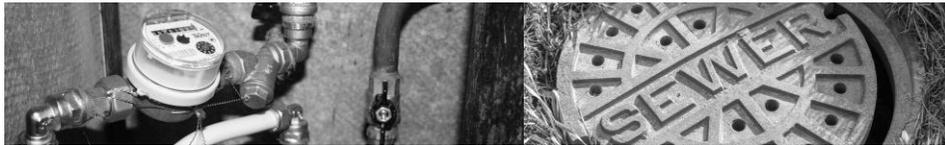

Town of South Bruce Peninsula

**WATER & WASTEWATER
RATE STUDY**



July 2022



DFA Infrastructure International Inc.



DFA Infrastructure International Inc.

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July 29, 2022

Lara Widdifield, C.E.T.
Director of Public Works
Town of South Bruce Peninsula
PO Box 310, 315 George Street
Warton, ON, N0H 2T0

**Re: Town of South Bruce Peninsula
Water & Wastewater Rate Study and Financial Plan**

We are pleased to submit our report for the above noted study. This report presents the full costs associated with managing the Town of South Bruce Peninsula's water and wastewater systems, the options for cost recovery including a recommended rate option.

The O.Reg 453/07 water and wastewater financial plans will be prepared and submitted under separate cover.

Please do not hesitate to call if you have any questions.

Respectfully submitted by,

DFA Infrastructure International Inc.

A handwritten signature in black ink, appearing to read 'Derek Ali', is written over a horizontal line.

Derek Ali, MBA, P.Eng.
President

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Disclaimer:

The information and statements contained in this report are based on the best available information at the time of preparation and intended use solely by the Town of South Bruce Peninsula. The statements made shall not have any meaning other than those intended by the author. The author is not in any way liable for use and/ or interpretation of the information contained in the document.

1 Introduction

1.1 Background

The Town of South Bruce Peninsula (Town) has a population of 9,137 (Statistics Canada, 2021 Census). The Town delivers water and wastewater services to its customers through two (2) independent water systems and one (1) wastewater system that are owned and operated by the Town. These systems and the respective number of customers serviced are noted below.

- The Amabel Water System with 518 customers. This water system includes the following drinking water systems:
 - ✓ Amabel-Sauble Drinking Water System
 - ✓ Foreman Drinking Water System
 - ✓ Huron Woods Drinking Water System
- The Wiarton Water System with 1,109 customers. This also includes the Oliphant Drinking Water System for the purpose of the rate study and establishing appropriate rates; and
- The Wiarton Wastewater System with 1,109 customers

The total cost of the Town's water and wastewater services are recovered from daily operating (non-rate) revenues (e.g. administrative fees, etc.) and through direct billing to customers (rate revenues). The Town's bill to customers is comprised of service charges based on the size of the water meters plus consumption charges based on the respective water and wastewater uniform rate per cubic metre for volume of water consumed. There are also "reserve" and "vacant" fixed water charges that apply to the Amabel water system. These revenues are required to cover the full costs of managing the water and wastewater systems including annual operating and capital costs and long-term asset renewal costs, net of any non-rate revenues. The Town is also required to prepare and submit an updated Water System Financial Plan (No. 094-301A) to meet the requirements of the Drinking Water Quality Management System as defined under O.Reg. 453/07 for renewal of its water system licence.

The rate study includes an assessment of full costs to manage the water and wastewater systems over a 25-year period from 2022 to 2046 inclusive and the recovery of full costs through appropriate rates and charges.

1.2 Purpose

The purpose of the rate study is to:

- Identify the full cost of services for the Town's two (2) drinking water systems and its wastewater system over the study period based on the most recent information;

- Determine the required rates and charges to customers to recover the full costs of supplying and distributing drinking water and collecting and treating wastewater in order to provide sustainable financing over the long-term;
- Investigate the opportunity to establish blended water rates for Amabel and Wiarton Water Systems so that the same rates would apply to both systems instead of the current method of different rates for each system; and
- Provide the financial information required to:
 - ✓ update the Town's Water System Financial Plan (No.094-301A) in accordance with the requirements of O.Reg. 453/07 for the renewal of the water system licences; and
 - ✓ prepare the Wastewater System Financial Plan (similar to that required for the water systems) to cover the wastewater system in accordance with the requirements of O.Reg. 453/07.

Both financial plans will be prepared following approval of the rate study recommendations and submitted under separate cover.

2 Regulatory Requirements

2.1 Provincial Regulations

The primary Provincial legislation governing drinking water and sanitary sewer services include the following:

- The Environmental Assessment (EA) Act, 1990;
- The Environmental Protection (EP) Act, 1990;
- The Safe Drinking Water Act, 2002;
- The Municipal Act, 2001;
- The Development Charges Act, 1997;
- The Water Opportunities & Conservation Act, 2010; and
- Infrastructure for Jobs and Prosperity Act, 2015 O.Reg. 588/17

The first two (2) set out the technical requirements related to service delivery. The EA Act applies to expansion of existing facilities and establishment of new capacity such as the installation of new pipes. The EP Act establishes the minimum requirements for the operations of water and wastewater systems in terms of the potential environmental impacts.

The Safe Drinking Water Act, 2002 (SDWA) has significant implications to the daily water system operations as it sets out the water sampling and other requirements (in O.Reg. 170/03) for ensuring that the water delivered to consumers is high quality and safe for consumption. This

Act has been a major influence over the past decade in terms of adjustments to operational practices and quality expectations regarding the Town's operations. In addition, there is also a requirement under this Act (O.Reg 188/07) for drinking water providers to establish a Drinking Water Quality Management System (DWQMS) and obtain a licence for their respective water systems. As part of this DWQMS, and as required under O. Reg. 453/07 (Financial Plans Regulation), operating authorities must submit a financial plan in order to renew their drinking water system licences. There are also many other regulations and guidelines that deal with design and operation standards that mandate certain activities be undertaken as part of service delivery.

The Municipal Act also sets out the financial requirements for managing the water and sanitary sewer systems including the assessment and recovery of full costs. The Municipal Act, Part VII, Section 293 requires municipalities to establish reserves for dealing with long-term liabilities. This applies directly to the water and wastewater assets and the future liabilities associated with their age and condition. The Municipal Act also permits the Town to establish fees for cost recovery and requires public input prior to any fee adjustments. The Development Charges Act and regulations establishes the requirements for the recovery of portions of future growth related capital expenditures to be incurred by the Town.

The Water Opportunities and Conservation Act, 2010 (WOA)

The WOA was enacted in November 2010. This legislation promotes water conservation and requires municipalities to prepare the following reports:

- Water conservation plans;
- Sustainability plans for water, sanitary sewage & stormwater management; and
- Asset management plans.

Financial plans are required as a component of the water and sanitary sewer sustainability and asset management plans. Therefore more municipalities are now preparing sanitary sewer financial plans as a best practise. These financial plans that are similar to those required for water systems in accordance with O.Reg. 453/07.

The DWQMS Requirements

Regulation 188/07 under the Safe Drinking Water Act requires Ontario municipalities to apply for and obtain Drinking Water System Licences as part of their overall DWQMS. One of the requirements to obtain a drinking water licence is to prepare and submit a financial plan in accordance with O.Reg. 453/07.

O.Reg.588/17: Asset Management Planning for Municipal Infrastructure

Regulation 588/17 under the Jobs and Prosperity Act, 2015 requires Ontario municipalities to prepare asset management plans for their core assets, which includes water and wastewater system, by July 2021. This deadline was deferred to 2022 due to the Covid-19 pandemic. A component of the asset management plan is a financial strategy to fund the asset renewal and

replacement needs. This water and wastewater rate study includes the costs identified in the Town's asset management plan as part of the full cost of water and wastewater services.

2.2 Town of South Bruce Peninsula's By-Law

By-Law 1-2022 establishes the Town's 2022 water and wastewater rates and charges to its customers. The 2022 rates and charges are intended to be replaced by the new rates and charges beginning in 2023 based on the recommendations of this study and subject to approval by Council.

3 Methodology

This section outlines the study methodology which considers the feedback received from Council and customers as further described in Section 4.

3.1 Guiding Principles

The water and wastewater rate structure design is based on the guiding principles noted below. These were reviewed and supported by Council and customers as described in Section 4.

1. **Sustainable Financing.** Rates shall provide sufficient revenues to fully finance the W&WW systems over the long-term;
2. **Full Cost Recovery.** The full cost of managing the W&WW systems shall be recovered annually over the long-term;
3. **User Pay.** Customers shall pay based on use or potential for use;
4. **Fairness and Equity.** Rates shall be as fair and equitable as possible with consideration of blended water rates as an option;
5. **Capital Investments.** Capital investments to target asset replacement needs based on the recommendations of the asset management plan and deliver the Town's capital forecast. Financing to be through a combination of debt and reserves;
6. **Revenue Security.** The rate structure shall minimize the occurrence of annual deficits to the extent possible;
7. **Rate Stability/ Affordability.** Reduce the occurrence of annual rate swings. Having rates that are affordable while meeting financial requirements
8. **Ease of Administration.** The structure and rates shall be transparent and simple to explain and administer;

3.2 Study Components

This study consists of two (2) main parts:

- *Full Cost of Service*. This identifies the full costs (net of non-rate revenues) associated with managing the water systems over a twenty-four (25) year study period from 2022 to 2026;
- *Full Cost Recovery*. This identifies the rate alternatives and the preferred option for recovery of costs (i.e. a revenue plan) through proposed new rates to customers; and

Full Cost Methodology

Calculation of the Town's full cost of managing the water and wastewater systems is based on estimating and projecting the respective annual costs related to each system over the study period. These include:

- Annual operations and maintenance (O&M) costs related to the water and wastewater systems;
- Capital projects as identified in the Town's Capital Budget Forecast;
- Water and wastewater asset replacement costs over the study period based on the recommendations of the Town's asset management plan. These costs are reconciled with the Town's Capital Budget Forecast and adjusted to remove any duplication;
- Capital funding for growth related projects over and above funding available through the Development Charges Reserve Fund and direct contributions by developers, as presented in the Town's Capital Budget Forecast;
- Funding required for studies and non-growth operational improvement projects as presented in the Town's Capital Budget Forecast;
- Annual contributions to separate water and wastewater capital reserve funds for financing capital projects; with a minimum target balance of 3% of asset replacement value.
- Repayment of existing and proposed future debt. Debt is utilized in combination with reserves to finance the water and wastewater system capital needs. The debt repayment levels are in accordance with the Provincial Approved Repayment Limits (ARL) (25% of own source revenues) but applied to the water and wastewater system combined.

The assumptions made with respect to these cost items are presented in Table. The annual costs are calculated in 2022 dollars and inflated over the study period.

Cost Recovery Methodology

The fundamental components of the Town's current rate structure (i.e. a fixed monthly charge plus a consumption rate per cubic metre) are maintained as the basis for the water and

wastewater rate structures. However, options are provided and assessed against the guiding principles to identify a preferred option. The base option (Option 1) is the Town’s 2022 rate structure with annual increases to the respective water and wastewater rates for full cost recovery. This option maintains separate rates for each water and wastewater system. Option 2 is a blended water rate structure for both water systems. The wastewater rates remain the same as under Option 1.

The current rate structure and rates apply in 2022. Implementation of the preferred structure and respective water and wastewater rates is intended for 2023. The respective water and wastewater rates over the study period and potential impacts to customers under each option are modeled using DFA’s Financial Planning Model. A more detailed description of the Town’s current rate structure and the rate options for cost recovery are presented in Section 7.

Data Sources

The primary sources of data used to prepare this rate study are listed in Table3-1. In addition, information was also developed from discussions with and input from the staff throughout the process.

Table 3-1: Rate Study Data Sources

Item	Data Source
Asset Life Expectancy	<ul style="list-style-type: none"> • Town’s PSAB 3150 TCA data • Town’s 2021 Asset Management Plan (AMP) • Information from other DFA studies
Asset Replacement Cost	<ul style="list-style-type: none"> • Town’s PSAB 3150 TCA data • Unit Prices from other DFA studies • Town’s Capital Budget Forecast
Net Book Value (2020), Depreciation, Historical Cost, etc.	<ul style="list-style-type: none"> • Town’s PSAB 3150 Data for Water & Wastewater
Customer Growth	<ul style="list-style-type: none"> • Development Charges Study • Information provided by the Town
O&M Costs	<ul style="list-style-type: none"> • Town’s 2021 and 2022 Operating Budgets for each system
Non-Rate Revenues	<ul style="list-style-type: none"> • Town’s 2021 and 2022 Operating Budgets for each system
Non TCA Capital Projections	<ul style="list-style-type: none"> • Town’s Capital Budget Forecast
Water & Wastewater Treatment Volumes	<ul style="list-style-type: none"> • Town’s 2021 and 2022 Historical Records
Water Volume Sold to Customers	<ul style="list-style-type: none"> • Town’s 2021 Operating Budget Data

Item	Data Source
Debt	<ul style="list-style-type: none"> • Information provided by the Town • Town’s 2022 Debt Repayment Schedule • Infrastructure Ontario Municipal Infrastructure Lending Calculator

4 Stakeholder Feedback

One of the key elements of the study process was the consideration of input from senior staff, members of Council and customers. Two (2) virtual public meetings were held the following dates to present the options and obtain feedback from members of Council and customers:

- November 17, 2021; and
- July 5, 2022.

The projected rates and potential impacts to customers under each option were presented and discussed at both meetings.

An online customer survey was also launched by the Town covering the period July 6, 2022 to 12:00 noon on July 29, 2022. Customers were asked to select the separate water rates (Option 1), the blended water rates (Option 2) or decline to choose (Option 3). The survey results indicate support for the blended rate (Option 2) based on 50 responses received.

❖ Support for Option 1 (Separate Rates):	10 (20%)
❖ Support for Option 2 (Blended Rates):	38 (76%)
❖ Support for Option 3 (No preference/ declined):	2 (4%)

5 Customers & Volumes

Table 5-1 summarizes the number of customers by system and meter size. There are currently (2022) 1,627 water and 1,109 wastewater customers according to the Town's billing records. The annual customer growth for Amabel and Wiarton is estimated at 3 and 7 respectively, for the duration of the study period.

The annual consumption is estimated at 185,000 m³ for Wiarton and 38,860 m³ for Amabel. These are based on the actual volumes sold to customers according to the 2021 billing data. The total annual volume of water to be sold to customers is estimated to be approximately 224,358m³. This is the “revenue” volume used to calculate the annual revenue from the metered consumption.

The revenue volumes for wastewater billing are the metered water volumes for those customers that also have water services. This method of applying the wastewater rates to the metered water consumption volumes for billing purposes is standard industry practise because sanitary sewage is typically not metered by municipalities. The annual revenue volumes are estimated to be approximately 170,000 m³. Note that there are customers that receive water

services only. Therefore the revenue volumes for sanitary sewage are lower than the revenue volumes for water because of the difference between the number water and wastewater customers.

The water and wastewater revenue volumes are estimated to increase by approximately 100 m³ per year for each new customer added to the systems.

Table 5-1: Customers and Volumes (2022)

Meter Size (Inches)	Amabel Water	Warton Water	Both Water Systems	Warton Wastewater
0.62	426	1,037	1,463	944
0.75	0	16	16	14
1	1	25	26	27
1.5	1	11	12	20
2	0	15	15	41
2.5	0	0	0	0
3	0	2	2	22
4	0	3	3	42
6	0	0	0	0
Vacant Properties/Flat Rate	90	0	90	0
Total Customers	518	1,109	1,627	1,109
Consumption (m³)	38,585	185,500	224,358	170,000

6 Cost of Services

The respective full cost of managing the Town’s water and wastewater systems takes into account all factors that have a bearing on the level of effort and costs required to ensure a safe and reliable supply of potable water to customers and public health and environmental protection regarding wastewater, over the long-term. These include both current and future considerations that would influence the cost of managing the systems throughout their respective lifetimes, which can be several decades for water and wastewater systems. Examples include replacement and rehabilitation of the distribution pipe network and the wastewater mains. The cost implications of some of these factors are more predictable and therefore more readily estimated than those of other factors. Higher costs are expected in the future as the water and wastewater business environment changes and asset replacement or rehabilitation becomes due. However, the impact can be mitigated by fully understanding, assessing and planning for future system costs. The following sections identify the main drivers of cost, the assumptions made in quantifying costs, and an estimate of the full cost of managing

the water and wastewater systems. The period used for this assessment is twenty-four (25) years (2022 to 2046).

The respective full cost of managing the water and wastewater systems is the total operating and capital costs less non-rate revenues which are the revenues that are routinely generated each year through the daily operations. These include administrative revenues such as service fees for turn-off charges, lateral installations, etc. but do not include the revenues generated by the water and wastewater rates (i.e. from the sale of water). Accordingly, the “net” full cost of service represents the amount to be recovered from customers through the water and wastewater rates.

6.1 Cost Components

The costs components related to the water systems include the following:

- *Operations and Maintenance (O&M) Costs of the Water Distribution Systems.* This includes the costs of administration, treatment plant repairs and maintenance, chemicals, hydro, pipe repairs and maintenance, water meter maintenance, hydrant maintenance, water service installations and maintenance, sampling and testing and regulatory reporting. Most of the operations and maintenance costs are included in the operations service contract with OCWA. However major maintenance costs remain the responsibility of the Town.
- *Capital Expenditures.* Capital expenditures are incurred primarily to replace and/ or rehabilitate existing water related infrastructure each year as part of the Town’s asset management program and increase system capacity to accommodate new growth. The costs associated with studies, design and construction are included in the capital expenditures. The capital costs associated with growth are normally recovered through developer contributions and financing from the Development Charges Reserve established by the Town. Some growth related costs are expected to be incurred. Annual contributions to the capital reserve are required to ensure that sufficient funds are available to finance projects as needed.
- *Debt Repayment.* This is an annual cost for the repayment of debentures issued to partially or fully finance water capital projects. It includes existing and projected future debt repayment.

The wastewater system cost components are similar to those for water.

The assumptions made with respect to these cost components are summarized in Table.

Table 6-1: Cost Related Assumptions

Applicable Factor	Assumptions Regarding Future Costs
Water Systems & Wastewater Systems Operations and Maintenance	<ul style="list-style-type: none"> • The current O&M costs are reflective of regulatory requirements. There would be no significant increase in the level of effort required to operate and maintain the water and wastewater systems in the next few years. Therefore an increase of 2% per year is allowed for inflation and any minor adjustments that may be required due to future regulatory changes from 2021 onward. • The Town’s annual contributions to capital reserves are typically included in the annual O&M costs. However, these contributions would be adjusted to suit the capital requirements and target reserve levels and would vary as needed over the study period. • No contributions to rate stabilization reserves are required as there are already sufficient funds in these reserves to manage minor surpluses and deficits.
Water & Wastewater Revenue Volumes (Volume to be Sold to Customers)	<ul style="list-style-type: none"> • Volume of water used to calculate the Town’s annual water revenues and rates from 2023 onward is 283,945 m³ adjusted annually for growth based on 100 m³ per year per new customer • Because of the difference between the number of water and wastewater customers, the volume of water used to calculate the Town’s annual wastewater revenues and rates is estimated to be slightly lower at 170,000 m³ adjusted annually for growth
Effective Date of Annual Water and Wastewater Rates	<ul style="list-style-type: none"> • For the purposes of the study the annual water and wastewater rates are assumed to take effect on January 1st each year.
Reserve Target Balances	<ul style="list-style-type: none"> • The minimum and maximum target balances for each capital reserve is equal to 3% and 5% respectively of the value of the water systems and the wastewater system. • The balances are intended to provide sufficient funds to finance in capital in combination with debt financing and emergency funds to address any unforeseen capital expenditures. Note that the costs of emergency events are unpredictable so the reserve balances may not cover all emergency costs. • Reserve balance are estimated to earn 2% interest annually
New and Emerging Regulations and Guidelines Related to Water Quality and Wastewater Management	<ul style="list-style-type: none"> • The implications of the Safe Drinking Water Act and the Water Opportunities Act have already been realized for the most part. Any further cost implications of emerging regulations would be taken into account in the annual 2% increase for O&M costs.
Capital Projects & Existing Asset Replacement & Rehabilitation	<ul style="list-style-type: none"> • The timing of pipe and other asset replacement is based on the annual investments as recommended by in the Town's 2021 Asset

Applicable Factor	Assumptions Regarding Future Costs
	Management Plan (AMP). <ul style="list-style-type: none"> Capital expenditures are driven by the Town’s Capital Budget Forecast for the period 2022 to 2031 Capital cost inflation is assumed at 3%
New growth related infrastructure	<ul style="list-style-type: none"> It is assumed that the portion of new infrastructure needed due to growth will be funded from Development Charges
Inflation	<ul style="list-style-type: none"> Inflation is estimated at 2% per annum. It is acknowledged that current inflation is high at approximately 8%. However the assumption is that recent Bank of Canada rate hikes would reduce inflation to normal levels within the next year.
Capital Financing	<ul style="list-style-type: none"> Future capital financing for water and wastewater projects would be through a combination of capital reserves and debt. Future debt repayment is based on a 15 year term at 3% interest
Market Competition and Pricing	<ul style="list-style-type: none"> All outsourced services will be secured through a competitive bid process thereby benefiting from market pricing and competition. Any market price increases would be covered of by the annual inflation assumption.

The factors described in Table have different cost implications. Some are directly within the Town’s control, while others are not (e.g. hydro costs, chemical costs, major maintenance, etc.) depending on the factor. For example, there is flexibility with capital expenditures, as upgrades can be planned and timed to suit a particular budget strategy. Lost revenues due to unaccounted for water and costs related to demand fluctuations are more difficult to control.

6.2 Full Cost Assessment – Water Systems

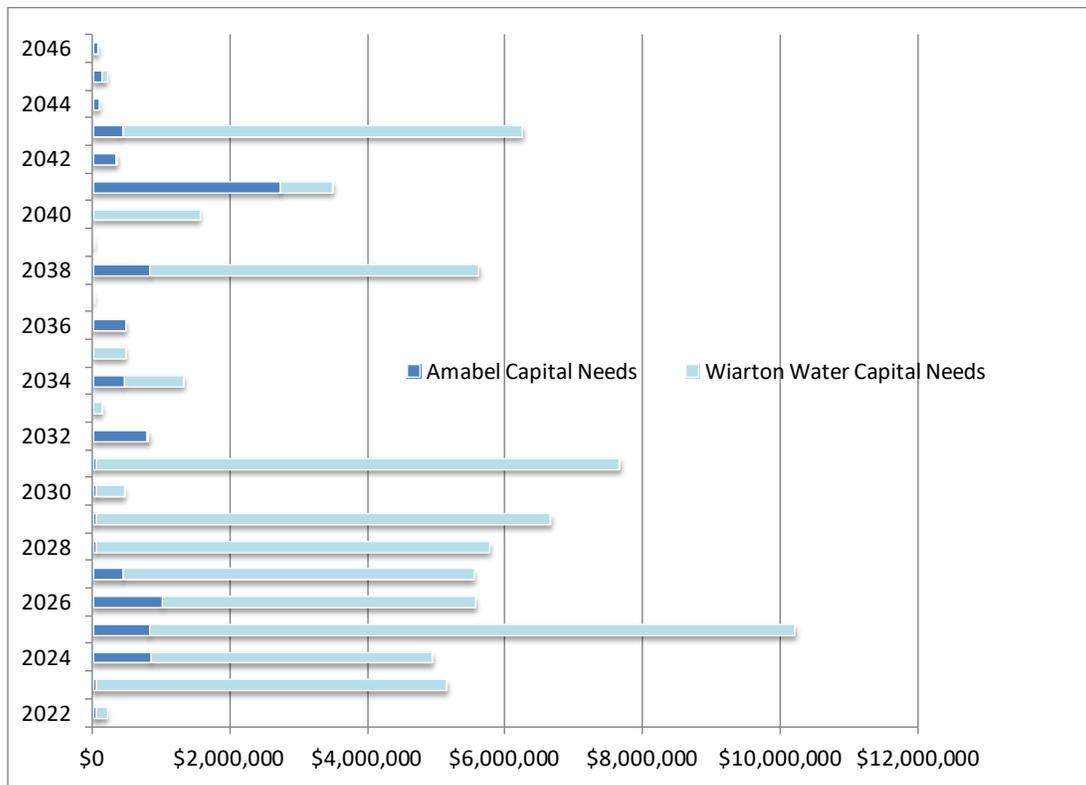
6.2.1 Water Systems Capital Costs

The water systems capital requirements over the study period are presented in Appendix A. This reflects the projects identified in the Town’s Capital Budget Forecast in conjunction with the replacement of existing water system assets based on the 2021 AMP recommendations. It should be noted that some of the projects identified in the Capital Budget Forecast include asset replacement. Therefore these projects were rationalized with the projected asset replacement needs to ensure that there is no duplication in the projections.

Figure 6-1 shows the annual water capital needs by system over the study period. Approximately \$14.5 million in capital expenditures is required in the next 10 years (2022 to 2031) and \$35.4 million over the next 25 years (2022-2046). The AMP indicates that replacement of some assets is required in 2022 i.e. a backlog of assets that require immediate capital investments. The backlog is estimated at approximately \$543,000 for each water

system. The Warton backlog is projected to be addressed through the capital program over the next 10 years. To allow sufficient time for developing budgets and arranging for financing an assumption was made that the Amabel backlog would be addressed in 2032. The largest expenditure is approximately \$10.2 million required in 2025 primarily for the Berford Street, Division Street and Gould Street watermain projects in Warton and partly the Amabel Master Servicing Study.

Figure 6-1: Capital Project Needs (2022-2046) – Water



Appendix A also shows the projected sources financing for the annual expenditures. Capital financing will be from development charges for the growth related portions of the projects and the capital reserve and debt for the non-growth portions. Without debt or reserve financing, major rate increases or “spikes” would be required in the project year to raise sufficient funds to cover the project expenditures. No debt financing is projected for the Amabel water system. Other sources of financing such as provincial and/ or federal grants are unpredictable and are therefore not considered over the long-term. Only approved grants are considered. However the Town is encouraged to aggressively pursue these funding opportunities as they become available to reduce the overall amount to be funded from the rates and the respective Capital Reserve Funds. The reserve fund and debt requirements are discussed in Section 6.2.2 and Section 6.2.3 respectively.

6.2.2 Water System Reserve Fund Requirements

Separate reserves are maintained for the Amabel and Wiarton water systems. Under the blended rate structure these separate reserves would be combined into a single water reserve for both systems allowing the use of available funds to be optimized as projects in each system arise. Lower reserve levels are possible when a single reserve is established under the blended rate structure while maintaining sufficient balances to meet the future capital project funding requirements. Appendix B shows the projected continuity schedules for each reserve and the blended reserve should the Town decide to blend the water rates. This shows the transfers to and from the respective reserves and the opening and closing balances. The rate stabilization reserves for both systems are fully funded with no requirements for contributions over the period.

Amabel Water System Capital Reserve Fund

The Amabel Water System Capital Reserve Fund, which had an opening balance of approximately \$1.25 million at the beginning of 2022, will be a source of financing along with development charges for future projects. Approximately \$8 million in financing will be required from this reserve between 2022 and 2046 mostly for asset replacement. This requires that annual contributions be made to the Reserve Fund to ensure that sufficient funds are available over the long-term. These annual contributions (to be raised through the water rates each year) are generally projected to range between \$240,000 and approximately \$425,000 between 2022 and 2046 and average approximately \$363,000 annually. The reserve closing balance is targeted to be a minimum of 3% of the asset replacement value adjusted for new assets each year over the study period. The annual reserve balance is projected to range between \$1.43 million and \$4.5 million. Figure 6-2 shows that the reserve balance would be well above the upper target for the duration of the study period suggesting that funds would remain unused for several years.

Warton Water System Capital Reserve Fund

The Wiarton Water System Capital Reserve Fund, which had an opening balance of approximately \$1.71 million at the beginning of 2022, will be a source of financing along with development charges and debt for future projects. There is also funded from other sources such as grants and taxes for projects with shared costs such as roads. Approximately \$14.8 million in financing will be required from this reserve between 2022 and 2046. This requires that annual contributions be made to the Reserve Fund to ensure that sufficient funds are available over the long-term. These annual contributions (to be raised through the water rates each year) are generally projected to range between \$0.5 million and approximately \$1.5 million between 2022 and 2046 and average approximately \$880,000 annually. The reserve closing balance is targeted to be a minimum of 3% of the asset replacement value adjusted for new assets each year over the study period. The annual reserve balance is projected to range between \$1.5 million and \$5 million for most of the period increasing to approximately \$10.5 million in 2046. Figure 6-3 shows that the reserve balance would be below the upper target for

most of the period and below the lower target for extended periods falling to a low of \$1.48 million in 2031.

Figure 6-2: Amabel Water Capital Reserve (2022 - 2046)

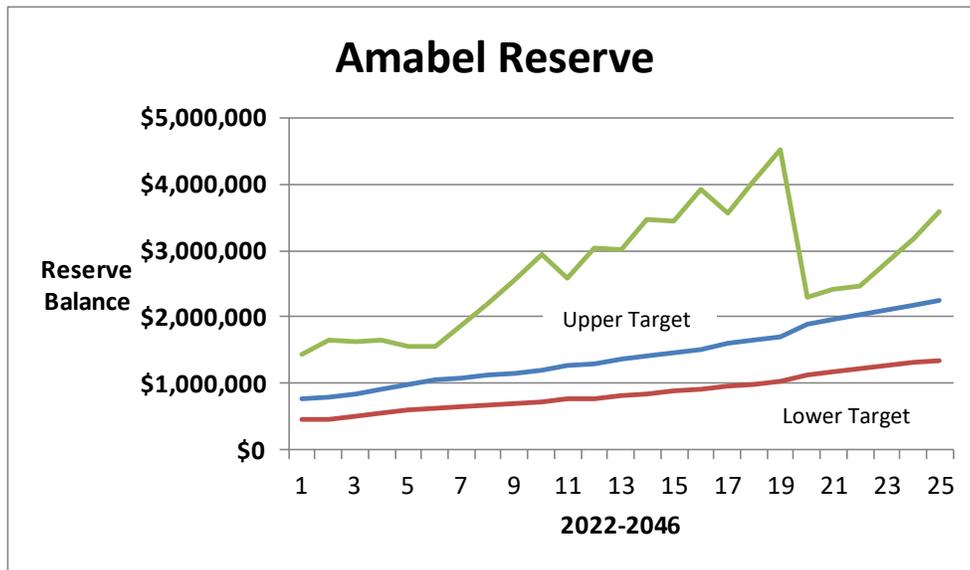
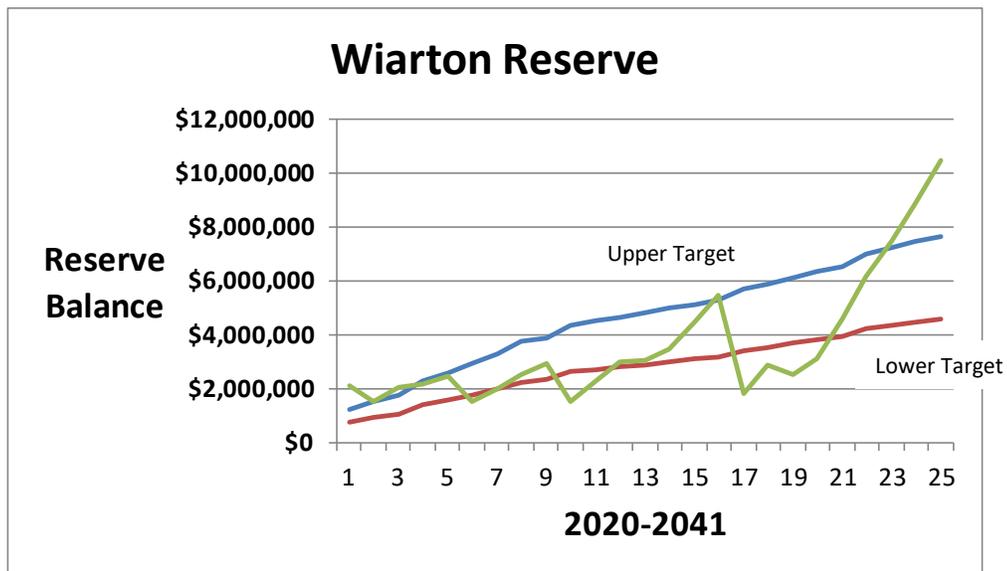


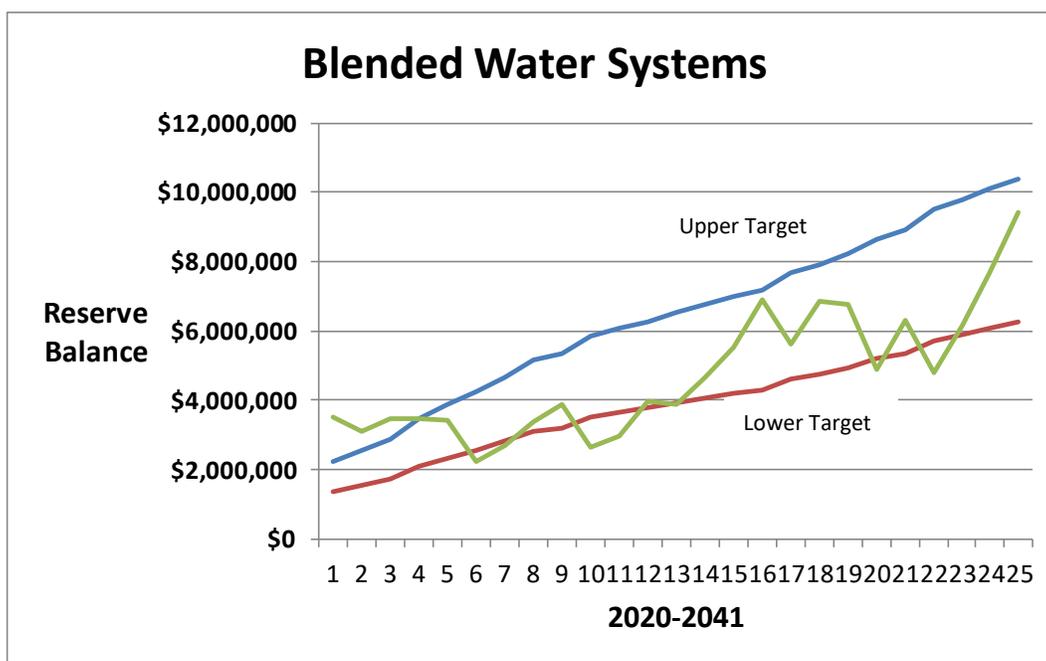
Figure 6-3: Wiarton Water Capital Reserve (2022 - 2046)



Blended Water Capital Reserve Fund

Figure 6-4 shows the reserve balance and targets under the blended rate option. The opening balance would be the combined amount for both systems of approximately \$2.97 million at the beginning of 2022. Funding from other sources would be the same. However the annual contributions to the blended reserve would be less than the combined contributions to the two separate reserves. They are generally projected to range between \$0.5 million and approximately \$1.7 million between 2022 and 2046 and average approximately \$1.1 million annually. The annual reserve balance is projected to range between \$2.3 million and \$6.9 million for most of the period increasing to approximately \$9.4 million in 2046. Figure 6-3 shows that the reserve balance would be within the upper and lower targets for most of the period with a lowest balance of approximately \$2.3 million.

Figure 6-4: Blended Water Capital Reserve (2022 - 2046)



6.2.3 Water Debt Repayment Costs

Debt financing will be used in combinations with reserves to fund capital projects after other sources of financing such as grants and development charges are utilized. No debt is anticipated for the Amabel water system. Debt financing of approximately \$6.7 million is projected to be required between 2024 and 2029 mainly for Gould Street, Berford Street and Division Street watermain projects. The projected debt repayment schedule including annual principal and interest payments is presented in Appendix C. The annual debt repayment is projected to be approximately \$104,000 in 2025 increasing to approximately \$530,000 by 2039 then decreasing to an average of approximately \$418,000 from 2040 onward.

The Province requires municipalities to restrict annual debt repayment to 25% of earned revenues (O.Reg.403/02). The water related debt repayment limit is projected to be well below 15% for most of the period with highs of 17% in 2030 and 2031 and 19% in 2039. Appendix C also shows the 25-year projections.

6.2.4 Water Systems Operations & Maintenance (O&M) Cost

Appendix D summarizes the gross operating costs, non-rate revenues and net costs to be recovered from users through the Town's rates and charges. The gross annual O&M costs (not including reserve transfers and debt repayment) are expected to increase from approximately \$1.51 million in 2022 to \$2.4 million by 2046.

Transfers to the respective capital reserves and debt servicing are typically included in the annual O&M budgets. However these costs are addressed separately for the purposes of the rate study and noted in Sections 6.1.2 and 6.1.3.

The 2022 gross annual operating budget of \$1.51 million is based on the operations and maintenance needs of the water systems. It includes costs related to water treatment, storage, distribution, metering and hydrants. The major costs generally include the following:

- Hydro;
- The operations service contract with OCWA
- Repairs and maintenance;
- Internal payroll charges; and
- Minor capital

A portion of these O&M costs is offset by non-rate revenues totalling \$410,000 including:

- Bulk water sales;
- Connection fees;
- Internal payroll recovery; and
- The Georgian Bluffs agreement.

6.2.5 Net Full Cost of Water System

The net full cost of managing the water system over the twenty five (25) years is a reasonable estimate of full costs to be recovered through the rates and charges and is comprised of:

- *Net* Annual O&M Costs (i.e. after non-rate revenues are considered);
- *Net* Capital costs (asset replacement and non growth projects) i.e. not including contributions from developers or grants;
- Capital reserve contributions; and
- Debt repayment.

Table 6-2 is a summary of the projected costs related to both water systems over the study period. It shows that the average annual cost of managing the water systems is approximately

\$2.8 million from 2023 onward compared to current (2022) annual costs of approximately \$2.29 million. Debt repayment accounts for \$0.27 million (10% of the annual costs) up from zero in 2022. This is due to the future debt financing requirements in the Wiarton system. Operating expenses are estimated to average approximately \$1.67 million (70%) going forward. This is up from \$1.5 million (66%) in 2022. The capital reserve contributions are estimated to average \$0.87 million (31%) up from \$0.77 million in 2022.

Under a blended rate system, the cost are expected to be the same as the current separate rate system except for the reserve transfers which would be lower at \$0.68 million. This would result in an overall lower annual cost of approximately \$2.6 million compared to \$2.8 million with separate rates.

Overall the Amabel system accounts for 42% of the total cost. Wiarton's share of the 2022 costs is 58% which is expected to increase to approximately 65% on average over the 25 years.

The projected costs and net revenue requirements (cost of service) for each year over the 25 years are used as the basis for developing the rates. The projected annual net full costs of managing the water system over the period are presented in Appendix E

Table 6-2: Average Annual Full Cost of Water System

System	2022	2022 (%)	2022-2032 Average	2022-2032 Average (%)
Amabel Water (Excluding Oliphant)				
Operating Costs	\$730,800	32%	\$686,966	25%
Transfers to Capital Reserve	\$239,514	10%	\$315,500	11%
Debt Repayment	\$0	0%	\$0	0%
Total	\$970,314	42%	\$989,739	35%
Warton Water (Including Oliphant)				
Operating Costs	\$782,341	34%	\$986,085	35%
Transfers to Capital Reserve	\$533,322	23%	\$552,222	20%
Debt Repayment	\$0	0%	\$273,586	10%
Total	\$1,315,663	58%	\$1,811,893	65%
Total Water Systems	\$2,285,977	100%	\$2,801,632	100%
Blended Water Systems				
Operating Costs	\$1,513,141	66%	\$1,667,490	64%
Transfers to Capital Reserve	\$772,836	34%	\$676,667	26%
Debt Repayment	\$0	0%	\$273,586	10%
Total	\$2,285,977	100%	\$2,617,743	100%

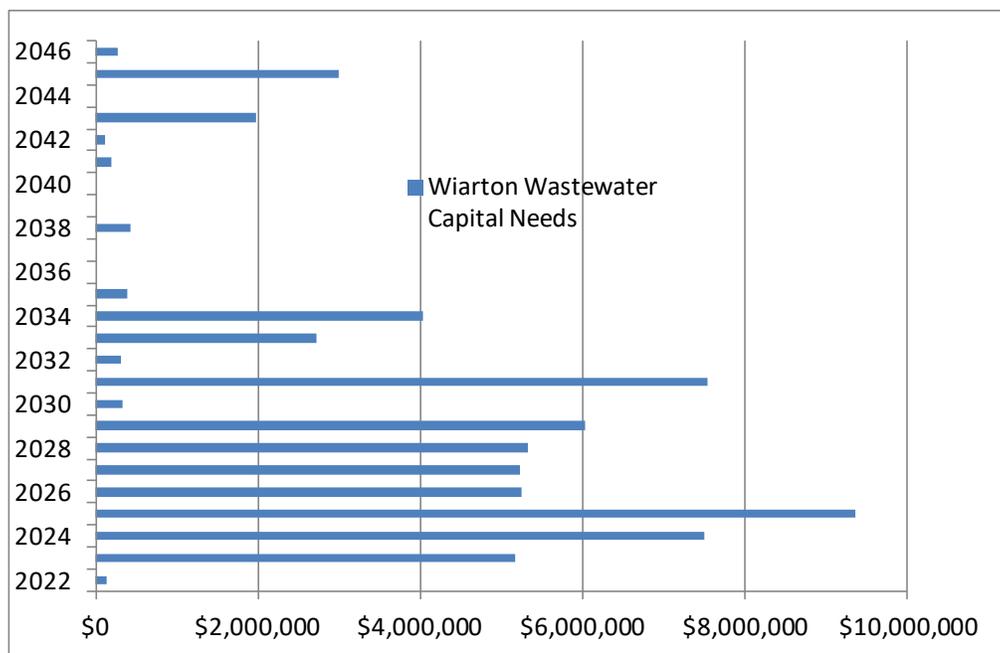
6.3 Full Cost Assessment – Wastewater System

6.3.1 Wastewater System Capital Costs

The wastewater systems capital requirements over the study period are presented in Appendix A. This reflects the projects identified in the Town’s Capital Budget Forecast in conjunction with the asset needs identified in the 2021 AMP. Some of the projects identified in the Capital Budget Forecast include asset replacement. Therefore these projects were rationalized with the projected asset replacement needs to ensure that there is no duplication in the projections.

Figure 6-5 shows the annual wastewater capital needs over the study period. Approximately \$65.3 million in capital expenditure is required between 2022 and 2046. The 2021 AMP indicated that replacement of some assets is required in 2022 i.e. a backlog of assets requiring immediate replacement. To allow sufficient time for developing budgets and arranging for financing an assumption was made that the replacement of these assets would occur in 2032. The largest expenditure is approximately \$9.3 million required in 2025. Most of this cost is to replace the Gould Street and Elm Street sewers.

Figure 6-5: Capital Project Needs (2022-2046) – Wastewater



Appendix A also shows the projected sources financing for the annual expenditures. Capital financing will be through the capital reserve and debt after all other financing sources are considered. Similar to water, the use of debt and reserve financing minimizes major rate increases or “spikes” that would otherwise be required in the project year to raise sufficient funds to cover the project expenditures. Other sources of financing such as provincial and/ or federal grants are unpredictable and are therefore not considered over the long-term. Only approved grants are considered. However the Town is encouraged to aggressively pursue these

funding opportunities as they become available to reduce the overall amount to be funded from the rates and Water Capital Reserve Fund. The reserve fund and debt requirements are discussed in Section 6.3.2 and Section 6.3.3 respectively.

6.3.2 Wastewater Reserve Fund Requirements

Appendix B shows the projected continuity schedule for wastewater capital reserve. This shows the transfers to and from the respective reserves and the opening and closing balances. Similar to water the rate stabilization reserve is fully funded so no further contributions are required over the period.

The Wastewater Capital Reserve Fund 2022 opening balance is approximately \$860,000. Approximately \$14.2 million in financing will be required from this reserve between 2022 and 2046 mostly for the Town's 10-year capital program. The annual contributions (to be raised through the wastewater rates each year) are generally projected to range between \$211,000 in 2022 and approximately \$1.5 million by 2046 with the average annual contribution of approximately \$812,000. The reserve closing balance is targeted to range between a minimum of 3% and a maximum of 5% of the asset replacement value adjusted for each year over the study period for new assets. The annual reserve balance is projected to range between \$0.54 million and 1.68 million over the next 10 years (2022-2031) increasing to approximately \$8.2 million by 2046 as debt repayment declines from 2039 onward.

Figure 6-6: Warton Wastewater Capital Reserve (2022-2046)

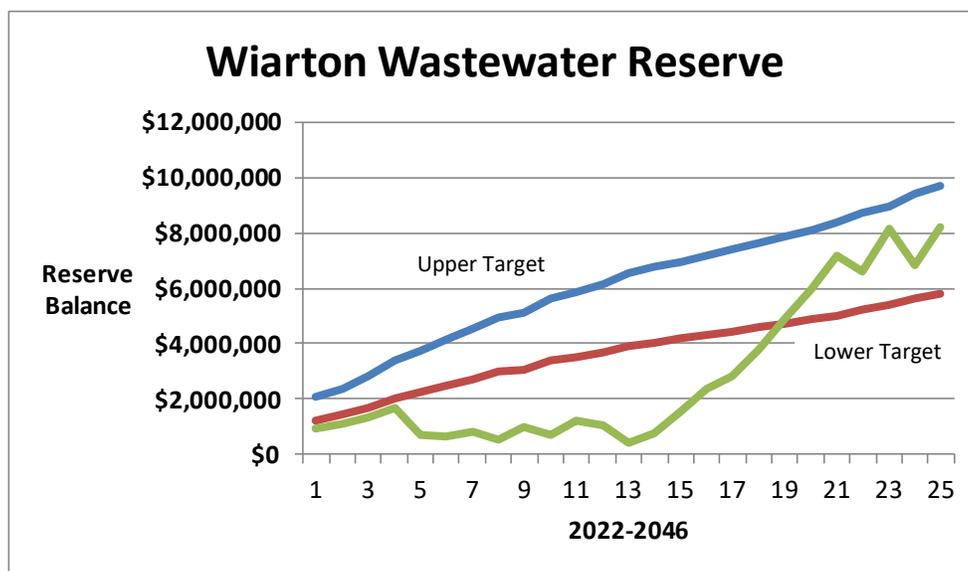


Figure 6-6 shows that the reserve balance would be well below the minimum target for most of the period with a lowest balance of approximately \$417,000 in 2034. However, this is acceptable as a significant portion of the capital needs would be financed through debt. Higher reserve contributions can be made as the debt matures and repayment amounts decline.

6.3.3 Wastewater Debt Repayment Costs

Debt financing will be used in combination with reserves to fund capital projects. The projected debt repayment schedule including annual principal and interest payments is presented in Appendix C. The annual debt repayment is projected to increase steadily from be approximately \$86,000 between 2022 to \$974,000 by 2035 after which it begins to decline.

The wastewater related debt repayment limit is projected to vary from 26% and 34% between 2030 and 2040. However when combined with water the overall debt repayment for water and wastewater is projected to approach 24% only in 2035 and 2039. This is below the limit in other years as noted in Appendix C. This suggests that the level of debt over the period is reasonable for water and wastewater as a whole.

6.3.4 Wastewater System Operations & Maintenance (O&M) Cost

Appendix D summarizes the gross operating costs, non-rate revenues and net costs to be recovered from users through the Town's rates and charges. The gross annual O&M costs (not including reserve transfers and debt repayment) are expected to increase from approximately \$0.86 million in 2022 to \$1.38 million by 2046.

Transfers to the respective capital reserves and debt servicing are typically included in the annual O&M budgets. However these costs are addressed separately for the purposes of the rate study and noted in Sections 6.2.2 and 6.2.3.

The 2022 gross annual operating budget of \$0.86 million is based on the operations and maintenance needs of the wastewater system. It includes costs related to wastewater collection and treatment. The major costs generally include the following:

- Hydro;
- The operations service contract with OCWA
- Repairs and maintenance;
- Professional fees; and
- Minor capital

A portion of these O&M costs is offset by non-rate revenues of approximately \$32,600 from septage disposal fees.

6.3.5 Net Full Cost of Wastewater System

The net full cost of managing the wastewater system over the period is a reasonable estimate of full costs to be recovered through the rates and charges and is comprised of:

- *Net* Annual O&M Costs (i.e. after non-rate revenues are considered);
- *Net* Capital costs (asset replacement and non growth projects) i.e. not including contributions from developers or grants;
- Capital reserve contributions; and

- Debt repayment.

Table 6-3 is a summary of the projected costs related to the wastewater systems over the study period. It shows that the average annual cost of managing the wastewater system is approximately \$1.75 million over the next 25 years compared to current (2022) annual costs of approximately \$1.15 million. Future debt repayment amounts and reserve contributions are projected to increase significantly compared to the respective costs in 2022. Debt repayment accounts for \$0.36 million (21%) of the annual costs. Operations cost are estimated to be approximately \$0.96 million (55%) and the capital reserve contributions \$0.51 million (29%).

The projected costs and net revenue requirements for each year over the next 25 years are used as the basis for developing the wastewater rates. The projected annual net full costs of managing the wastewater system over the period are presented in Appendix E.

Table 6-3: Average Annual Full Costs of Wiarion Wastewater System

System	2022	2022 (%)	2022 -2032 Average	2022-2032 Average (%)
Operating Costs	\$856,860	74%	\$956,644	55%
Transfers to Capital Reserve	\$211,493	18%	\$506,500	29%
Debt Repayment	\$86,357	7%	\$360,608	21%
Total	\$1,154,710	100%	\$1,752,100	100%

7 Financing the Water & Wastewater System Costs

This Section presents an analysis of the rate structure options, the preferred structure and the rates required to provide sufficient revenues to recover the full costs of managing the Town's water and wastewater systems.

7.1 Existing Rate Structure & Rates

The Town's current rate structure for both water and wastewater includes the following components:

- A Monthly Fixed Charge according to the size of the water meter;
- A Uniform Consumption Rate per cubic metre that is applied to the volume of water consumed as measure by the water meter; and
- A Flat Charge for non-metered customers.

There is also a reserve charge and a vacant property charge for the Amabel water system. This rate structure is consistent with industry best practice which typically includes a fixed or base charge plus the consumption rate.

Table 7-1 shows the 2022 monthly fixed charges and the consumption rate for each system. As noted the Amabel monthly fixed charges are high compared to the Wiarton monthly charges. They are high due mainly to the relatively low number of customers (518 compared to 1,109 for Wiarton).

Table 7-1: 2022 Monthly Fixed Charges & Uniform Consumption Rate

Meter Size (Inches)	Amabel Water	Wiarion Water	Wiarion Wastewater
0.62	\$117.00	\$38.52	\$49.88
0.75	\$129.00	\$42.37	\$54.87
1	\$164.00	\$53.92	\$69.83
1.5	\$211.00	\$69.33	\$89.78
2	\$340.00	\$111.70	\$144.65
2.5	\$821.00	\$269.61	\$349.76
3	\$1,290.00	\$423.67	\$548.68
4	-	\$539.22	\$698.32
6	-	\$808.83	-
Reserve Water Charge	\$31.67	NA	NA
Vacant Fixed Water Charge	\$44.34	NA	NA
Consumption Charge	\$2.04/m3	\$1.96/m3	\$2.96/m3

7.2 Alternative Rate Structures & Rates

The existing rate structure consisting of a fixed charge and consumption rate is maintained and the rates are calculated to fully recover the respective cost of the water and wastewater services for two (2) options:

- **Option 1: Current Structure.** This is the existing rate structure with independent rates and charges for each water and wastewater system.
- **Option 2: Blended Structure for Water.** This structure allows for the same water rates and charges to apply to both water systems and the wastewater rates and charges would be the same as Option 1.

Both options are intended to fully recover the cost of services over the long-term. The rates required under each option over the 25-year study period are based on cash flow analyses undertaken.

7.2.1 Rate Structure Option 1 – Current Structure

This option is the current structure used by the Town to recover the costs of the water and wastewater systems. Under this option the Town would continue to charge by system and maintain separate administration and accounting for each system. The consumption rate and fixed charge projections for the study period are presented in Appendix F.

Water Rates

Table 7-2: Option 1: 2022 to 2028 Amabel Water Rates & Charges

Meter Size	2022	2023	2024	2025	2026	2027	2028
Annual Increase%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
0.62	\$117.00	\$119.34	\$121.73	\$124.16	\$126.64	\$129.18	\$131.76
0.75	\$129.00	\$131.58	\$134.21	\$136.90	\$139.63	\$142.43	\$145.27
1.00	\$164.00	\$167.28	\$170.63	\$174.04	\$177.52	\$181.07	\$184.69
1.50	\$211.00	\$215.22	\$219.52	\$223.91	\$228.39	\$232.96	\$237.62
2.00	\$340.00	\$346.80	\$353.74	\$360.81	\$368.03	\$375.39	\$382.90
2.50	\$821.00	\$837.42	\$854.17	\$871.25	\$888.68	\$906.45	\$924.58
3.00	\$1,290.00	\$1,315.80	\$1,342.12	\$1,368.96	\$1,396.34	\$1,424.26	\$1,452.75
4.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Reserve Charge	\$31.67	\$32.31	\$32.95	\$33.61	\$34.28	\$34.97	\$35.67
Vacant Charge	\$44.34	\$45.23	\$46.13	\$47.06	\$48.00	\$48.96	\$49.94
Annual Increase%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Consumption Rate	\$2.04	\$2.08	\$2.12	\$2.16	\$2.21	\$2.25	\$2.30

The 7-year (2022 to 2028) water rate projections under Option 1 are shown in Table 7-2 for Amabel and Table 7-3 for Wiarton. The annual increases for the Amabel Water System are projected to be approximately 2% from 2023 to 2028. The annual increases for the Wiarton Water System are projected to be approximately 7%.

Table 7-3: Option 1: 2022 to 2028 Wiarion Water Rates

Meter Size	2022	2023	2024	2025	2026	2027	2028
Annual Increase%	3.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
0.62	\$38.52	\$41.22	\$44.10	\$47.19	\$50.49	\$54.03	\$57.81
0.75	\$42.37	\$45.34	\$48.51	\$51.91	\$55.54	\$59.43	\$63.59
1.00	\$53.92	\$57.69	\$61.73	\$66.05	\$70.68	\$75.63	\$80.92
1.50	\$69.33	\$74.18	\$79.38	\$84.93	\$90.88	\$97.24	\$104.05
2.00	\$111.70	\$119.52	\$127.89	\$136.84	\$146.42	\$156.67	\$167.63
2.50	\$269.61	\$288.48	\$308.68	\$330.28	\$353.40	\$378.14	\$404.61
3.00	\$423.67	\$453.33	\$485.06	\$519.01	\$555.34	\$594.22	\$635.81
4.00	\$539.22	\$576.97	\$617.35	\$660.57	\$706.81	\$756.28	\$809.22
6.00	\$808.83	\$865.45	\$926.03	\$990.85	\$1,060.21	\$1,134.43	\$1,213.84
Annual Increase%	3.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Consumption Rate	\$1.96	\$2.09	\$2.24	\$2.40	\$2.57	\$2.74	\$2.94

Wastewater Rates

The 7-year (2022 to 2028) wastewater rate projections under Option 1 are shown in Table 7-4. The annual increases are projected to be approximately 7% from 2023 to 2028.

Table 7-4: Option 1: 2022 to 2028 Wiarion Wastewater Rates

Meter Size	2022	2023	2024	2025	2026	2027	2028
Annual Increase%	6.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
0.62	\$49.88	\$53.37	\$57.11	\$61.11	\$65.38	\$69.96	\$74.86
0.75	\$54.87	\$58.71	\$62.82	\$67.22	\$71.92	\$76.96	\$82.35
1.00	\$69.83	\$74.72	\$79.95	\$85.54	\$91.53	\$97.94	\$104.80
1.50	\$89.78	\$96.06	\$102.79	\$109.98	\$117.68	\$125.92	\$134.74
2.00	\$144.65	\$154.78	\$165.61	\$177.20	\$189.61	\$202.88	\$217.08
2.50	\$349.16	\$373.60	\$399.75	\$427.74	\$457.68	\$489.71	\$524.00
3.00	\$548.68	\$587.09	\$628.18	\$672.16	\$719.21	\$769.55	\$823.42
4.00	\$698.32	\$747.20	\$799.51	\$855.47	\$915.36	\$979.43	\$1,047.99
Vacant Charge	\$48.33	\$51.71	\$55.33	\$59.21	\$63.35	\$67.79	\$72.53
Annual Increase%	6.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Consumption Rate	\$2.96	\$3.17	\$3.39	\$3.63	\$3.88	\$4.15	\$4.44

7.2.2 Rate Structure Option 2 – Blended Structure for Water

Under this option the water rates and charges will be the same for both water systems unlike Option 1. The changes will be phased in between 2023 and 2027 so that the Amabel rates and charges will be fully blended with the Wiarion water rates by 2027. ***The Wiarion water and***

wastewater rates are the same as Option 1. The consumption rate and fixed charge projections for Option 2 over the study period are presented in Appendix F.

The 7-year (2022 to 2028) water rate projections under Option 2 are shown in Table 7-5 for Amabel. The annual fixed charges for the Amabel Water System are projected to progressively decline by approximately 11% in 2023 to 19% by 2027. This progressive reduction in the monthly fixed charges allows the charges for both water systems to be the same by 2027. The monthly fixed charge for a residential customer would decrease from \$117 in 2022 to \$54.03 by 2027 i.e. a reduction of approximately 54%. The consumption rate is projected to increase by 6% beginning in 2023 to match the Wiarton consumption rate by 2027.

Analysis of the financial impact of the phased blending of the water rates indicates that increases to the Wiarton rates would not be necessary to accommodate the blending in of the Amabel rates. This is mainly due to the lower reserve contributions that would be required under the blended option for Wiarton. The debt obligations, reserve contributions and revenue security are not expected to be compromised by blending the water rates.

Table 7-5: Option 2: 2022 to 2028 Amabel Blended Rates

Meter Size	2022	2023	2024	2025	2026	2027	2028
Annual Increase%	3.0%	-10.8%	-12.1%	-13.7%	-15.9%	-18.9%	7.0%
0.62	\$117.00	\$104.41	\$91.81	\$79.22	\$66.62	\$54.03	\$57.81
0.75	\$129.00	\$115.11	\$101.23	\$87.34	\$73.45	\$59.57	\$63.61
1.00	\$164.00	\$146.35	\$128.69	\$111.04	\$93.38	\$75.73	\$80.95
1.50	\$211.00	\$188.29	\$165.57	\$142.86	\$120.15	\$97.43	\$104.07
2.00	\$340.00	\$303.40	\$266.80	\$230.20	\$193.60	\$157.00	\$167.66
2.50	\$821.00	\$732.62	\$644.24	\$555.86	\$467.49	\$379.11	\$404.71
3.00	\$1,290.00	\$1,151.13	\$1,012.27	\$873.40	\$734.54	\$595.67	\$635.97
4.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$809.43
6.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,214.13
Reserve Charge	\$31.67	\$33.89	\$36.26	\$38.80	\$41.52	\$44.42	\$47.53
Vacant Charge	\$44.34	\$47.45	\$50.77	\$54.32	\$58.12	\$62.19	\$66.54
Annual Increase%	3.0%	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%
Consumption Rate	\$2.04	\$2.16	\$2.29	\$2.43	\$2.58	\$2.74	\$2.94

Option 2 allows for more efficient use of the reserve funds that are available to the Town as needed and facilitates easier administration by having only one set of accounts to manage instead of two.

7.2.3 Potential Customer Impacts

The potential cost impacts to customers are driven by the following:

- Ensuring that the rates and charges are sufficient to provide sustainable levels of revenues to recover the full cost of service over the long-term.
- The phasing in of the blended rates.

The potential customer impacts under each option are determined by the annual amount the average residential customer in system would pay monthly over the 2023 to 2027 period for water and particularly in 2027 when the blended rates are fully established. The average customer is defined as follows:

Average Residential Customer - with a 5/8" diameter water meter and average monthly consumption of 12 m³.

Impact of Water Rates

The impacts to both Wiarton and Amabel residential customers under Options 1 and 2 are shown in Table 7-6. Option 1 is projected to have a relatively consistent cost impact between 2023 and 2027 with increases of 2% annually for Amabel customers and 7% for Wiarton customers. The monthly cost for Amabel customers would increase from \$141 in 2022 to approximately \$156 by 2027. Similarly, the monthly cost for Wiarton customers would increase from \$62 in 2022 to \$87 by 2027.

Option 2 is the phasing in of the blended rates. It is projected to significantly reduce the monthly costs to the average Amabel residential customer from \$141 in 2022 to \$87 by 2027. This is a significant reduction of approximately \$54 per month by 2027. The cost to Wiarton customers would be the same as under Option 1 i.e. no impact between Options 1 and 2.

Table 7-6: Water Rate Impacts to Residential Customers

SYSTEM	2022	2023	2024	2025	2026	2027	2028
Option 1 - Current Structure							
AMABEL Water							
Annual Increase%	4%	2%	2%	2%	2%	2%	2%
Total Charge	\$141.48	\$144.31	\$147.20	\$150.14	\$153.14	\$156.21	\$159.33
WIARTON Water							
Annual Increase%	4%	7%	7%	7%	7%	7%	7%
Total Charge	\$62.00	\$66.34	\$70.99	\$75.96	\$81.27	\$86.96	\$93.05
Option 2 - Blended Structure for Water Rates							
BLENDED - AMABEL Water							
Annual Increase%	4%	-8%	-8%	-9%	-10%	-11%	7%
Total Charge	\$141.48	\$130.35	\$119.32	\$108.37	\$97.53	\$86.96	\$93.05
BLENDED WIARTON Water							
Annual Increase%	4%	7%	7%	7%	7%	7%	7%
Total Charge	\$62.00	\$66.34	\$70.99	\$75.96	\$81.27	\$86.96	\$93.05

Impact of Wastewater Rates

The impacts to Wiarton residential customers for wastewater are shown in Table 7-7 and are the same for both rate Options. The monthly cost to the average residential customer is projected to increase approximately 7% annually from \$85 in 2022 to \$91 in 2023. This increase is necessary to recover the full cost of wastewater services as noted in earlier.

Table 7-7: Wastewater Rate Impacts to Residential Customers

SYSTEM	2022	2023	2024	2025	2026	2027	2028
Annual Increase%	5.9%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Fixed Charge	\$49.88	\$53.37	\$57.11	\$61.11	\$65.38	\$69.96	\$74.86
Consumption Charge	\$35.52	\$38.01	\$40.67	\$43.51	\$46.56	\$49.82	\$53.31
Total Charge	\$85.40	\$91.38	\$97.77	\$104.62	\$111.94	\$119.78	\$128.16

7.2.4 Options Analysis & Preferred Option

A qualitative assessment of how well each option aligns with the Guiding Principles in Section 3.1 is presented in this Section. Table 7-8 shows the results using check marks. In general both options align with the principles.

Table 7-8: Qualitative Analysis of Rate Options

Guiding Principles	Option 1	Option 2
Sustainable Financing	✓	✓
Full Cost Recovery	✓	✓
User Pay	✓	✓
Fairness and Equity	✓	✓
Capital Investments	✓	✓
Revenue Security	✓	✓
Rate Stability/ Affordability	-	✓
Ease of Administration	-	✓

However Option 2 offers the following benefits:

- Simpler administration due to the need for only one set of accounts.
- Greater affordability for Amabel customers whose monthly bills are expected to decrease by 40% between 2023 and 2027. There is also no impact to Wiarton customers due to the blending.
- Optimizing the use of the funds available in the two existing water capital reserves by blending into a single water reserve. This provides access to Amabel's reserve for projects in the Wiarton water system. Lower reserve contributions would be required compare to Option 1. This is estimated at approximately \$2.2 million under Option 2 versus \$3.2 million under Option 1 over the next 5 years.

Sustainable Financing

- Both options would provide the capital financing and rate revenues sufficient to support the management of the water and wastewater systems on a consistent basis over the long-term (25 years).
- The overall debt repayment ratio for water and wastewater combined is projected to be below the 25% limit set by the Province indicating that the level of debt financing over the long-term is appropriate in terms of fiscal responsibility.

Full Cost Recovery

- Both options are designed to recover the full costs (i.e. all costs current and future costs) of managing the water and wastewater systems over the study period.

User Pay

- The concept of user pay is based on the philosophy that those who use more water should pay more. Under both options customers would pay more if their consumption increases as they all have a consumption rate component.

Fairness and Equity

- Both promote fairness and equity as the fixed charges plus a consumption charge is a reasonably fair approach to cost recovery to both the Town as the owner/operator and the customers.
- Option 1 maintains the current differential rates and charges to customers depending on the system. However, under Options 2 customers would be exposed to the same rates and charges regardless of the system

Capital Investments

- Both options are based on a combination of reserve and debt financing for capital projects. The debt repayment levels are within the ARL set by the Province as applied to water and wastewater as a whole.

- Under Option 1 all reserves must be managed separately resulting in unused balances for extended period. However Option 2 allows the reserve funds to be combined and their use optimized. The cash in hand can be utilized when needed regardless of the system.

Revenue Security

- Both options provide good revenue security with approximately 70% and 57% respectively of the water and wastewater revenues projected to be generated by the fixed charges. This is consistent with the historical fixed versus consumption revenue split. Appendix G shows the percentages by system.

Rate Stability/ Affordability

- Both options provide smooth changes to annual rates and charges and minimize peaks and valleys
- Option 2 offers lower rates to the Amabel customers and access to more cash reserve for Wiarton projects

Ease of Administration

- Option 1 is the current rate structure that has been in place for several years. However, the administration requires that all costs, revenues and reserves and financial planning be kept separate by system. Therefore this option requires more effort to administer.
- Options 2 facilitates reduced administration due to the blending of the rates and reduction in accounting requirements

Summary

Based on a qualitative review, both options would provide the level of funding to be fully sustainable over the long-term. Options 2 offers simpler administration; facilitates optimization of reserve funds for use by either system; and offers lower costs to the Amabel customers without impacting Wiarton customers. Therefore Option 2 is recommended.

8 Water and Wastewater Financial Plans

Regulation 188/07 under the Safe Drinking Water Act requires Ontario municipalities to apply for and obtain Drinking Water System Licences as part of their overall DWQMS. One of the requirements of holding a valid drinking water licence is preparing and submitting to the Province an updated water financial plan in accordance with O.Reg. 453/07. The water financial plan must include financial statements on the following:

- The proposed or projected financial position of the drinking water systems;
- The proposed or projected gross cash receipts and gross cash payments;

- The proposed or projected financial operations of the drinking water system; and
- Details on the extent to which the above information applies to the replacement of lead service pipes, if applicable.

The water financial plan must apply to a period of at least six (6) years with the first year being the year the existing license expires.

The water financial plan is intended to be based on the results of this rate study. Upon Council's approval the recommended rate option, the financial statements will be prepared, analyzed and submitted in a separate report with appropriate recommendations for the Town's consideration. A similar financial plan will be prepared for wastewater based on the information contained in this rate report.

9 Conclusions and Recommendations

9.1 Conclusions

Based on the information reviewed and analyses completed, the following are the main conclusions:

1. The average annual full cost of managing the Town's water system over the study period (next 25 years) is anticipated to be \$2.8 million compared to current (2022) annual costs of approximately \$2.29 million. Debt repayment accounts for \$0.27 million (10% of the annual costs) up from zero in 2022. This is due to the future debt financing requirements in the Wiarton system. Operating expenses are estimated to average approximately \$1.67 million (70%) going forward. This is up from \$1.5 million (66%) in 2022. The capital reserve contributions are estimated to average \$0.87 million (31%) up from \$0.77 million in 2022. Therefore water rate increases are necessary to ensure that the system costs are fully funded and financially sustainable over the long-term as required by O. Reg. 453/07.
2. Under a blended rate system, the cost are expected to be the same as the current separate rate system except for the reserve transfers which would be lower at \$0.68 million. This would result in an overall lower annual cost of approximately \$2.6 million compared to \$2.8 million with separate rates.
3. Overall the Amabel system accounts for 42% of the total cost. Wiarton's share of the 2022 costs is 58% which is expected to increase to approximately 65% on average over the 25 years.
4. The average annual cost of managing the wastewater system is approximately \$1.75 million over the next 25 years compared to current (2022) annual costs of approximately \$1.15 million. Future debt repayment amounts and reserve contributions are projected to increase significantly compared to the respective costs in 2022. Debt repayment accounts for \$0.36 million (21%) of the annual costs. Operations cost are estimated to be approximately \$0.96 million (55%) and the capital reserve contributions \$0.51 million

(29%). Therefore wastewater rate increases are necessary to ensure that the system costs are fully funded and financially sustainable over the long-term.

5. Based on a qualitative review, both rate options would provide the level of funding to be fully sustainable over the long-term and align well with the guiding principles. Option 2 offers simpler administration, facilitate optimization of reserve funds and is more affordable to Amabel customers

9.2 Recommendations

The following are the recommendations for consideration by the Town:

1. Implement the blended water rate structure described as Option 2 in this report to be phased in between 2023 and 2027.
2. Implement the water and wastewater rate increases projected in this study under Option 2 with annual reviews by staff to reflect actual information.
3. Maintain transfers to the Water and Wastewater Capital Reserve Funds at the levels noted in this report and included in Appendix D, with the goal of achieving the minimum target balance of 3% of asset value to fully fund the capital requirements subject to annual reviews of the water and wastewater systems' asset needs.
4. Utilize debt financing over the long-term as projected in this study, subject to annual reviews of the capital funding requirements and debt capacity.
5. That the O.Reg. 453/07 Water System Financial Plan No. 103-301A including the financial statements be prepared following approval of the recommended rate option by Council and submitted in a separate report.
6. That the Wastewater Financial Plan also be prepared following approval of the recommended rate option by Council and submitted in a separate report.

References

1. Development Charges Background Study.
2. Town of South Bruce Peninsula Capital Budget Forecast
3. Town of South Bruce Peninsula Asset Management Plan (2016)
4. Town of South Bruce Peninsula Asset Management Needs Forecast 2021
5. Town of South Bruce Peninsula PSAB 3150 TCA Data (2021).
6. Town of South Bruce Peninsula 2021 and 2022 Operating Budgets.
7. Town of South Bruce Peninsula By-Law Number 1-2022.
8. Town of South Bruce Peninsula Debt Repayment Schedules.
9. Town of South Bruce Peninsula Water Systems Capital Reserve Continuity Schedules.
10. Town of South Bruce Peninsula Wastewater Systems Capital Reserve Continuity Schedules
11. Town of South Bruce Peninsula Water & Wastewater Asset Inventories.
12. American Water Works Association (AWWA) - AWWA Manual: *AWWAM1 Principles of Water Rates, Fees and Charges*

Appendix A

Capital Costs and Financing

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX A: Capital Costs and Financing**

Warton Water System																									
Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Town's 10-Year Capital Forecast	\$ 150,000	\$ 5,096,000	\$ 4,097,600	\$ 9,390,000	\$ 4,557,600	\$ 5,105,000	\$ 5,732,500	\$ 6,617,500	\$ 422,500	\$ 7,622,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation / Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,949	\$ 142,936	\$ 862,792	\$ 481,860	\$ -	\$ 10,375	\$ 4,776,425	\$ 4,408	\$ 1,563,521	\$ 774,487	\$ 12,027	\$ 5,821,144	\$ -	\$ 75,910	\$ -
Total Capital Requirements	\$ 150,000	\$ 5,096,000	\$ 4,097,600	\$ 9,390,000	\$ 4,557,600	\$ 5,105,000	\$ 5,732,500	\$ 6,617,500	\$ 422,500	\$ 7,622,500	\$ 8,949	\$ 142,936	\$ 862,792	\$ 481,860	\$ -	\$ 10,375	\$ 4,776,425	\$ 4,408	\$ 1,563,521	\$ 774,487	\$ 12,027	\$ 5,821,144	\$ -	\$ 75,910	\$ -
Development Charges Financing	\$ -	\$ 750,000	\$ -	\$ 3,937,500	\$ -	\$ -	\$ 325,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ -	\$ -	\$ 1,241,500	\$ 1,241,500	\$ 1,161,000	\$ -	\$ 1,350,000	\$ 1,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,821,144	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 150,000	\$ 1,131,000	\$ 97,600	\$ 455,000	\$ 257,600	\$ 1,455,000	\$ 188,500	\$ 37,500	\$ 203,500	\$ 2,147,500	\$ 8,949	\$ 142,936	\$ 862,792	\$ 481,860	\$ -	\$ 10,375	\$ 4,776,425	\$ 4,408	\$ 1,563,521	\$ 774,487	\$ 12,027	\$ -	\$ -	\$ 75,910	\$ -
Other Financing (Grants, third party, etc.)	\$ -	\$ 3,215,000	\$ 2,758,500	\$ 3,756,000	\$ 3,139,000	\$ 3,650,000	\$ 3,869,000	\$ 4,380,000	\$ 219,000	\$ 5,475,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 150,000	\$ 5,096,000	\$ 4,097,600	\$ 9,390,000	\$ 4,557,600	\$ 5,105,000	\$ 5,732,500	\$ 6,617,500	\$ 422,500	\$ 7,622,500	\$ 8,949	\$ 142,936	\$ 862,792	\$ 481,860	\$ -	\$ 10,375	\$ 4,776,425	\$ 4,408	\$ 1,563,521	\$ 774,487	\$ 12,027	\$ 5,821,144	\$ -	\$ 75,910	\$ -

Amabel Water System																									
Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Town's 10-Year Capital Forecast	\$ 59,000	\$ 57,600	\$ 847,000	\$ 824,000	\$ 1,014,600	\$ 443,000	\$ 43,500	\$ 46,500	\$ 46,500	\$ 47,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation / Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 792,757	\$ -	\$ 463,372	\$ -	\$ 479,491	\$ -	\$ 837,451	\$ -	\$ -	\$ 2,723,516	\$ 332,677	\$ 429,728	\$ 101,745	\$ 131,242	\$ 79,889
Total Capital Requirements	\$ 59,000	\$ 57,600	\$ 847,000	\$ 824,000	\$ 1,014,600	\$ 443,000	\$ 43,500	\$ 46,500	\$ 46,500	\$ 47,000	\$ 792,757	\$ -	\$ 463,372	\$ -	\$ 479,491	\$ -	\$ 837,451	\$ -	\$ -	\$ 2,723,516	\$ 332,677	\$ 429,728	\$ 101,745	\$ 131,242	\$ 79,889
Development Charges Financing	\$ -	\$ -	\$ 533,600	\$ 533,600	\$ 583,550	\$ 133,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 59,000	\$ 57,600	\$ 313,400	\$ 290,400	\$ 431,050	\$ 309,800	\$ 43,500	\$ 46,500	\$ 46,500	\$ 47,000	\$ 792,757	\$ -	\$ 463,372	\$ -	\$ 479,491	\$ -	\$ 837,451	\$ -	\$ -	\$ 2,723,516	\$ 332,677	\$ 429,728	\$ 101,745	\$ 131,242	\$ 79,889
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 59,000	\$ 57,600	\$ 847,000	\$ 824,000	\$ 1,014,600	\$ 443,000	\$ 43,500	\$ 46,500	\$ 46,500	\$ 47,000	\$ 792,757	\$ -	\$ 463,372	\$ -	\$ 479,491	\$ -	\$ 837,451	\$ -	\$ -	\$ 2,723,516	\$ 332,677	\$ 429,728	\$ 101,745	\$ 131,242	\$ 79,889

Blended Water System																									
Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Town's 10-Year Capital Forecast	\$ 209,000	\$ 5,153,600	\$ 4,944,600	\$ 10,214,000	\$ 5,572,200	\$ 5,548,000	\$ 5,776,000	\$ 6,664,000	\$ 469,000	\$ 7,669,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation / Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 801,707	\$ 142,936	\$ 1,326,164	\$ 481,860	\$ 479,491	\$ 10,375	\$ 5,613,876	\$ 4,408	\$ 1,563,521	\$ 3,498,003	\$ 344,704	\$ 6,250,873	\$ 101,745	\$ 207,152	\$ 79,889
Total Capital Requirements	\$ 209,000	\$ 5,153,600	\$ 4,944,600	\$ 10,214,000	\$ 5,572,200	\$ 5,548,000	\$ 5,776,000	\$ 6,664,000	\$ 469,000	\$ 7,669,500	\$ 801,707	\$ 142,936	\$ 1,326,164	\$ 481,860	\$ 479,491	\$ 10,375	\$ 5,613,876	\$ 4,408	\$ 1,563,521	\$ 3,498,003	\$ 344,704	\$ 6,250,873	\$ 101,745	\$ 207,152	\$ 79,889
Development Charges Financing	\$ -	\$ 750,000	\$ 533,600	\$ 4,471,100	\$ 583,550	\$ 133,200	\$ 325,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ -	\$ -	\$ 1,241,500	\$ 1,241,500	\$ 1,161,000	\$ -	\$ 1,350,000	\$ 1,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,806,938	\$ -	\$ -	\$ -	\$ -	\$ 2,910,572	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 209,000	\$ 1,188,600	\$ 411,000	\$ 745,400	\$ 688,650	\$ 1,764,800	\$ 232,000	\$ 84,000	\$ 250,000	\$ 2,194,500	\$ 801,707	\$ 142,936	\$ 1,326,164	\$ 481,860	\$ 479,491	\$ 10,375	\$ 2,806,938	\$ 4,408	\$ 1,563,521	\$ 3,498,003	\$ 344,704	\$ 3,340,301	\$ 101,745	\$ 207,152	\$ 79,889
Other Financing (Grants, third party, etc.)	\$ -	\$ 3,215,000	\$ 2,758,500	\$ 3,756,000	\$ 3,139,000	\$ 3,650,000	\$ 3,869,000	\$ 4,380,000	\$ 219,000	\$ 5,475,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 209,000	\$ 5,153,600	\$ 4,944,600	\$ 10,214,000	\$ 5,572,200	\$ 5,548,000	\$ 5,776,000	\$ 6,664,000	\$ 469,000	\$ 7,669,500	\$ 801,707	\$ 142,936	\$ 1,326,164	\$ 481,860	\$ 479,491	\$ 10,375	\$ 5,613,876	\$ 4,408	\$ 1,563,521	\$ 3,498,003	\$ 344,704	\$ 6,250,873	\$ 101,745	\$ 207,152	\$ 79,889

Warton Wastewater System																									
Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Town's 10-Year Capital Forecast	\$ 135,000	\$ 5,170,000	\$ 7,505,000	\$ 9,345,000	\$ 5,254,000	\$ 5,225,000	\$ 5,325,000	\$ 6,025,000	\$ 332,000	\$ 7,532,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation / Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 318,282	\$ 2,717,426	\$ 4,027,364	\$ 387,142	\$ -	\$ -	\$ 428,521	\$ -	\$ -	\$ 202,412	\$ 125,164	\$ 1,977,642	\$ -	\$ 2,992,391	\$ 281,745
Total Capital Requirements	\$ 135,000	\$ 5,170,000	\$ 7,505,000	\$ 9,345,000	\$ 5,254,000	\$ 5,225,000	\$ 5,325,000	\$ 6,025,000	\$ 332,000	\$ 7,532,000	\$ 318,282	\$ 2,717,426	\$ 4,027,364	\$ 387,142	\$ -	\$ -	\$ 428,521	\$ -	\$ -	\$ 202,412	\$ 125,164	\$ 1,977,642	\$ -	\$ 2,992,391	\$ 281,745
Development Charges Financing	\$ -	\$ 750,000	\$ 3,350,000	\$ 3,937,500	\$ 750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ -	\$ 1,057,500	\$ 1,080,000	\$ 1,473,750	\$ -	\$ 1,012,500	\$ 1,131,000	\$ 810,000	\$ -	\$ 1,012,500	\$ -	\$ 1,630,455	\$ 2,416,418	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 135,000	\$ 170,000	\$ 155,000	\$ 95,000	\$ 1,365,000	\$ 562,500	\$ 325,000	\$ 835,000	\$ 113,000	\$ 1,044,500	\$ 318,282	\$ 1,086,970	\$ 1,610,946	\$ 387,142	\$ -	\$ -	\$ 428,521	\$ -	\$ -	\$ 202,412	\$ 125,164	\$ 1,977,642	\$ -	\$ 2,992,391	\$ 281,745
Other Financing (Grants, third party, etc.)	\$ -	\$ 3,192,500	\$ 2,920,000	\$ 3,838,750	\$ 3,139,000	\$ 3,650,000	\$ 3,869,000	\$ 4,380,000	\$ 219,000	\$ 5,475,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 135,000	\$ 5,170,000	\$ 7,505,000	\$ 9,345,000	\$ 5,254,000	\$ 5,225,000	\$ 5,325,000	\$ 6,025,000	\$ 332,000	\$ 7,532,000	\$ 318,282	\$ 2,717,426	\$ 4,027,364	\$ 387,142	\$ -	\$ -	\$ 428,521	\$ -	\$ -	\$ 202,412	\$ 125,164	\$ 1,977,642	\$ -	\$ 2,992,391	\$ 281,745

Appendix B

Reserve Schedules

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX B: Capital Reserves Schedules**

Warton Water System Capital Reserve Schedule

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Opening Balance	\$ 1,712,728	\$ 2,137,971	\$ 1,547,310	\$ 2,060,105	\$ 2,182,907	\$ 2,484,013	\$ 1,559,593	\$ 1,995,215	\$ 2,583,369	\$ 2,973,167	\$ 1,505,180	\$ 2,311,555	\$ 3,033,092	\$ 3,070,506	\$ 3,532,919	\$ 4,531,777	\$ 5,580,831	\$ 1,825,194	\$ 2,902,702	\$ 2,559,364	\$ 3,156,775	\$ 4,686,643	\$ 6,305,276	\$ 7,614,581	\$ 9,066,445
Transfer from Operating	\$ 533,322	\$ 510,000	\$ 570,000	\$ 535,000	\$ 510,000	\$ 500,000	\$ 585,000	\$ 575,000	\$ 535,000	\$ 650,000	\$ 770,000	\$ 805,000	\$ 840,000	\$ 875,000	\$ 910,000	\$ 950,000	\$ 985,000	\$ 1,025,000	\$ 1,170,000	\$ 1,310,000	\$ 1,450,000	\$ 1,495,000	\$ 1,160,000	\$ 1,350,000	\$ 1,395,000
Transfer to Capital	\$ 150,000	\$ 1,131,000	\$ 97,600	\$ 455,000	\$ 257,600	\$ 1,455,000	\$ 188,500	\$ 37,500	\$ 203,500	\$ 2,147,500	\$ 8,949	\$ 142,936	\$ 862,792	\$ 481,860	\$ -	\$ 10,375	\$ 4,776,425	\$ 4,408	\$ 1,563,521	\$ 774,487	\$ 12,027	\$ -	\$ -	\$ 75,910	\$ -
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 2,096,050	\$ 1,516,971	\$ 2,019,710	\$ 2,140,105	\$ 2,435,307	\$ 1,529,013	\$ 1,956,093	\$ 2,532,715	\$ 2,914,869	\$ 1,475,667	\$ 2,266,231	\$ 2,973,619	\$ 3,010,300	\$ 3,463,646	\$ 4,442,919	\$ 5,471,403	\$ 1,789,406	\$ 2,845,786	\$ 2,509,181	\$ 3,094,877	\$ 4,594,748	\$ 6,181,643	\$ 7,465,276	\$ 8,888,671	\$ 10,461,445
Interest	\$ 41,921	\$ 30,339	\$ 40,394	\$ 42,802	\$ 48,706	\$ 30,580	\$ 39,122	\$ 50,654	\$ 58,297	\$ 29,513	\$ 45,325	\$ 59,472	\$ 60,206	\$ 69,273	\$ 88,858	\$ 109,428	\$ 35,788	\$ 56,916	\$ 50,184	\$ 61,898	\$ 91,895	\$ 123,633	\$ 149,306	\$ 177,773	\$ 209,229
Target Max. Balance (5% of Asset Value)	\$ 1,224,297	\$ 1,515,826	\$ 1,766,181	\$ 2,288,666	\$ 2,585,206	\$ 2,918,013	\$ 3,292,178	\$ 3,721,818	\$ 3,854,598	\$ 4,351,361	\$ 4,482,349	\$ 4,623,966	\$ 4,805,825	\$ 4,974,093	\$ 5,123,316	\$ 5,277,534	\$ 5,674,681	\$ 5,845,142	\$ 6,098,672	\$ 6,320,357	\$ 6,510,569	\$ 6,996,943	\$ 7,206,851	\$ 7,426,852	\$ 7,649,658
Amount Above Max. Balance	\$ 871,753	\$ 1,145	\$ 253,529	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 193,869	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 258,425	\$ 1,461,819	\$ 2,811,787
Target Min. Balance (3% of Asset Value)	\$ 734,578	\$ 909,496	\$ 1,059,709	\$ 1,373,200	\$ 1,551,124	\$ 1,750,808	\$ 1,975,307	\$ 2,233,091	\$ 2,312,759	\$ 2,610,817	\$ 2,689,410	\$ 2,774,380	\$ 2,883,495	\$ 2,984,456	\$ 3,073,989	\$ 3,166,520	\$ 3,404,809	\$ 3,507,085	\$ 3,659,203	\$ 3,792,214	\$ 3,906,341	\$ 4,198,166	\$ 4,324,111	\$ 4,456,111	\$ 4,589,795
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 221,795	\$ 19,214	\$ -	\$ -	\$ 1,135,150	\$ 423,179	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,615,402	\$ 661,299	\$ 1,150,023	\$ 697,337	\$ -	\$ -	\$ -	\$ -	\$ -

Amabel Water System Capital Reserve Schedule

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Opening Balance	\$ 1,253,263	\$ 1,462,453	\$ 1,687,950	\$ 1,672,341	\$ 1,690,079	\$ 1,580,010	\$ 1,601,614	\$ 1,910,576	\$ 2,253,258	\$ 2,618,093	\$ 3,005,015	\$ 2,644,103	\$ 3,089,685	\$ 3,071,539	\$ 3,530,770	\$ 3,510,104	\$ 3,988,306	\$ 3,621,872	\$ 4,107,409	\$ 4,607,758	\$ 2,340,127	\$ 2,470,899	\$ 2,510,394	\$ 2,885,222	\$ 3,242,560
Transfer from Operating	\$ 239,514	\$ 250,000	\$ 265,000	\$ 275,000	\$ 290,000	\$ 300,000	\$ 315,000	\$ 345,000	\$ 360,000	\$ 375,000	\$ 380,000	\$ 385,000	\$ 385,000	\$ 390,000	\$ 390,000	\$ 400,000	\$ 400,000	\$ 405,000	\$ 410,000	\$ 410,000	\$ 415,000	\$ 420,000	\$ 420,000	\$ 425,000	\$ 425,000
Transfer to Capital	\$ 59,000	\$ 57,600	\$ 313,400	\$ 290,400	\$ 431,050	\$ 309,800	\$ 43,500	\$ 46,500	\$ 46,500	\$ 47,000	\$ 792,757	\$ -	\$ 463,372	\$ -	\$ 479,491	\$ -	\$ 837,451	\$ -	\$ -	\$ 2,723,516	\$ 332,677	\$ 429,728	\$ 101,745	\$ 131,242	\$ 79,889
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 1,433,777	\$ 1,654,853	\$ 1,639,550	\$ 1,656,941	\$ 1,549,029	\$ 1,570,210	\$ 1,873,114	\$ 2,209,076	\$ 2,566,758	\$ 2,946,093	\$ 2,592,258	\$ 3,029,103	\$ 3,011,312	\$ 3,461,539	\$ 3,441,279	\$ 3,910,104	\$ 3,550,855	\$ 4,026,872	\$ 4,517,409	\$ 2,294,242	\$ 2,422,450	\$ 2,461,171	\$ 2,828,649	\$ 3,178,981	\$ 3,587,672
Interest	\$ 28,676	\$ 33,097	\$ 32,791	\$ 33,139	\$ 30,981	\$ 31,404	\$ 37,462	\$ 44,182	\$ 51,335	\$ 58,922	\$ 51,845	\$ 60,582	\$ 60,226	\$ 69,231	\$ 68,826	\$ 78,202	\$ 71,017	\$ 80,537	\$ 90,348	\$ 45,885	\$ 48,449	\$ 49,223	\$ 56,573	\$ 63,580	\$ 71,753
Target Max. Balance (5% of Asset Value)	\$ 761,898	\$ 787,635	\$ 853,614	\$ 920,423	\$ 998,765	\$ 1,050,878	\$ 1,084,580	\$ 1,119,442	\$ 1,155,350	\$ 1,192,361	\$ 1,267,770	\$ 1,305,803	\$ 1,368,145	\$ 1,409,190	\$ 1,475,440	\$ 1,519,703	\$ 1,607,167	\$ 1,655,382	\$ 1,705,043	\$ 1,892,370	\$ 1,965,775	\$ 2,046,235	\$ 2,112,709	\$ 2,182,653	\$ 2,252,127
Amount Above Max. Balance	\$ 671,879	\$ 867,217	\$ 785,935	\$ 736,518	\$ 550,264	\$ 519,332	\$ 788,534	\$ 1,089,634	\$ 1,411,408	\$ 1,753,732	\$ 1,324,488	\$ 1,723,300	\$ 1,643,167	\$ 2,052,349	\$ 1,965,839	\$ 2,390,401	\$ 1,943,688	\$ 2,371,490	\$ 2,812,366	\$ 401,871	\$ 456,675	\$ 414,936	\$ 715,940	\$ 996,328	\$ 1,335,545
Target Min. Balance (3% of Asset Value)	\$ 457,139	\$ 472,581	\$ 512,169	\$ 552,254	\$ 599,259	\$ 630,527	\$ 650,748	\$ 671,665	\$ 693,210	\$ 715,417	\$ 760,662	\$ 783,482	\$ 820,887	\$ 845,514	\$ 885,264	\$ 911,822	\$ 964,300	\$ 993,229	\$ 1,023,026	\$ 1,135,422	\$ 1,179,465	\$ 1,227,741	\$ 1,267,626	\$ 1,309,592	\$ 1,351,276
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Blended Capital Reserve Schedule

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Opening Balance	\$ 2,965,991	\$ 3,600,424	\$ 3,174,060	\$ 3,552,721	\$ 3,516,268	\$ 3,470,670	\$ 2,270,387	\$ 2,742,155	\$ 3,425,318	\$ 3,963,025	\$ 2,696,395	\$ 3,008,682	\$ 4,045,061	\$ 3,946,275	\$ 4,752,603	\$ 5,628,475	\$ 7,056,462	\$ 5,711,515	\$ 7,014,649	\$ 6,916,750	\$ 5,006,922	\$ 6,433,363	\$ 4,894,024	\$ 6,311,024	\$ 7,857,950
Transfer from Operating	\$ 772,836	\$ 700,000	\$ 720,000	\$ 640,000	\$ 575,000	\$ 520,000	\$ 650,000	\$ 700,000	\$ 710,000	\$ 875,000	\$ 1,055,000	\$ 1,100,000	\$ 1,150,000	\$ 1,195,000	\$ 1,245,000	\$ 1,300,000	\$ 1,350,000	\$ 1,170,000	\$ 1,330,000	\$ 1,490,000	\$ 1,645,000	\$ 1,705,000	\$ 1,395,000	\$ 1,600,000	\$ 1,665,000
Transfer to Capital	\$ 209,000	\$ 1,188,600	\$ 411,000	\$ 745,400	\$ 688,650	\$ 1,764,800	\$ 232,000	\$ 84,000	\$ 250,000	\$ 2,194,500	\$ 801,707	\$ 142,936	\$ 1,326,164	\$ 481,860	\$ 479,491	\$ 10,375	\$ 2,806,938	\$ 4,408	\$ 1,563,521	\$ 3,498,003	\$ 344,704	\$ 3,340,301	\$ 101,745	\$ 207,152	\$ 79,889
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 3,529,827	\$ 3,111,824	\$ 3,483,060	\$ 3,447,321	\$ 3,402,618	\$ 2,225,870	\$ 2,688,387	\$ 3,358,155	\$ 3,885,318	\$ 2,643,525	\$ 2,949,688	\$ 3,965,746	\$ 3,868,897	\$ 4,659,415	\$ 5,518,112	\$ 6,918,100	\$ 5,599,524	\$ 6,877,106	\$ 6,781,127	\$ 4,908,747	\$ 6,307,219	\$ 4,798,062	\$ 6,187,279	\$ 7,703,873	\$ 9,443,061
Interest	\$ 70,597	\$ 62,236	\$ 69,661	\$ 68,946	\$ 68,052	\$ 44,517	\$ 53,768	\$ 67,163	\$ 77,706	\$ 52,870	\$ 58,994	\$ 79,315	\$ 77,378	\$ 93,188	\$ 110,362	\$ 138,362	\$ 111,990	\$ 137,542	\$ 135,623	\$ 98,175	\$ 126,144	\$ 95,961	\$ 123,746	\$ 154,077	\$ 188,861
Target Max. Balance (5% of Asset Value)	\$ 2,236,181	\$ 2,560,946	\$ 2,885,004	\$ 3,482,254	\$ 3,865,332	\$ 4,258,692	\$ 4,675,253	\$ 5,148,710	\$ 5,326,622	\$ 5,869,895	\$ 6,086,078	\$ 6,275,807	\$ 6,530,389	\$ 6,750,394	\$ 6,976,880	\$ 7,186,705	\$ 7,683,000	\$ 7,913,711	\$ 8,229,298	\$ 8,651,077	\$ 8,927,845	\$ 9,508,224	\$ 9,798,558	#####	\$ 10,409,952
Amount Above Max. Balance	\$ 1,293,646	\$ 550,878	\$ 598,056	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Target Min. Balance (3% of Asset Value)	\$ 1,341,708	\$ 1,536,568	\$ 1,731,003	\$ 2,089,353	\$ 2,319,199	\$ 2,555,215	\$ 2,805,152	\$ 3,089,226	\$ 3,195,973	\$ 3,521,937	\$ 3,651,647	\$ 3,765,484	\$ 3,918,233	\$ 4,050,236	\$ 4,186,128	\$ 4,312,023	\$ 4,609,800	\$ 4,748,226	\$ 4,937,579	\$ 5,190,646	\$ 5,356,707	\$ 5,704,934	\$ 5,879,135	\$ 6,061,723	\$ 6,245,971
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 329,345	\$ 116,764	\$ -	\$ -	\$ 878,413	\$ 701,958	\$ -	\$ 49,337	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 281,899	\$ -	\$ 906,872	\$ -	\$ -	\$ -

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX B: Capital Reserves Schedules**

Warton Wastewater System Capital Reserve Schedule

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Opening Balance	\$ 859,758	\$ 954,976	\$ 1,137,276	\$ 1,374,221	\$ 1,712,805	\$ 732,162	\$ 657,555	\$ 849,206	\$ 549,990	\$ 1,042,430	\$ 737,388	\$ 1,233,288	\$ 1,092,744	\$ 425,135	\$ 803,752	\$ 1,605,227	\$ 2,443,132	\$ 2,881,103	\$ 3,877,125	\$ 5,005,268	\$ 6,092,313	\$ 7,300,292	\$ 6,755,103	\$ 8,328,405	\$ 6,972,734
Transfer from Operating	\$ 211,493	\$ 330,000	\$ 365,000	\$ 400,000	\$ 370,000	\$ 475,000	\$ 500,000	\$ 525,000	\$ 585,000	\$ 725,000	\$ 790,000	\$ 925,000	\$ 935,000	\$ 750,000	\$ 770,000	\$ 790,000	\$ 810,000	\$ 920,000	\$ 1,030,000	\$ 1,170,000	\$ 1,190,000	\$ 1,300,000	\$ 1,410,000	\$ 1,500,000	\$ 1,520,000
Transfer to Capital	\$ 135,000	\$ 170,000	\$ 155,000	\$ 95,000	\$ 1,365,000	\$ 562,500	\$ 325,000	\$ 835,000	\$ 113,000	\$ 1,044,500	\$ 318,282	\$ 1,086,970	\$ 1,610,946	\$ 387,142	\$ -	\$ -	\$ 428,521	\$ -	\$ -	\$ 202,412	\$ 125,164	\$ 1,977,642	\$ -	\$ 2,992,391	\$ 281,745
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Closing Balance</i>	\$ 936,251	\$ 1,114,976	\$ 1,347,276	\$ 1,679,221	\$ 717,805	\$ 644,662	\$ 832,555	\$ 539,206	\$ 1,021,990	\$ 722,930	\$ 1,209,106	\$ 1,071,318	\$ 416,799	\$ 787,993	\$ 1,573,752	\$ 2,395,227	\$ 2,824,611	\$ 3,801,103	\$ 4,907,125	\$ 5,972,855	\$ 7,157,149	\$ 6,622,650	\$ 8,165,103	\$ 6,836,014	\$ 8,210,989
Interest	\$ 18,725	\$ 22,300	\$ 26,946	\$ 33,584	\$ 14,356	\$ 12,893	\$ 16,651	\$ 10,784	\$ 20,440	\$ 14,459	\$ 24,182	\$ 21,426	\$ 8,336	\$ 15,760	\$ 31,475	\$ 47,905	\$ 56,492	\$ 76,022	\$ 98,143	\$ 119,457	\$ 143,143	\$ 132,453	\$ 163,302	\$ 136,720	\$ 164,220
Target Max. Balance (5% of Asset Value)	\$ 2,075,335	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Above Max. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Target Min. Balance (3% of Asset Value)	\$ 1,245,201	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Below Min. Balance	\$ 308,950	\$ 322,681	\$ 358,661	\$ 358,244	\$ 1,538,403	\$ 1,835,984	\$ 1,882,260	\$ 2,437,803	\$ 2,054,289	\$ 2,671,598	\$ 2,296,806	\$ 2,621,294	\$ 3,507,413	\$ 3,265,559	\$ 2,601,406	\$ 1,905,186	\$ 1,617,670	\$ 774,446	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Appendix C

Debt Repayment

South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX C: Debt Repayment

System	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	
Amabel Water (Excluding Oliphant)																										
Earned Revenues	\$943,588	\$893,210	\$917,228	\$941,849	\$967,088	\$992,960	\$1,019,480	\$1,046,664	\$1,074,528	\$1,103,087	\$1,121,400	\$1,139,970	\$1,158,801	\$1,177,896	\$1,197,259	\$1,216,893	\$1,236,801	\$1,256,987	\$1,277,456	\$1,298,209	\$1,319,251	\$1,340,587	\$1,362,218	\$1,384,150	\$1,406,387	
Debt Repayment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debt Capacity Ratio	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Warton Water (Including Oliphant)																										
Earned Revenues	\$1,318,510	\$1,421,504	\$1,506,502	\$1,597,442	\$1,694,761	\$1,798,926	\$1,910,439	\$2,029,839	\$2,157,707	\$2,294,663	\$2,435,935	\$2,491,647	\$2,548,613	\$2,606,862	\$2,666,420	\$2,727,319	\$2,789,586	\$2,853,254	\$2,918,352	\$2,984,913	\$3,052,969	\$3,122,554	\$3,193,700	\$3,266,443	\$3,340,819	
Debt Repayment	\$0	\$0	\$0	\$103,996	\$207,992	\$305,245	\$305,245	\$418,330	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$456,737	\$352,741	\$255,488	\$255,488	\$630,021	\$487,617	\$487,617	
Debt Capacity Ratio	0%	0%	0%	7%	12%	17%	16%	21%	26%	24%	23%	23%	22%	22%	21%	21%	20%	20%	16%	12%	8%	8%	20%	15%	15%	
Total Both Water Systems (Sum)																										
Earned Revenues	\$2,262,098	\$2,314,714	\$2,423,729	\$2,539,291	\$2,661,849	\$2,791,886	\$2,929,919	\$3,076,503	\$3,232,234	\$3,397,750	\$3,557,335	\$3,631,617	\$3,707,415	\$3,784,758	\$3,863,679	\$3,944,212	\$4,026,388	\$4,110,241	\$4,195,808	\$4,283,122	\$4,372,221	\$4,463,140	\$4,555,918	\$4,650,594	\$4,747,206	
Debt Repayment	\$0	\$0	\$0	\$103,996	\$207,992	\$305,245	\$305,245	\$418,330	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$456,737	\$352,741	\$255,488	\$255,488	\$630,021	\$487,617	\$487,617	
Debt Capacity Ratio	0%	0%	0%	4%	8%	11%	10%	14%	17%	17%	16%	15%	15%	15%	15%	14%	14%	14%	11%	8%	6%	6%	14%	10%	10%	
Blended Water Systems																										
Earned Revenues	\$2,262,098	\$2,257,865	\$2,310,175	\$2,369,280	\$2,435,743	\$2,510,705	\$2,676,014	\$2,853,256	\$3,043,345	\$3,247,234	\$3,460,504	\$3,543,761	\$3,629,009	\$3,716,297	\$3,805,677	\$3,897,201	\$3,990,923	\$4,086,897	\$4,185,182	\$4,285,836	\$4,388,919	\$4,494,494	\$4,602,625	\$4,713,378	\$4,826,821	
Debt Repayment	\$0	\$0	\$0	\$103,996	\$207,992	\$305,245	\$305,245	\$418,330	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$560,733	\$795,861	\$691,865	\$587,869	\$490,616	\$490,616	\$621,339	\$478,936	\$478,936	
Debt Capacity Ratio	0%	0%	0%	4%	9%	12%	11%	15%	18%	17%	16%	16%	15%	15%	15%	14%	14%	19%	17%	14%	11%	11%	13%	10%	10%	
Warton Wastewater																										
Earned Revenues	\$1,200,342	\$1,289,869	\$1,386,130	\$1,489,633	\$1,600,920	\$1,719,996	\$1,848,649	\$1,986,973	\$2,135,694	\$2,295,592	\$2,463,752	\$2,620,206	\$2,786,629	\$2,827,226	\$2,868,462	\$2,910,352	\$2,952,913	\$2,996,161	\$3,040,116	\$3,084,796	\$3,130,221	\$3,176,413	\$3,223,393	\$3,271,186	\$3,319,815	
Debt Repayment	\$86,357	\$86,356	\$131,761	\$179,051	\$302,502	\$302,502	\$387,316	\$482,056	\$549,907	\$549,907	\$634,720	\$634,720	\$771,298	\$973,713	\$973,713	\$973,713	\$973,713	\$885,130	\$794,662	\$671,211	\$671,211	\$586,397	\$491,657	\$423,806	\$423,806	
Debt Capacity Ratio	7%	7%	10%	12%	19%	18%	21%	24%	26%	24%	26%	24%	28%	34%	34%	33%	33%	30%	26%	22%	21%	18%	15%	13%	13%	
All Water & Wastewater Systems Combined																										
Earned Revenues	\$3,462,440	\$3,547,734	\$3,696,306	\$3,858,913	\$4,036,663	\$4,230,701	\$4,524,662	\$4,840,229	\$5,179,039	\$5,542,826	\$5,924,256	\$6,163,966	\$6,415,637	\$6,543,524	\$6,674,139	\$6,807,553	\$6,943,835	\$7,083,058	\$7,225,298	\$7,370,631	\$7,519,140	\$7,670,907	\$7,826,018	\$7,984,564	\$8,146,637	
Debt Repayment	\$86,357	\$86,356	\$131,761	\$283,047	\$510,494	\$607,747	\$692,561	\$900,386	\$1,110,640	\$1,110,640	\$1,195,454	\$1,195,454	\$1,332,031	\$1,534,447	\$1,534,447	\$1,534,447	\$1,534,447	\$1,680,991	\$1,486,527	\$1,259,080	\$1,161,827	\$1,077,013	\$1,112,997	\$902,743	\$902,743	
Debt Capacity Ratio	2%	2%	4%	7%	13%	14%	15%	19%	21%	20%	20%	19%	21%	23%	23%	23%	22%	24%	21%	17%	15%	14%	14%	11%	11%	

Appendix D

Operating Costs

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX D: Operating Costs**

Warton Water System - Operating Costs

Cost Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Salaries - Full Time	\$ 61,736	\$ 62,971	\$ 64,230	\$ 65,515	\$ 66,825	\$ 68,162	\$ 69,525	\$ 70,915	\$ 72,334	\$ 73,780	\$ 75,256	\$ 76,761	\$ 78,296	\$ 79,862	\$ 81,459	\$ 83,089	\$ 84,750	\$ 86,445	\$ 88,174	\$ 89,938	\$ 91,736	\$ 93,571	\$ 95,443	\$ 97,351	\$ 99,298
Employee Benefits	\$ 23,270	\$ 23,735	\$ 24,210	\$ 24,694	\$ 25,188	\$ 25,692	\$ 26,206	\$ 26,730	\$ 27,265	\$ 27,810	\$ 28,366	\$ 28,933	\$ 29,512	\$ 30,102	\$ 30,704	\$ 31,318	\$ 31,945	\$ 32,584	\$ 33,235	\$ 33,900	\$ 34,578	\$ 35,270	\$ 35,975	\$ 36,694	\$ 37,428
Utilities Hydro	\$ 98,000	\$ 99,960	\$ 101,959	\$ 103,998	\$ 106,078	\$ 108,200	\$ 110,364	\$ 112,571	\$ 114,823	\$ 117,119	\$ 119,461	\$ 121,851	\$ 124,288	\$ 126,773	\$ 129,309	\$ 131,895	\$ 134,533	\$ 137,224	\$ 139,968	\$ 142,767	\$ 145,623	\$ 148,535	\$ 151,506	\$ 154,536	\$ 157,627
Supplies	\$ 750	\$ 765	\$ 780	\$ 796	\$ 812	\$ 828	\$ 845	\$ 862	\$ 879	\$ 896	\$ 914	\$ 933	\$ 951	\$ 970	\$ 990	\$ 1,009	\$ 1,030	\$ 1,050	\$ 1,071	\$ 1,093	\$ 1,114	\$ 1,137	\$ 1,159	\$ 1,183	\$ 1,206
Repairs and Maintenance	\$ 63,000	\$ 64,260	\$ 65,545	\$ 66,856	\$ 68,193	\$ 69,557	\$ 70,948	\$ 72,367	\$ 73,815	\$ 75,291	\$ 76,797	\$ 78,333	\$ 79,899	\$ 81,497	\$ 83,127	\$ 84,790	\$ 86,485	\$ 88,215	\$ 89,980	\$ 91,779	\$ 93,615	\$ 95,487	\$ 97,397	\$ 99,345	\$ 101,332
Payroll Internal Charge	\$ 58,270	\$ 59,435	\$ 60,624	\$ 61,837	\$ 63,073	\$ 64,335	\$ 65,621	\$ 66,934	\$ 68,273	\$ 69,638	\$ 71,031	\$ 72,451	\$ 73,900	\$ 75,378	\$ 76,886	\$ 78,424	\$ 79,992	\$ 81,592	\$ 83,224	\$ 84,888	\$ 86,586	\$ 88,318	\$ 90,084	\$ 91,886	\$ 93,724
Postage	\$ 10,000	\$ 10,200	\$ 10,404	\$ 10,612	\$ 10,824	\$ 11,041	\$ 11,262	\$ 11,487	\$ 11,717	\$ 11,951	\$ 12,190	\$ 12,434	\$ 12,682	\$ 12,936	\$ 13,195	\$ 13,459	\$ 13,728	\$ 14,002	\$ 14,282	\$ 14,568	\$ 14,859	\$ 15,157	\$ 15,460	\$ 15,769	\$ 16,084
Internal Equipment Rentals	\$ 6,500	\$ 6,630	\$ 6,763	\$ 6,898	\$ 7,036	\$ 7,177	\$ 7,320	\$ 7,466	\$ 7,616	\$ 7,768	\$ 7,923	\$ 8,082	\$ 8,244	\$ 8,408	\$ 8,577	\$ 8,748	\$ 8,923	\$ 9,102	\$ 9,284	\$ 9,469	\$ 9,659	\$ 9,852	\$ 10,049	\$ 10,250	\$ 10,455
Billing Charge - Warton H.E.C.	\$ 2,000	\$ 2,040	\$ 2,081	\$ 2,122	\$ 2,165	\$ 2,208	\$ 2,252	\$ 2,297	\$ 2,343	\$ 2,390	\$ 2,438	\$ 2,487	\$ 2,536	\$ 2,587	\$ 2,639	\$ 2,692	\$ 2,746	\$ 2,800	\$ 2,856	\$ 2,914	\$ 2,972	\$ 3,031	\$ 3,092	\$ 3,154	\$ 3,217
Service Contract (Operations)	\$ 316,200	\$ 322,524	\$ 328,974	\$ 335,554	\$ 342,265	\$ 349,110	\$ 356,093	\$ 363,214	\$ 370,479	\$ 377,888	\$ 385,446	\$ 393,155	\$ 401,018	\$ 409,038	\$ 417,219	\$ 425,564	\$ 434,075	\$ 442,756	\$ 451,611	\$ 460,644	\$ 469,857	\$ 479,254	\$ 488,839	\$ 498,616	\$ 508,588
Meeting Expenses	\$ 50	\$ 51	\$ 52	\$ 53	\$ 54	\$ 55	\$ 56	\$ 57	\$ 59	\$ 60	\$ 61	\$ 62	\$ 63	\$ 65	\$ 66	\$ 67	\$ 69	\$ 70	\$ 71	\$ 73	\$ 74	\$ 76	\$ 77	\$ 79	\$ 80
Insurance	\$ 35,400	\$ 36,108	\$ 36,830	\$ 37,567	\$ 38,318	\$ 39,084	\$ 39,866	\$ 40,663	\$ 41,477	\$ 42,306	\$ 43,152	\$ 44,015	\$ 44,896	\$ 45,794	\$ 46,710	\$ 47,644	\$ 48,597	\$ 49,569	\$ 50,560	\$ 51,571	\$ 52,603	\$ 53,655	\$ 54,728	\$ 55,822	\$ 56,939
Property Taxes & PIL	\$ 30,665	\$ 31,278	\$ 31,904	\$ 32,542	\$ 33,193	\$ 33,857	\$ 34,534	\$ 35,224	\$ 35,929	\$ 36,648	\$ 37,380	\$ 38,128	\$ 38,891	\$ 39,668	\$ 40,462	\$ 41,271	\$ 42,096	\$ 42,938	\$ 43,797	\$ 44,673	\$ 45,567	\$ 46,478	\$ 47,407	\$ 48,356	\$ 49,323
Interfunctional Charge - Water	\$ 25,000	\$ 25,500	\$ 26,010	\$ 26,530	\$ 27,061	\$ 27,602	\$ 28,154	\$ 28,717	\$ 29,291	\$ 29,877	\$ 30,475	\$ 31,084	\$ 31,706	\$ 32,340	\$ 32,987	\$ 33,647	\$ 34,320	\$ 35,006	\$ 35,706	\$ 36,420	\$ 37,149	\$ 37,892	\$ 38,649	\$ 39,422	\$ 40,211
Frostline Adjustment	\$ 1,500	\$ 1,530	\$ 1,561	\$ 1,592	\$ 1,624	\$ 1,656	\$ 1,689	\$ 1,723	\$ 1,757	\$ 1,793	\$ 1,828	\$ 1,865	\$ 1,902	\$ 1,940	\$ 1,979	\$ 2,019	\$ 2,059	\$ 2,100	\$ 2,142	\$ 2,185	\$ 2,229	\$ 2,273	\$ 2,319	\$ 2,365	\$ 2,413
Non TCA Minor Capital	\$ 50,000	\$ 51,000	\$ 52,020	\$ 53,060	\$ 54,122	\$ 55,204	\$ 56,308	\$ 57,434	\$ 58,583	\$ 59,755	\$ 60,950	\$ 62,169	\$ 63,412	\$ 64,680	\$ 65,974	\$ 67,293	\$ 68,639	\$ 70,012	\$ 71,412	\$ 72,841	\$ 74,297	\$ 75,783	\$ 77,299	\$ 78,845	\$ 80,422
Oliphant Operations (start in 2023)	\$ -	\$ 111,812	\$ 114,049	\$ 116,330	\$ 118,656	\$ 121,029	\$ 123,450	\$ 125,919	\$ 128,437	\$ 131,006	\$ 133,626	\$ 136,299	\$ 139,025	\$ 141,805	\$ 144,641	\$ 147,534	\$ 150,485	\$ 153,494	\$ 156,564	\$ 159,696	\$ 162,890	\$ 166,147	\$ 169,470	\$ 172,860	\$ 176,317
Total	\$ 782,341	\$ 909,800	\$ 927,996	\$ 946,556	\$ 965,487	\$ 984,797	\$ 1,004,493	\$ 1,024,583	\$ 1,045,074	\$ 1,065,976	\$ 1,087,295	\$ 1,109,041	\$ 1,131,222	\$ 1,153,847	\$ 1,176,924	#####	\$ 1,224,471	\$ 1,248,961	\$ 1,273,940	\$ 1,299,419	#####	\$ 1,351,915	#####	\$ 1,406,533	\$ 1,434,663

Amabel Water System - Operating Costs

Cost Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Utilities - Hydro	\$ 54,000	\$ 46,818	\$ 47,754	\$ 48,709	\$ 49,684	\$ 50,677	\$ 51,691	\$ 52,725	\$ 53,779	\$ 54,855	\$ 55,952	\$ 57,071	\$ 58,212	\$ 59,377	\$ 60,564	\$ 61,775	\$ 63,011	\$ 64,271	\$ 65,557	\$ 66,868	\$ 68,205	\$ 69,569	\$ 70,960	\$ 72,380	\$ 73,827
Utilities - Water and Sewer	\$ 6,250	\$ 5,419	\$ 5,527	\$ 5,638	\$ 5,750	\$ 5,865	\$ 5,983	\$ 6,102	\$ 6,224	\$ 6,349	\$ 6,476	\$ 6,605	\$ 6,738	\$ 6,872	\$ 7,010	\$ 7,150	\$ 7,293	\$ 7,439	\$ 7,588	\$ 7,739	\$ 7,894	\$ 8,052	\$ 8,213	\$ 8,377	\$ 8,545
Property Taxes & PIL	\$ 5,550	\$ 4,812	\$ 4,908	\$ 5,006	\$ 5,106	\$ 5,209	\$ 5,313	\$ 5,419	\$ 5,527	\$ 5,638	\$ 5,751	\$ 5,866	\$ 5,983	\$ 6,103	\$ 6,225	\$ 6,349	\$ 6,476	\$ 6,606	\$ 6,738	\$ 6,873	\$ 7,010	\$ 7,150	\$ 7,293	\$ 7,439	\$ 7,588
Materials and supplies	\$ 18,300	\$ 15,866	\$ 16,183	\$ 16,507	\$ 16,837	\$ 17,174	\$ 17,517	\$ 17,868	\$ 18,225	\$ 18,590	\$ 18,961	\$ 19,341	\$ 19,728	\$ 20,122	\$ 20,524	\$ 20,935	\$ 21,354	\$ 21,781	\$ 22,216	\$ 22,661	\$ 23,114	\$ 23,576	\$ 24,048	\$ 24,529	\$ 25,019
Equipment Maintenance	\$ 36,000	\$ 31,212	\$ 31,836	\$ 32,473	\$ 33,122	\$ 33,785	\$ 34,461	\$ 35,150	\$ 35,853	\$ 36,570	\$ 37,301	\$ 38,047	\$ 38,808	\$ 39,584	\$ 40,376	\$ 41,184	\$ 42,007	\$ 42,847	\$ 43,704	\$ 44,578	\$ 45,470	\$ 46,379	\$ 47,307	\$ 48,253	\$ 49,218
Postage	\$ 6,100	\$ 5,289	\$ 5,394	\$ 5,502	\$ 5,612	\$ 5,725	\$ 5,839	\$ 5,956	\$ 6,075	\$ 6,197	\$ 6,320	\$ 6,447	\$ 6,576	\$ 6,707	\$ 6,841	\$ 6,978	\$ 7,118	\$ 7,260	\$ 7,405	\$ 7,554	\$ 7,705	\$ 7,859	\$ 8,016	\$ 8,176	\$ 8,340
Telephone	\$ 5,000	\$ 4,335	\$ 4,422	\$ 4,510	\$ 4,600	\$ 4,692	\$ 4,786	\$ 4,882	\$ 4,980	\$ 5,079	\$ 5,181	\$ 5,284	\$ 5,390	\$ 5,498	\$ 5,608	\$ 5,720	\$ 5,834	\$ 5,951	\$ 6,070	\$ 6,191	\$ 6,315	\$ 6,442	\$ 6,570	\$ 6,702	\$ 6,836
Internal Equipment Rentals	\$ 1,000	\$ 867	\$ 884	\$ 902	\$ 920	\$ 938	\$ 957	\$ 976	\$ 996	\$ 1,016	\$ 1,036	\$ 1,057	\$ 1,078	\$ 1,100	\$ 1,122	\$ 1,144	\$ 1,167	\$ 1,190	\$ 1,214	\$ 1,238	\$ 1,263	\$ 1,288	\$ 1,314	\$ 1,340	\$ 1,367
Rentals - Contractors - Oliphant	\$ 75,000	\$ 65,025	\$ 66,326	\$ 67,652	\$ 69,005	\$ 70,385	\$ 71,793	\$ 73,229	\$ 74,693	\$ 76,187	\$ 77,711	\$ 79,265	\$ 80,850	\$ 82,467	\$ 84,117	\$ 85,799	\$ 87,515	\$ 89,265	\$ 91,051	\$ 92,872	\$ 94,729	\$ 96,624	\$ 98,556	\$ 100,527	\$ 102,538
Service Contract (Operations)	\$ 346,770	\$ 300,650	\$ 306,663	\$ 312,796	\$ 319,052	\$ 325,433	\$ 331,941	\$ 338,580	\$ 345,352	\$ 352,259	\$ 359,304	\$ 366,490	\$ 373,820	\$ 381,296	\$ 388,922	\$ 396,701	\$ 404,635	\$ 412,727	\$ 420,982	\$ 429,402	\$ 437,990	\$ 446,749	\$ 455,684	\$ 464,798	\$ 474,094
Meeting Expenses	\$ 50	\$ 43	\$ 44	\$ 45	\$ 46	\$ 47	\$ 48	\$ 49	\$ 50	\$ 51	\$ 52	\$ 53	\$ 54	\$ 55	\$ 56	\$ 57	\$ 58	\$ 60	\$ 61	\$ 62	\$ 63	\$ 64	\$ 66	\$ 67	\$ 68
Insurance	\$ 25,800	\$ 22,369	\$ 22,816	\$ 23,272	\$ 23,738	\$ 24,212	\$ 24,697	\$ 25,191	\$ 25,694	\$ 26,208	\$ 26,733	\$ 27,267	\$ 27,813	\$ 28,369	\$ 28,936	\$ 29,515	\$ 30,105	\$ 30,707	\$ 31,321	\$ 31,948	\$ 32,587	\$ 33,239	\$ 33,903	\$ 34,581	\$ 35,273
Interfunctional Charge - Interest	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interfunctional Charge - Principal	\$ 18,240	\$ 18,240	\$ 18,240	\$ 18,240	\$ 18,240	\$ 18,240	\$ 18,240	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non TCA Minor Capital	\$ 75,000	\$ 65,025	\$ 66,326	\$ 67,652	\$ 69,005	\$ 70,385	\$ 71,793	\$ 73,229	\$ 74,693	\$ 76,187	\$ 77,711	\$ 79,265	\$ 80,850	\$ 82,467	\$ 84,117	\$ 85,799	\$ 87,515	\$ 89,265	\$ 91,051	\$ 92,872	\$ 94,729	\$ 96,624	\$ 98,556	\$ 100,527	\$ 102,538
Total	\$ 730,800	\$ 636,197	\$ 648,531	\$ 661,112	\$ 673,944	\$ 687,033	\$ 700,383	\$ 694,501	\$ 708,391	\$ 722,559	\$ 737,010	\$ 751,750	\$ 766,785	\$ 782,121	\$ 797,763	\$ 813,719	\$ 829,993	\$ 846,593	\$ 863,525	\$ 880,795	\$ 898,411	\$ 916,379	\$ 934,707	\$ 953,401	\$ 972,469

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX D: Operating Costs**

Warton Wastewater System - Operating Costs

Cost Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Utilities - Hydro	\$ 140,000	\$ 142,800	\$ 145,656	\$ 148,569	\$ 151,541	\$ 154,571	\$ 157,663	\$ 160,816	\$ 164,032	\$ 167,313	\$ 170,659	\$ 174,072	\$ 177,554	\$ 181,105	\$ 184,727	\$ 188,422	\$ 192,190	\$ 196,034	\$ 199,954	\$ 203,954	\$ 208,033	\$ 212,193	\$ 216,437	\$ 220,766	\$ 225,181
Utilities - Water	\$ 14,000	\$ 14,280	\$ 14,566	\$ 14,857	\$ 15,154	\$ 15,457	\$ 15,766	\$ 16,082	\$ 16,403	\$ 16,731	\$ 17,066	\$ 17,407	\$ 17,755	\$ 18,110	\$ 18,473	\$ 18,842	\$ 19,219	\$ 19,603	\$ 19,995	\$ 20,395	\$ 20,803	\$ 21,219	\$ 21,644	\$ 22,077	\$ 22,518
Property Taxes and PIL	\$ 34,500	\$ 35,190	\$ 35,894	\$ 36,612	\$ 37,344	\$ 38,091	\$ 38,853	\$ 39,630	\$ 40,422	\$ 41,231	\$ 42,055	\$ 42,896	\$ 43,754	\$ 44,629	\$ 45,522	\$ 46,432	\$ 47,361	\$ 48,308	\$ 49,274	\$ 50,260	\$ 51,265	\$ 52,290	\$ 53,336	\$ 54,403	\$ 55,491
Supplies	\$ 1,500	\$ 1,530	\$ 1,561	\$ 1,592	\$ 1,624	\$ 1,656	\$ 1,689	\$ 1,723	\$ 1,757	\$ 1,793	\$ 1,828	\$ 1,865	\$ 1,902	\$ 1,940	\$ 1,979	\$ 2,019	\$ 2,059	\$ 2,100	\$ 2,142	\$ 2,185	\$ 2,229	\$ 2,273	\$ 2,319	\$ 2,365	\$ 2,413
Equipment and Maintenance	\$ 37,500	\$ 38,250	\$ 39,015	\$ 39,795	\$ 40,591	\$ 41,403	\$ 42,231	\$ 43,076	\$ 43,937	\$ 44,816	\$ 45,712	\$ 46,627	\$ 47,559	\$ 48,510	\$ 49,480	\$ 50,470	\$ 51,479	\$ 52,509	\$ 53,559	\$ 54,630	\$ 55,723	\$ 56,837	\$ 57,974	\$ 59,134	\$ 60,316
Payroll Internal Charge	\$ 83,810	\$ 85,486	\$ 87,196	\$ 88,940	\$ 90,719	\$ 92,533	\$ 94,384	\$ 96,271	\$ 98,197	\$ 100,161	\$ 102,164	\$ 104,207	\$ 106,291	\$ 108,417	\$ 110,586	\$ 112,797	\$ 115,053	\$ 117,354	\$ 119,701	\$ 122,095	\$ 124,537	\$ 127,028	\$ 129,569	\$ 132,160	\$ 134,803
Postage	\$ 1,400	\$ 1,428	\$ 1,457	\$ 1,486	\$ 1,515	\$ 1,546	\$ 1,577	\$ 1,608	\$ 1,640	\$ 1,673	\$ 1,707	\$ 1,741	\$ 1,776	\$ 1,811	\$ 1,847	\$ 1,884	\$ 1,922	\$ 1,960	\$ 2,000	\$ 2,040	\$ 2,080	\$ 2,122	\$ 2,164	\$ 2,208	\$ 2,252
Telephone	\$ 4,300	\$ 4,386	\$ 4,474	\$ 4,563	\$ 4,654	\$ 4,748	\$ 4,842	\$ 4,939	\$ 5,038	\$ 5,139	\$ 5,242	\$ 5,347	\$ 5,453	\$ 5,563	\$ 5,674	\$ 5,787	\$ 5,903	\$ 6,021	\$ 6,141	\$ 6,264	\$ 6,390	\$ 6,517	\$ 6,648	\$ 6,781	\$ 6,916
Internal Equipment Rentals	\$ 1,500	\$ 1,530	\$ 1,561	\$ 1,592	\$ 1,624	\$ 1,656	\$ 1,689	\$ 1,723	\$ 1,757	\$ 1,793	\$ 1,828	\$ 1,865	\$ 1,902	\$ 1,940	\$ 1,979	\$ 2,019	\$ 2,059	\$ 2,100	\$ 2,142	\$ 2,185	\$ 2,229	\$ 2,273	\$ 2,319	\$ 2,365	\$ 2,413
Rentals - Contractors	\$ 6,000	\$ 6,120	\$ 6,242	\$ 6,367	\$ 6,495	\$ 6,624	\$ 6,757	\$ 6,892	\$ 7,030	\$ 7,171	\$ 7,314	\$ 7,460	\$ 7,609	\$ 7,762	\$ 7,917	\$ 8,075	\$ 8,237	\$ 8,401	\$ 8,569	\$ 8,741	\$ 8,916	\$ 9,094	\$ 9,276	\$ 9,461	\$ 9,651
Service Agreement (Operations)	\$ 223,600	\$ 228,072	\$ 232,633	\$ 237,286	\$ 242,032	\$ 246,872	\$ 251,810	\$ 256,846	\$ 261,983	\$ 267,223	\$ 272,567	\$ 278,018	\$ 283,579	\$ 289,250	\$ 295,035	\$ 300,936	\$ 306,955	\$ 313,094	\$ 319,356	\$ 325,743	\$ 332,258	\$ 338,903	\$ 345,681	\$ 352,595	\$ 359,647
Sewer Flushing	\$ 6,000	\$ 6,120	\$ 6,242	\$ 6,367	\$ 6,495	\$ 6,624	\$ 6,757	\$ 6,892	\$ 7,030	\$ 7,171	\$ 7,314	\$ 7,460	\$ 7,609	\$ 7,762	\$ 7,917	\$ 8,075	\$ 8,237	\$ 8,401	\$ 8,569	\$ 8,741	\$ 8,916	\$ 9,094	\$ 9,276	\$ 9,461	\$ 9,651
Meeting Expenses	\$ 50	\$ 51	\$ 52	\$ 53	\$ 54	\$ 55	\$ 56	\$ 57	\$ 59	\$ 60	\$ 61	\$ 62	\$ 63	\$ 65	\$ 66	\$ 67	\$ 69	\$ 70	\$ 71	\$ 73	\$ 74	\$ 76	\$ 77	\$ 79	\$ 80
Insurance	\$ 31,800	\$ 32,436	\$ 33,085	\$ 33,746	\$ 34,421	\$ 35,110	\$ 35,812	\$ 36,528	\$ 37,259	\$ 38,004	\$ 38,764	\$ 39,539	\$ 40,330	\$ 41,137	\$ 41,959	\$ 42,799	\$ 43,655	\$ 44,528	\$ 45,418	\$ 46,327	\$ 47,253	\$ 48,198	\$ 49,162	\$ 50,145	\$ 51,148
Frostline Adjustment	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Clerk - Sewer Write Offs	\$ 400	\$ 408	\$ 416	\$ 424	\$ 433	\$ 442	\$ 450	\$ 459	\$ 469	\$ 478	\$ 488	\$ 497	\$ 507	\$ 517	\$ 528	\$ 538	\$ 549	\$ 560	\$ 571	\$ 583	\$ 594	\$ 606	\$ 618	\$ 631	\$ 643
Non TCA Minor Capital	\$ 70,000	\$ 71,400	\$ 72,828	\$ 74,285	\$ 75,770	\$ 77,286	\$ 78,831	\$ 80,408	\$ 82,016	\$ 83,656	\$ 85,330	\$ 87,036	\$ 88,777	\$ 90,552	\$ 92,364	\$ 94,211	\$ 96,095	\$ 98,017	\$ 99,977	\$ 101,977	\$ 104,016	\$ 106,097	\$ 108,219	\$ 110,383	\$ 112,591
Unfunded Capital	\$ 100,000	\$ 102,000	\$ 104,040	\$ 106,121	\$ 108,243	\$ 110,408	\$ 112,616	\$ 114,869	\$ 117,166	\$ 119,509	\$ 121,899	\$ 124,337	\$ 126,824	\$ 129,361	\$ 131,948	\$ 134,587	\$ 137,279	\$ 140,024	\$ 142,825	\$ 145,681	\$ 148,595	\$ 151,567	\$ 154,598	\$ 157,690	\$ 160,844
Total	\$ 856,860	\$ 873,987	\$ 891,457	\$ 909,276	\$ 927,452	\$ 945,491	\$ 964,400	\$ 983,688	\$ 1,003,362	\$ 1,023,429	\$ 1,043,898	\$ 1,064,776	\$ 1,086,072	\$ 1,107,793	\$ 1,129,949	#####	\$ 1,175,599	\$ 1,199,111	\$ 1,223,093	\$ 1,247,555	#####	\$ 1,297,956	#####	\$ 1,350,393	\$ 1,377,401

Appendix E

Full Cost of Service

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX E: Full Cost of Service**

Warton Water System

Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	
Operations & Maintenance	\$ 782,341	\$ 909,800	\$ 927,996	\$ 946,556	\$ 965,487	\$ 984,797	\$ 1,004,493	\$ 1,024,583	\$ 1,045,074	\$ 1,065,976	\$ 1,087,295	\$ 1,109,041	\$ 1,131,222	\$ 1,153,847	\$ 1,176,924	\$ 1,200,462	\$ 1,224,471	\$ 1,248,961	\$ 1,273,940	\$ 1,299,419	\$ 1,325,407	\$ 1,351,915	\$ 1,378,954	\$ 1,406,533	\$ 1,434,663	
Transfers to Capital Reserves	\$ 533,322	\$ 510,000	\$ 570,000	\$ 535,000	\$ 510,000	\$ 500,000	\$ 585,000	\$ 575,000	\$ 535,000	\$ 650,000	\$ 770,000	\$ 805,000	\$ 840,000	\$ 875,000	\$ 910,000	\$ 950,000	\$ 985,000	\$ 1,025,000	\$ 1,170,000	\$ 1,310,000	\$ 1,450,000	\$ 1,495,000	\$ 1,160,000	\$ 1,350,000	\$ 1,395,000	
Debt Repayment	\$ -	\$ -	\$ -	\$ 103,996	\$ 207,992	\$ 305,245	\$ 305,245	\$ 418,330	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 456,737	\$ 352,741	\$ 255,488	\$ 255,488	\$ 630,021	\$ 487,617	\$ 487,617
Less Non-Rate Revenues	\$ 392,995	\$ 400,801	\$ 408,763	\$ 416,884	\$ 425,168	\$ 433,617	\$ 442,236	\$ 451,026	\$ 459,993	\$ 469,139	\$ 475,767	\$ 485,283	\$ 494,988	\$ 504,888	\$ 514,986	\$ 525,286	\$ 535,791	\$ 546,507	\$ 557,437	\$ 568,586	\$ 579,958	\$ 591,557	\$ 603,388	\$ 615,456	\$ 627,765	
<i>Cost of Service (Revenue Requirements)</i>	\$ 922,668	\$ 1,018,999	\$ 1,089,233	\$ 1,168,668	\$ 1,258,312	\$ 1,356,425	\$ 1,452,503	\$ 1,566,887	\$ 1,680,815	\$ 1,807,571	\$ 1,942,262	\$ 1,989,492	\$ 2,036,967	\$ 2,084,692	\$ 2,132,671	\$ 2,185,910	\$ 2,234,413	\$ 2,288,187	\$ 2,343,240	\$ 2,393,574	\$ 2,450,937	\$ 2,510,846	\$ 2,565,586	\$ 2,628,694	\$ 2,689,516	

Amabel Water System

Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Operations & Maintenance	\$ 730,800	\$ 636,197	\$ 648,531	\$ 661,112	\$ 673,944	\$ 687,033	\$ 700,383	\$ 694,501	\$ 708,391	\$ 722,559	\$ 737,010	\$ 751,750	\$ 766,785	\$ 782,121	\$ 797,763	\$ 813,719	\$ 829,993	\$ 846,593	\$ 863,525	\$ 880,795	\$ 898,411	\$ 916,379	\$ 934,707	\$ 953,401	\$ 972,469
Transfers to Capital Reserves	\$ 239,514	\$ 250,000	\$ 265,000	\$ 275,000	\$ 290,000	\$ 300,000	\$ 315,000	\$ 345,000	\$ 360,000	\$ 375,000	\$ 380,000	\$ 385,000	\$ 385,000	\$ 390,000	\$ 390,000	\$ 400,000	\$ 400,000	\$ 405,000	\$ 410,000	\$ 410,000	\$ 415,000	\$ 420,000	\$ 420,000	\$ 425,000	\$ 425,000
Debt Repayment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Less Non-Rate Revenues	\$ 16,950	\$ 12,189	\$ 12,433	\$ 12,681	\$ 12,935	\$ 13,194	\$ 13,458	\$ 13,727	\$ 14,001	\$ 14,281	\$ 14,567	\$ 14,858	\$ 15,155	\$ 15,459	\$ 15,768	\$ 16,083	\$ 16,405	\$ 16,733	\$ 17,068	\$ 17,409	\$ 17,757	\$ 18,112	\$ 18,474	\$ 18,844	\$ 19,221
<i>Cost of Service (Revenue Requirements)</i>	\$ 953,364	\$ 874,008	\$ 901,098	\$ 923,430	\$ 951,009	\$ 973,839	\$ 1,001,926	\$ 1,025,774	\$ 1,054,390	\$ 1,083,278	\$ 1,102,443	\$ 1,121,892	\$ 1,136,630	\$ 1,156,662	\$ 1,171,996	\$ 1,197,636	\$ 1,213,588	\$ 1,234,860	\$ 1,256,457	\$ 1,273,386	\$ 1,295,654	\$ 1,318,267	\$ 1,336,233	\$ 1,359,557	\$ 1,378,248

Blended Water System

Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Operations & Maintenance	\$ 1,513,141	\$ 1,545,997	\$ 1,576,527	\$ 1,607,668	\$ 1,639,431	\$ 1,671,830	\$ 1,704,876	\$ 1,719,084	\$ 1,753,466	\$ 1,788,535	\$ 1,824,306	\$ 1,860,792	\$ 1,898,008	\$ 1,935,968	\$ 1,974,687	\$ 2,014,181	\$ 2,054,464	\$ 2,095,554	\$ 2,137,465	\$ 2,180,214	\$ 2,223,818	\$ 2,268,295	\$ 2,313,661	\$ 2,359,934	\$ 2,407,133
Transfers to Capital Reserves	\$ 772,836	\$ 700,000	\$ 720,000	\$ 640,000	\$ 575,000	\$ 520,000	\$ 650,000	\$ 700,000	\$ 710,000	\$ 875,000	\$ 1,055,000	\$ 1,100,000	\$ 1,150,000	\$ 1,195,000	\$ 1,245,000	\$ 1,300,000	\$ 1,350,000	\$ 1,170,000	\$ 1,330,000	\$ 1,490,000	\$ 1,645,000	\$ 1,705,000	\$ 1,395,000	\$ 1,600,000	\$ 1,665,000
Debt Repayment	\$ -	\$ -	\$ -	\$ 103,996	\$ 207,992	\$ 305,245	\$ 305,245	\$ 418,330	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 560,733	\$ 795,861	\$ 691,865	\$ 587,869	\$ 490,616	\$ 490,616	\$ 621,339	\$ 478,936
Less Non-Rate Revenues	\$ 409,945	\$ 412,990	\$ 421,196	\$ 429,566	\$ 438,103	\$ 446,811	\$ 455,693	\$ 464,753	\$ 473,994	\$ 483,420	\$ 490,334	\$ 500,141	\$ 510,144	\$ 520,347	\$ 530,754	\$ 541,369	\$ 552,196	\$ 563,240	\$ 574,505	\$ 585,995	\$ 597,715	\$ 609,669	\$ 621,863	\$ 634,300	\$ 646,986
<i>Cost of Service (Revenue Requirements)</i>	\$ 1,876,032	\$ 1,833,007	\$ 1,875,332	\$ 1,922,098	\$ 1,984,321	\$ 2,050,264	\$ 2,204,429	\$ 2,372,661	\$ 2,550,205	\$ 2,740,848	\$ 2,949,705	\$ 3,021,384	\$ 3,098,597	\$ 3,171,354	\$ 3,249,667	\$ 3,333,545	\$ 3,413,002	\$ 3,498,175	\$ 3,584,825	\$ 3,672,088	\$ 3,761,719	\$ 3,854,241	\$ 3,708,137	\$ 3,804,570	\$ 3,904,083

Warton Wastewater System

Cost / Revenue Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Operations & Maintenance	\$ 856,860	\$ 873,987	\$ 891,457	\$ 909,276	\$ 927,452	\$ 945,491	\$ 964,400	\$ 983,688	\$ 1,003,362	\$ 1,023,429	\$ 1,043,898	\$ 1,064,776	\$ 1,086,072	\$ 1,107,793	\$ 1,129,949	\$ 1,152,548	\$ 1,175,599	\$ 1,199,111	\$ 1,223,093	\$ 1,247,555	\$ 1,272,506	\$ 1,297,956	\$ 1,323,915	\$ 1,350,393	\$ 1,377,401
Transfers to Capital Reserves	\$ 211,493	\$ 330,000	\$ 365,000	\$ 400,000	\$ 370,000	\$ 475,000	\$ 500,000	\$ 525,000	\$ 585,000	\$ 725,000	\$ 790,000	\$ 925,000	\$ 935,000	\$ 750,000	\$ 770,000	\$ 790,000	\$ 810,000	\$ 920,000	\$ 1,030,000	\$ 1,170,000	\$ 1,190,000	\$ 1,300,000	\$ 1,410,000	\$ 1,500,000	\$ 1,520,000
Debt Repayment	\$ 86,357	\$ 86,356	\$ 131,761	\$ 179,051	\$ 302,502	\$ 302,502	\$ 387,316	\$ 482,056	\$ 549,907	\$ 549,907	\$ 634,720	\$ 634,720	\$ 771,298	\$ 973,713	\$ 973,713	\$ 973,713	\$ 973,713	\$ 885,130	\$ 794,662	\$ 671,211	\$ 671,211	\$ 586,397	\$ 491,657	\$ 423,806	\$ 423,806
Less Non-Rate Revenues	\$ 32,580	\$ 33,220	\$ 33,873	\$ 34,539	\$ 35,218	\$ 35,331	\$ 36,037	\$ 36,758	\$ 37,493	\$ 38,243	\$ 39,008	\$ 39,788	\$ 40,584	\$ 41,395	\$ 42,223	\$ 43,068	\$ 43,929	\$ 44,808	\$ 45,704	\$ 46,618	\$ 47,550	\$ 48,501	\$ 49,471	\$ 50,461	\$ 51,470
<i>Cost of Service (Revenue Requirements)</i>	\$ 1,122,130	\$ 1,257,123	\$ 1,354,346	\$ 1,453,788	\$ 1,564,736	\$ 1,687,662	\$ 1,815,679	\$ 1,953,986	\$ 2,100,776	\$ 2,260,093	\$ 2,429,611	\$ 2,584,708	\$ 2,751,786	\$ 2,790,111	\$ 2,831,439	\$ 2,873,193	\$ 2,915,383	\$ 2,959,433	\$ 3,002,051	\$ 3,042,148	\$ 3,086,167	\$ 3,135,852	\$ 3,176,101	\$ 3,223,739	\$ 3,269,738

Appendix F

Rate Projections

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX F Rate Projections**

AMABEL Water (Excluding Oliphant)

Meter Size	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Annual Increase%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
0.62	\$117.00	\$119.34	\$121.73	\$124.16	\$126.64	\$129.18	\$131.76	\$134.40	\$137.08	\$139.83	\$141.22	\$142.64	\$144.06	\$145.50	\$146.96	\$148.43	\$149.91	\$151.41	\$152.93	\$154.45	\$156.00	\$157.56	\$159.13	\$160.73	\$162.33
0.75	\$129.00	\$131.58	\$134.21	\$136.90	\$139.63	\$142.43	\$145.27	\$148.18	\$151.14	\$154.17	\$155.71	\$157.27	\$158.84	\$160.43	\$162.03	\$163.65	\$165.29	\$166.94	\$168.61	\$170.30	\$172.00	\$173.72	\$175.46	\$177.21	\$178.98
1.00	\$164.00	\$167.28	\$170.63	\$174.04	\$177.52	\$181.07	\$184.69	\$188.38	\$192.15	\$196.00	\$197.96	\$199.93	\$201.93	\$203.95	\$205.99	\$208.05	\$210.13	\$212.23	\$214.36	\$216.50	\$218.67	\$220.85	\$223.06	\$225.29	\$227.54
1.50	\$211.00	\$215.22	\$219.52	\$223.91	\$228.39	\$232.96	\$237.62	\$242.37	\$247.22	\$252.16	\$254.69	\$257.23	\$259.81	\$262.40	\$265.03	\$267.68	\$270.35	\$273.06	\$275.79	\$278.55	\$281.33	\$284.15	\$286.99	\$289.86	\$292.76
2.00	\$340.00	\$346.80	\$353.74	\$360.81	\$368.03	\$375.39	\$382.90	\$390.55	\$398.36	\$406.33	\$410.39	\$414.50	\$418.64	\$422.83	\$427.06	\$431.33	\$435.64	\$440.00	\$444.40	\$448.84	\$453.33	\$457.86	\$462.44	\$467.07	\$471.74
2.50	\$821.00	\$837.42	\$854.17	\$871.25	\$888.68	\$906.45	\$924.58	\$943.07	\$961.93	\$981.17	\$990.98	\$1,000.89	\$1,010.90	\$1,021.01	\$1,031.22	\$1,041.53	\$1,051.95	\$1,062.47	\$1,073.09	\$1,083.82	\$1,094.66	\$1,105.61	\$1,116.66	\$1,127.83	\$1,139.11
3.00	\$1,290.00	\$1,315.80	\$1,342.12	\$1,368.96	\$1,396.34	\$1,424.26	\$1,452.75	\$1,481.80	\$1,511.44	\$1,541.67	\$1,557.09	\$1,572.66	\$1,588.38	\$1,604.27	\$1,620.31	\$1,636.51	\$1,652.88	\$1,669.41	\$1,686.10	\$1,702.96	\$1,719.99	\$1,737.19	\$1,754.56	\$1,772.11	\$1,789.83
4.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Reserve Charge	\$31.67	\$32.31	\$32.95	\$33.61	\$34.28	\$34.97	\$35.67	\$36.38	\$37.11	\$37.85	\$38.23	\$38.61	\$39.00	\$39.39	\$39.78	\$40.18	\$40.58	\$40.99	\$41.40	\$41.81	\$42.23	\$42.65	\$43.08	\$43.51	\$43.94
Vacant Charge	\$44.34	\$45.23	\$46.13	\$47.06	\$48.00	\$48.96	\$49.94	\$50.93	\$51.95	\$52.99	\$53.52	\$54.06	\$54.60	\$55.14	\$55.70	\$56.25	\$56.81	\$57.38	\$57.96	\$58.54	\$59.12	\$59.71	\$60.31	\$60.91	\$61.52
Annual Increase%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Consumption Rate	\$2.04	\$2.08	\$2.12	\$2.16	\$2.21	\$2.25	\$2.30	\$2.34	\$2.39	\$2.44	\$2.46	\$2.49	\$2.51	\$2.54	\$2.56	\$2.59	\$2.61	\$2.64	\$2.67	\$2.69	\$2.72	\$2.75	\$2.77	\$2.80	\$2.83

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX F Rate Projections**

WIARTON Water

Meter Size	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Annual Increase%	3.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
0.62	\$38.52	\$41.22	\$44.10	\$47.19	\$50.49	\$54.03	\$57.81	\$61.85	\$66.18	\$70.82	\$75.77	\$77.29	\$78.84	\$80.41	\$82.02	\$83.66	\$85.33	\$87.04	\$88.78	\$90.56	\$92.37	\$94.22	\$96.10	\$98.02	\$99.98
0.75	\$42.37	\$45.34	\$48.51	\$51.91	\$55.54	\$59.43	\$63.59	\$68.04	\$72.80	\$77.90	\$83.35	\$85.02	\$86.72	\$88.45	\$90.22	\$92.02	\$93.86	\$95.74	\$97.66	\$99.61	\$101.60	\$103.63	\$105.71	\$107.82	\$109.98
1.00	\$53.92	\$57.69	\$61.73	\$66.05	\$70.68	\$75.63	\$80.92	\$86.58	\$92.64	\$99.13	\$106.07	\$108.19	\$110.35	\$112.56	\$114.81	\$117.11	\$119.45	\$121.84	\$124.28	\$126.76	\$129.30	\$131.88	\$134.52	\$137.21	\$139.96
1.50	\$69.33	\$74.18	\$79.38	\$84.93	\$90.88	\$97.24	\$104.05	\$111.33	\$119.12	\$127.46	\$136.38	\$139.11	\$141.89	\$144.73	\$147.62	\$150.58	\$153.59	\$156.66	\$159.79	\$162.99	\$166.25	\$169.57	\$172.97	\$176.43	\$179.95
2.00	\$111.70	\$119.52	\$127.89	\$136.84	\$146.42	\$156.67	\$167.63	\$179.37	\$191.92	\$205.36	\$219.73	\$224.13	\$228.61	\$233.18	\$237.84	\$242.60	\$247.45	\$252.40	\$257.45	\$262.60	\$267.85	\$273.21	\$278.67	\$284.25	\$289.93
2.50	\$269.61	\$288.48	\$308.68	\$330.28	\$353.40	\$378.14	\$404.61	\$432.93	\$463.24	\$495.67	\$530.36	\$540.97	\$551.79	\$562.83	\$574.08	\$585.56	\$597.28	\$609.22	\$621.41	\$633.83	\$646.51	\$659.44	\$672.63	\$686.08	\$699.80
3.00	\$423.67	\$453.33	\$485.06	\$519.01	\$555.34	\$594.22	\$635.81	\$680.32	\$727.94	\$778.90	\$833.42	\$850.09	\$867.09	\$884.44	\$902.12	\$920.17	\$938.57	\$957.34	\$976.49	\$996.02	\$1,015.94	\$1,036.26	\$1,056.98	\$1,078.12	\$1,099.68
4.00	\$539.22	\$576.97	\$617.35	\$660.57	\$706.81	\$756.28	\$809.22	\$865.87	\$926.48	\$991.33	\$1,060.73	\$1,081.94	\$1,103.58	\$1,125.65	\$1,148.17	\$1,171.13	\$1,194.55	\$1,218.44	\$1,242.81	\$1,267.67	\$1,293.02	\$1,318.88	\$1,345.26	\$1,372.16	\$1,399.61
6.00	\$808.83	\$865.45	\$926.03	\$990.85	\$1,060.21	\$1,134.43	\$1,213.84	\$1,298.80	\$1,389.72	\$1,487.00	\$1,591.09	\$1,622.91	\$1,655.37	\$1,688.48	\$1,722.25	\$1,756.69	\$1,791.83	\$1,827.66	\$1,864.22	\$1,901.50	\$1,939.53	\$1,978.32	\$2,017.89	\$2,058.25	\$2,099.41
Annual Increase%	3.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Consumption Rate	\$1.96	\$2.09	\$2.24	\$2.40	\$2.57	\$2.74	\$2.94	\$3.14	\$3.36	\$3.60	\$3.85	\$3.93	\$4.01	\$4.09	\$4.17	\$4.25	\$4.34	\$4.42	\$4.51	\$4.60	\$4.69	\$4.79	\$4.88	\$4.98	\$5.08

South Bruce Peninsula Water and Wastewater Rate Study

APPENDIX F Rate Projections

BLENDDED - AMABEL (excluding Oliphant)

Meter Size	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Annual Increase%	3.0%	-10.8%	-12.1%	-13.7%	-15.9%	-18.9%	7.0%	7.0%	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
0.62	\$117.00	\$104.41	\$91.81	\$79.22	\$66.62	\$54.03	\$57.81	\$61.85	\$66.18	\$70.82	\$75.77	\$77.29	\$78.84	\$80.41	\$82.02	\$83.66	\$85.33	\$87.04	\$88.78	\$90.56	\$92.37	\$94.22	\$96.10	\$98.02	\$99.98
0.75	\$129.00	\$115.11	\$101.23	\$87.34	\$73.45	\$59.57	\$63.61	\$68.06	\$72.82	\$77.92	\$83.37	\$85.04	\$86.74	\$88.48	\$90.25	\$92.05	\$93.89	\$95.77	\$97.69	\$99.64	\$101.63	\$103.66	\$105.74	\$107.85	\$110.01
1.00	\$164.00	\$146.35	\$128.69	\$111.04	\$93.38	\$75.73	\$80.95	\$86.61	\$92.68	\$99.16	\$106.11	\$108.23	\$110.39	\$112.60	\$114.85	\$117.15	\$119.49	\$121.88	\$124.32	\$126.81	\$129.34	\$131.93	\$134.57	\$137.26	\$140.00
1.50	\$211.00	\$188.29	\$165.57	\$142.86	\$120.15	\$97.43	\$104.07	\$111.36	\$119.15	\$127.49	\$136.42	\$139.14	\$141.93	\$144.77	\$147.66	\$150.61	\$153.63	\$156.70	\$159.83	\$163.03	\$166.29	\$169.62	\$173.01	\$176.47	\$180.00
2.00	\$340.00	\$303.40	\$266.80	\$230.20	\$193.60	\$157.00	\$167.66	\$179.40	\$191.95	\$205.39	\$219.77	\$224.16	\$228.65	\$233.22	\$237.88	\$242.64	\$247.49	\$252.44	\$257.49	\$262.64	\$267.90	\$273.25	\$278.72	\$284.29	\$289.98
2.50	\$821.00	\$732.62	\$644.24	\$555.86	\$467.49	\$379.11	\$404.71	\$433.04	\$463.35	\$495.78	\$530.49	\$541.10	\$551.92	\$562.96	\$574.22	\$585.70	\$597.41	\$609.36	\$621.55	\$633.98	\$646.66	\$659.59	\$672.79	\$686.24	\$699.97
3.00	\$1,290.00	\$1,151.13	\$1,012.27	\$873.40	\$734.54	\$595.67	\$635.97	\$680.49	\$728.12	\$779.09	\$833.63	\$850.30	\$867.31	\$884.65	\$902.35	\$920.39	\$938.80	\$957.58	\$976.73	\$996.26	\$1,016.19	\$1,036.51	\$1,057.24	\$1,078.39	\$1,099.96
4.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$809.43	\$866.09	\$926.71	\$991.58	\$1,061.00	\$1,082.22	\$1,103.86	\$1,125.94	\$1,148.46	\$1,171.42	\$1,194.85	\$1,218.75	\$1,243.13	\$1,267.99	\$1,293.35	\$1,319.21	\$1,345.60	\$1,372.51	\$1,399.96
6.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,214.13	\$1,299.12	\$1,390.06	\$1,487.37	\$1,591.48	\$1,623.31	\$1,655.78	\$1,688.89	\$1,722.67	\$1,757.13	\$1,792.27	\$1,828.11	\$1,864.68	\$1,901.97	\$1,940.01	\$1,978.81	\$2,018.38	\$2,058.75	\$2,099.93
Reserve Charge	\$31.67	\$33.89	\$36.26	\$38.80	\$41.52	\$44.42	\$47.53	\$50.86	\$54.42	\$58.23	\$62.30	\$63.55	\$64.82	\$66.12	\$67.44	\$68.79	\$70.17	\$71.57	\$73.00	\$74.46	\$75.95	\$77.47	\$79.02	\$80.60	\$82.21
Vacant Charge	\$44.34	\$47.45	\$50.77	\$54.32	\$58.12	\$62.19	\$66.54	\$71.20	\$76.19	\$81.52	\$87.23	\$88.97	\$90.75	\$92.57	\$94.42	\$96.31	\$98.23	\$100.20	\$102.20	\$104.24	\$106.33	\$108.46	\$110.62	\$112.84	\$115.09
Annual Increase%	3.0%	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%	7.0%	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Consumption Rate	\$2.04	\$2.16	\$2.29	\$2.43	\$2.58	\$2.74	\$2.94	\$3.14	\$3.36	\$3.60	\$3.85	\$3.93	\$4.01	\$4.09	\$4.17	\$4.25	\$4.34	\$4.42	\$4.51	\$4.60	\$4.69	\$4.79	\$4.88	\$4.98	\$5.08

South Bruce Peninsula Water and Wastewater Rate Study

APPENDIX F Rate Projections

BLEND - WIARTON (including Oliphant)

Meter Size	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Annual Increase%	3.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
0.62	\$38.52	\$41.22	\$44.10	\$47.19	\$50.49	\$54.03	\$57.81	\$61.85	\$66.18	\$70.82	\$75.77	\$77.29	\$78.84	\$80.41	\$82.02	\$83.66	\$85.33	\$87.04	\$88.78	\$90.56	\$92.37	\$94.22	\$96.10	\$98.02	\$99.98
0.75	\$42.37	\$45.34	\$48.51	\$51.91	\$55.54	\$59.43	\$63.61	\$68.06	\$72.82	\$77.92	\$83.37	\$85.04	\$86.74	\$88.48	\$90.25	\$92.05	\$93.89	\$95.77	\$97.69	\$99.64	\$101.63	\$103.66	\$105.74	\$107.85	\$110.01
1.00	\$53.92	\$57.69	\$61.73	\$66.05	\$70.68	\$75.63	\$80.95	\$86.61	\$92.68	\$99.16	\$106.11	\$108.23	\$110.39	\$112.60	\$114.85	\$117.15	\$119.49	\$121.88	\$124.32	\$126.81	\$129.34	\$131.93	\$134.57	\$137.26	\$140.00
1.50	\$69.33	\$74.18	\$79.38	\$84.93	\$90.88	\$97.24	\$104.07	\$111.36	\$119.15	\$127.49	\$136.42	\$145.96	\$156.18	\$167.12	\$178.81	\$191.33	\$204.72	\$219.05	\$234.39	\$250.80	\$268.35	\$287.14	\$307.23	\$328.74	\$351.75
2.00	\$111.70	\$119.52	\$127.89	\$136.84	\$146.42	\$156.67	\$167.66	\$179.40	\$191.95	\$205.39	\$219.77	\$224.16	\$228.65	\$233.22	\$237.88	\$242.64	\$247.49	\$252.44	\$257.49	\$262.64	\$267.90	\$273.25	\$278.72	\$284.29	\$289.98
2.50	\$269.61	\$288.48	\$308.68	\$330.28	\$353.40	\$378.14	\$404.71	\$433.04	\$463.35	\$495.78	\$530.49	\$541.10	\$551.92	\$562.96	\$574.22	\$585.70	\$597.41	\$609.36	\$621.55	\$633.98	\$646.66	\$659.59	\$672.79	\$686.24	\$699.97
3.00	\$423.67	\$453.33	\$485.06	\$519.01	\$555.34	\$594.22	\$635.97	\$680.49	\$728.12	\$779.09	\$833.63	\$850.30	\$867.31	\$884.65	\$902.35	\$920.39	\$938.80	\$957.58	\$976.73	\$996.26	\$1,016.19	\$1,036.51	\$1,057.24	\$1,078.39	\$1,099.96
4.00	\$539.22	\$576.97	\$617.35	\$660.57	\$706.81	\$756.28	\$809.43	\$866.09	\$926.71	\$991.58	\$1,061.00	\$1,082.22	\$1,103.86	\$1,125.94	\$1,148.46	\$1,171.42	\$1,194.85	\$1,218.75	\$1,243.13	\$1,267.99	\$1,293.35	\$1,319.21	\$1,345.60	\$1,372.51	\$1,399.96
6.00	\$808.83	\$865.45	\$926.03	\$990.85	\$1,060.21	\$1,134.43	\$1,214.13	\$1,299.12	\$1,390.06	\$1,487.37	\$1,591.48	\$1,623.31	\$1,655.78	\$1,688.89	\$1,722.67	\$1,757.13	\$1,792.27	\$1,828.11	\$1,864.68	\$1,901.97	\$1,940.01	\$1,978.81	\$2,018.38	\$2,058.75	\$2,099.93
Annual Increase%	3.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Consumption Rate	\$1.96	\$2.09	\$2.24	\$2.40	\$2.57	\$2.74	\$2.94	\$3.14	\$3.36	\$3.60	\$3.85	\$3.93	\$4.01	\$4.09	\$4.17	\$4.25	\$4.34	\$4.42	\$4.51	\$4.60	\$4.69	\$4.79	\$4.88	\$4.98	\$5.08

WIARTON WASTEWATER

Meter Size	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Annual Increase%	5.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
0.62	\$49.88	\$53.37	\$57.11	\$61.11	\$65.38	\$69.96	\$74.86	\$80.10	\$85.70	\$91.70	\$98.12	\$104.01	\$110.25	\$111.35	\$112.47	\$113.59	\$114.73	\$115.87	\$117.03	\$118.20	\$119.38	\$120.58	\$121.78	\$123.00	\$124.23
0.75	\$54.87	\$58.71	\$62.82	\$67.22	\$71.92	\$76.96	\$82.35	\$88.11	\$94.28	\$100.88	\$107.94	\$114.41	\$121.28	\$122.49	\$123.72	\$124.95	\$126.20	\$127.47	\$128.74	\$130.03	\$131.33	\$132.64	\$133.97	\$135.31	\$136.66
1.00	\$69.83	\$74.72	\$79.95	\$85.54	\$91.53	\$97.94	\$104.80	\$112.13	\$119.98	\$128.38	\$137.37	\$145.61	\$154.34	\$155.89	\$157.45	\$159.02	\$160.61	\$162.22	\$163.84	\$165.48	\$167.13	\$168.80	\$170.49	\$172.20	\$173.92
1.50	\$89.78	\$96.06	\$102.79	\$109.98	\$117.68	\$125.92	\$134.74	\$144.17	\$154.26	\$165.06	\$176.61	\$188.97	\$202.20	\$216.36	\$231.50	\$247.71	\$265.05	\$283.60	\$303.45	\$324.69	\$347.42	\$371.74	\$397.76	\$425.60	\$455.40
2.00	\$144.65	\$154.78	\$165.61	\$177.20	\$189.61	\$202.88	\$217.08	\$232.28	\$248.54	\$265.93	\$284.55	\$301.62	\$319.72	\$322.92	\$326.14	\$329.41	\$332.70	\$336.03	\$339.39	\$342.78	\$346.21	\$349.67	\$353.17	\$356.70	\$360.27
2.50	\$349.16	\$373.60	\$399.75	\$427.74	\$457.68	\$489.71	\$524.00	\$560.67	\$599.92	\$641.92	\$686.85	\$728.06	\$771.75	\$779.46	\$787.26	\$795.13	\$803.08	\$811.11	\$819.22	\$827.42	\$835.69	\$844.05	\$852.49	\$861.01	\$869.62
3.00	\$548.68	\$587.09	\$628.18	\$672.16	\$719.21	\$769.55	\$823.42	\$881.06	\$942.73	\$1,008.73	\$1,079.34	\$1,144.10	\$1,212.74	\$1,224.87	\$1,237.12	\$1,249.49	\$1,261.98	\$1,274.60	\$1,287.35	\$1,300.22	\$1,313.23	\$1,326.36	\$1,339.62	\$1,353.02	\$1,366.55
4.00	\$698.32	\$747.20	\$799.51	\$855.47	\$915.36	\$979.43	\$1,047.99	\$1,121.35	\$1,199.84	\$1,283.83	\$1,373.70	\$1,456.12	\$1,543.49	\$1,558.93	\$1,574.51	\$1,590.26	\$1,606.16	\$1,622.22	\$1,638.45	\$1,654.83	\$1,671.38	\$1,688.09	\$1,704.97	\$1,722.02	\$1,739.24
Annual Increase%	6.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Consumption Rate	\$2.96	\$3.17	\$3.39	\$3.63	\$3.88	\$4.15	\$4.44	\$4.75	\$5.09	\$5.44	\$5.82	\$6.17	\$6.54	\$6.61	\$6.67	\$6.74	\$6.81	\$6.88	\$6.94	\$7.01	\$7.08	\$7.16	\$7.23	\$7.30	\$7.37

Appendix G

Revenue Stability

**South Bruce Peninsula Water and Wastewater Rate Study
APPENDIX G: Revenue Stability**

Water Revenue Stability

System	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Amabel Water																									
Fixed Charge Revenue	91%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%
Uniform Rate Revenue	9%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Warton Water																									
Fixed Charge Revenue	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
Uniform Rate Revenue	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
Total Both Systems (Sum)																									
Fixed Charge Revenue	76%	75%	75%	75%	74%	74%	74%	73%	73%	73%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Uniform Rate Revenue	24%	25%	25%	25%	26%	26%	26%	27%	27%	27%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
Blended Water Systems																									
Fixed Charge Revenue	76%	74%	73%	72%	71%	69%	69%	69%	69%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Uniform Rate Revenue	24%	26%	27%	28%	29%	31%	31%	31%	31%	31%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%

Wastewater Revenue Stability

System	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Warton Wastewater																									
Fixed Charge Revenue	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	58%	58%	58%	58%	58%	58%	58%	58%
Uniform Rate Revenue	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	42%	42%	42%	42%	42%	42%	42%	42%