ONTARIO CLEAN WATER AGENCY
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Town of Amherstburg

Water and Wastewater Rate Study

SUBMITTED BY

Ontario Clean Water Agency
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Date: January 12, 2024

Rev: 3

Issue and Revision Record					
Rev.	Date	Prepared by:	Reviewed by:	Approved by:	Rev. Description
1	November 17, 2023	Anna Duong, Nick Larson	Jason Younker	Nick Larson	Draft
2	December 12, 2023	Anna Duong, Nick Larson	Jason Younker	Nick Larson	Draft
3	January 12, 2024	Anna Duong, Nick Larson	Jason Younker	Nick Larson	Final

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1 Introduction

1.1 Overview

The Town of Amherstburg (Town) retained the Ontario Clean Water Agency (OCWA) to prepare a Water and Wastewater Rate Study.

A Rate Study helps decision makers to establish a fiscally responsible charge for users of water and wastewater systems to fund the operating and capital expenditures required to provide services.

This Rate Study is based on an analysis of:

- Current and past budgets;
- Reserve fund and debt positions;
- Asset maintenance, rehabilitation, replacement and new construction spending forecasts;
- Current and forecasted customers; and
- Current and forecasted water consumption levels.

1.2 Approach

The approach to completing this Rate Study is:

1. Understand current and forecasted expenditures.
2. Understand current and forecasted revenues.
3. Establish an appropriate structure to establishing a billing approach. This looks at options regarding base (flat) charges, standard volumetric ($/m^3) charges, and block increasing/decreasing volumetric charges.
4. Analyze the rate increases (or decreases) necessary to generate sufficient revenues to fund forecasted expenditures.

1.3 Updating Rate Analysis

The analysis completed in this report is based on current system performance and existing information. Changing circumstances (i.e. unexpected accelerated deterioration of asset performance, rapid growth of the serviced population, changing regulations, etc.) will affect the timing of capital projects.

Rates are reviewed on an annual basis, and this Rate Study should be repeated every five years, or more frequently if significant events occur that will affect the timing of any large capital projects. This is particularly noteworthy with respect to the wastewater infrastructure system in the Town as there are technical planning studies planned over the next few years to identify large projects to meet long-term service objectives. The current high inflation landscape also provides incentive for more frequent updates.

1.4 Background

The Town currently provides water services to approximately 9,960 customers, and wastewater services to approximately 7606 customers as shown in Table 1.

Table 1: Summary of Service Connections

Size/type of service connection	Number of customers Water connections	Number of customers Wastewater connections
5/8" and 3/4"	9862	7557
1"	50	19
1.25" and 1.5"	5	3
2"	38	23
3"	1	2
4"	4	2
Total	**9960**	**7606**

The current billing structure is as follows:

1. Customers pay a monthly base (minimum) charge based on the meter size; and
2. An additional volumetric consumption fee based on meter readings.

The 2022 base charges by connection size are summarized in Table 2. The volumetric rate is $1.28/ m^3 for water connections and $2.36/ m^3 for wastewater connection.

Table 2: Summary of 2022 Charges

Size/type of service connection	Base monthly fee Water connections	Base monthly fee Wastewater connection
5/8" and 3/4"	$24.40	$34.89
1"	$32.46	$46.54
1.25" and 1.5"	$40.61	$58.17
2"	$60.94	$87.24
3"	$79.84	$121.17
4"	$152.38	$218.11

2 Expenditure Forecast

2.1 2022 Expenditures

Table 3 summarizes the 2023 budget expenditures for each system. Descriptions of each category are below the table.

Table 3: Amherstburg Water and Wastewater 2023 Budget Expenditures

Expenditure Source	Water expenditure	Wastewater expenditure
Operation	$4,315,486.09	$4,088,064.50
Debt Servicing	$344,378.74	$2,009,777.32
Contributions to Reserves	$1,542,632.00	$996,117.00
Total Operating	**$6,202,497.09**	**$7,093,958.50**
Capital Expenditures	$12,420,000	$3,401,500.00

- **Operating Costs:** Staff and material costs used to operate the systems, including the cost for the services contracted to the Ontario Clean Water Agency.
- **Debt:** Principal and interest payments for the existing debentures used to finance past projects.
- **Contribution to Reserve:** Contribution to rate-funded reserve funds to pay for future capital works.
- **Capital:** Costs for major maintenance, repair, rehabilitation, replacement or new construction activities to maintain current performance (or achieve desired performance) of the systems.

2.2 Expenditure Forecasts

2.2.1 Operating Costs

Operating costs are forecasted by expecting 'business as usual' to continue for the planning horizon. Revisiting this assumption is necessary if there are any significant increases in the size of the water and wastewater infrastructure portfolio that may result in significant increases to annual operating costs. For example, constructing a new additional facility may result in net increases to operating costs.

Inflation rate estimates used to forecast operational cost items are as follows:

- 2023 = 5%
- 2024 = 4%
- 2025 = 3%
- 2026 & beyond = 2%

2.2.2 Capital Expenditures

The Town's Capital Budget captures capital expenditures for the next 5 years. Longer term (i.e. 6 to 20 year) capital forecasts are taken directly from Town's Asset Management Plan (OCWA; 2023). The first 5 years in the Asset Management Plan are identical to the Town's 5 year Capital Budget, which aligns the capital forecast in all business processes.

It is also important to recognize that the Town is in the early stages of completing technical wastewater servicing master planning studies to identify large projects that may be necessary to meet performance expectations over the long term. For the purposes of this analysis, the following placeholders are included to fund additional large wastewater projects not currently included in the Town's Asset Management Plan:

- $10 M project in 2033
- $10 M project in 2038
- $10 M project in 2043

Inflation rate estimates used to forecast capital cost items are as follows:

- 2023 = 5%
- 2024 = 4%
- 2025 = 3%
- 2026 & beyond = 2%

2.2.3 Debt Expenditures

Table 4 summarizes the Town's existing debentures. There is a large amount of wastewater debt paid off in 2031, which will open up additional fiscal capacity to finance additional projects. There is also a new debenture for the water reservoir that is captured in the analysis but not listed in Table 4.

Table 4: Summary of the current Debt Schedule

Account number	Debenture account	Annual Interest Rate	Initial Amount Borrowed	Date Borrowed	Maturity Year
WASTEWATER					
2009-25	Infrastructure Ontario -Sewer Separation Phase 3 & 4	5.44%	$4,330,670.00	07/02/09	2034
2002-78	Versa Bank - Malden Sewer (7.50%)	7.50%	$3,085,711.86	12/16/02	2022
Bylaw 2014-64	IO - Simcoe, Victoria St & George St Sanitary Sewers	3.62%	$624,871.45	08/01/14	2034
Bylaw 2014-65	IO - King St Sanitary Sewer	3.52%	$123,371.97	08/01/14	2034
	CMHC	3.89%	$18,118,285.00	03/29/11	2031
By-Law 2014-13	Green Municipal Fund	2.00%	$4,000,000.00	06/01/14	2034
Bylaw 2019-098	IO - PP #2 Edgewater PH1	2.62%	$1,147,028.61	12/16/19	2039
WATER					
2009-26	Infrastructure Ontario - Water Distribution System	5.44%	$1,810,390.00	07/02/09	2034
Bylaw 2014-60	Infrastruture Ontario - South Sideroad Watermain	2.88%	$36,921.76	08/01/14	2024
Bylaw 2014-62	IO - MXU water meter program & water meter replacement	2.88%	$803,482.00	08/01/14	2024
Bylaw 2014-63	IO - Watermains & New plant generator	3.62%	$1,126,308.00	08/01/14	2034
ByLaw 2017-82	IO - Upflow Clarifier Cover	3.27%	$398,609.00	12/15/2017	2037
ByLaw 2017-82	IO - Riviera Place/Riviera Drive Watermain	3.27%	$245,000.00	12/15/2017	2037

2.3 Expenditure Forecast

Figure 1 and Figure 2 summarize the combined operating and capital expenditure forecasts. Inflation rates as of the writing of this report is considerably higher that long term averages. The Town should continue to monitor real inflation pressures on their operational and capital expenditures, and update this analysis as necessary.

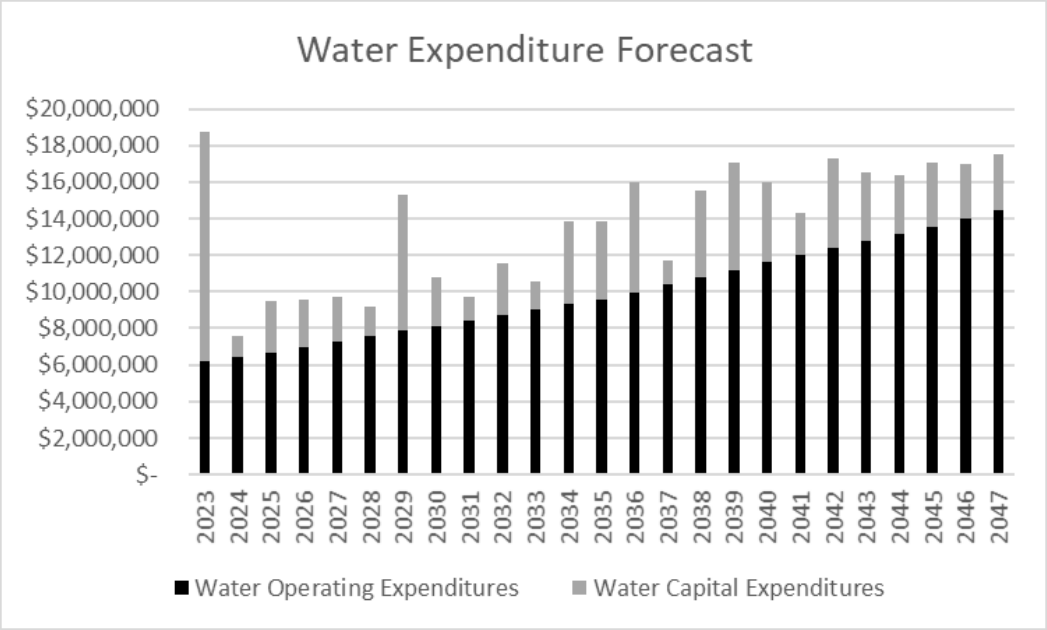

Figure 1: Water Expenditure Forecast

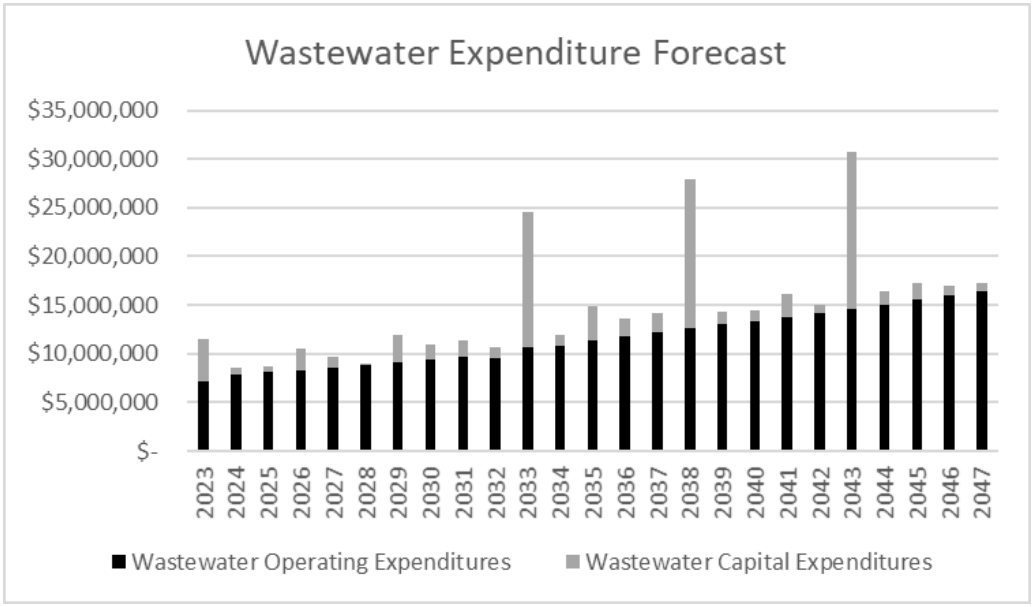

Figure 2: Wastewater Expenditure Forecast

3 Revenue Analysis

3.1 Customer Forecast

Real growth in serviced population is a critical variable in a rate analysis since increasing customer base results in net revenue growth, which offsets the need to raise rates to generate sufficient revenue.

The population has increased in the Town over the past 10 years (Table 5). The rate of increase from 2011 to 2016 was 1.75%, or about 0.35% per year.

Table 5: Amherstburg Population History

Year	Population
2006	22,440
2011	22,250
2016	22,640
2019	23,670
2029	26,260
2031	26,690

Population figures from 2019 Development Charges Background Study

As seen in Table 5 , the population of Amherstburg has been increasing steadily over the last 10 years and expect to grow further over the next 10 years. The Development Charge Study forecasts an increase of approximately 110 households per year from 2019 to 2031.

For the purposes of this Rate Study it has been assumed that the new residential connection will be 3/4" and the new ICI connection would be meter size 2". There are three different growth scenarios modeled in the subsequent analysis (refer to Table 7). This provides perspective to compare the relationship between rate increase and population growth rate. The Town should closely monitor real growth rates since it has a significant impact on the need to raise rates (i.e. slower growth results in the need to raise rates more).

Table 6: Customer Growth Forecast based on Scenarios

Size/Type of Service Connection	Number of new connections (low growth)	Number of new connections (medium growth)	Number of new connections (high growth)
5/8" and 3/4"	10	50	110
2"	4	10	14

3.2 Current Revenue

Table 7 summarizes budgeted 2023 revenues. The rate billings represent approximately 94% to 97% of total revenues.

Table 7: Summary of Current Revenues

Revenue Source	Water Revenue	Wastewater Revenue
Direct Rate Billings	$6,021,967	$6,670,612
Other revenues	$180,530	$423,347
Total	**$6,202,497**	**$7,093,959**

3.3 Capital Financing

The Town uses a combination of the following financing sources to fund the Capital Budget:

- Contributions from water and wastewater rate-funded reserves
- Provincial gas tax allocation
- Other one-off federal or provincial governments grants
- Debt
- Contributions from Development Charges-funded reserves

The analysis in this report assumes the following approach for future financing capital expenditures:

- Financing for the next five years explicitly matches the sources identified in the Town's Capital Budget. An additional $2M of development charges financing is assumed for the clarifier and residual management projects in 2029, which is beyond the horizon of the Capital Budget.
- Infrastructure to service new growth financed via Development Charges. However, some contribution from rates may be necessary to finance these large projects since they are likely to have a reasonable 'benefit to existing' component. The water system assumed
- Remaining capital financing will be from rate-funded reserves.
- No allowance for gas tax or one-off provincial or federal grants are been assumed, other than those explicitly stated in the Towns' 5-year capital budget.
- No new debt issuances.

3.4 Revenue Forecast

The approach to forecasting revenue is to apply annual rate increases that generate sufficient dollars to fund the expenditures forecasted in Section 2, considering real growth rate scenarios described in Section 3.1. The approach also assumed Stable per-capita water consumption levels (i.e. no continued water-use efficiency measures). The rate analysis is capture in Section 5 of this report.

4 Billing Structure

There are several common variations to the water and wastewater billing structure in Ontario municipalities, including:

1. Flat rate (non-metered) charge that does not change based on meter size or consumption. Municipalities without water meters use flat rate billing structures.
2. Volumetric charge ($/m^3) which can be either:
    - Constant rate – same price for each m^3
    - Declining block rate – first X m^3 priced at one rate, the second X m^3 priced at a lower rate. Used to reduce the cost charged to large users.
    - Increasing block rate – first X m^3 priced at one rate, the second X m^3 priced at a higher rate. Used to encourage users to reduce water consumption.
3. Combination of base charge (minimum charge to cover the fixed cost of providing services) + volumetric charge based on metered consumption.

Revenues based solely on a volumetric rate can be volatile based on consumption trends that are not in a Town's control (i.e. a wet summer when consumers purchase less water). Most billing structures have a combination of a base charge plus a volumetric rate to limit revenue volatility and enhance predictability for long term planning.

The current billing structure in Amherstburg has a base fee with a constant volumetric rate. No change is recommended to the current billing structure.

5 Rate Increase Analysis

This section calculates describes the rate increases required to generate the necessary revenue to fund expenditures. The analysis starts with the current reserve balances, and then establishes the required rate increases to fund the forecasted expenditures (from Section 2) considering the current revenue analysis (from Section 3).

The objective of the analysis is to maintain an appropriate reserve fund balance over the forecast period, balancing the sporadic nature of large infrastructure projects with a desire to have relatively stable rate increases (which provides certainty to customers). For each system, the analysis first presents the high growth rate scenario. This scenario uses the annual household and population growth rates from the 2019 Development Charges background study. Next, the comparison rate increase for the medium and low growth scenarios provide context for decision makers.

As of the date of this report, there is much higher inflation in Canada compared to the previous 20-year period. The impact of inflation on each individual line item expenditure in the Town's budget is uncertain, and the duration of the high inflation period is unknown. Updates to the rate calculations presented below are necessary as the inflationary landscape unfolds.

5.1 Water

The analysis indicates that under a high growth rate scenario, an annual rate increases of 2% over the planning horizon results in relatively stable reserve fund balance. This indicates a general positive financial situation where rate increases in line with inflationary pressures combined with real growth in the customer base can fund expected expenditures.

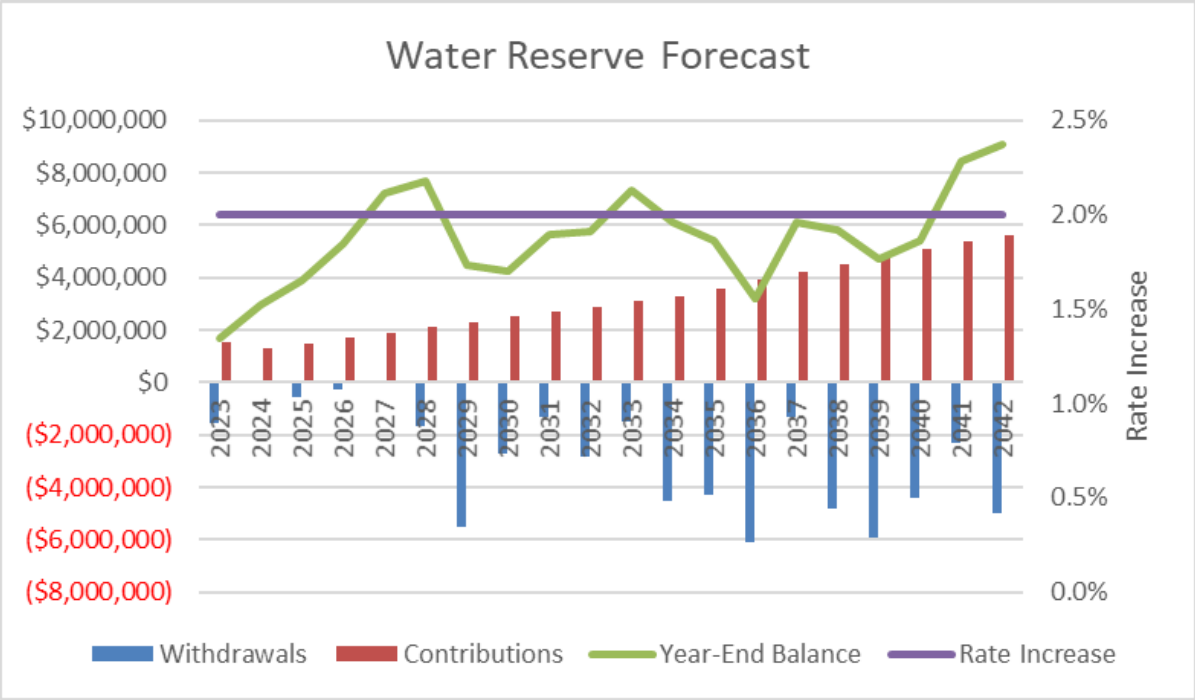

Figure 5: Water Reserve Forecast – High Growth Scenario

For comparison purposes, the analysis indicates the following impact to rate increases for alternative growth scenarios as described in Section 3.1:

- Low Growth Scenario would require annual rate increases of approximately 3.4%.
- Medium Growth Scenario would require annual rate increases of approximately 2.7%.

5.2 Wastewater

The analysis indicates that under a high growth rate scenario, an annual rate increase of 2% over the planning horizon results in a gradually increasing reserve fund balance for the first 10 years. However starting in the early 2030's, when annual debt payments of approximately $2 M per year expire, the reserve fund balance increases quickly. In reality, a large reserve fund balance as shown in the analysis would not accumulate. The practical outcome would involve some combination of:

- Financing additional capital projects not currently identified**.** The technical master plans for wastewater servicing and additional sewer camera inspections will result in greater certainty in the long-term large capital projects required to meet performance objective. Financing additional resulting from these studies may be necessary.
- Reducing the annual rate increase in the 10+ year horizon. After the Town has an appropriate financing plan for the long-term capital program, it may be appropriate to reduce the annual rate increase to below the inflation rate (i.e. 1% rate increase if there is 2% inflation).

Routine updates to this analysis will refresh this long-term perspective on a regular basis to see how the situation evolves over the next decade.

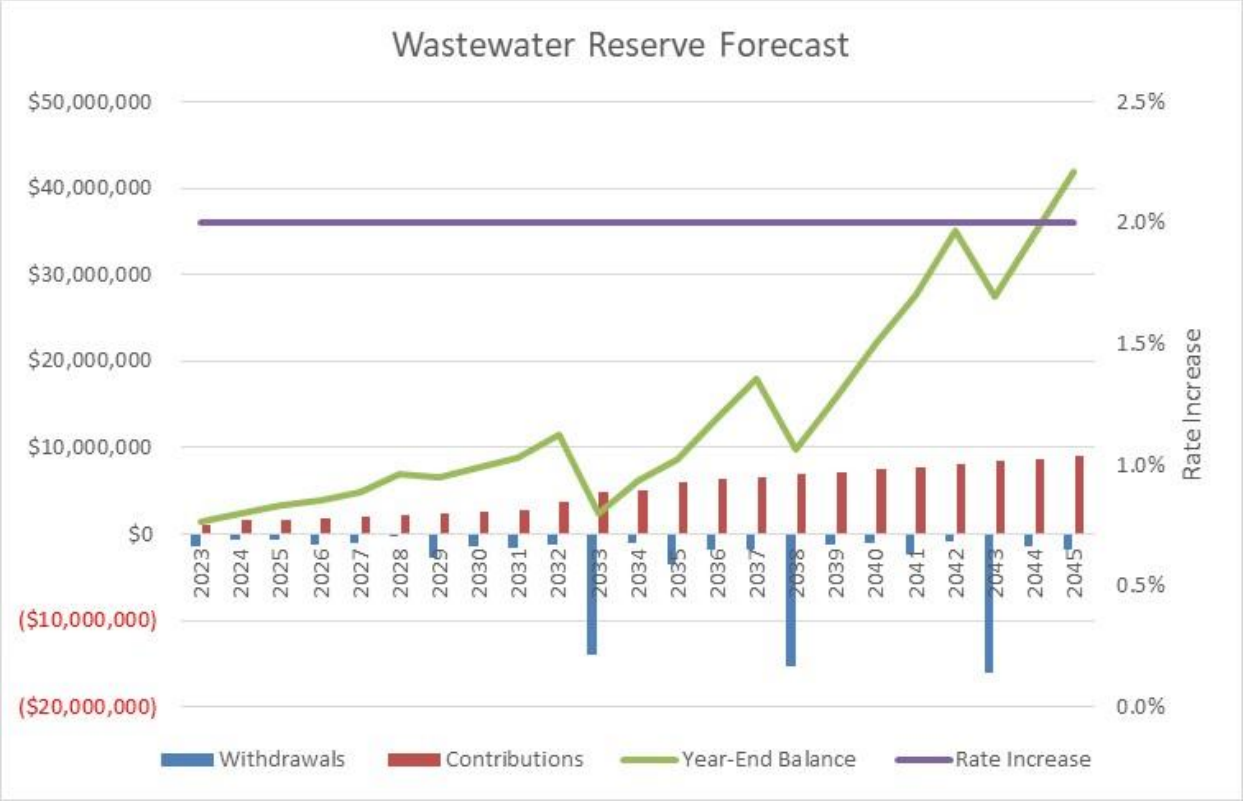

Figure 6: Wastewater Reserve Forecast – High Growth Scenario

For comparison purposes, the analysis indicates the following impact to rate increases for alternative growth scenarios as described in Section 3.1:

- Low Growth Scenario would require annual rate increases of approximately 3.3%.
- Medium Growth Scenario would require annual rate increases of approximately 2.6%.

6 Conclusions and Discussion

The water and wastewater systems are in strong financial positions. The following conclusions provide guidance to Town decision makers:

- Annual rate increases of between 2% (high growth scenario) and 3.5% (low growth scenario) should maintain appropriate reserve balances over the short to medium term while funding the necessary operating and capital expenditures.
- A 3% increase in 2024 for both the water and wastewater rates is appropriate since there was no increase to rates in 2023. The Town should continue to monitor real growth rates to inform future rate adjustments.
- Real growth rates have a significant impact on the annual rate increase required to fund expenditures because of the increasing customer base. In recent years, the Town has experienced dramatic swings in development pressures as first demand increased in the early pandemic years, with now demand slowing with rising interest rates. Incorporating real growth rate data from building permits and development applications into this analysis on an annual basis will continually improve growth forecasts.
- The water system is in the midst of several large enhancement projects with the reservoir recently completed and two large projects planned for the next 5-10 years.
- The wastewater system will likely require large projects in the 10+ year time horizon. This analysis has made allowances for $10M projects in 2033, 2038 and 2043. Updates to this analysis to reflect the results of the technical wastewater master servicing plans will provide greater clarity on long-term rate increase requirements.
- Canada is in a prolonged period of high inflation. Although the typical update cycle for a Rate Study is around 5 years, it may be appropriate to update the analysis more frequently (i.e. annually) in the next few years as high inflation persists