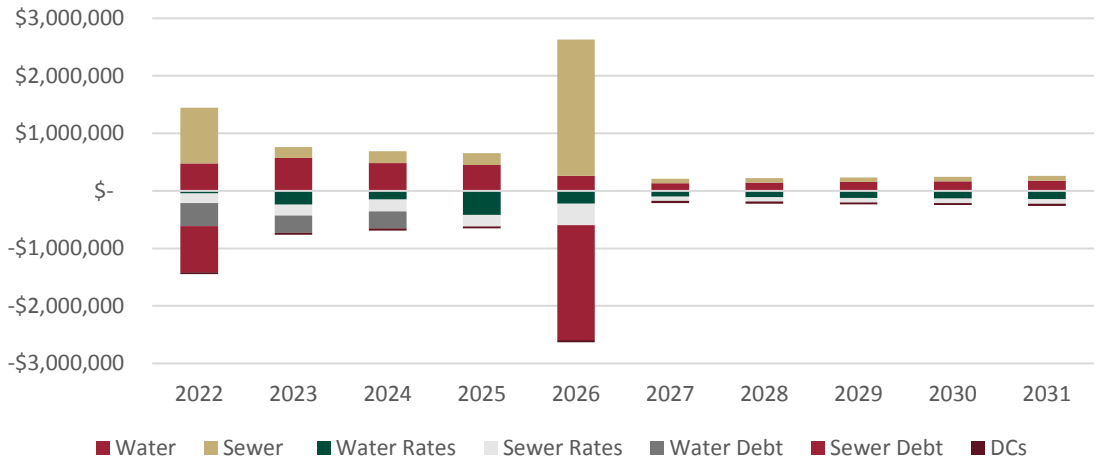
Over the next ten-year period (2022-2031), infrastructure investments will be required to support new growth in the Township and maintain the existing infrastructure network. Infrastructure related to growth, is assumed in part to receive funding through development charge revenues. Capital improvements and financing costs related to non-growth related infrastructure are the responsibility of the Township. These costs will need to be funded through user rates.

The total non-growth[2] related capital expenditures that the Township will be responsible for funding is summarized in Figure 5 below. Overall, over the 2022-2031 period, approximately $3.04 million in capital is required to support water services and an additional $4.32 million to support the wastewater capital projects. Cumulatively, the program equals $7.35 million.

It should be noted that existing water and wastewater reserves and the utility rates are intended to be the primary source to fund in-year capital expenditures. Therefore, of the total $7.35 million capital program (water and wastewater combined), approximately $3.80 million in new debt will be required to fund the capital program. Debenture financing has been used to help "smooth" out the immediate cash requirements to carry-out the $7.35 million in projected capital expenditures over the forecast period while ensuring reserves maintain a positive position over the same period. Please note, the quantum of external financing required would be determined by staff and council through the budget process at the time of expenditure and is included in this study for financial planning purposes. Importantly, the annual debt payments (principal and interest combined) have been included in the utility rates to 2031.

[2] The program is largely non-growth related. Some Water DC funding is applied to help offset the cost based on the DC Study. The annual DC contribution is about 35k

Figure 5: Summary of Non-Growth Related Capital Program



ii. Asset Repair and Replacement Provision

In addition to annual operating and maintenance costs, water and wastewater infrastructure will require periodic rehabilitation and eventual replacement. Capital expenditures to carry out the rehabilitation and replacement of the aging infrastructure are not growth-related and therefore would not receive funding through development charges. When assets require rehabilitation or are due for replacement, the source of funds are essentially limited to reserves or contributions from the operating budget. In maintaining a user-pay approach, it is important for the Township to build sufficient reserves for the scheduled replacement of infrastructure through contributions from operating.

The rehabilitation and replacement schedules were created using the TCA data provided by the Township. Provisions for infrastructure replacement are initially calculated for each asset based on their remaining useful life and the anticipated cost of replacement. The aggregate of all individual provisions form the required annual contribution to a reserve fund. A full cost approach is employed to calculate the annual reserve fund contributions and is recognized as a fair approach to charging customers for the use of these assets. Based on the calculated replacement schedule developed from the Township's TCA data, the calculated full cost average annual contribution requirement amounts to $738,500 for water services and $1.06 million for wastewater services. This calculation is based on a 20 year period and on the infrastructure which the Township owns at the time of preparing this study.

To mitigate an impractical increase of the user rates, reserve fund contributions are phased in gradually over the analysis and when considered in conjunction with the in-year capital requirements, are still below the calculated contributions. It also important to note, that the Township is not required to achieve reserve fund balances that are equal to replacement value by 2031.

5. RATE STRUCTURE ANALYSIS

Various water and wastewater rate structures are in place across Ontario municipalities. These include flat rates, constant rates, humpback block rates, declining block rates and inclining block rates. Rate structures may also include fixed or minimum charges. The implementation of a particular rate structure depends on a number of aspects including administrative and financial factors. Emphasis should be placed on identifying a rate structure that satisfies changing water use patterns and demographic trends while being fiscally responsible and sustainable from a service delivery standpoint. Table 5 provides a comparison of the most common rate structures employed.

TABLE 5: RATE STRUCTURE COMPARISON

Rate Structure	Brief Description	Pros	Cons
Flat Fee	▪ Each user pays the same fee regardless of the amount of water consumed ▪ Often combined with consumption-based charge	▪ Understood by the public ▪ Easy to administer ▪ Guaranteed funding	▪ Does not represent true cost of water ▪ May encourage wasteful water use ▪ Not equitable to all users of the system
Constant Metered Rates	▪ The user is charged a constant rate per unit of water consumed	▪ Understood by public ▪ Easy to administer	▪ May encourage wasteful water use
Increasing Block Rate	▪ A tiered approach in which the unit price of water increases relative to water use	▪ Encourages conservation ▪ Increased equity	▪ Large non-residential users pay more, which may discourage economic development
Declining Block Rate	▪ A tiered approach in which the unit price of water decreases relative to water use	▪ Supports high water users (i.e. commercial or industrial operations)	▪ May encourage wasteful water use ▪ Shifts burden to residential users

TABLE 5: RATE STRUCTURE COMPARISON			
Rate Structure	**Brief Description**	**Pros**	**Cons**
Humpback Rate	▪ A tiered approach in which the unit price of water increases relative to use to a determined rate before retreating back to a lower charge	▪ Encourages conservation and increased equity ▪ Supports high water users (i.e. commercial or industrial operations)	▪ Shifts burden to low-volume users
Seasonal Rates	▪ Users are charged a higher rate during peak times of high water/wastewater use	▪ - Encourages conservation	▪ May encourage wasteful water use

A. BACKGROUND

As shown in Table 6, the Township currently has in place a two-part rate structure.

1. A fixed charge per quarter is levied to each connection irrespective of usage patterns. This fixed charge is intended to provide the Township with a stable revenue source but is set lower than actual fixed charges the Township would incur to provide services.
2. A consumption-based charge is then applied to each cubic meter of water consumed. This variable rate component is intended to provide the end-user with control of their utility bill, which the total amount payable is relative to the volume of water consumed.

Wastewater services are charged in the same manner as water services.

TABLE 6: IN-FORCE 2021 UTILITY RATES		
All Accounts	**Water**	**Wastewater**
Fixed Charge: $/Quarter		
1" or less	$122.22	$169.26
1"	$171.11	$236.96
1.5"	$220.00	$304.67
2"	$354.44	$490.85
3"	$1,344.42	$1,861.86
Consumption Charge $/m³	$2.64	$3.53

B. ISSUES TO CONSIDER

i. Cost Recovery

In determining water and wastewater rates, the full cost of providing services are recovered. The costs are to include, operation and maintenance, periodic rehabilitation and contributions to reserves for the eventual repair and ultimate replacement of water and wastewater infrastructure.

ii. Equity

A 'user-pay' approach was used in selecting a rate structure and calculating water and wastewater rates.

iii. Conservation

It is important to consider measures that promote water conservation when determining a rate structure. It is also important to recognize that not all users have the ability to change their levels of consumption and, as such, should not be penalized.

iv. Administration

A rate structure should be transparent and easy to understand by both the users and service provider. Also, easing administrative requirements may reduce the overall administrative cost, which would ultimately provide for a reduction of rates.

v. Economic Development

While recognizing the importance of the above objectives, it is also important to maintain the Township's attractiveness to industries that may rely heavily on water and/or wastewater services. A rate structure must allow the Township to continue to be competitive from an economic development perspective.

C. MOVING FORWARD

After consultation with Township staff and analysis of neighbouring municipalities and best practices, the current recommendation is to maintain the current rate structure.

The existing rate structure will continue to allow the Township to generate sufficient funds on an annual basis to cover operating and capital improvement works. From a fiscal sustainability standpoint, it is important that the Township ensures the fixed charge represents a reasonable share of costs to secure sufficient revenues to properly run the system while balancing the overall incentives to promote conservation efforts.

The proposed rate structure continues to ensure the Township's fiscal stability remains sound while the fixed charges continue to represent a balanced share of total revenues which maintains the predictability of revenues over time. The volumetric based charges are still applied to each cubic meter of water consumed thereby continuing the Township's commitment to promote water conservation efforts ensuring the end-users have the ability to control the total bill with conservation adjustments.

6. CALCULATED RATES

In calculating the water and wastewater rates, a number of assumptions were applied. The water and wastewater rates are calculated to fully recover the cost of operating the system and identified in-year capital needs. Furthermore, the rates provide for contributions to asset replacement reserves, albeit, with modest contributions in the short-term as rate revenues are directed to carry-out known capital projects. An immediate implementation of a rate that fully funded the calculated asset rehabilitation and replacement contributions would result in significant impacts to all users in the Township. The analysis is based on providing for a gradual movement towards full rates. These contributions, when combined with the Township's ongoing capital works, will demonstrate a significant movement to long-term full cost recovery rates.

Table 7 below provides a summary of the 2022 net rate funding requirement for each of the water and wastewater systems. The net rate funding need represents the amount of money that must be funded through the utility rates.

TABLE 7: CALCULATION OF THE 2022 NET RATE FUNDING REQUIREMENT ($000)

Ref	Category	Water	Wastewater
1	Operating Expenditures	$1,358.9	$1,419.4
2	In-year rate funded capital	$480.0	$966.0
2a	*Less: Transfer from reserve*	*$0*	*$0*
2b	*Less: Debt Financing*	*($400.0)*	*($800.0)*
3	Contribution to/(from) Reserves	$173.1	$170.8
4	*Less: Non-metered Rate Revenue*	*($115.6)*	*($154.0)*
	Total Net Rate Funding Need = (1+2+2a+2b+3-4)	**$1,496.4**	**$1,602.2**

i. Calculated 2021 Utility Rates

Based on the information provided above, the required water and wastewater user rate revenue in 2022 is forecast to be $1.49 million and $1.60 million respectively. This is the amount of revenue which must be collected through the sale of water and treatment of wastewater to fully recover the operating, capital, rehabilitation and replacement costs of the systems. The rates moving forward are projected to increase by 2.0% for water and wastewater respectively, ensuring long-term fiscal stability of the services.

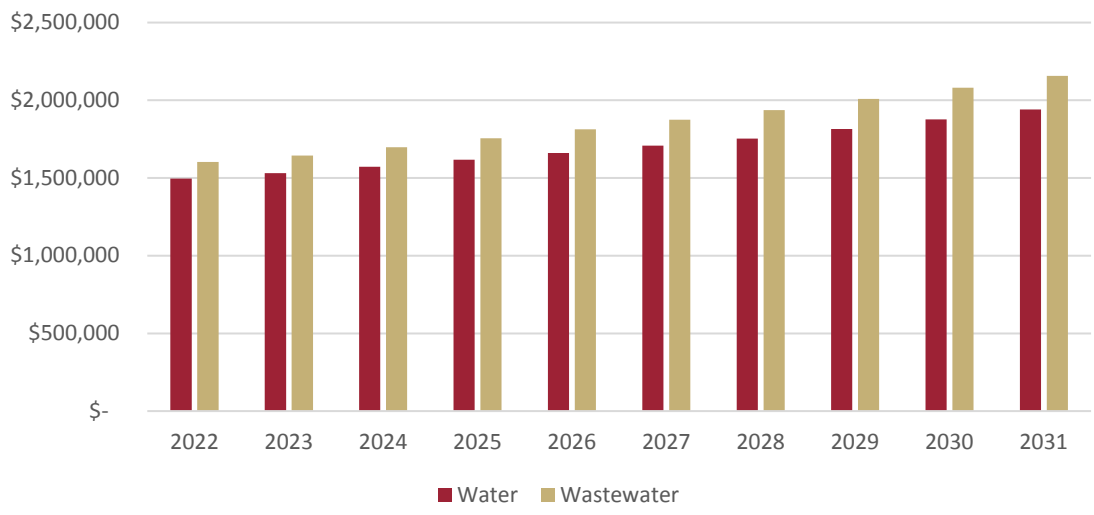
The calculated rates for 2022 are outlined in Table 8 below and the detailed calculations of the water and wastewater rates are outlined in Appendix A.

TABLE 8: CALCULATED RATES FOR 2022		
All Accounts	**Water**	**Wastewater**
Fixed Charge: $/Quarter		
1" or less	$124.66	$172.65
1"	$174.53	$241.70
1.5"	$224.40	$310.76
2"	$361.53	$500.67
3"	$1,371.31	$1,899.10
Consumption Charge $/m³	$2.69	$3.60

ii. Utility Rate Projection

Over the long-term, the net rate funding requirements for both the water and wastewater system are expected to increase. The cost increases can largely be attributed to carrying out the capital program, escalating operating costs, new debt financing requirements (associated to capital), and contributions to the Township's asset management reserves. The water and wastewater net rate funding requirements are projected to increase to $1.94 million and $2.16 million respectively over the ten-year period. Figure 6 below provides a snapshot of the annual year-over-year change in costs to 2031.

Figure 6: Net Rate Funding Requirement



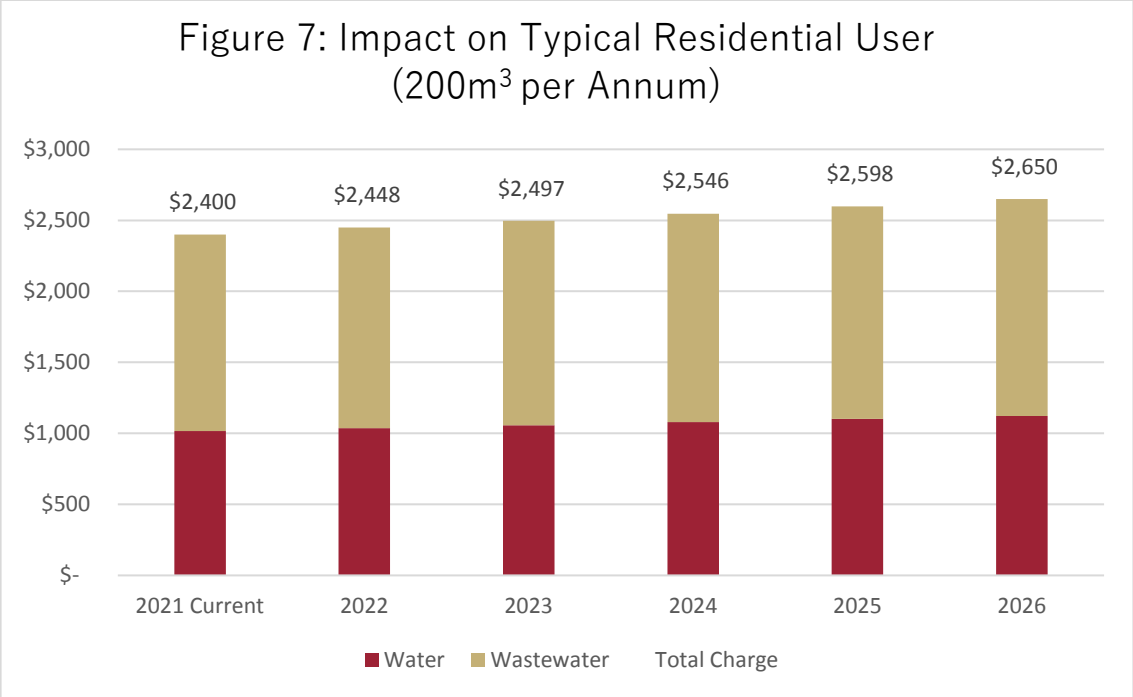
The table below outlines the proposed utility rates required over the immediate 5-year period to support the system. In general, the quarterly fixed and variable charges for water and wastewater will increase at a rate of 2.0% for water and wastewater, starting in 2022 through to 2031.

TABLE 9: CALCULATED UTILITY RATES: 5-YEAR PROJECTION					
Water Services (All Accounts)	**2022**	**2023**	**2024**	**2025**	**2026**
Fixed Charge: $/Quarter					
1" or less	$124.66	$127.16	$129.70	$132.29	$134.94
1"	$174.53	$178.02	$181.58	$185.21	$188.92
1.5"	$224.40	$228.89	$233.47	$238.14	$242.90
2"	$361.53	$368.76	$376.13	$383.66	$391.33
3"	$1,371.31	$1,398.73	$1,426.71	$1,455.24	$1,484.35
Consumption Charge: $/m³	$2.69	$2.75	$2.80	$2.86	$2.91
Wastewater Services (All Accounts)	**2022**	**2023**	**2024**	**2025**	**2026**
Fixed Charge: $/Quarter					
1" or less	$172.65	$176.10	$179.62	$183.21	$186.88
1"	$241.70	$246.53	$251.46	$256.49	$261.62
1.5"	$310.76	$316.98	$323.32	$329.78	$336.38
2"	$500.67	$510.68	$520.89	$531.31	$541.94
3"	$1,899.10	$1,937.08	$1,975.82	$2,015.34	$2,055.64
Consumption Charge: $/m³	$3.60	$3.67	$3.75	$3.82	$3.90

iii. Impact on Typical User

In this analysis, the typical user is assumed to be a household consuming 200 m^3 of water per year based on the average consumption for a typical user in the Township. The water and wastewater rates are calculated to increase by 2.0% per annum to 2031.

The 2022 rate will increase the average household's annual water and wastewater bill by $48, from $2,400 to $2,448, or an increase of 2.0%. As shown in Figure 6 below, the total charge per typical household is expected to reach $2,650 by 2026 the equivalent of about a 2.0% average increase per year.



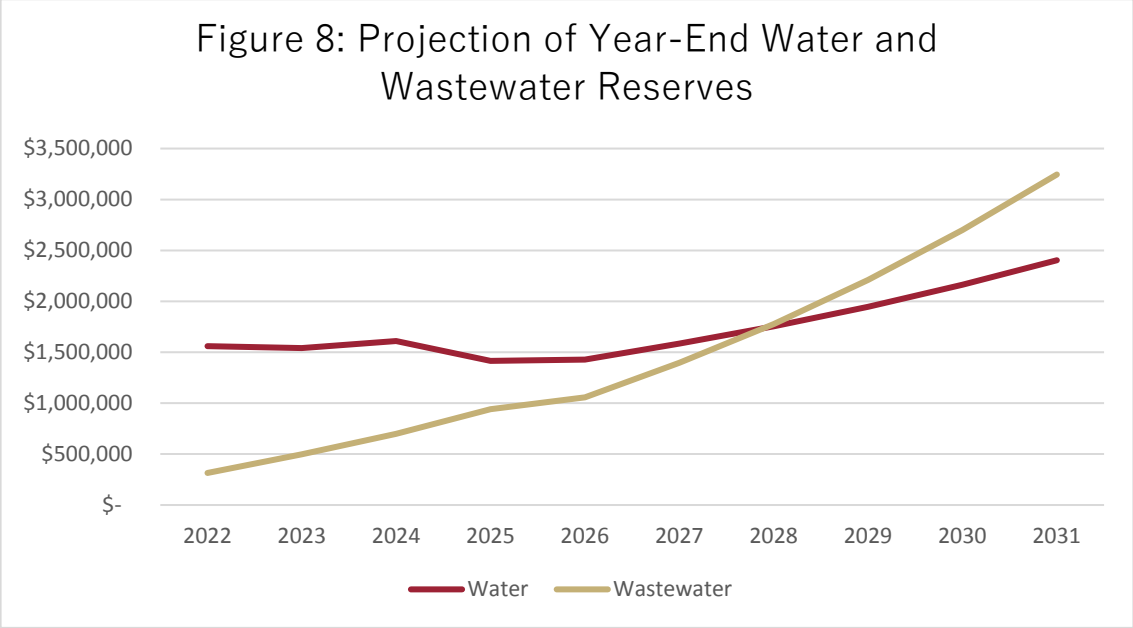
iv. Impact on Reserve and Reserve Funds

It is important to consider the implications of the rate structure and calculated user rates on the Township's water and wastewater reserve fund. The Township's existing water and wastewater reserve funds are estimated to currently be in a positive position with about $1.37 million in water and $140,900 in wastewater funds to start 2022. Township staff and Hemson have calculated the Township's reserve funds over the 10-year period with the goal of ensuring reserves maintain a positive position and funds are available to manage unexpected capital expenditures or other operational variances, which may be experienced over the planning period (i.e. variations in annual billable consumption).

Figure 8 indicates that the Township's water and wastewater reserve funds maintain a positive position throughout the period despite drawing on these funds to carry-out the non-growth related capital plan. Although the wastewater reserve funds accumulate over the planning period, the balance should be considered in the context of both the system replacement value and the potential need to continue interim funding growth-related projects and/or existing growth-debt until the DC receipts are realized and can be used to repay the rate reserves.

It is recommended that the Township continue to monitor both the water and wastewater reserve funds over the period to ensure they continue to be sufficient to cover operational

and capital expenditures. It is expected that the quantum of the Township's reserve funds be reviewed again at the next rate review.



7. RECOMMENDATIONS AND FINDINGS

The calculated rates presented establish water and wastewater rates to all users of the systems that are fair and equitable. The analysis included in this report ensures that the water and wastewater rates fully fund all of the Township's anticipated annual costs including all operating costs and capital financing needs. It is fiscally prudent that the Township continue to contribute to reserves for the eventual repair and ultimate replacement of water and wastewater infrastructure. The immediate implementation of a rate that fully funds the calculated asset rehabilitation and replacement contributions would result in significant impacts to all users in the Township. The analysis establishes an annual contribution to reserves for asset rehabilitation and replacement that will ensure the Township begins to build up its reserves for the long-term. These contributions, when combined with the Township's ongoing capital works, will demonstrate a significant movement towards long-term full cost recovery rates.

It is important to note that at the time this document was prepared, the full impact and fiscal ramifications of COVID-19 were (and remain) unknown; as such, water and wastewater rates should be closely monitored to ensure revenues are sufficient to cover costs. Furthermore, it is imperative that the Township continue to monitor all consumption data on a monthly basis to identify usage trends and variance in the projections to ensure costs and revenues are managed accordingly. A financial model was developed to undertake the analysis and serves as a dynamic rate setting tool. Using the model, the Township is able to perform sensitivity analyses of water and wastewater rates, rate structure and also phase-in options. It is recommended that this study be reviewed and updated in three to five years as details surrounding overall growth and costs become more refined.

APPENDIX A

DETAILED RATE CALCULATIONS

APPENDIX A
TABLE 1

TOWNSHIP OF RAMARA
2021 WATER & SEWER RATE STUDY
WATER AND SEWER RATE CALCULATIONS - SUMMARY
WATER SERVICES

Water Services	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected	2027 Projected	2028 Projected	2029 Projected	2030 Projected	2031 Projected
Expenditures										
Operating										
Annual Gross Operating Expenditures	$ 1,342,109	$ 1,368,951	$ 1,396,330	$ 1,424,257	$ 1,452,742	$ 1,481,797	$ 1,511,433	$ 1,541,661	$ 1,572,495	$ 1,603,944
Current Outstanding Debt	$ 16,777	$ 16,777	$ 16,777	$ 16,777	$ 16,777	$ 16,777	$ 16,777	$ 16,777	$ 16,777	$ 16,777
Debt Financing Costs (P+I for New Capital)	*$ -*	*$ 22,060*	*$ 38,604*	*$ 55,149*	*$ 55,149*	*$ 55,149*	*$ 55,149*	*$ 55,149*	*$ 55,149*	*$ 55,149*
Subtotal Annual Gross Operating Expenditures	***$ 1,358,886***	***$ 1,407,788***	***$ 1,451,712***	***$ 1,496,183***	***$ 1,524,668***	***$ 1,553,723***	***$ 1,583,359***	***$ 1,613,587***	***$ 1,644,421***	***$ 1,675,870***
Capital										
In-Year Non-Growth Related Capital Works Share	$ 480,000	$ 575,382	$ 486,075	$ 451,013	$ 259,784	$ 135,038	$ 145,738	$ 156,653	$ 167,786	$ 179,142
Transfer from Reserve (for capital)										
Smoothing for Capital - Debt Financing	$ (400,000)	$ (300,000)	$ (300,000)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sub-total Capital	***$ 80,000***	***$ 275,382***	***$ 186,075***	***$ 451,013***	***$ 259,784***	***$ 135,038***	***$ 145,738***	***$ 156,653***	***$ 167,786***	***$ 179,142***
Asset Replacement Reserve Contribution										
Calculated Annual Asset Management Contribution										
Contribution To/(from) Reserves	$ 173,074	$ (34,584)	$ 53,966	$ (210,137)	$ (937)	$ 142,387	$ 150,890	$ 171,849	$ 194,316	$ 217,759
Total Capital Expenditures	**$ 253,074**	**$ 240,798**	**$ 240,041**	**$ 240,876**	**$ 258,847**	**$ 277,425**	**$ 296,628**	**$ 328,502**	**$ 362,103**	**$ 396,901**
Total Annual Expenditures	***$ 1,611,961***	***$ 1,648,586***	***$ 1,691,753***	***$ 1,737,059***	***$ 1,783,515***	***$ 1,831,148***	***$ 1,879,987***	***$ 1,942,090***	***$ 2,006,523***	***$ 2,072,771***
Non-Rate Revenues										
Grant Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DC Revenues	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)	$ (35,000)
Non-User Rate Revenues	$ (80,580)	$ (82,192)	$ (83,835)	$ (85,512)	$ (87,222)	$ (88,967)	$ (90,746)	$ (92,561)	$ (94,412)	$ (96,301)
Total Non-User Rate Revenues	***$ (115,580)***	***$ (117,192)***	***$ (118,835)***	***$ (120,512)***	***$ (122,222)***	***$ (123,967)***	***$ (125,746)***	***$ (127,561)***	***$ (129,412)***	***$ (131,301)***
Net Rate Funding Need	**$ 1,496,381**	**$ 1,531,395**	**$ 1,572,917**	**$ 1,616,547**	**$ 1,661,292**	**$ 1,707,181**	**$ 1,754,241**	**$ 1,814,529**	**$ 1,877,111**	**$ 1,941,470**

APPENDIX A
TABLE 1

TOWNSHIP OF RAMARA
2021 WATER & SEWER RATE STUDY
WATER AND SEWER RATE CALCULATIONS - SUMMARY
WATER SERVICES

User Rates	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A) **Fixed Quarterly Charge per Metre**										
Quarterly Fixed Fee per Equivalent Unit	$124.66	$127.16	$129.70	$132.29	$134.94	$137.64	$140.39	$143.20	$146.06	$148.99
Increase (%)	2.0%	2.0%	2.0%	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Number of Equivalent Metered Connections	*1,954*	*1,969*	*2,001*	*2,035*	*2,070*	*2,105*	*2,140*	*2,185*	*2,230*	*2,275*
Total Annual Fixed Metered Revenue	**$ 974,377**	**$ 1,001,494**	**$ 1,038,126**	**$ 1,076,880**	**$ 1,117,309**	**$ 1,158,925**	**$ 1,201,759**	**$ 1,251,570**	**$ 1,302,893**	**$ 1,355,768**
Other Fixed Revenues (Vacant and Non-Metered)	***$ 31,914***	***$ 30,009***	***$ 24,903***	***$ 19,580***	***$ 13,494***	***$ 7,157***	***$ 562***	***$ -***	***$ -***	***$ -***
B) **Consumption Charge per cubic m3**										
Consumption Revenue	**$ 490,090**	**$ 499,891**	**$ 509,889**	**$ 520,087**	**$ 530,489**	**$ 541,099**	**$ 551,920**	**$ 562,959**	**$ 574,218**	**$ 585,702**
Total Annual Billed Consumption (m3)	182,000	182,000	182,000	182,000	182,000	182,000	182,000	182,000	182,000	182,000
Charge Per Cubic Metre	$2.69	$2.75	$2.80	$2.86	$2.91	$2.97	$3.03	$3.09	$3.16	$3.22
Increase (%)	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Total Revenue Generated	**$ 1,496,381**	**$ 1,531,395**	**$ 1,572,917**	**$ 1,616,547**	**$ 1,661,292**	**$ 1,707,181**	**$ 1,754,241**	**$ 1,814,529**	**$ 1,877,111**	**$ 1,941,470**

APPENDIX A
TABLE 2

TOWNSHIP OF RAMARA
2021 WATER & SEWER RATE STUDY
WATER AND SEWER RATE CALCULATIONS - SUMMARY
WASTEWATER SERVICES

Wastewater Services	**2022 Projected**	**2023 Projected**	**2024 Projected**	**2025 Projected**	**2026 Projected**	**2027 Projected**	**2028 Projected**	**2029 Projected**	**2030 Projected**	**2031 Projected**
Expenditures										
Operating										
Annual Gross Operating Expenditures	$ 964,394	$ 983,682	$ 1,003,356	$ 1,023,423	$ 1,043,892	$ 1,064,769	$ 1,086,065	$ 1,107,786	$ 1,129,942	$ 1,152,541
Current Outstanding Debt	$ 455,053	$ 455,053	$ 455,053	$ 455,053	$ 455,053	$ 455,053	$ 455,053	$ 455,053	$ 455,053	$ 455,053
Debt Financing Cost (P+I of New Debt for Capital)	$ -	$ 44,119	$ 44,119	$ 44,119	$ 44,119	$ 159,932	$ 159,932	$ 159,932	$ 159,932	$ 159,932
Subtotal Annual Gross Operating Expenditures	*$ 1,419,448*	*$ 1,482,855*	*$ 1,502,528*	*$ 1,522,596*	*$ 1,543,064*	*$ 1,679,754*	*$ 1,701,050*	*$ 1,722,771*	*$ 1,744,927*	*$ 1,767,526*
Capital										
Net In-Year Non-Growth Capital Related Expenditures	$ 966,000	$ 188,700	$ 202,878	$ 202,691	$ 2,370,526	$ 73,973	$ 75,453	$ 76,962	$ 78,501	$ 80,071
Transfer from Reserves (for Capital)										
Smoothing for Capital- Debt Financed	$ (800,000)	$ -	$ -	$ -	$ (2,000,000)	$ -	$ -	$ -	$ -	$ -
Sub-total Capital	***$ 166,000***	***$ 188,700***	***$ 202,878***	***$ 202,691***	***$ 370,526***	***$ 73,973***	***$ 75,453***	***$ 76,962***	***$ 78,501***	***$ 80,071***
Asset Replacement Reserve Contribution										
Calculated Annual Contribution	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contribution To/(from) Reserves	$ 170,780	$ 176,580	$ 196,447	$ 233,243	$ 103,950	$ 324,482	$ 364,078	$ 412,104	$ 461,740	$ 513,858
Total Capital Expenditures	***$ 336,780***	***$ 365,280***	***$ 399,325***	***$ 435,933***	***$ 474,476***	***$ 398,455***	***$ 439,531***	***$ 489,066***	***$ 540,241***	***$ 593,929***
Total Annual Expenditures	***$ 1,756,228***	***$ 1,848,134***	***$ 1,901,853***	***$ 1,958,529***	***$ 2,017,540***	***$ 2,078,210***	***$ 2,140,581***	***$ 2,211,837***	***$ 2,285,168***	***$ 2,361,454***
Revenues										
Grant Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DC Revenue	$ (100,000)	$ (150,000)	$ (150,000)	$ (150,000)	$ (150,000)	$ (150,000)	$ (150,000)	$ (150,000)	$ (150,000)	$ (150,000)
Other Non-Rate Revenues	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)	$ (53,984)
Total Non-User Rate Revenues	***$ (153,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***	***$ (203,984)***
Net Rate Funding Need	**$ 1,602,244**	**$ 1,644,150**	**$ 1,697,869**	**$ 1,754,545**	**$ 1,813,556**	**$ 1,874,226**	**$ 1,936,597**	**$ 2,007,853**	**$ 2,081,184**	**$ 2,157,470**
Increase in Net Funding Need	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*4%*	*4%*	*4%*

APPENDIX A
TABLE 2

TOWNSHIP OF RAMARA
2021 WATER & SEWER RATE STUDY
WATER AND SEWER RATE CALCULATIONS - SUMMARY
WASTEWATER SERVICES

User Rates		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A)	**Fixed Quarterly**										
	Quarterly Fixed Fee per Equivalent Unit	$172.65	$176.10	$179.62	$183.21	$186.88	$190.61	$194.43	$198.32	$202.28	$206.33
	Increase (%)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Number of Equivalent Metered Connections	1,561	1,575	1,604	1,635	1,667	1,699	1,731	1,772	1,813	1,855
	Total Annual Fixed Revenue	**$ 1,077,997**	**$ 1,109,418**	**$ 1,152,442**	**$ 1,198,210**	**$ 1,246,094**	**$ 1,295,414**	**$ 1,346,209**	**$ 1,405,657**	**$ 1,466,944**	**$ 1,530,946**
	Other Fixed Revenue (Non-Metered)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
B)	**Consumption Charge**										
	Consumption Revenue	**$ 524,247**	**$ 534,732**	**$ 545,427**	**$ 556,335**	**$ 567,462**	**$ 578,811**	**$ 590,388**	**$ 602,195**	**$ 614,239**	**$ 626,524**
	Total Annual Billed Consumption (m3)	145,600	145,600	145,600	145,600	145,600	145,600	145,600	145,600	145,600	145,600
	Charge Per Cubic Metre	$3.60	$3.67	$3.75	$3.82	$3.90	$3.98	$4.05	$4.14	$4.22	$4.30
	Increase (%)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Total Revenue Generated		**$ 1,602,244**	**$ 1,644,150**	**$ 1,697,869**	**$ 1,754,545**	**$ 1,813,556**	**$ 1,874,226**	**$ 1,936,597**	**$ 2,007,853**	**$ 2,081,184**	**$ 2,157,470**

APPENDIX B

WATER AND WASTEWATER CAPITAL PROGRAM

Appendix B
Township of Ramara
Water Capital Program

Project Name/Description	Service Area	Timing	Gross Cost
Energy Efficiency Program - Water portion	All facilities	2022 - 2026	$ 50,000
Energy Efficiency Program - Water portion	All facilities	2027 - 2031	$ 40,000
Reservoir inspection	Bayshore WTP	2024 - 2024	$ 10,000
High Lift Pumps (HLP) replacement	Bayshore WTP	2024 - 2024	$ 60,000
Study to investigate corrosion issues	Bayshore WTP	2024 - 2024	$ 10,000
Swab Distribution System	Bayshore WTP	2022 - 2022	$ 12,000
Paint Hydrants	Bayshore WTP	2023 - 2023	$ 7,000
Major Maintenance Items	Bayshore WTP	2022 - 2022	$ 10,000
Major Maintenance Items	Bayshore WTP	2023 - 2023	$ 13,000
Major Maintenance Items	Bayshore WTP	2024 - 2024	$ 14,000
Major Maintenance Items	Bayshore WTP	2025 - 2025	$ 10,000
Major Maintenance Items	Bayshore WTP	2026 - 2026	$ 5,000
Major Maintenance Items	Bayshore WTP	2027 - 2031	$ 5,000
Green Sand Filters	Davy Drive WTP	2022 - 2022	$ 125,000
Major Maintenance Items	Davy Drive WTP	2022 - 2022	$ 9,000
Major Maintenance Items	Davy Drive WTP	2023 - 2023	$ 14,000
Major Maintenance Items	Davy Drive WTP	2024 - 2024	$ 9,000
Major Maintenance Items	Davy Drive WTP	2025 - 2025	$ 10,000
Major Maintenance Items	Davy Drive WTP	2026 - 2026	$ 10,000
Major Maintenance Items	Davy Drive WTP	2027 - 2031	$ 5,000
Hydrant Replacement Program	Lagoon City Distribution System	2022 - 2022	$ 50,000
Hydrant Replacement Program	Lagoon City Distribution System	2023 - 2023	$ 50,000
Hydrant Replacement Program	Lagoon City Distribution System	2024 - 2024	$ 50,000
Hydrant Replacement Program	Lagoon City Distribution System	2025 - 2025	$ 50,000
Hydrant Replacement Program	Lagoon City Distribution System	2026 - 2026	$ 50,000
Hydrant Replacement Program	Lagoon City Distribution System	2027 - 2031	$ 250,000
Paint Hydrants	Lagoon City Distribution System	2023 - 2024	$ 14,000
Pump Refurbishment Program	Lagoon City WTP	2022 - 2022	$ 30,000

Note: Projects costs inflated in rate calculation to the year in which the capital expenditure is required.

Appendix B
Township of Ramara
Water Capital Program

Project Name/Description	Service Area	Timing	Gross Cost
Pump Refurbishment Program	Lagoon City WTP	2023 - 2023	$ 50,000
Pump Refurbishment Program	Lagoon City WTP	2024 - 2024	$ 35,000
Pump Refurbishment Program	Lagoon City WTP	2025 - 2025	$ 45,000
Pump Refurbishment Program	Lagoon City WTP	2026 - 2026	$ 90,000
Pump Refurbishment Program	Lagoon City WTP	2027 - 2031	$ 90,000
Complete an automation study	Lagoon City WTP	2024 - 2024	$ 10,000
Major Maintenance Items	Lagoon City WTP	2022 - 2022	$ 15,000
Major Maintenance Items	Lagoon City WTP	2023 - 2023	$ 15,000
Major Maintenance Items	Lagoon City WTP	2024 - 2024	$ 23,000
Major Maintenance Items	Lagoon City WTP	2025 - 2025	$ 5,000
Major Maintenance Items	Lagoon City WTP	2026 - 2026	$ 5,000
Major Maintenance Items	Lagoon City WTP	2027 - 2031	$ 5,000
Fix Leaking Roof	Lagoon City WTP	2022 - 2022	$ 30,000
Filter media replacement	Lagoon City WTP	2022 - 2022	$ 10,000
Raw water Intake Inspection Clean and inspect intake	Lagoon City WTP	2022 - 2022	$ 50,000
Replace Air Conditioning in Control Room	Lagoon City WTP	2022 - 2022	$ 7,000
Clearwell Bypass Valve Replacement	Lagoon City WTP	2023 - 2023	$ 10,000
Milltronics sensor in low lift pump chamber.	Lagoon City WTP	2023 - 2023	$ 6,000
Flushing Machines	Lagoon City WTP	2023 - 2023	$ 40,000
Remove and replace interior coating (refer to Landmark report).	Lagoon City/ Brechin Water Tower	2022 - 2022	$ 50,000
Remove and replace interior coating (refer to Landmark report).	Lagoon City/ Brechin Water Tower	2023 - 2023	$ 200,000
Waterproof membrane on concrete roof	Lagoon City/ Brechin Water Tower	2024 - 2024	$ 25,000
Interior (dry side) galvanized steel decking membrane on concrete roof	Lagoon City/ Brechin Water Tower	2024 - 2024	$ 110,000
Other operational/safety upgrades (refer to Landmark Report)	Lagoon City/ Brechin Water Tower	2024 - 2024	$ 30,000
Major Maintenance Items	Park Lane WTP	2022 - 2022	$ 9,000
Major Maintenance Items	Park Lane WTP	2023 - 2023	$ 9,000
Major Maintenance Items	Park Lane WTP	2024 - 2024	$ 4,000
Major Maintenance Items	Park Lane WTP	2025 - 2025	$ 5,000

Note: Projects costs inflated in rate calculation to the year in which the capital expenditure is required.

Appendix B
Township of Ramara
Water Capital Program

Project Name/Description	Service Area	Timing	Gross Cost
Major Maintenance Items	Park Lane WTP	2026 - 2026	$ 5,000
Major Maintenance Items	Park Lane WTP	2027 - 2031	$ 5,000
Installation of auto-flusher at the end of watermain supplying the small subdivision.	South Ramara WTP	2023 - 2023	$ 40,100
Replace touch screens	South Ramara WTP	2023 - 2023	$ 7,000
Replace touch screens	South Ramara WTP	2025 - 2025	$ 7,000
Refurish filter 1	South Ramara WTP	2026 - 2026	$ 50,000
Refurbish filter 2	South Ramara WTP	2023 - 2023	$ 50,000
New Filter Effluent Pump	South Ramara WTP	2023 - 2023	$ 6,000
Purchase Spare Pump	South Ramara WTP	2023 - 2023	$ 10,000
Install attic insulation to reduce heating costs and energy consumption.	South Ramara WTP	2024 - 2024	$ 7,500
Filter media replacement	South Ramara WTP	2022 - 2022	$ 10,000
Review electrical connection to provide full emergency power coverage at the WTP facility	South Ramara WTP	2024 - 2024	$ 10,700
Complete an automation study	South Ramara WTP	2024 - 2024	$ 10,000
Expand Serviced Area (On Lakeshore North of Heritage Farms)	South Ramara WTP	2027 - 2031	$ 2,000,000
Spare Raw Water Pump	South Ramara WTP	2022 - 2022	$ 5,000
Major Maintenance Items	South Ramara WTP	2022 - 2022	$ 14,000
Major Maintenance Items	South Ramara WTP	2023 - 2023	$ 10,000
Major Maintenance Items	South Ramara WTP	2024 - 2024	$ 19,000
Major Maintenance Items	South Ramara WTP	2025 - 2025	$ 5,000
Major Maintenance Items	South Ramara WTP	2026 - 2026	$ 5,000
Major Maintenance Items	South Ramara WTP	2027 - 2031	$ 10,000
High Lift Pumps (HLP) replacement	Val Harbour WTP	2022 - 2022	$ 20,000
High Lift Pumps (HLP) upgrade project (includes engineering design)	Val Harbour WTP	2025 - 2025	$ 274,000
Major Maintenance Items	Val Harbour WTP	2022 - 2022	$ 14,000
Major Maintenance Items	Val Harbour WTP	2023 - 2023	$ 10,000
Major Maintenance Items	Val Harbour WTP	2024 - 2024	$ 13,000
Major Maintenance Items	Val Harbour WTP	2025 - 2025	$ 4,000
Major Maintenance Items	Val Harbour WTP	2026 - 2026	$ 10,000
Major Maintenance Items	Val Harbour WTP	2027 - 2031	$ 13,000
Total			**$ 4,599,300**

Note: Projects costs inflated in rate calculation to the year in which the capital expenditure is required.

Appendix B
Township of Ramara
Wastewater Capital Program

Project Name/Description	Service Area	Timing	Gross Cost
Energy Efficiency Program - Wastewater portion	All facilities	2022 - 2026	$ 50,000
Energy Efficiency Program - Wastewater portion	All facilities	2027 - 2031	$ 40,000
I&I Work	All facilities	2022 - 2031	$ 500,000
Spray Fields (Bayshore)	Bayshore SPSs	2026 - 2026	$ 2,000,000
Major Maintenance Items	Bayshore SPSs	2026 - 2026	$ 5,000
Pump Replacements	Bayshore SPSs	2022 - 2023	$ 40,000
Pump Replacements	Bayshore SPSs	2024 - 2024	$ 8,000
cross culverts between ponds	Bayshore WWTP	2022 - 2022	$ 4,000
New wet end	Bayshore WWTP	2022 - 2022	$ 10,000
Acoutstic Sludge Survey and Report	Bayshore WWTP	2022 - 2022	$ 30,000
Acoutstic Sludge Survey and Report	Bayshore WWTP	2027 - 2031	$ 35,000
Plant Monitoring Upgrades	Lagoon City / Brechin WWTP	2022 - 2022	$ 25,000
Cleaning of Basins	Lagoon City / Brechin WWTP	2022 - 2022	$ 90,000
New polymer storage tank	Lagoon City / Brechin WWTP	2022 - 2022	$ 32,000
Digester Roof	Lagoon City / Brechin WWTP	2022 - 2022	$ 120,000
Air conditioning	Lagoon City / Brechin WWTP	2022 - 2022	$ 7,000
Long terrm servicing study	Lagoon City / Brechin WWTP	2022 - 2022	$ 50,000
Spare Aertor Float Frame	Lagoon City / Brechin WWTP	2022 - 2023	$ 10,000
Side Aertor Float Frame	Lagoon City / Brechin WWTP	2023 - 2023	$ 20,000
Major Maintenance Items	Lagoon City / Brechin WWTP	2022 - 2022	$ 13,000
Major Maintenance Items	Lagoon City / Brechin WWTP	2023 - 2023	$ 30,000
Major Maintenance Items	Lagoon City / Brechin WWTP	2024 - 2024	$ 12,000
Major Maintenance Items	Lagoon City / Brechin WWTP	2025 - 2025	$ 16,000
Major Maintenance Items	Lagoon City / Brechin WWTP	2026 - 2026	$ 10,000
Major Maintenance Items	Lagoon City / Brechin WWTP	2027 - 2031	$ 10,000
SPS#4 - Upgrades	Lagoon City SPSs	2022 - 2022	$ 375,000
New electrical Panel Lift Station 3	Lagoon City SPSs	2023 - 2023	$ 50,000
SPS#1 - General SPS Refurbishment	Lagoon City SPSs	2025 - 2025	$ 115,000
SPS#2 - General SPS Refurbishment	Lagoon City SPSs	2022 - 2022	$ 115,000
SPS#3 - General SPS Refurbishment	Lagoon City SPSs	2026 - 2026	$ 115,000
SPS#5 - General SPS Refurbishment	Lagoon City SPSs	2024 - 2024	$ 115,000
Treated reservoir inspection and report	Lagoon City WTP	2022 - 2022	$ 10,000
Total			**$ 4,062,000**

Note: Projects costs inflated in rate calculation to the year in which the capital expenditure is required.