Town of
SOUTH BRUCE
PENINSULA

The Town of South Bruce Peninsula

Drinking Water and Wastewater System

Rate Report – October 31, 2014

Sharratt Water Management Ltd.
Sustainable Water Management Specialists

Table of Contents

1.0 Executive Summary

The Town of South Bruce Peninsula is a municipality with a population of approximately 8,413 according to the 2011 census, and is situated in Bruce County. The Town's water system is comprised of two communities, Wiarton, with about 1,034 connected properties, and Amabel with a total of about 394 connected and occupied properties and another 113 properties that are connected but vacant. Amabel has four separate communities: Amabel-Sauble, Foreman, Huron Woods, and Oliphant.

Wiarton has a communal wastewater system with about 919 connected properties. Wastewater services in Amabel is provided by private septic systems.

The Town has undertaken this rate study to prepare water and wastewater rates, which will serve as a basis for a financial plan that will meet the requirements Regulation 453/07, and fulfill one of the statutory requirements for the Town to renew its Drinking Water Licences.

This rate project carried out the following tasks:

1) Compiled the current and projected operating costs for the 2012-2025 period
2) Utilized the 2015 to 2025 capital renewal and major maintenance costs provided by OCWA and the Town staff and used the specified set-aside for post 2025 asset renewal
3) Estimated the quantities of water sold, and number of future water/wastewater connections.
4) Smoothed the water and wastewater rates through the 2015 to the 2025 period
5) Estimated the projected water and wastewater bills of various customers using different quantities of water
6) Compared the water/wastewater rates in South Bruce Peninsula with those in other nearby communities

The intent of the project is to develop a sustainable financing plan that will meet the 2015-2025 capital and major maintenance needs, as well as making full provision for renewing water and wastewater system capital assets after 2025 in accordance with the asset management study set-aside.

The costs of the identified 2015-25 and the post 2025 capital renewal needs have been combined with the projection of the operating costs needed to produce an overall projection of system cost. Various methods have been utilized to supply the necessary financial resources to pay for this overall cost. These include loans, development charges, flat, fixed and volumetric user fees and reserves. User fees are the key component of the financing plan as they pay down debt and build up reserves, as well as meeting day-to-day operating and major maintenance costs. It recommended that rates be monitored annually to determine if projected revenues and expenditures are in line with expectations. If necessary, they should be adjusted.

1.1 Wiarton Water System

Rates are calculated by considering the user fee revenue requirements, and by taking into account future water use and the number of connections. User fees are projected to increase, due to inflation and capital renewal from 2015-25 and post 2025. This causes rates to rise. In 2015, the cost of water sold, including day-to-day operating costs as well as capital costs, is projected at $3.73 per cubic metre. This provides a context for assessing the rate recommendations.

Table 1.1 Wiarton Water Rates - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Water Rate												
Meter Size (inches)					**Monthly Fixed Water Charge**							
5/8 x 3/4	27	27.20	28.75	30.38	32.05	33.80	35.30	36.88	38.52	40.23	42.01	43.87
0.75	28	29.93	31.63	33.42	35.25	37.18	38.84	40.56	42.37	44.25	46.21	48.26
1	36	38.09	40.25	42.54	44.86	47.32	49.43	51.63	53.92	56.32	58.81	61.42
1.5	46	48.97	51.75	54.69	57.68	60.84	63.55	66.38	69.33	72.41	75.62	78.97
2	74	78.89	83.38	88.11	92.93	98.01	102.38	106.94	111.70	116.66	121.83	127.22
2.5	179	190.43	201.26	212.68	224.32	236.59	247.13	258.13	269.61	281.58	294.07	307.09
3	281	299.25	316.26	334.20	352.50	371.78	388.35	405.64	423.67	442.49	462.11	482.57
4	357	380.87	402.51	425.35	448.64	473.17	494.27	516.27	539.22	563.16	588.14	614.18
6	536	571.30	603.77	638.03	672.96	709.76	741.40	774.40	808.83	844.75	882.21	921.28
Metered Water Use Charge - All Users												
Cost per M3	1.47	1.51	1.58	1.65	1.72	1.79	1.84	1.90	1.96	2.02	2.08	2.14
Flat Rate for those refusing to Meter/Mo	486	501	516	531	547	563	580	598	616	634	653	673

Table 1.5 Wiarton Hypothetical Water Bills 2014 - 2025 Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Single Person with 70 M3/Year	427	432	456	480	505	531	553	575	599	624	649	676
Couple with 125 M3 per Year	508	516	543	571	599	629	654	680	707	735	764	794
Family 300 M3 per Year	766	781	819	859	900	942	976	1,012	1,049	1,087	1,127	1,168
Large User 8000 M3 per Year 4 ir	16,077	16,688	17,477	18,300	19,122	19,978	20,671	21,385	22,121	22,880	23,661	24,466

The proposed 2015-2025 rates for Wiarton are set out in table 1.1. For 2015, it is proposed that the fixed water charge be $27.20 per month for the 5/8 by ¾-inch meter, the smallest, and most common, residential and small business meter, and that the metered water use charge be $1.51 per cubic metre for all users. Flat rate charges for those that refuse to meter in 2015 are proposed to be $501 per month. Larger meters are proposed to be assessed a higher fixed charge than smaller meters. For example, the fixed cost of a 1-inch meter in 2015 would be $38.09 per month with a metered use charge of $1.51 per cubic metre. The 2019 fixed water charge for the most common meter size is proposed to be $33.80 per month and the metered charge be $1.79.

1.1.1 Sample Monthly Water Bills for Various User Groups

A number of hypothetical user groups were selected to determine the impacts of the proposed rate. The water bills are set out in table 1.2.

A user taking 70 cubic metres per year is projected to pay $432 in 2015, or $5 more than in 2014, $531 in 2019 and $676 in 2025. Someone using 125 cubic metres per year will pay $516 in 2015, or $8 more than in 2014, $629 in 2019 and $794 in 2025. A user of 300 cubic metres per year will pay a water bill of $781 in 2015, or $15 more than in 2014, $942 in 2019 and $1,168 in 2025. A large user with a 4-inch meter, taking 8,000 cubic metres per year, will pay $16,688 in 2015, up from 16,077 in 2014, $19,978 in 2019 and $24,466 in 2025.

1.1.2 Value of Wiarton Water

This section discusses what water at Wiarton's proposed water rates will buy in terms of practical use. The cost per litre of drinking water in 2015, for someone using 300 cubic metres of water per year, is one quarter of a cent. In 2019, it is projected to be just over one quarter of a cent. Table 1.3 provides an indication of the number of water uses that can be undertaken for $1.00. In the case of lawn watering, it is the number of minutes that the lawn can be watered for $1.00.

Table 1.3 Wiarton Drinking Water - It's Value in 2015 and in 2019

		What $1.00 will buy Quantity Purchased	
	Amount Used (litres)	2015 Rate	2019 Rate
Drink a 340 ml glass of Wiarton tap water	0.3	1,130	937
Drink a 500 ml bottle of Wiarton tap water	0.5	768	637
Buy a 500 ml bottle of water at Tim Hortons	0.5	2/3 bottle	?
Shower 30 minutes	270.0	1	1
Shower 10 minutes	90.0	4	4
Shower 5 minutes	45.0	9	7
Run dishwasher start to finish - new	25.0	15	13
Run dishwasher start to finish - older	38.0	10	8
Flush an older 15 litre toilet	15.0	26	21
Flush a 6 litre toilet	6.0	64	53
Flush a high efficiency toilet	4.5	85	71
Wash clothes - older top load	175.0	2	2
Wash clothes - new front load	90.0	4	4
Length of time to water lawn for $1 - 1/2 in hose	1,097.0	21	17
Assume the cost of water if use the average residential 180 m3 per year			

Table1.3 shows that $1.00 worth of water in 2015, for a user taking 300 cubic metres per year, an average family use, can buy one of the following uses: 1,130 normal glasses of tap water, 9 five-minute showers, 15 runs of a water-efficient dishwasher, 85 toilet flushes with a high efficiency toilet, or 4 washer

loads using a high efficiency washing machine. A dollar will get 21 minutes of lawn watering time. The proposed rates for 2019 show small changes that can be bought in 2015 compared with the higher priced water in 2019. This table is not intended to downplay the bill increases in the future. Instead, it shows the tremendous value represented by tap water that will continue for the near future.

1.2 Amabel Water System

As with the Wiarton rate calculations, rates in Amabel are calculated by considering the user fee revenue requirements, and by taking into account future water use and the number of connections. User fees are projected to increase, due to inflation. This causes rates to rise. In 2014, the cost of water sold, including day-to-day operating costs as was as capital costs, is projected at $26 per cubic metre. This number results from low total water use. Many connections are seasonal. This provides a context for assessing the rate recommendations.

The proposed 2015-2025 rates are set out in table 1.4. For 2015, it is proposed that the rates be the same as 2014. The fixed water charge be $84 per month for the 5/8 by ¾-inch meter, the smallest most common residential and small business meter, and that the metered water use charge be $1.36 per cubic metre for all users. Larger meters are proposed to be assessed a higher fixed charge than smaller meters with the charge increasing with the size of the meter. However, there are very few large meters in the Amabel system. The 1-inch meter charge would be $118 per month plus $1.36 per cubic metre. The 2019 fixed water charge is proposed to be $103 per month for the small meters, and the metered charge be $1.74.

1.2.1 Sample Monthly Water Bills for Various User Groups

A number of hypothetical user groups were selected to determine the impacts of the proposed rate. The water bills are set out in table 1.5.

A user taking 70 cubic metres per year is projected to pay $1,106 in 2015, the same as 2014, $1,356 in 2019 and $1,753 in 2025. Someone using 125 cubic metres per year in 2015 will pay $1,181, the same as 2014, $1,452 in 2019 and $1,883 in 2025. A user of 300 cubic metres per year, such as a family in permanent residence, will pay a water bill of $1,419 in 2015, the same as 2014, $1,757 in 2019 and $2,297 in 2025.

1.2.2 Value of Amabel Water

This section discusses what water at Amabel's proposed water rates will buy in terms of practical use. The cost per litre of drinking water in 2015, for someone using 300 cubic metres of water per year, is just under one-half a cent. In 2019, it is projected to be just over one-half a cent. Table 1.6 provides an indication of the number of water uses that can be undertaken for $1.00. In the case of lawn watering, it is the number of minutes that the lawn can be watered for $1.00.

Table 1.6 shows that $1.00 worth of water in 2015, for an average family user taking 300 cubic metres per year, can buy one of the following uses: 622 normal glasses of tap water, 5 five-minute showers, 8 runs of a water-efficient dishwasher, 47 toilet flushes with a high efficiency toilet, or 2 washer loads using a high efficiency washing machine. A dollar will get 12 minutes of lawn watering time. The proposed rates for 2019 show small changes that can be bought in 2015 compared with the higher priced water in

Table 1.4 Amabel Water Rates - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Charge for Occupied Dwellings												
Fixed												
Meter Size inches					Rate per Month							
5/8 x 3/4	84	84	88	93	98	103	108	113	117	122	127	132
0.75	93	92	97	102	108	113	119	124	129	134	140	145
1	118	118	124	130	137	144	151	158	164	171	178	185
1.5	152	151	159	167	176	185	195	203	211	220	229	238
2	244	243	256	269	284	298	314	327	340	354	368	384
2.5	589	587	618	650	684	720	757	788	821	854	889	926
3	926	923	971	1,022	1,075	1,131	1,190	1,239	1,290	1,343	1,398	1,455
Volumetric Cost per M3	$1.36	$1.36	$1.46	$1.55	$1.64	$1.74	$1.85	$1.94	$2.04	$2.14	$2.25	$2.36
Flat Rate Charge for those refusing to Meter/Mo	486	486	516	531	547	563	580	598	616	634	653	673
Reserve Charge for All Metreed Users	25	25	26.52	27.32	28.14	28.98	29.85	30.75	31.67	32.62	33.60	34.61
Vacant Properties on the System												
Reserve Charge for All Vacant Connections	25	25	26.52	27.32	28.14	28.98	29.85	30.75	31.67	32.62	33.60	34.61
Fixed Water Charge for Vacant Properties	35	36.05	37.13	38.25	39.39	40.57	41.79	43.05	44.34	45.67	47.04	48.45

Table 1.5 Amabel Hypothetical Water Bills 2014 - 2025 Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Single Person with 70 M3/Year	1,106	1,106	1,162	1,223	1,288	1,356	1,428	1,488	1,550	1,615	1,682	1,753
Couple with 125 M3 per Year	1,181	1,181	1,242	1,308	1,378	1,452	1,530	1,595	1,662	1,733	1,806	1,883
Family 300 M3 per Year	1,419	1,419	1,496	1,579	1,665	1,757	1,853	1,934	2,019	2,108	2,200	2,297

Table 1.6 Amabel Water - It's Value in 2015 and in 2019

		What $1.00 will buy Quantity Purchased	
	Amount Used (litres)	2015 Rate	2019 Rate
Drink a 340 ml glass of Grafton tap water	0.3	622	456
Drink a 500 ml bottle of Grafton tap water	0.5	423	310
Buy a 500 ml bottle of water at Tim Hortons	0.5	2/3 bottle	?
Shower 30 minutes	270.0	1	1
Shower 10 minutes	90.0	2	2
Shower 5 minutes	45.0	5	3
Run dishwasher start to finish - new	25.0	8	6
Run dishwasher start to finish - older	38.0	6	4
Flush an older 15 litre toilet	15.0	14	10
Flush a 6 litre toilet	6.0	35	26
Flush a high efficiency toilet	4.5	47	34
Wash clothes - older top load	175.0	1	1
Wash clothes - new front load	90.0	2	2
Length of time to water lawn for $1 - 1/2 in hose	1,097.0	12	8
Assume the cost of water if someone uses 300 m3 per year			

2019. This table is not intended to downplay the bill increases in the future. Instead, it shows the tremendous value represented by tap water that will continue for the near future.

1.3 Wiarton Wastewater

As with the two water rate calculations above, wastewater rates are calculated by considering the user fee revenue requirements, and by taking into account future water use and the number of connections. User fees are projected to increase, due to inflation. This causes rates to rise. In 2014, the cost of wastewater treated, including day-to-day operating costs as was as capital costs, is projected at $4.36 per cubic metre. This provides a context for assessing the rate recommendations.

1.3.1 Proposed Rates

The proposed 2015-2025 rates are set out in table 1.7. For 2015, it is proposed that the fixed wastewater charge be $33.05 per month for the 5/8 by ¾-inch meter, the smallest most common residential and small business meter, and that the metered water use charge be $1.99 per cubic metre for all users. Larger meters are proposed to be assessed a higher fixed charge than smaller meters with the charge increasing with the size of the meter. The 1-inch meter charge would be $46.27 per month plus $1.99 per cubic metre. The 2019 fixed water charge for the 5/8 by ¾-inch meter is proposed to be $42.51 per month, and the metered volume charge be $2.46 per cubic metre.

Table 1.7 Wiarton Wastewater Rates - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Water Rate												
Meter Size					**Monthly Fixed Wastewater Charge**							
5/8 x 3/4	28	33.05	35.94	38.22	40.31	42.51	44.84	47.29	49.88	51.62	53.42	55.29
0.75	31	36.35	39.54	42.04	44.34	46.76	49.32	52.02	54.87	56.78	58.76	60.82
1	39	46.27	50.32	53.51	56.43	59.52	62.77	66.21	69.83	72.27	74.79	77.40
1.5	50	59.49	64.70	68.80	72.55	76.52	80.71	85.12	89.78	92.92	96.16	99.52
2	81	95.84	104.23	110.84	116.89	123.28	130.03	137.14	144.65	149.70	154.92	160.33
2.5	196	231.35	251.60	267.54	282.16	297.58	313.86	331.04	349.16	361.34	373.95	387.01
3	307	363.55	395.37	420.42	443.39	467.63	493.21	520.20	548.68	567.82	587.64	608.16
4	391	462.70	503.20	535.08	564.32	595.17	627.72	662.07	698.32	722.68	747.90	774.02
6	-	-	-		-	-	-	-	-	-	-	-
Wastewater Charge based on Water Used - All Users												
Cost per M3	1.85	1.99	2.06	2.18	2.32	2.46	2.62	2.78	2.96	3.08	3.21	3.35
Flat Rate Charge for those refusing to Meter/Mo	486	515	546	579	614	650	689	731	775	821	870	923

Table 1.8 Wiarton Hypothetical Wastewater Bills 2014 - 2025 Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Single Person with 70 M3/Year	465	536	576	611	646	683	721	762	806	835	866	898
Couple with 125 M3 per Year	567	646	689	731	773	818	865	915	968	1,005	1,043	1,082
Family 300 M3 per Year	890	995	1,049	1,113	1,179	1,249	1,323	1,402	1,486	1,544	1,605	1,669
Large User 8000 M3 per Year 4 ir	18,489	20,320	21,223	22,481	23,857	25,315	26,862	28,501	30,240	31,477	32,764	34,102

1.3.2 Sample Monthly Water Bills for Various User Groups

A number of hypothetical user groups were selected to determine the impacts of the proposed rate. The water bills are set out in table 1.8.

A user taking 70 cubic metres per year is projected to pay $536 in 2015, or $71 more than 2014, $683 in 2019 and $898 in 2025. Someone using 125 cubic metres per year in 2015 will pay $646 or $79 more than in 2014, $818 in 2019 and $1,082 in 2025. A user of 300 cubic metres per year, such as a family, will pay a water bill of $995 in 2015, or an increase of $105 over the 2014 annual bill, $1,249 in 2019 and $1,669 in 2025.

2.0 Town of South Bruce Peninsula Rate Development Project

2.1 Project Purpose

The Town of South Bruce Peninsula is a municipality with a population of approximately 8,413 according to the 2011 census, and is situated in Bruce County. The Town's water system is comprised of two systems, Wiarton, with about 1,034 connected properties, and Amabel has about 394 occupied dwelling connected to the water system and another 113 vacant properties connected to the water system. Amabel water system serves four separate water communities: Amabel-Sauble, Foreman, Huron Woods, and Oliphant.

Wiarton has a communal wastewater system with about 919 connected properties. Wastewater in Amabel is provided privately.

The Town has undertaken this rate study to prepare water and wastewater rates, which will serve as a basis for a financial plan that will meet the requirements Regulation 453/07, and fulfill one of the statutory requirements for the Town to renew its Drinking Water Licences.

The Town intends to develop full cost rates for the water systems in South Bruce Peninsula. This report develops a financing plan for the water system to provide funding for identified capital and major maintenance needs for 2015-25 and for post 2025 asset renewal as per the asset study, as well as financing for the day-to-day operation of the system. The plan was created by setting out a projection of all revenues, relevant operating costs, needed reserve set-asides to fund operating and capital replacement from 2015-25 and asset renewal post 2025, as well as projections of water sold, and the estimation of the future number of connections. This information serves as the basis for setting simple, smooth and fair water rates, based on current practice across Ontario, as well as conforming to MOE financial guidelines. This report projects the water bills of typical customers associated with the proposed future water rates. Finally, the report compares the water and wastewater bills of a number of communities with those for Wiarton and Amabel.

2.2 Legislative Context for the Preparation of this Rate Report

There have been a number of legislative initiatives affecting water system management and operations over the past decade. These commenced with the water borne illness tragedy in Walkerton in 2000. Following this event, the government established a public inquiry to look into the tragedy, chaired by the

Honourable Dennis O'Connor. The Inquiry Report recommended a comprehensive approach to the delivery of safe drinking water in Ontario.

The Ministry of Environment (MOE) has responded to the Inquiry recommendations by making legislative changes. One having relevance to the development of rates and financial plans was the passage of the Safe Drinking Water Act, 2002 (SDWA). It requires owners of municipal drinking water systems to apply for and obtain a Municipal Drinking Water Licence. Five elements must be in place in order for the owner of a drinking water system to obtain a licence:

- A Drinking Water Works Permit to establish or alter a drinking-water system;
- An accepted Operational Plan. The Drinking Water Quality Management Standard (DWQMS) is the standard upon which operational plans are based. The plan documents an operating authority's quality management system (QMS).
- An Accredited Operating Authority. A third party audit of an operating authority's QMS will be the basis for accreditation.
- A Permit to Take Water.
- A Financial Plan that must be prepared, based on up-to-date rates, and approved in accordance with the prescribed requirements in the Financial Plans Regulation.

The preparation of rates is the main purpose of this project. The Financial Plan will be presented in a separate document.

Under section 30 of the SDWA, the Financial Plans element of the licence program must either be prepared in accordance with the Sustainable Water and Sewage System Act, 2002 (SWSSA) or in accordance with the requirements set by the Minister of the Environment. SWSSA regulations were not published for ten years and accordingly SWSSA act is no longer in force. Accordingly, the requirements set by the Minister of Environment apply and these are the 2007 MOE Regulation 453/07 and MOE guidelines.

Regulation 453/07 of the Safe Drinking Water Act 2002 was passed in 2007, and contains two key provisions that apply to existing water systems:

- *"A person who makes an application under the Act for a municipal drinking water licence shall, before making the application, prepare and approve Financial Plans for the system that satisfy the requirements of Reg. 453/07."*
- *"As a condition in a municipal drinking water licence that is issued in response to an application made under section 33 of the Act for a municipal drinking water licence, the Director shall include a requirement that the owner of the drinking water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, prepare and approve Financial Plans for the system that satisfy the requirements prescribed Reg. 453/07."*

The review of capital and replacement needs and the preparation of fully sustainable rates is the foundation for the financial plans. In August 2007, the MOE published "Toward Financially Sustainable Drinking-Water and Wastewater Systems". This document provides an outline of the Province's approach and principles for developing the above-mentioned Financial Plans, including the rates. Achieving financial sustainability in the province's municipal and water and wastewater sector is the long-term goal.

The above MOE publication set out nine principles to guide the preparation of Financial Plans and by implication, water rates:

1. *Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.* The owner of the drinking water system must make the Financial Plan available, on request, to members of the public who are served by the drinking water system without charge, publish them on the internet, if one is available, and provide notice to the public of the availability of the document.

2. *An integrated approach to planning among water, wastewater and storm water systems is desirable given the inherent relationship among these services*. If one entity plans for both water and wastewater, then this arrangement allows owners and operators to make more rational decisions about operations, capital investment and environmental protection – choices that the recognize the inter-relationship between water and wastewater services. Many municipalities, where water users are metered, pay for the costs of wastewater services by levying a surcharge on water rates. This is a valuable linkage, as those who use water will generate equivalent amounts of water. However, the guideline encourages municipalities to structure their accounts to reflect the three separate activity areas: water, wastewater and storm water. Costs are to be computed on a service basis for water, and separately for wastewater. Separating fire protection costs from other system costs is desirable. Recovering costs for storm water through a surcharge on water bills does not satisfy the user pay principle.

3. *Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.* This can be done by establishing dedicated reserves s, in which excess utility revenues above current cash costs and capital expenditures are saved for future utility needs.

4. *Financial planning with midcourse corrections is preferable to planning over the short term, or not planning at all*. It is recommended that utilities, when they undertake capital investment planning, adopt a planning horizon that encompasses the entire life cycle of the asset base. This may not be immediately possible, but in the interim, a planning horizon of at minimum 35 years is desirable.

5. *An asset management planning approach is a key input to the development of a financial plan*. A very useful starting assumption, in preparing capital investment plans is that each asset will need to be replaced at the end of the estimated life that is assigned to it for accounting purposes. The intent of an asset management plan, the rates and accompanying financial plan is to ensure that when assets need to be maintained, rehabilitated or replaced; municipalities are in a financial position to do so.

6. *A sustainable level of revenue allows for reliable service that meets or exceeds environmental standards, while providing sufficient resources for future rehabilitation and replacement needs.* A sustainable utility is one that can adequately cover current operating costs, maintain and repair its existing asset base, replace assets when appropriate, fund future growth and service enhancements, and account for inflation and changes in technology. Capital expenditures can be funded through user fees, new debt issuance and cash reserves. The use of debt is limited by the municipality's debt ceiling. Many municipalities wish to avoid the use of debt and, accordingly, need to raise additional revenues from ratepayers today to pay for future investment needs. According to the guidelines, it is a good practice for the funding plan to clearly identify the contribution of various funding sources towards satisfying capital investment plan requirements

over the projection periods. A related best practice is for the funding plan to include projected balances for debt and cash reserves in each period of the projection horizon. Additional best practices include:

- Avoiding large fluctuations in rates from year to year
- Keeping debt within a sustainable level
- Avoiding depleting cash reserves or, conversely, building up large cash balances that do not reflect future cash needs

7. *Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services rendered.* Rate structures should promote financial sustainability and water conservation. Metering and the use of rates are preferable to cross subsidization using property taxes.

8. *Financial Plans are living documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.* From time to time, it is good practice to review the accuracy of projections in both capital investment and funding plans. The appropriate frequency is likely to be once in 3 to 5 years.

9. *Financial Plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council*.

In summary, this rate report has been prepared in line with the various pieces of MOE legislation and regulations and in particular, with the above mentioned MOE guideline document.

3.0 Water Service Financing Options

Municipalities have a number of alternatives available to fund water and wastewater services:

Development Charges - Such charges are applied to developers and others connecting new non-serviced areas or lots to the existing water systems. Most of the growth related costs of building additions to the system are generally passed on to these developers or new customers. Existing users may have to pay some costs of accommodating new growth, but are spared the bulk of the capital cost of expanding infrastructure to accommodate new users to the system. Development charge funds are placed in a dedicated reserve fund and used to fund growth-related projects including reservoir expansions, additional wells and pipe oversizing. The Town applies a development charge to fund new growth infrastructure development.

Connection Charges - Fees are charged to landowners who wish to connect to the system. The fee covers the cost to the water utility associated with installing a service line from the existing water main or large sewer to the edge of the property line. A connection fee is assessed in the Town.

Government Grants - The Ontario and Federal governments provide funding on a shared basis with municipalities. The formula is one-third Federal government, one third Provincial government and one third municipal funding. Capital grants have been received for both Wiarton and Amabel in 2014. No capital grants have been assumed for the water projects set out in this study after 2014.

Reserves - Reserves are quantities of funds, drawn from user fees, and set aside to deal with unexpected equipment repairs, and to renew ageing water systems. Increasingly, municipalities are carrying out studies to look out many years in the future to identify capital renewal or replacement projects that need to be sustainably funded, in large part, by reserves. The Town currently has a water system operating reserve for both Wiarton and Annabel water and Wiarton wastewater. These funds help deal with large unexpected repairs and revenue shortfalls that arise from cool damp summers. These reserves will be drawn on and replenished in future. Each also has a capital reserve designed to fund non growth-related capital and major maintenance projects for 2015-25 as well as post 2025 water and wastewater asset renewal projects.

Debentures/Loans/Working Deficits – In many Ontario water systems, money has traditionally been borrowed in the form of debentures to provide upgrades to service existing users. Utilizing debentures and loans allows principal and interest to be recovered over a period of time spread over a large number of future water users, rather than having the full cost burden fall on one group of water users at one time. The Wiarton water system has no loans outstanding. The Amabel water system has two outstanding loans at this time and the Wiarton wastewater system has a loan outstanding.

User Fees – Smaller, recurring capital maintenance and renewal projects are often financed out of the annual operating funds of the water system. User fees also contribute to the reserves and cover all the costs not covered by other financing approaches.

Most water systems use some or all of the above means. In this project, revenue generation will rely upon user fees, connection fees, development charges, loans/working deficits and reserves derived from user fees.

4.0 Water Rate Types

There are a number of rate types that are in use in Ontario. These are as follows:

Flat Rate - All users are assessed an annual fee that does not depend on the amount of water used. This approach, by necessity, is utilized when users are not metered. Most All South Bruce Peninsula users are metered however, there are a very small number, in both water systems that do not have a meter and pay flat rate.
Decreasing Block - Users pay less per cubic metre as water use exceeds a certain pre-set amount. This rate provides an economic advantage to large industrial or institutional water users. The Town does not utilize a decreasing block. All users pay the same volumetric charge.
Increasing Block - Users pay more per cubic metre as water use increases beyond a pre-set amount. This is sometimes called the conservation rate, as it was designed to encourage large users to be more careful with their water use. The Town charges all users the same amount per cubic metre and does not use the increasing block method.
Two-part Constant Unit - The user pays a fixed fee that covers a part of the total water costs, usually metering and billing costs, which increases with the size of the meter, plus the same charge for all users for each and every cubic metre of water used. The Town currently utilizes this rate type for water and wastewater, and it is recommended that this be continued in future.
Seasonal Rate – Higher rates in the summer are applied to those who take more water in summer than in winter. This is often used when the system is closest to capacity. This is not utilized by the Town and is not proposed at this time.

Flat rates are commonly utilized in about a tenth of Ontario municipalities that are not metered, and in communities that are only partially metered. Decreasing block rates were formerly very popular as they provided some relief for large users. However, the popularity of this rate type is declining. The management of a system that is reaching capacity, and will face expensive expansion, often employs increasing block rates. The two-part constant unit rate is now the most commonly used rate type. It is recommended that the Town continue with the two-part constant unit rate for setting 2015 and future year's rates. The 2014 rates is set out in table 4.1.

4.1 South Bruce Peninsula 2014 Water Rate

Table 4.1 South Bruce Penninsula Water and Sewer Rates for 2014	
Wiarton	
Water	Monthly/M3
Refusal to Install a Meter	486.00
Fixed Meter Charge per Month	27.00
Volumetric Rate per Cubic Metre (220 gallons)	1.48
Wastewater	
Refusal to Install a Meter	486.00
Fixed Sanitary Charge per Month	28.00
Variable Rate based on each Cubic Metre of Water Used	1.85
Flat Rate - No municipal Service	48.00
Amabel	
Water Charge for Connected Occupied Properties	
Refusal to Install a Meter	486.00
Fixed Meter Charge per Month	85.00
Volumetric Rate per Cubic Metre (220 gallons)	1.36
Reserve Water Charge per Month	25.00
Water Charge for Serviced Lots (Vacant)	
Fixed Water Charge per Month	35.00
Reserve Water Charge per Month	25.00

The water bill for someone using 200 cubic metres of water per year in Wiarton would be $27 multiplied by 12 or $324 plus 200 multiplied by $1.48 ($386) for a total water bill of $620. The Wiarton wastewater bill would be $28 per month multiplied by 12 or $336 plus 200 times $1.85 ($370) for a total wastewater water bill of $706. The Amabel water bill for someone using 200 cubic metres of water per year in would be $$85 multiplied by 12 or $1,020 plus 200 multiplied by $1.36 ($272) plus $25 per month multiplied by 12, or $300, for a reserve fee, with a total water bill of $1,592.

5.0 Proposed Wiarton Water System Rates for 2015-2025

5.1 Water System Rate Setting Assumptions

The water rate setting process, in this report begins, by establishing a financing plan for 2015-2025, that also will provide full funding for all capital and major maintenance to 2025 and for asset renewal post 2025. This plan contains information about various system attributes, such as future revenue sources, the projected day-to-day expenditures needed to operate the system, estimated future capital projects to provide for system asset renewal and replacement, reserves and debt. Water sold and the number of connections are projected. Several assumptions have been made in preparing the financing plan:

- Inflation (operating) — 3.0% per annum, with 6% for energy–2015-25
- Inflation (capital) — 3.0% per annum 2015-2025
- Interest on investments — 1.5% to 2025
- New connections — 3 per year to 2017 and then 5 per year to 2025

5.2 Capital Renewal Expenditures Needed

Projecting future capital renewal and replacement expenditures is a very important step in developing sustainable rates. In this project, the Town's capital and major maintenance repair and replacement program was prepared by OCWA with assistance from Town staff. An asset management study, conducted for the Town, determined that $400,000 per year should be set aside for asset renewal. A future renewal and major maintenance schedule was developed for 2015-2023 with an estimate provided for 2024-5. The 2014 values for all identified projects to 2025 were inflated. The projected capital renewal schedule for 2015 to 2025 is illustrated in figure 5.1.

Fig 5.1 Total Capital and User Fee Financed Renewal Projects
2014 - 2025 Inflated $

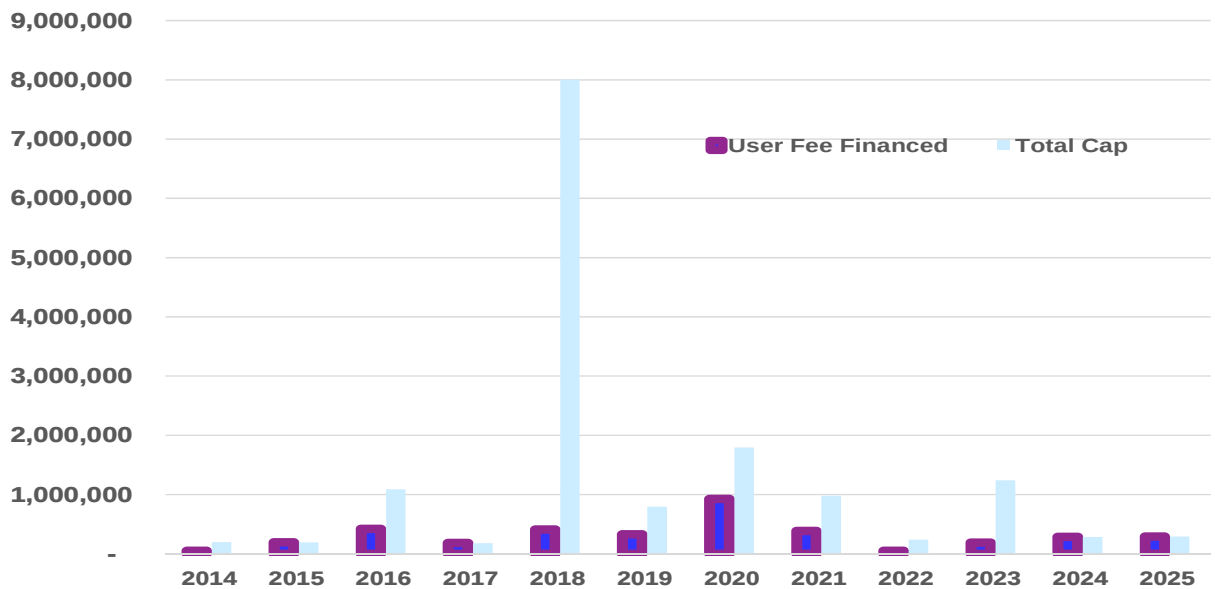


Table 5.1 Wiarton Capital Expenditures and Sources of Revenue 2014-2025

			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	User Pay Supported Capital Projects													
1	Project #	Descripton												
2	WAT-12-01	Claude & Brown Street Reconstruction (20:	50,000	-	-	-	-	-	-	-	-	-		
3	WAT-14-01	Claude & Brown Street Reconstruction	148,950	-	-	-	-	-	-	-	-	-		
4	WAT-15-01	William Street - McNaughton to Berford	-	161,504	-	-	-	-	-	-	-	-		
5	WAT-16-01	Berford Street - George to Boyd	-	-	201,571	-	-	-	-	-	-	-		
6	WAT-17-01	Division Street - Dawson to Gould	-	-	-	181,174	-	-	-	-	-	-		
7	WAT-18-01	Mary Street - Scott to Isaac	-	-	-	-	213,847	-	-	-	-	-		
8	WAT-19-01	Gould Street - Pengally to Frank	-	-	-	-	-	207,510	-	-	-	-		
9	WAT-19-02	Gould Street - Elm to Pengally	-	-	-	-	-	119,405	-	-	-	-		
10	WAT-20-01	Gould Street - Frank to Jenny	-	-	-	-	-	-	800,015	-	-	-		
11	WAT-21-01	Berford Street - Mary to George	-	-	-	-	-	-	-	279,181	-	-		
12	WAT-22-01	Berford Street - Boyd to Division	-	-	-	-	-	-	-	-	48,137	-		
13	WAT-23-01	Division Street - Gould to Berford	-	-	-	-	-	-	-	-	-	99,163		
14	Sub-Total		198,950	161,504	201,571	181,174	213,847	326,915	800,015	279,181	48,137	99,163	200,000	200,000
15														
16	Capital Renewal and Replacment Needs (OCWA/Town)		0	29,613	219,606	0	194,150	0	123,584	106,077	0	90,029	84,784	90,915
17	**Area Specific Growth Infrastructure**													
18	1	Extend Main Street - Elm to Dawson			454,850									
19	2	McNaughton (Mary St to Pengally St)			213,633									
20	3	Elm Street - Watson to Dawson					603,188							
21	4	Watermain To Service Area South West of Ames St					6,996,984							
22	5	Elm Street - East of Town Limit to Watson						466,886						
23	6	Extend Main on Dawson St. - Frank to Elm							870,039					
24	7	Within Proposed Subdivision on McNaughton Street								594,383				
25	8	Extend Main on Division - Frank to Watson									190,090			
26	9	Dawson - Division to 200 meters north										525,484		
27	10	John Street - Dvision to 200m north										525,484		
28	Sub-Total				668,484	-	7,600,173	466,886	870,039	594,383	190,090	1,050,969	-	-
29														
30	Financing													
31	**User Pay Supported Projects**													
32	Grants, Subsidies etc		150,746											
33	Developmment Charges													
34	Reserves		48,204	191,117	421,177	181,174	407,997	326,915	923,599	385,258	48,137	189,192	284,784	290,915
35	Sub-Total		198,950	191,117	421,177	181,174	407,997	326,915	923,599	385,258	48,137	189,192	284,784	290,915
37														
38	**Area Specific Growth Infrastructure**													
39	Grants, Subsidies etc		0	0	0	0	0	0	0	0	0	0	0	0
40	Developmment Charges		0	0	668,484	-	7,600,173	466,886	870,039	594,383	190,090	1,050,969	-	-
41	Capital Reserves		0	0	0	0	0	0	0	0	0	0	0	0
42	Sub-Total		-	-	668,484	-	7,600,173	466,886	870,039	594,383	190,090	1,050,969	-	-
43														
44	Summary													
45														
46	Grand Total Capital Project Expenditures		198,950	191,117	1,089,661	181,174	8,008,170	793,801	1,793,638	979,641	238,228	1,240,161	84,784	90,915
47														
48	Total Grants		150,746	-	-	-	-	-	-	-	-	-	-	-
49	Total Development Charges		-	-	668,484	-	7,600,173	466,886	870,039	594,383	190,090	1,050,969	-	-
50	Total Capital Reserves		48,204	191,117	421,177	181,174	407,997	326,915	923,599	385,258	48,137	189,192	284,784	290,915
51														
52	Grand Total Financing		198,950	191,117	1,089,661	181,174	8,008,170	793,801	1,793,638	979,641	238,228	1,240,161	284,784	290,915

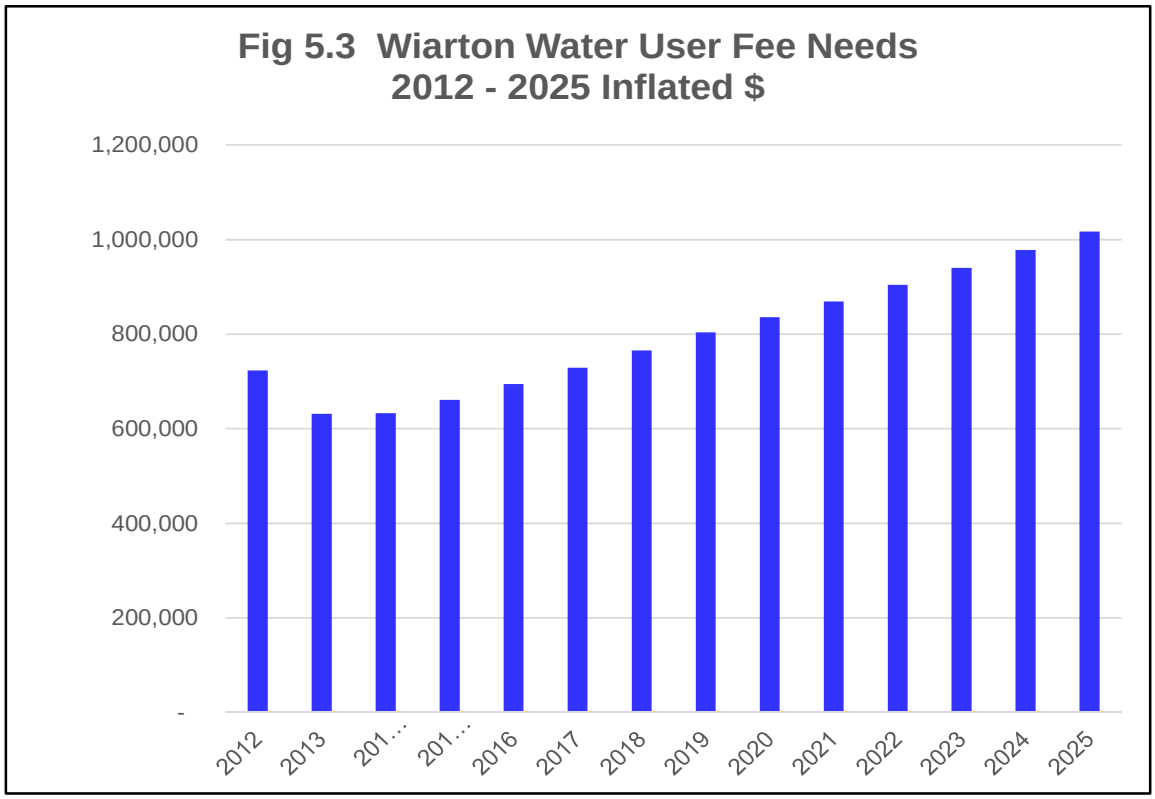
The shaded bars in figure 5.1 represents the inflated costs of currently identified projects. The user fees required to support the 2015-25 capital renewal averages $235,000 per year, and is set out in the dark bars in figure 5.1. The Town is also anticipated to experience some growth over the next ten years. Large projects is anticipated for 2016 and 2018 as well as 2019 and 2020. These will be financed by development charges. The details of these investments, as well as funding sources, are set out in table 5.1.

5.3 Summary Financial Statement

The summary operating financial statement for the water system sets out the revenues and expenditures and summarizes the financing strategy for the water system. The objective, adopted in this study, is to use user fees as much as possible to finance projected 2015-25 and post 2025 asset renewal expenditures. The 2012 to 2025 operations plan finances are shown in table 5.2.

5.3.1 User Fee Requirements

Revenues are comprised primarily of revenues from base rate and volumetric charges, and to a lesser degree from fees charged to the Georgian Bluffs community, flat rate charges on those who have not metered and bulk water sales. Contributions from the capital reserve augment revenues in particular years, when large capital expenditures occur. The projected fixed and metered user fee revenue needs are set out in line 3 of table 5.2 and are illustrated graphically in Figure 5.2 below:



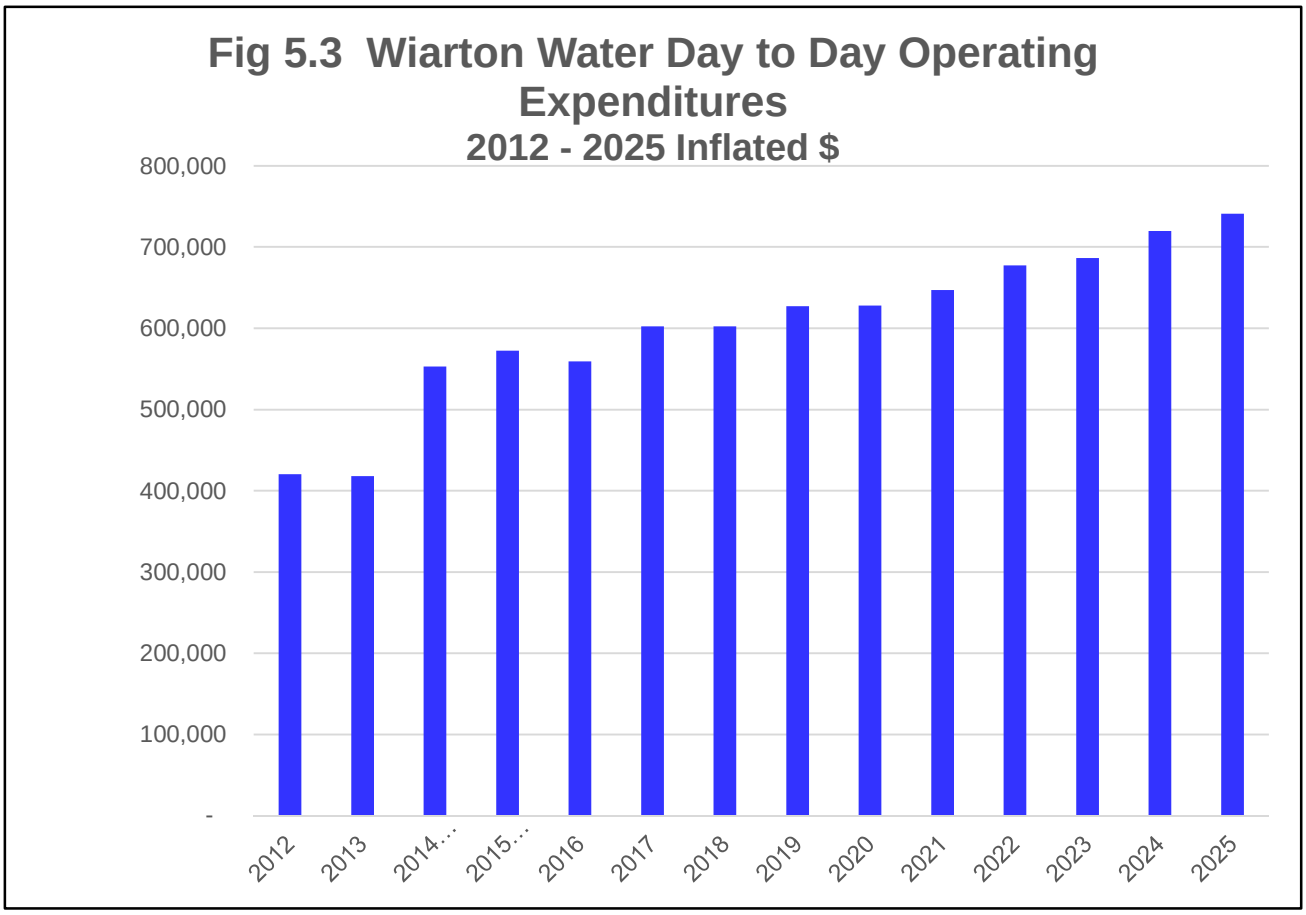
User fees are projected to increase at 4.5% in 2015, 5% from 2016 to 2020 and 4% from 2021 to 2025. Included in the user fee increase is provision for the inflation of operating costs of 3% per year, and inflation of capital costs of 3% per year. The proposed schedule of user fee increases funds all routine projected operating costs, and provides sufficient revenue to cover the currently projected capital and major maintenance projects to 2025 as well as post 2025 asset renewal and replacement needs.

Table 5.2 Wiarton Water System Operating Financial Plan - 2012-2025

		2012	2013	2014 Budget	2015 Budget	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	REVENUES														
1	WATER BILLING - BASE RATE	(165,815)	(278,580)	(333,720)	(346,080)	-	-	-	-	-	-	-	-	-	-
2	WATER BILLING - VOLUMETRIC CHARGE	(344,174)	(353,071)	(298,960)	(315,120)	-	-	-	-	-	-	-	-	-	-
3	TOTAL BILLING - BASE PLUS VOLUMETRIC	(509,989)	(631,651)	(632,680)	(661,200)	(694,260)	(728,973)	(765,422)	(803,693)	(835,840)	(869,274)	(904,045)	(940,207)	(977,815)	(1,016,928)
4	WATER BILLING - WIARTON	(212,951)													
5	WATER BILLING - FLAT RATE CHARGE	(19,881)	(22,641)	(10,000)	(23,330)	(24,030)	(24,751)	(25,493)	(26,258)	(27,046)	(27,857)	(28,693)	(29,554)	(30,440)	(31,354)
6	BULK WATER SALES	(9,641)	(5,894)	(7,500)	(10,000)	(10,300)	(10,609)	(10,927)	(11,255)	(11,593)	(11,941)	(12,299)	(12,668)	(13,048)	(13,439)
7	HYDRANT USE PERMIT APPLICATION FEE	-	(25)	-	-	-	-	-	-	-	-	-	-	-	-
8	GEORGIAN BLUFFS AGREEMENTS - OPERATING	(61,439)	(61,439)	(66,240)	(69,550)	(73,028)	(76,679)	(80,513)	(84,538)	(88,765)	(93,204)	(97,864)	(102,757)	(107,895)	(113,290)
9	GOERGIAN BLUFFS AGREEMENTS - CAPITAL	(37,951)	(37,951)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)	(37,950)
10	GEORGIAN BLUFFS AGREEMENTS - RESERVE	(13,635)	(13,635)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)	(13,640)
11	OTHER SERVICES	(199)	(1,365)	-											
12	WATER CONNECTION FEES	(1,000)	-	-	-	-	-	-	-	-	-	-	-	-	-
13	WATER CERTIFCATES	(1,240)	(1,040)	(1,000)	(1,030)	(1,061)	(1,093)	(1,126)	(1,159)	(1,194)	(1,230)	(1,267)	(1,305)	(1,344)	(1,384)
14	MISC. REV. - WATER METER RECOVERY	(398)	(3,471)	(1,000)	(1,030)	(1,061)	(1,093)	(1,126)	(1,159)	(1,194)	(1,230)	(1,267)	(1,305)	(1,344)	(1,384)
15	FIRE HYDRANT CHARGE BY TAX LEVY	(7,669)	(7,823)	(7,900)	(8,130)	(8,374)	(8,625)	(8,884)	(9,150)	(9,425)	(9,708)	(9,999)	(10,299)	(10,608)	(10,926)
16	PAYROLL INTERNAL RECOVERY	-	-	(40,470)	(44,240)	(45,567)	(46,934)	(48,342)	(49,793)	(51,286)	(52,825)	(54,410)	(56,042)	(57,723)	(59,455)
17	INTERFUNCTIONAL CHARGE - WATER SALES	(13,195)	(12,345)	(11,000)		-	-	-	-	-	-	-	-	-	-
18	INTERFUNCTIONAL CHARGE - INTEREST	(1,260)	-	(1,260)	(1,260)	(1,148)	(1,020)	(893)	(765)	(637)	(510)	(382)	(254)	(127)	-
	INTERFUNCTIONAL CHARAGE - PRINCIPAL				(18,240)	(18,240)	(18,240)	(18,240)	(18,240)	(18,240)	(18,240)	(18,240)	(18,240)	(18,240)	
19	RESERVE		(115,960)												
20	TOTAL OPERATING REVENUE	(890,448)	(799,279)	(830,640)	(889,600)	(910,418)	(951,367)	(994,315)	(1,039,361)	(1,078,571)	(1,119,367)	(1,161,815)	(1,205,980)	(1,251,933)	(1,299,749)
21															
22	**EXPENDITURES**														
23	SALARIES - FULL TIME	33,435	42,023	13,960	58,830	60,595	62,413	64,285	66,214	68,200	70,246	72,353	74,524	76,760	79,063
24	FRINGE BENEFITS	12,354	13,726	4,200	19,290	19,869	20,465	21,079	21,711	22,362	23,033	23,724	24,436	25,169	25,924
25	UTILITIES	66,641	55,039	81,000	85,860	91,012	96,472	102,261	108,396	114,900	121,794	129,102	136,848	145,059	153,762
26	MAJOR MAINTENANCE (OCWA/TOWNSHIP LISTING)	2,080	4,601	98,820	77,970	47,475	72,940	54,362	59,992	40,896	39,110	47,821	34,642	44,492	41,392
27	REPAIRS AND MAINTENANCE - WATER METERS	1,156	7,144	5,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720
28	SUPPLIES	1,057	1,027	-	1,200	1,236	1,273	1,311	1,351	1,391	1,433	1,476	1,520	1,566	1,613
29	PROFESSIONAL FEES	18,833	2,719	12,500	-	-	-	-	-	-	-	-	-	-	-
30	POSTAGE	3,683	5,088	6,500	6,700	6,901	7,108	7,321	7,541	7,767	8,000	8,240	8,487	8,742	9,004
31	RENTALS - TOWN	1,920	655	5,600	6,240	6,427	6,620	6,819	7,023	7,234	7,451	7,674	7,905	8,142	8,386
32	SERVICE AGREEMENT (OPERATIONS)	250,293	254,960	258,450	266,200	274,186	282,412	290,884	299,610	308,599	317,857	327,392	337,214	347,331	357,751
33	(CONTINGENCIES FROZEN PIPES, NON SCHED. EQ. FAIL	19,930	17,618	30,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
34	MEMBERSHIPS	-	-	410	-	-	-	-	-	-	-	-	-	-	-
35	INSURANCE	8,117	8,653	13,360	10,100	10,403	10,715	11,037	11,368	11,709	12,060	12,422	12,794	13,178	13,574
36	INTERFUNCTIONAL CHARGE - WATER	1,121	3,510	2,860	3,860	3,976	4,095	4,218	4,344	4,475	4,609	4,747	4,890	5,036	5,188
37	FROSTLINE ADJUSTMENT	-	1,438	1,500	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688
38	UTILITY CLERK-WATER WRITE OFFS	-	-	250	250	258	265	273	281	290	299	307	317	326	336
39	CHANGE FOR YEAR - TCA	(133,217)	-	-	-	-	-	-	-	-	-	-	-	-	-
40	DEPRECIATION EXPENSE			-	-	-	-	-	-	-	-	-	-	-	-
41	PAYROLL INTERNAL CHARGE	-	-	18,480	19,070	19,642	20,231	20,838	21,463	22,107	22,771	23,454	24,157	24,882	25,628
42	TOTAL DAY TO DAY EXPENSES	420,620	418,200	552,890	572,570	559,189	602,435	602,337	627,174	628,045	647,020	677,322	686,601	719,816	741,028
43															
44	REVENUES LESS DAY TO DAY EXPENSES	(469,827)	(381,079)	(277,750)	(317,030)	(351,229)	(348,932)	(391,978)	(412,187)	(450,526)	(472,347)	(484,492)	(519,378)	(532,117)	(558,722)
45															
46	TRANSFERS														
47	TRANSFER TO RESERVE - WSIB	1,226	1,856	-	-	-	-	-	-	-	-	-	-	-	-
48	LONG TERM ASSET RENEWAL				20,000	40,000	60,000	80,000	100,000	120,000	140,000	160,000	180,000	180,000	160,000
49	TRANSFER TO RESERVE - CAPITAL	567,229	498,685	277,750	277,030	291,229	268,932	291,978	292,187	310,526	312,347	304,492	319,378	332,117	378,722
50	TRANSFER TO THE OPERATING STABILIZATION RESERVE				20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
51	TOTAL OPERATING EXPENSE	855,858	918,741	830,640	889,600	910,418	951,367	994,315	1,039,361	1,078,571	1,119,367	1,161,814	1,205,979	1,251,933	1,299,750
52	TOTAL WIARTON WATER SYSTEM REQUIREMENT	(34,589)	119,462	-	-	(0)	0	(0)	0	0	0	(0)	(0)	(0)	0
53															
54	**SBP WIARTON WATER SYSTEM CAPITAL PLAN**														
55	**REVENUES**														
56	TRANSFER FROM CAPITAL RESERVE	-	(310,528)	(153,149)	(191,117)	(421,177)	(181,174)	(407,997)	(326,915)	(923,599)	(385,258)	(48,137)	(189,192)	(284,784)	(290,915)
57	PROVINCIAL CAPITAL GRANT	-	-	(150,746)											
58	TOTAL CAPITAL REVENUE	-	(310,528)	(303,895)	(191,117)	(421,177)	(181,174)	(407,997)	(326,915)	(923,599)	(385,258)	(48,137)	(189,192)	(284,784)	(290,915)
59															
60	**EXPENDITURES**														
61	TCA - CAPITAL EXPENDITURES	34,589	310,528	303,895	191,117	421,177	181,174	407,997	326,915	923,599	385,258	48,137	189,192	284,784	290,915
62	TOTAL CAPITAL EXPENSE	34,589	310,528	303,895	191,117	421,177	181,174	407,997	326,915	923,599	385,258	48,137	189,192	284,784	290,915
63	TOTAL CAPITAL PROGRAM	34,589	-	-	-	-	-	-	-	-	-	-	-	-	-

5.3.2 Operating Expenses

Operating expenditures represent the day-to-day costs of operating the system, and include electrical, chemical, testing and a variety of other costs. Projected operating day-to-day expenditures are summarized in line 42 in table 5.2, and are illustrated in figure 5.3:



In 2014, a large maintenance and repair item accounts for a fluctuation in day-to-day operating expenditures. Such fluctuations are normal, and in the future, they will fluctuate from year to year. Day-to-day operating costs are projected to increase at the rate of inflation to 2025.

5.3.3 Debt

The water system has no outstanding loans at this time. None is forecast during the 2015 to 2025 period.

5.3.4 Reserves

The system had two reserves. The operating reserve had a balance surplus of $46,094, as of December 31, 2013. It is proposed that the amount in the operating reserve be increased and capped

at about $300,000. Contributions are made each year from 2015 to 2025. Future contributions could be reduced if the reserve builds up. The operating reserve is shown in table 5.3

Table 5.3 Wiarton Water System Operating Rate Stablization Reserves 2014-2025 - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Value	46,094	66,785	87,787	109,104	130,741	152,702	174,992	197,617	220,581	243,890	267,548	291,562
Addition (Withdrawl)	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	-
Interest on Cash Balance (deficit)	691	1,002	1,317	1,637	1,961	2,291	2,625	2,964	3,309	3,658	4,013	4,373
Close	66,785	87,787	109,104	130,741	152,702	174,992	197,617	220,581	243,890	267,548	291,562	295,935
Close in 2014$	66,785	85,230	102,841	119,646	135,673	150,950	165,501	179,353	192,529	205,054	216,949	213,790

The capital reserve had a balance of $1,294,623 as of December 31, 2013. The projected water reserves, from user fees covering the 2015 to 2025 period, are shown in table 5.4:

Table 5.4 Wiarton Water System Capital Reserves 2014-2026 - Inflated $

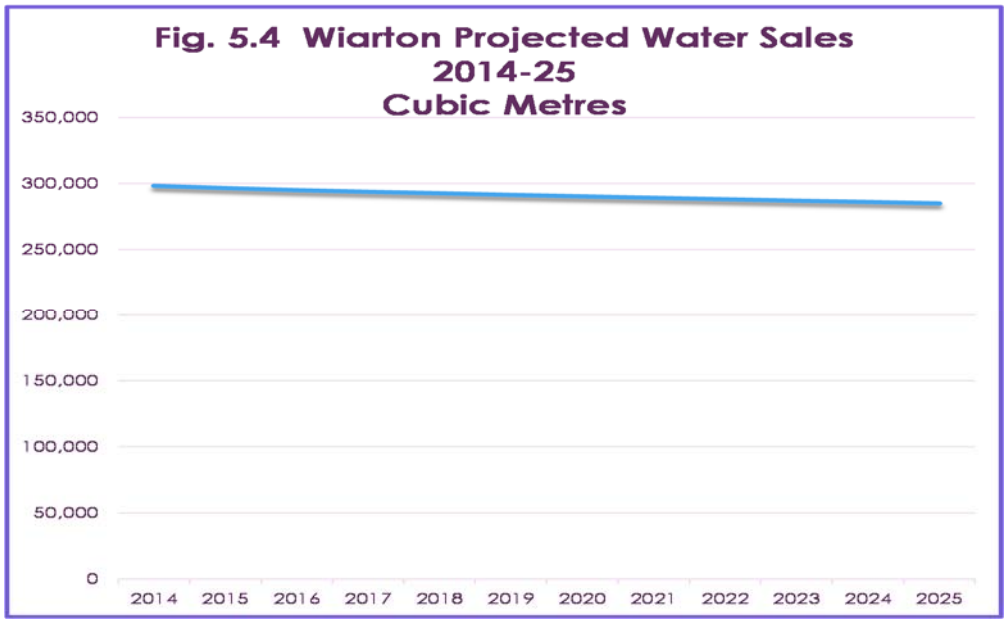
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Value	1,294,623	1,438,643	1,520,521	1,369,950	1,407,723	1,237,503	1,139,797	555,939	513,359	740,004	813,390	783,474
Investment	153,149	191,117	421,177	181,174	407,997	326,915	923,599	385,258	48,137	189,192	284,784	290,915
Long Term Asset Renewal	-	20,000	40,000	60,000	80,000	100,000	120,000	140,000	160,000	180,000	180,000	160,000
Addition (Withdrawl)	277,750	277,030	291,229	268,932	291,978	292,187	310,526	312,347	304,492	319,378	332,117	378,722
Interest on Cash Balance	19,419	21,580	22,808	20,549	21,116	18,563	17,097	8,339	7,700	11,100	12,201	11,752
Close	1,438,643	1,566,136	1,453,380	1,538,257	1,392,820	1,321,337	663,821	631,367	937,415	1,061,290	1,052,924	1,043,034
Close in 2014$	1,438,643	1,520,521	1,369,950	1,407,723	1,237,503	1,139,797	555,939	513,359	740,004	813,390	783,474	753,510

The Wiarton system has a very healthy reserve in 2014. From 2015 onwards, contributions are often less than investments, so that the reserve in 2025 is about one-half of the 2013 end-of-year total in 2014$. The amount transferred to the capital reserve, made up of contributions for long-term (post 2025) asset renewal and general reserve additions reach $400,000 in 2020. This is the amount that the asset management study determined should be set aside each year in order to assure that funds will be available for capital renewal. From 2021 to 2025, the set asides are a little higher than the amount recommended in the asset management study. The long-term asset renewal figure of $400,000 was set in 2013. Since the recommended level is not reached until 2020, higher levels are needed to catch up. In addition, the achievement of the recommended level is more than five years away, and much can change. We recommend that the amount set-asides be further refined in the next rate study in 2019 or 2020.

5.4 Wiarton Water Sales/Connections

5.4.1 Water Sales 2014-2025

Water sold is water that a user paid for. The projected sales calculations for all users from 2015 to 2025 are set out in table 5.5. They are illustrated in figure 5.4.



From 2015 to 2025, the rate-setting period, total water sold to existing users is projected to decline due to conservation. This is largely a result of provincial plumbing regulation amendments, enacted in 1991, requiring installation of water efficient fixtures (toilets, showers and faucets) in all new construction and the restrictions on the sale of toilets that use more than 6 litres per flush. In addition, people carrying out renovations will replace currently inefficient fixtures with more water efficient ones. Highly efficient front-load washing machines are now very popular with many homeowners and these use just over one-half of the water used by an older top load machine.

In addition, some existing businesses and institutions can be expected to install more water efficient equipment in the years ahead, in response to normal business equipment renewal, and in response to higher water charges. This decline in water use puts some upward pressure on the water rates. However, this will not necessarily increase everyone's water bills. Those who adopt more water efficient fixtures and appliances will reduce their water use, and pay lower bills, than would be the case if they did not become more water efficient.

New residential users added to the system will start with water efficient fixtures. These will most likely use the latest and most water efficient fixtures. This is built into the estimates above. The water use by new users will decline very slightly over the next ten years due to efficiency improvements. Any new Industrial, commercial and institutional users will be more efficient than existing users and their usage will make a smaller than expected increase in water sales based on historical averages.

Overall, water use is projected to decline slightly over the next ten years. This has been taken into consideration in setting the proposed rates in this report, and it puts a slight upward pressure on rates.

5.4.2 Projected Number of Connections

The current number of billing units and metered connections, and the projected distribution of metered connections are set out in table 5.6. Currently, there are 1,034 connected users. It is assumed that there will be three new connections per year until 2017 and then there will be five new connections per year until 2025.

5.5 Wiarton Water Rate Calculations

Rates are calculated by considering the user fee revenue requirements, and by taking into account future water use and the number of connections. User fees are projected to increase due to inflation in capital renewal costs and in day-to-day operating expenses. This causes rates to rise. In Wiarton, there is a small projected number of new users that will offset some of the projected increase in user fees. In 2014, the cost of water sold, including the operating and capital charges, was $3.73 per cubic metre. This provides a context for assessing the projected rates. It is proposed that the two-part rate structure currently in use be continued. One part of this rate is a fixed cost applied to all users regardless of water use. Included in this are the billing costs, including salaries and postage, as well as the cost of renewing meters every 17 years or so, plus other charges. The second part is the cost per cubic metre that depends on the amount of water used. The more that is used, the higher the water bill. All costs that are not included in the fixed portion of the rate are included in this rate component. The fixed costs are currently generating just over 50% of revenues while the variable charge generates the balance of the revenue. The proposed rates differ from current rates by assessing fixed water charges based on meter size, with users having larger meters paying more. This is a recognition that large meters are more expensive to purchase and may wear out more quickly than smaller meters. Charging the fixed rate by meter size is a very common practice in Ontario, and elsewhere.

The proposed 2015-2025 rates for Wiarton are set out in table 5.7. For 2015, it is proposed that the fixed water charge be $27.20 per month for the 5/8 by ¾-inch meter, the smallest, and most common, residential and small business meter, and that the metered water use charge be $1.51 per cubic metre for all users. Flat rate charges for those that refuse to meter in 2015 are proposed to be $501 per month. Larger meters are proposed to be assessed a higher fixed charge than smaller meters. For example, the fixed cost of a 1-inch meter in 2015 would be $38.09 per month with a metered use charge of $1.51 per cubic metre. The 2019 fixed water charge for the most common meter size is proposed to be $33.80 per month and the metered charge be $1.79.

1.1.1 Sample Monthly Water Bills for Various User Groups

A number of hypothetical user groups were selected to determine the impacts of the proposed rate. The water bills are set out in table 5.8.

A user taking 70 cubic metres per year is projected to pay $432 in 2015, or $5 more than in 2014, $531 in 2019 and $676 in 2025. Someone using 125 cubic metres per year will pay $516 in 2015, or $8 more than in 2014, $629 in 2019 and $794 in 2025. A user of 300 cubic metres per year will pay a water bill of $781 in 2015, or $15 more than in 2014, $942 in 2019 and $1,168 in 2025. A large user with a 4-inch meter, taking 8,000 cubic metres per year, will pay $16,688 in 2015, up from 16,077 in 2014, $19,978 in 2019 and $24,466 in 2025.

Table 5.5 Wiarton Water System - Projected Water Sold by Year in M3

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Wiarton Total Sold (M3)	201,786	200,797	199,824	198,867	198,343	197,834	197,341	196,864	196,401	195,954	195,521	195,103
Institutional/Commercial/Industrial (ICI) Use (Est.)	40,357	40,357	40,357	40,357	40,357	40,357	40,357	40,357	40,357	40,357	40,357	40,357
Residential Use (Est)	161,429	159,815	158,216	156,634	155,068	153,517	151,982	150,462	148,958	147,468	145,993	144,533
Number of ICI users (Est.)	155	155	155	155	155	155	155	155	155	155	155	155
Number of Residential Users pre 2015	879	879	879	879	879	879	879	879	879	879	879	879
Residential Use per Conn Pre 2015/Year (M3)	184	182	180	178	176	175	173	171	169	168	166	164
Persons per Residential Unit	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
Use per Person per Day (M3)	0.188	0.186	0.184	0.182	0.180	0.179	0.177	0.175	0.173	0.172	0.170	0.168
Residential Usage for New Users Post 2014	0	508	1,016	1,525	2,372	3,219	4,066	4,912	5,759	6,606	7,453	8,300
Number of New Residential Users post 2014		2.6	5.1	7.7	11.9	16.2	20.4	24.7	28.9	33.2	37.4	41.7
Residential Use Per Connection Post 2014/Yr		199	199	199	199	199	199	199	199	199	199	199
Persons per Residential Unit Post 2014		2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Residential Use per Person per Day (M3)		0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195
ICI Users Post 2014		0.5	0.9	1.4	2.1	2.9	3.6	4.4	5.1	5.9	6.6	7.4
ICI use per Conn per Year (M3)		260	260	260	260	260	260	260	260	260	260	260
ICI Water Use Post 2014 in M3		117	234	351	546	742	937	1,132	1,327	1,522	1,717	1,912

Table 5.6 Wiarton Water System Projected Number of Connections - 2014-2025

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Number of Connections												
Meter Size (in)												
Not Metered	4	4	4	4	4	4	4	4	4	4	4	4
0.62	986	989	992	995	1,000	1,005	1,010	1,015	1,020	1,025	1,030	1,035
0.75	13	13	13	13	13	13	13	13	13	13	13	13
1	14	14	14	14	14	14	14	14	14	14	14	14
1.5	8	8	8	8	8	8	8	8	8	8	8	8
2	6	6	6	6	6	6	6	6	6	6	6	6
2.5	0	0	0	0	0	0	0	0	0	0	0	0
3	1	1	1	1	1	1	1	1	1	1	1	1
4	2	2	2	2	2	2	2	2	2	2	2	2
6	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,034	1,037	1,040	1,043	1,048	1,053	1,058	1,063	1,068	1,073	1,078	1,083

Table 5.7 Wiarton Water Rates - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Water Rate												
Meter Size (inches)					**Monthly Fixed Water Charge**							
5/8 x 3/4	27	27.20	28.75	30.38	32.05	33.80	35.30	36.88	38.52	40.23	42.01	43.87
0.75	28	29.93	31.63	33.42	35.25	37.18	38.84	40.56	42.37	44.25	46.21	48.26
1	36	38.09	40.25	42.54	44.86	47.32	49.43	51.63	53.92	56.32	58.81	61.42
1.5	46	48.97	51.75	54.69	57.68	60.84	63.55	66.38	69.33	72.41	75.62	78.97
2	74	78.89	83.38	88.11	92.93	98.01	102.38	106.94	111.70	116.66	121.83	127.22
2.5	179	190.43	201.26	212.68	224.32	236.59	247.13	258.13	269.61	281.58	294.07	307.09
3	281	299.25	316.26	334.20	352.50	371.78	388.35	405.64	423.67	442.49	462.11	482.57
4	357	380.87	402.51	425.35	448.64	473.17	494.27	516.27	539.22	563.16	588.14	614.18
6	536	571.30	603.77	638.03	672.96	709.76	741.40	774.40	808.83	844.75	882.21	921.28
Metered Water Use Charge - All Users												
Cost per M3	1.47	1.51	1.58	1.65	1.72	1.79	1.84	1.90	1.96	2.02	2.08	2.14
Flat Rate for those refusing to Meter/Mo	486	501	516	531	547	563	580	598	616	634	653	673

Table 5.8 Wiarton Hypothetical Water Bills 2014 - 2025 Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Single Person with 70 M3/Year	427	432	456	480	505	531	553	575	599	624	649	676
Couple with 125 M3 per Year	508	516	543	571	599	629	654	680	707	735	764	794
Family 300 M3 per Year	766	781	819	859	900	942	976	1,012	1,049	1,087	1,127	1,168
Large User 8000 M3 per Year 4 ir	16,077	16,688	17,477	18,300	19,122	19,978	20,671	21,385	22,121	22,880	23,661	24,466

6.0 Amabel Water System

6.1 Water System Rate Setting Assumptions

The water rate setting process, in this report begins, by establishing a financing plan for 2015-2025, that also will provide funding for all capital and major maintenance projects to 2025 and for asset renewal beyond 2025. This plan contains information about various system attributes, such as future revenue sources, the projected day-to-day expenditures needed to operate the system, estimated future capital projects to provide for system asset renewal and replacement, reserves and debt. Water sold and the number of connections are projected. Several assumptions have been made in preparing the financing plan:

- Inflation (operating) 3.0% per annum, with 6% for energy–2015 - 2025
- Inflation (capital) 3.0% per annum 2015-2025
- Interest on investments 1.5%
- New connections No new occupied households
- Interest on working deficits/loan 3.5%

6.2 Capital Renewal Expenditures Needed

Projecting future capital renewal and replacement expenditures is a very important step in developing sustainable rates. In this project, Town staff and OCWA prepared the inventory of capital and major maintenance projects from 2015-25. The Town's asset management study identified a target annual contribution needed to renew Amabel's water assets over their lifetime. The projected 2015-25 capital renewal is set out in table 6.1. Two capital projects are being undertaken. The major project is the activation of the Oliphant treatment plant. This project is funded from grants and a smaller portion is financing by capital reserves.

6.3 Financial Statement

The operating financial statement for the water system sets out the revenues and expenditures and summarizes the financing strategy for the water system. The objective, adopted in this study, is to use working deficits or short-term loans, as well as user fee increases, to rebuild the reserves. The operating financial plan for the 2012 to 2025 period is shown in table 6.2.

6.3.1 User Fee Requirements

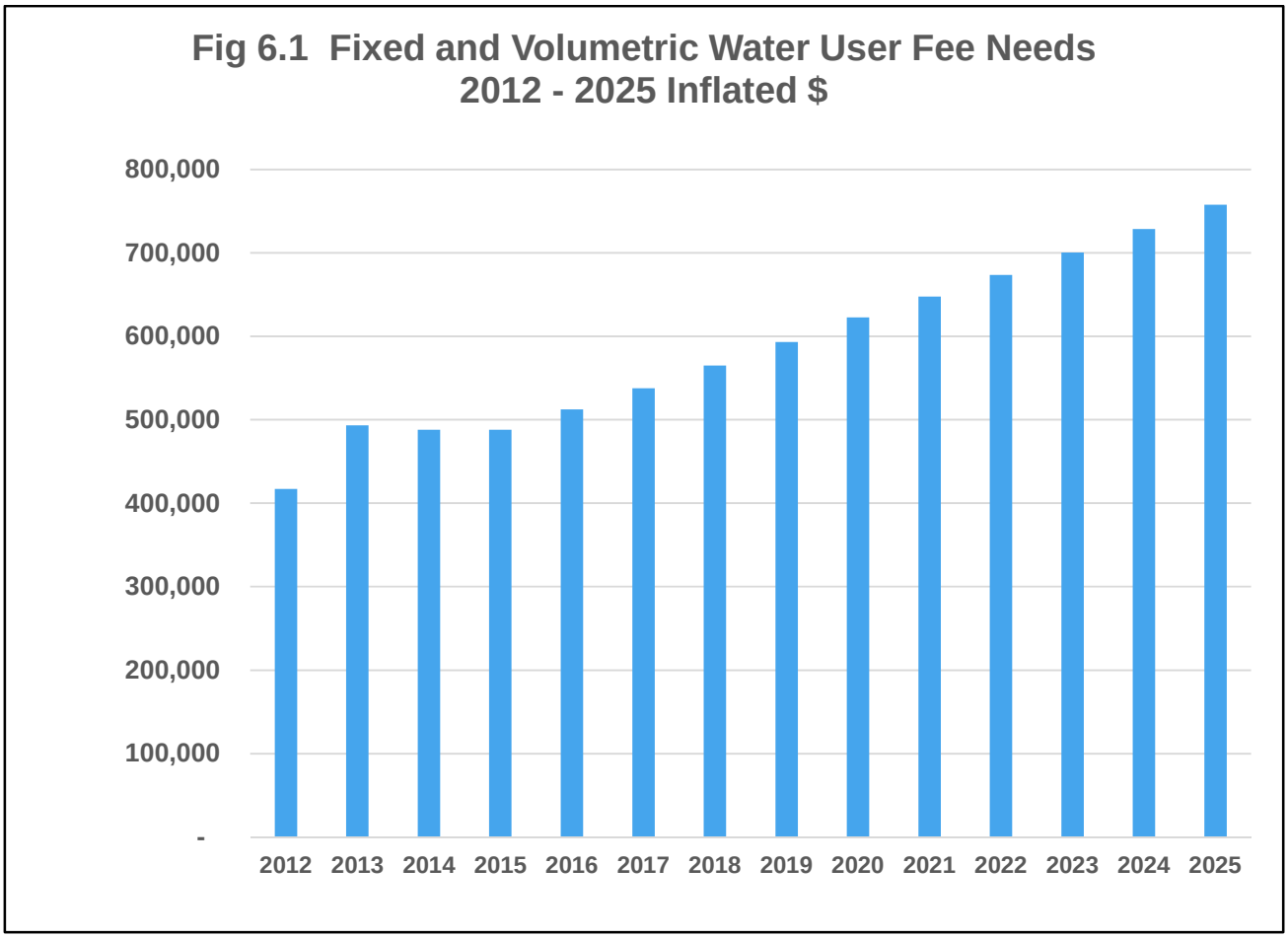
Revenues are comprised primarily of revenues from fixed water charge user fees, metered use charges reserve contributions, and to a lesser degree from flat rate fees for those who do not have meters as well as a hydrant fee collected on the taxes and transferred to the water accounts. A fixed charge and a reserve charge are also assessed on vacant properties that are attached to the water system. The projected user fixed water charge and metered water use revenues are set out in line 8 of table 6.2 and are illustrated graphically in figure 6.1 below.

Table 6.1 Amabel Capital Expenditures and Sources of Revenue 2014-2025

		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	**User Pay Supported Capital Projects**												
2	Capital as Per OCWA/Town Review												
3	Wat - 14 - 02 Reinstate	495,500	-	-	8,625	-	-	-	-	-	-	-	-
4	Grand Total Capital Projec	495,500	-	-	8,625	-	-	-	-	-	-	-	-
5													
6	Financing												
7	Total Grants	322,075	-	-	-	-	-	-	-	-	-	-	-
8	Total Development Charge	-	-	-	-	-	-	-	-	-	-	-	-
9	Total Reserves Contributio	173,425	-	-	8,625	-	-	-	-	-	-	-	-
10													
11	Grand Total Financing	495,500	-	-	8,625	-	-	-	-	-	-	-	-

Table 6.2 Amabel Water System Operating Financial Plan - 2012-2025

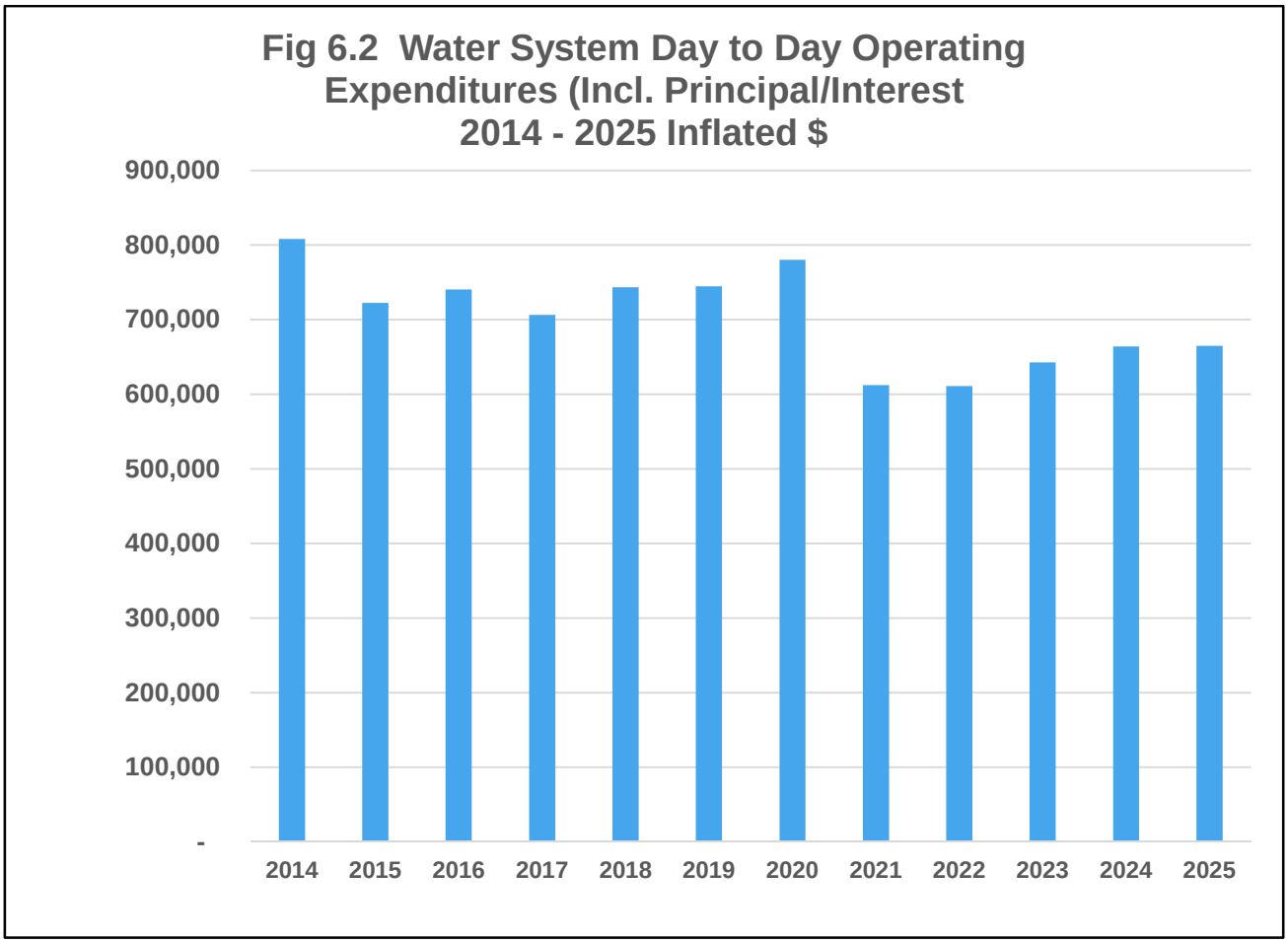
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	REVENUES														
1	WATER CHARGES-TAXES	-	-	-											
2	PROVINCE OF ONTARIO - OSWAP	(25,000)	-	-											
3	WATER BILLING-AMABEL	(135,591)	-	-											
4	WATER BILLING - BASE RATE CHARGE	(77,998)	(445,590)	(439,020)	(439,020)										
5	WATER BILLING - FLAT RATE CHARGE	(33,578)	(13,626)	(7,500)	(11,900)	(12,495)	(13,120)	(13,776)	(14,465)	(15,188)	(15,947)	(16,744)	(17,582)	(18,461)	(19,384)
6	WATER BILLING - RESERVE CHARGE	-	(121,207)	(150,300)	(150,300)	(157,815)	(165,706)	(173,991)	(182,691)	(191,825)	(201,416)	(211,487)	(222,062)	(233,165)	(244,823)
7	WATER BILLING - VOLUMETRIC (CONSUMPTION) CHARGE	(203,678)	(47,709)	(48,960)	(48,960)										
8	TOTAL BILLING - BASE CHARGE PLUS VOLUMETRIC CHAR	(417,267)	(493,300)	(487,980)	(487,980)	(512,379)	(537,998)	(564,898)	(593,143)	(622,800)	(647,712)	(673,620)	(700,565)	(728,588)	(757,731)
9		417,267	493,300	487,980	487,980	512,379	537,998	564,898	593,143	622,800	647,712	673,620	700,565	728,588	757,731
10	OTHER SERVICES	(199)	(1,796)	(1,000)	(1,030)	(1,061)	(1,093)	(1,126)	(1,159)	(1,194)	(1,230)	(1,267)	(1,305)	(1,344)	(1,384)
11	CAPITAL RECEIPTS - OSTAR USER FEES	10,434	(35,251)	-											
12	FIRE HYDRANT CHARGE BY TAX LEVY	(4,806)	(4,903)	(5,000)	(5,150)	(5,305)	(5,464)	(5,628)	(5,796)	(5,970)	(6,149)	(6,334)	(6,524)	(6,720)	(6,921)
13	INTERFUNCTIONAL CHARGE - WATER SALES	(10)	-	-	-	-	-	-	-	-	-	-	-	-	-
14	CAPITAL COST RECOVERY - LEVY	(252,391)	(232,661)	(220,000)	(230,850)	(230,845)	(200,117)	(200,117)	(200,117)	(200,117)	-	-	-	-	-
15	WATER CERTIFICATES-AMABEL	(400)	(310)	(360)	(370)	(381)	(393)	(404)	(416)	(429)	(442)	(455)	(469)	(483)	(497)
16	GAIN/LOSS ON DISPOSAL OF ASSET	8,500	-	-	-	-	-	-	-	-	-	-	-	-	-
17	CURRENT YEAR DEFICIT-AMABEL WATER SYSTEMS	(156,353)	4,627	-	-	-	-	-	-	-	-	-	-	-	-
18	TRANSFER FROM RESERVES	(54,360)	-	-	-	-	-	-	-	-	-	-	-	-	-
19	**TOTAL OPERATING REVENUE**	(1,061,021)	(898,427)	(872,140)	(887,580)	(920,280)	(923,890)	(959,939)	(997,787)	(1,037,523)	(872,896)	(909,908)	(948,506)	(988,759)	(1,030,741)
20															
21	**EXPENDITURES**														
22	SALARIES-FULL TIME	16,085	22,201	10,370	1,700	1,751	1,804	1,858	1,913	1,971	2,030	2,091	2,154	2,218	2,285
23	FRINGE BENEFITS	3,004	4,516	3,110	500	515	530	546	563	580	597	615	633	652	672
24	UTILITIES	31,352	40,562	40,000	42,400	44,944	47,641	50,499	53,529	56,741	60,145	63,754	67,579	71,634	75,932
25	SUPPLIES (WATER SYSTEM MATERIALS)	1,125	882	1,500	1,500	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	1,957	2,016
26	INTERFUNCTIONAL CHARGE	13,114	12,345	11,000	-	-	-	-	-	-	-	-	-	-	-
27	MAJOR MAINTENANCE	474	2,713	48,200	54,390	58,880	41,524	63,816	49,849	69,852	85,722	67,139	81,418	85,000	85,000
28	REPAIRS & MAINTENANCE - WATER METERS	90	1,687	1,500	1,500	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	1,957	2,016
29	DIESEL	82		-	-	-	-	-	-	-	-	-	-	-	-
30	LEGAL	321		5,000	-	-	-	-	-	-	-	-	-	-	-
31	PROFESSIONAL FEES	100	8,380	12,500	-	-	-	-	-	-	-	-	-	-	-
32	POSTAGE	3,669	5,088	6,500	6,700	6,901	7,108	7,321	7,541	7,767	8,000	8,240	8,487	8,742	9,004
33	TELEPHONE	9,327	7,968	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	13,842
34	RENTALS - TOWN	2,275	613	3,360	800	824	849	874	900	927	955	984	1,013	1,044	1,075
35	RENTALS - CONTRACTORS - OLIPHANT	40,105	38,456	35,000	-	-	-	-	-	-	-	-	-	-	-
36	SERVICE CONTRACT (OPERATIONS)	277,666	282,843	286,730	295,330	304,190	313,316	322,715	332,397	342,368	352,639	363,219	374,115	385,339	396,899
37	CONTINGENCIES	41,576	18,658	30,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720
38	MEMBERSHIPS	-		410	-	-	-	-	-	-	-	-	-	-	-
39	INSURANCE	18,971	22,734	33,700	14,800	15,244	15,701	16,172	16,658	17,157	17,672	18,202	18,748	19,311	19,890
40	DEBT REPAYMENT - PRINCIPAL	172,580	180,376	194,780	200,090	205,530	180,239	185,340	190,584	195,977	-	-	-	-	-
41	DEBT REPAYMENT - INTEREST	62,809	97,026	35,070	30,760	25,315	19,878	14,778	9,533	4,140	-	-	-	-	-
42	INTERFUNCTIONAL CHARGE - PRINCIPAL				18,240	18,240	18,240	18,240	18,240	18,240	18,240	18,240	18,240	18,240	
43	INTERFUNCTIONAL CHARGE - INTEREST	1,260	-	1,260	1,260	1,148	1,020	893	765	637	510	382	254	127	-
44	INTERFUNCTIONAL CHARGE - WATER	1,147	5,354	5,190	-	-	-	-	-	-	-	-	-	-	-
45	WATER CHARGE ON TAXES WRITTEN OFF	-		-	-	-	-	-	-	-	-	-	-	-	-
46	CHANGE FOR YEAR - TCA	(290,148)	-	-	-	-	-	-	-	-	-	-	-	-	-
47	PAYROLL INTERNAL CHARGE	-		32,730	36,880	37,986	39,126	40,300	41,509	42,754	44,037	45,358	46,718	48,120	49,564
48	TOTAL DAY TO DAY EXPENDITURES	406,983	752,400	807,910	722,150	740,317	706,390	743,349	744,577	780,327	612,399	610,730	642,543	664,303	664,914
49															
50	REVENUE LESS DAY TO DAY EXPENDITIURES	(654,038)	(146,027)	(64,230)	(165,430)	(179,963)	(217,500)	(216,590)	(253,210)	(257,197)	(260,498)	(299,178)	(305,963)	(324,456)	(365,827)
51															
52	TRANSFERS														
53	TRANSFER TO OPERATING RESERVE	27,068		-	30,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
54	TRANSFER TO RESERVE - WSIB	735	1,024	-	-										
55	TRANSFER TO RESERVE - CAPITAL	-	145,000	64,230	110,430	89,963	102,500	76,590	88,210	67,197	45,498	59,178	40,963	34,456	50,827
56	LONG TERM ASSET RENEWAL			-	25,000	50,000	75,000	100,000	125,000	150,000	175,000	200,000	225,000	250,000	275,000
57	SURPLUS/DEFICIT FOR YEAR	29,791		-											
58	DEPRECIATION EXPENSE	281,648		-											
59	TOTAL TRANSFERS	339,242	146,024	64,230	165,430	179,963	217,500	216,590	253,210	257,197	260,498	299,178	305,963	324,456	365,827
60															
61	TOTAL OPERATING EXPENSE	746,225	898,424	872,140	887,580	920,280	923,890	959,939	997,787	1,037,524	872,897	909,908	948,506	988,759	1,030,741
62	TOTAL AMABEL WATER SYSTEM REQUIREMENT	(314,796)	63,039	-	-	(0)	0	(0)	(0)	0	0	(0)	(0)	(0)	0
63															
64	**CAPITAL BUDGET**														
	REVENUES														
65	TRANSFER FROM CAPITAL RESERVE	-	(59,143)	(173,425)	-	-	(8,625)	-	-	-	-	-	-	-	-
66	PROVINCIAL CAPITAL GRANT	-	-	(322,075)	-	-	-	-	-	-	-	-	-	-	-
67	MISC. REVENUE - CAPITAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	MISC. REV. - WATER METER RECOVERY	(1,858)	(898)	-	-	-	-	-	-	-	-	-	-	-	-
69	TOTAL CAPITAL REVENUE	(1,858)	(60,042)	(495,500)	-	-	(8,625)	-	-	-	-	-	-	-	-
70	**EXPENDITURES**														
71	TCA - CAPITAL EXPENDITURE	181,063	60,042	495,500	-	-	8,625	-	-	-	-	-	-	-	-
72	TOTAL CAPITAL EXPENSE	181,063	60,042	495,500	-	-	8,625	-	-	-	-	-	-	-	-
73	TOTAL CAPITAL PROGRAM	179,205	-	-	-	-	-	-	-	-	-	-	-	-	-



The 2015 user fee needs are proposed to be the same as the 2014 fee requirements. The 2016 to 2020 user fee increase is proposed to be 5% per annum and 4% per annum from 2021 to 2025. The fixed water charge and the metered water use revenues are shown on line 8 of table 6.2. These increases are to account for the inflation of operating costs of 3-6% per year, and inflation of all future capital costs of 3% per year. The proposed schedule of user fee increases funds all routine projected operating costs, and provides sufficient revenue to cover the currently projected capital and major maintenance needs to 2025 as well as setting aside sufficient funding to renew tangible renewal capital assets for the long term. Major maintenance needs for 2024 and 2025 were estimated based on trends in previous years.

6.3.2 Operating Expenses

Operating expenditures represent the day-to-day costs of operating the system, and include electrical, chemical, testing and a variety of other costs are summarized in line 48 in table 6.2, and are illustrated in figure 6.2:



Operating costs are generally constant until 2020 and then they decline in 2021 as debt is paid off. At that point they begin rising again with inflation until 2025, when they are constant, as additional debt is paid off.

6.3.3 Debt

The water system has three outstanding loans at this time. One is a 5-year loan taken out in 2011 with an outstanding principal of $88,887 as of December 31, 2013. This loan will be paid off in 2016. The second is a 9-year loan with an outstanding principal of $1,236,642 as of December 31, 2013. This will be paid off in 2020. The third is a loan from Wiarton water to enable Amabel to install meters. Its value is $182,400 as of the end of 2014. This loan will be repaid over ten years commencing in 2015. It is shown in lines 42 and 43 of table 6.2 No other long-term loans are projected however; there is a need to eliminate operating and capital reserve deficits. This will require continuing a working capital deficit for the next two years or so, barring any major new capital for operating expenditures.

6.3.4 Reserves

The projected water operating reserves, with contributions from user fees covering the 2014 to 2025 period, are shown in table 6.3:

Table 6.3 Amabel Water System Operating Rate Stablization Reserves 2014-2025 - Inflated $												
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Value	(152,770)	(158,117)	(131,998)	(87,786)	(43,400)	4,653	52,200	103,461	157,871	210,310	265,677	309,663
Expenditure	-	1,653	8,832	7,458	9,572	7,477	10,478	12,858	10,071	12,213	-	-
Addition	-	30,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Interest on Cash Balance (	(5,347)	(5,534)	(4,620)	(3,073)	(1,519)	70	783	1,552	2,368	3,155	3,985	4,645
Close	(158,117)	(131,998)	(87,786)	(43,400)	4,653	52,200	103,461	157,871	210,310	265,677	309,663	354,307
Close in 2014$	(158,117)	(128,153)	(82,747)	(39,718)	4,134	45,028	86,647	128,364	166,021	203,620	230,418	255,959

The operating reserve total, as of December 31, 2013, was a deficit $152,770. This is projected to decline and be paid off in 2018. The reserve is projected to build to a surplus of $255,000 in 2014$ by 2025.

The capital reserve is set out in table 6.4

Table 6.4 Amabel Water System Capital Reserves 2014-2025 - Inflated $												
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Value	(118,130)	(231,460)	(104,131)	32,187	202,189	381,812	600,749	826,957	1,059,860	1,334,935	1,620,923	1,929,692
Investment	(173,425)	-	-	(8,625)	-	-	-	-	-	-	-	-
Long Term Asset Renewal	-	25,000	50,000	75,000	100,000	125,000	150,000	175,000	200,000	225,000	250,000	275,000
Addition (Withdrawl)	64,230	110,430	89,963	102,500	76,590	88,210	67,197	45,498	59,178	40,963	34,456	50,827
Interest on Cash Balance	(4,135)	(8,101)	(3,645)	1,127	3,033	5,727	9,011	12,404	15,898	20,024	24,314	28,945
Close	(231,460)	(104,131)	32,187	202,189	381,812	600,749	826,957	1,059,860	1,334,935	1,620,923	1,929,692	2,284,465
Close in 2014$	(231,460)	(101,098)	30,340	185,032	339,235	518,211	692,564	861,763	1,053,810	1,242,302	1,435,872	1,650,346

The capital reserve has a deficit $118,130 in 2014. Through annual contributions from user fees, the deficit will be eliminated in 2015, barring any unexpected capital expenditures. By 2025, the annual transfers from the long-term asset renewal and general addition categories to the capital reserve fund equal the $313,000 figure, determined as the needed contribution in the asset renewal study.

6.4 Amabel Water Sales/Connections

6.4.1 Water Sales 2014-2025

Water sold is water that a user paid for. The projected sales from 2014 to 2025 are set out in table 6.5. The water sold data are based on actual readings and billing data for the second half of 2013, and the first half of 2014, when the current rate structure was implemented.

From 2015 to 2025, the rate-setting period, total water sold to existing users is projected to decline due to conservation. This is a result of new provincial plumbing regulations, enacted in 1991, requiring installation of water efficient fixtures (toilets, showers and faucets) in all new connections and the restrictions on the sale of toilets that use more than 6 litres per flush. In addition, people carrying out renovations will replace currently inefficient fixtures with more water efficient ones. Highly efficient front-load washing machines are now very popular with homeowners. An annual improvement in water use efficiency of one per annum is assumed in all connections, meaning a decline in water sold of about 1%.

In addition, some businesses can be expected to install more water efficient equipment in the years ahead, in response to normal business equipment renewal, and in response to higher water charges. This puts some upward pressure on the water rates.

In summary, water sold in Amabel will decline, until such time that new connections are added to the system.

Table 6.5 Amabel Water System - Water Sold by Year in M3

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Amubel Total Sold (M3)	32,314	32,023	31,735	31,450	31,168	30,889	30,612	30,338	30,067	29,799	29,533	29,270
Institutional/Commercial/Industrial Use (Est.)	3,231	3,231	3,231	3,231	3,231	3,231	3,231	3,231	3,231	3,231	3,231	3,231
Residential Use (Est)	29,083	28,792	28,504	28,219	27,937	27,657	27,381	27,107	26,836	26,568	26,302	26,039
Number of ICI users (Est.)	12	12	12	12	12	12	12	12	12	12	12	12
Number of Residential Users pre 2015	382	382	382	382	382	382	382	382	382	382	382	382
Residential Use per Conn Pre 2015 (M3)	76	75	75	74	73	72	72	71	70	70	69	68
Persons per Residential Unit	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
Use per Person per Day (M3)	0.078	0.077	0.076	0.075	0.075	0.074	0.073	0.073	0.072	0.071	0.070	0.070
Residential Usage Post 2014		0	0	0	0	0	0	0	0	0	0	0
Number of Residential Users post 2014		0	0	0	0	0	0	0	0	0	0	0
Residential Use Per Connection Post 2014		82	82	82	82	82	82	82	82	82	82	82
Persons per Residential Unit Post 2014		2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Residential Use per Person per Day (M3)		0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
ICI Users Post 2014		0	0	0	0	0	0	0	0	0	0	0
ICI use per Conn per Year		273	273	273	273	273	273	273	273	273	273	273
ICI Water Use Post 2014 in M3		0	0	0	0	0	0	0	0	0	0	0

Table 6.6 Amabel Water System Number of Connections - 2014-2025

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Meter Size (in)												
Not Metered	2	2	2	2	2	2	2	2	2	2	2	2
0.62	391	391	391	391	391	391	391	391	391	391	391	391
0.75		0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1
1.5		0	0	0	0	0	0	0	0	0	0	0
2		0	0	0	0	0	0	0	0	0	0	0
2.5		0	0	0	0	0	0	0	0	0	0	0
3		0	0	0	0	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0	0
Total	394	394	394	394	394	394	394	394	394	394	394	394
Vacant Properties	113	113	113	113	113	113	113	113	113	113	113	113
Total	507	507	507	507	507	507	507	507	507	507	507	507

6.4.2 Projected Number of Connections

The current and projected number of billing units and metered connections is set out in table 6.6. It is assumed that there will be no more occupied dwelling added to the system until 2025. This absence of growth puts upward pressure on rates

6.5 Amabel Water Rate Calculations

Rates are calculated by considering the user fee revenue requirements, and by taking into account future water use and the number of connections. User fees are projected to increase. This causes rates to rise. In 2013, the cost of water sold, including the operating, capital and debt servicing charges, was $28 per cubic metre. This provides a context for assessing the rate options.

The proposed rates utilize the two-part rate structure currently in use. One part of this rate is a fixed cost applied to all users regardless of water use. Included in this are the billing costs, including salaries and postage, as well as the cost of renewing meters every 17 years or so as well as a host of other costs. This study proposes that the fixed rate be based on the size of the meter with charges on larger meters being higher than for smaller meters. Large meters are more costly and may wear out more quickly. The second part is the cost per cubic metre that depends on the amount of water used. The more that is used by a user, the higher that user's water bill. All costs that are not included in the fixed portion of the rate are included in this rate component. The fixed costs usually generate just over 90% of revenues while the variable charge generates the balance. The proposed rates are set out in table 6.7.

The proposed 2015-2025 rates are set out in table 6.7. For 2015, it is proposed that the rates be the same as 2014. The fixed water charge be $84 per month for the 5/8 by ¾-inch meter, the smallest most common residential and small business meter, and that the metered water use charge be $1.36 per cubic metre for all users. Larger meters are proposed to be assessed a higher fixed charge than smaller meters with the charge increasing with the size of the meter. However, there are very few large meters in the Amabel system. The 1-inch meter charge would be $118 per month plus $1.36 per cubic metre. The 2019 fixed water charge is proposed to be $103 per month for the small meters, and the metered charge be $1.74.

6.6 Sample Monthly Water Bills for Various User Groups

A number of hypothetical user groups were selected to determine the impacts of the proposed rates. The water bills are set out in table 6.8.

A user taking 70 cubic metres per year is projected to pay $1,106 in 2015, the same as 2014, $1,356 in 2019 and $1,753 in 2025. Someone using 125 cubic metres per year in 2015 will pay $1,181, the same as 2014, $1,452 in 2019 and $1,883 in 2025. A user of 300 cubic metres per year, such as a family in permanent residence, will pay a water bill of $1,419 in 2015, the same as 2014, $1,757 in 2019 and $2,297 in 2025.

Table 6.7 Amabel Water Rates - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Charge for Occupied Dwellings												
Fixed												
Meter Size inches					Rate per Month							
5/8 x 3/4	84	84	88	93	98	103	108	113	117	122	127	132
0.75	93	92	97	102	108	113	119	124	129	134	140	145
1	118	118	124	130	137	144	151	158	164	171	178	185
1.5	152	151	159	167	176	185	195	203	211	220	229	238
2	244	243	256	269	284	298	314	327	340	354	368	384
2.5	589	587	618	650	684	720	757	788	821	854	889	926
3	926	923	971	1,022	1,075	1,131	1,190	1,239	1,290	1,343	1,398	1,455
Volumetric Cost per M3	$1.36	$1.36	$1.46	$1.55	$1.64	$1.74	$1.85	$1.94	$2.04	$2.14	$2.25	$2.36
Flat Rate Charge for those refusing to Meter/Mo	486	486	516	531	547	563	580	598	616	634	653	673
Reserve Charge for All Metreed Users	25	25	26.52	27.32	28.14	28.98	29.85	30.75	31.67	32.62	33.60	34.61
Vacant Properties on the System												
Reserve Charge for All Vacant Connections	25	25	26.52	27.32	28.14	28.98	29.85	30.75	31.67	32.62	33.60	34.61
Fixed Water Charge for Vacant Properties	35	36.05	37.13	38.25	39.39	40.57	41.79	43.05	44.34	45.67	47.04	48.45

Table 6.8 Amabel Hypothetical Water Bills 2014 - 2025 Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Single Person with 70 M3/Year	1,106	1,106	1,162	1,223	1,288	1,356	1,428	1,488	1,550	1,615	1,682	1,753
Couple with 125 M3 per Year	1,181	1,181	1,242	1,308	1,378	1,452	1,530	1,595	1,662	1,733	1,806	1,883
Family 300 M3 per Year	1,419	1,419	1,496	1,579	1,665	1,757	1,853	1,934	2,019	2,108	2,200	2,297

6.7 WATER BILL COMPARISONS WITH NEARBY COMMUNITIES

The projected water bill for Wiarton and Amabel users is compared with water bills for a number of nearby communities in Ontario. The usage for all communities is 294 cubic metres per year. All users are assumed to have a standard 15mm (5/8 by ¾") meter. The bill comparisons are set out in table 6.9.

6.9 Water Bill Comparisons (2014 Rates)

Utility	Water Bill
Midland	$479
Brockton	$482
Penetanguishene	$527
Springwater Residential	$658
Clearview	$747
Wiarton	$759
Springwater Commercial	$783
Kawartha Lakes	$985
Adjala-Tosorontio	$1,335
Amabel	$1,720

Based on Usage of 294 M3 per Year

Rate comparisons with other communities are very difficult to make. Some may have less expensive water now, but may soon have to make major investments in new capital soon. If so, this will move them to a more expensive placing in the table.

7.0 Proposed Wiarton Wastewater Rates for 2015-25

7.1 Wastewater Rate Setting Assumptions

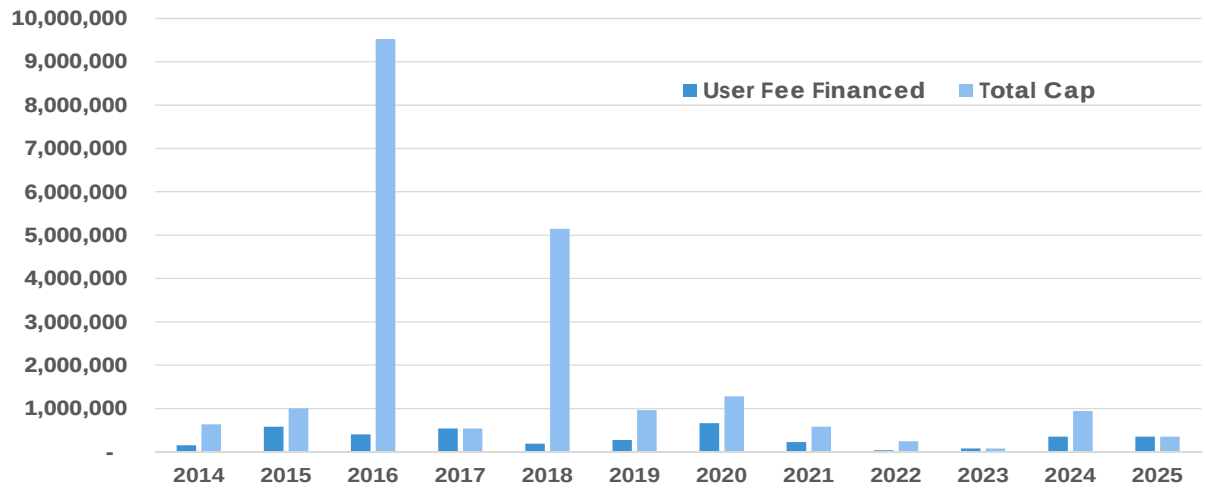
The wastewater rate setting approach begins by establishing a capital and major maintenance financing plan as well as an operating plan for 2012-2025. The Town prepared the 2015-25 capital plan and the asset management study provided a target contribution for asset renewal. The major maintenance costs are estimated. The operating plan contains information about various system attributes, such as revenue sources, the day- to-day expenditures needed to operate the system, debt-servicing requirements and existing reserve levels. The capital needs projections is combined with the operating plan to produce an overall wastewater capital and asset renewal and operating financing plan with revenues adjusted to ensure sustainability. Several assumptions have been made in preparing the capital and major maintenance programs as well as the operating plan:

Inflation	capital and major maintenance 3% per annum, operating 3%, 6% for energy
Interest on investments	1.5%
Interest on reserve deficits/loans	3.5%
Population growth/new connections	3 connections thru 2017 and then 5 per year to 2025

7.2 Capital and Major Maintenance Expenditures

The Town prepared capital renewal projections. These included capital renewal and investment to accommodate anticipated growth. The total cost for all projects as well as the user fee portion of the capital costs for the 2014 to 2025, in inflated dollars, are shown graphically in Figure 7.1.

Fig 7.1 Total Capital and User Fee Financed Wastewater Renewal Projects 2014 - 2025 Inflated $



The 2015 to 2025 outlook presented in Figure 7.1 shows some major expenditures in 2016, 2018 and 2020. These and some others are funded totally by development charges. The detailed listing of capital projects is shown in table 7.1.

Table 7.1 Wiarton Wastewater Capital Expenditures and Sources of Revenue 2014-2025

			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	User Pay Supported Capital Projects													
1	Project #	Descripton												
2	SAN-12-01	Claude & Brown Street Reconstruction (2012)	318,263	-	-	-	-	-	-	-	-	-		
3	SAN-14-01	Claude & Brown Street Reconstruction	318,262	-	-	-	-	-	-	-	-	-		
4	SAN-15-01	Gould Street Pump Station and Forcemain	-	849,750	-	-	-	-	-	-	-	-		
5	SAN-15-02	William Street - McNaughton to Berford	-	154,500	-	-	-	-	-	-	-	-		
6	SAN-16-01	Berford Street - George to Boyd	-	-	187,460	-	-	-	-	-	-	-		
7	SAN-16-02	Elm Street - Berford to Taylor	-	-	267,800	-	-	-	-	-	-	-		
8	SAN-16-03	Gould Street Extension	-	-	149,350	386,250	-	-	-	-	-	-		
9	SAN-17-01	Division Street - Dawson to Gould	-	-	-	154,500	-	-	-	-	-	-		
10	SAN-18-01	Mary Street - Scott to Isaac	-	-	-	-	186,430	-	-	-	-	-		
11	SAN-19-01	Gould Street - Pengally to Frank	-	-	-	-	-	176,130	-	-	-	-		
12	SAN-19-02	Gould Street - Elm to Pengally	-	-	-	-	-	100,940	-	-	-	-		
13	SAN-20-01	Gould Street - Frank to Jenny	-	-	-	-	-	-	661,260	-	-	-		
14	SAN-21-01	Berford Street - Mary to George								224,540	-	-		
15	SAN-22-01	Berford Street - Boyd to Division								-	37,080	-		
16	SAN-23-01	Division Street - Gould to Berford										75,190	350,000	350,000
17	Sub-Total	Total	636,525	1,004,250	604,610	540,750	186,430	277,070	661,260	224,540	37,080	75,190	350,000	350,000
18														
19	**Area Specific Growth Infrastructure**													
20														
21		1 Sewage Treatment Plant Expansion			6,250,000									
22		2 Pumping Stn Dawson and Elm			780,000									
23		3 Force Main Elm Street			413,140									
24		4 Sewer Elm Street - Gould to Dawson			295,100									
25		5 Sewer Elm Street - Berford to Taylor			937,170									
26		6 Sewer Elm Street - Gould to Berford			242,970									
27		7 Sewer Elm Street - Watson to Dawson					450,138							
28		8 Sewer Elm Street - Ames to Pump. Stn					4510350							
29		9 Sewer Elm Street - City Limits to Watson						265,590						
30		10 Sewer Berford to South Ames						417,625						
31		11 Sewer Dawson - S of Franks to Elm							619,710					
32		12 Sewer - Proposed Subdivision McNaugton St								354,120				
33		13 Sewer - Division Street - Dawson to John									206,570			
34		14 Sewer - Dawson Street - Division											295,100	
35		15 Sewer John Street - Division											295,100	
36	Sub-Total		-	-	8,918,380	-	4,960,488	683,215	619,710	354,120	206,570	-	590,200	-
37														
38	Financing													
39	**User Pay Supported Projects**													
40	Grants, Subsidies etc		482,300											
41	Developmment Charges			425,000	200,000									
42	Reserves		154,225	579,250	404,610	540,750	186,430	277,070	661,260	224,540	37,080	75,190	350,000	350,000
43	Sub-Total		636,525	1,004,250	604,610	540,750	186,430	277,070	661,260	224,540	37,080	75,190	350,000	350,000
45														
46	**Area Specific Growth Infrastructure**													
47	Grants, Subsidies etc		-	0	0	0	0	0	0	0	0	0	0	0
48	Developmment Charges		-	0	8,918,380	0	4,960,488	683,215	619,710	354,120	206,570	-	590,200	-
49	Capital Reserves		0	0	0	0	0	0	0	0	0	0	0	0
50	Sub-Total		-	-	8,918,380	-	4,960,488	683,215	619,710	354,120	206,570	-	590,200	-
51														
52	Summary													
53														
54	Grand Total Capital Project Expenditures		636,525	1,004,250	9,522,990	540,750	5,146,918	960,285	1,280,970	578,660	243,650	75,190	940,200	350,000
55														
56	Total Grants		482,300	-	-	-	-	-	-	-	-	-	-	-
57	Total Development Charges		-	425,000	9,118,380	-	4,960,488	683,215	619,710	354,120	206,570	-	590,200	-
58	Total Capital Reserves		154,225	579,250	404,610	540,750	186,430	277,070	661,260	224,540	37,080	75,190	350,000	350,000
59														
60	Grand Total Financing		636,525	1,004,250	9,522,990	540,750	5,146,918	960,285	1,280,970	578,660	243,650	75,190	940,200	350,000

The user pay projects average $425,000 per year. The 2014 Claude and Brown projects were supported by $482,000 in government grants and the Gould street pumping station and the Gould street extension were supported by $625,000 in development charges. The balance was funded from the capital reserve. The area specific growth projects are funded by development charges.

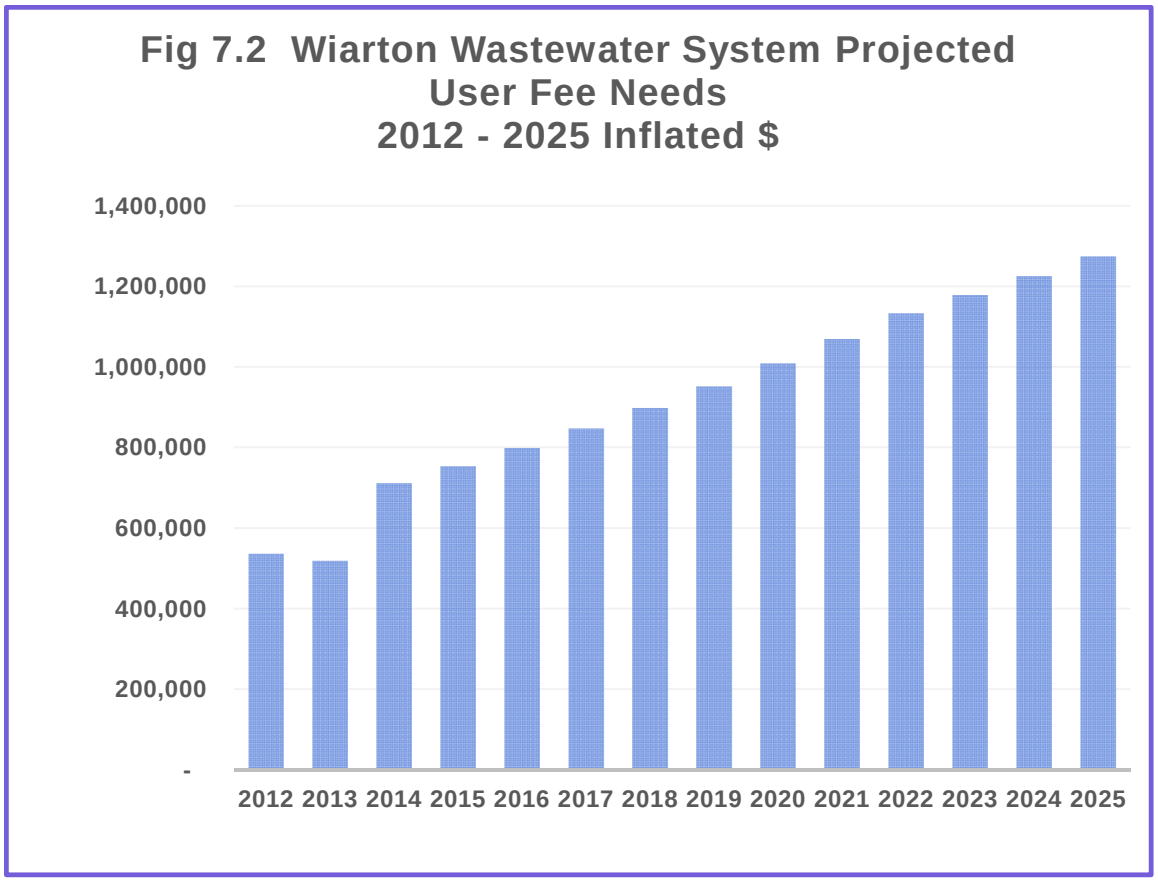
7.3 Wastewater Operating Plan

The summary financial statement for the wastewater system is set out in table 7.2.

The operating fund numbers for 2012 to 2014 are based on actual and budgeted year-end values whereas the numbers for 2015-25 are based on the trends established in 2012 to 2014 period with some consideration for changes in future operations. All costs after 2014 were inflated.

7.3.1 User Fee Requirements

User fee needs projections for the base rate line 3 and the volumetric charge revenues are set out in line 5 of table 7.2. The total is shown in line 6 of table 7.2. The total is illustrated in figure 7.2 below:



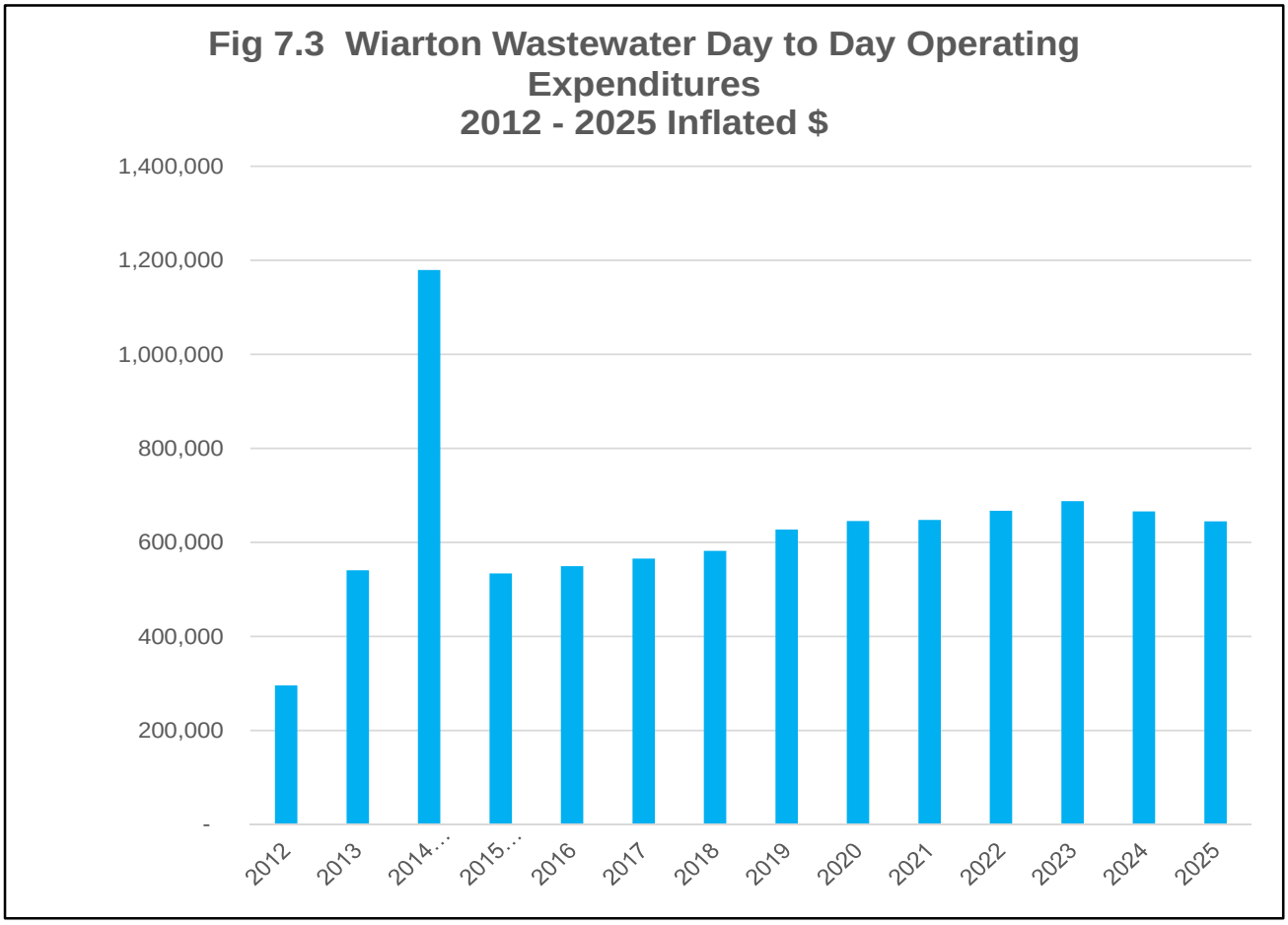
User fee revenues are projected to increase at 6% per year, including inflation, from 2015 through 2023 and then 4% from 2023 to 2025. This increase is needed to fund the renewal of capital assets that are reaching the end of their life as set out in the 2015-25 capital projections and the asset management plan carried out for the Town. All project costs are inflated which accounts for about 3% of the proposed increase.

Table 7.2 Wiarton Wastewater System Operating Financial Plan - 2012-2025

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	REVENUES														
1	SEWER BILLING - WIARTON	(129,236)	-	-	-	-	-	-	-	-	-	-	-	-	-
2	SEWAGE HAULERS	(23,066)	(27,610)	(16,000)	(25,000)	(25,750)	(26,523)	(27,318)	(28,138)	(28,982)	(29,851)	(30,747)	(31,669)	(32,619)	(33,598)
3	SEWER BILLING - BASE RATE	(147,109)	(247,728)	(389,760)	(401,940)	(426,056)	(451,620)	(478,717)	(507,440)	(537,886)	(570,160)	(604,369)	(628,544)	(653,686)	(679,833)
4	SEWER BILLING - FLAT RATE CHARGE	(13,671)	(21,802)	-	(23,900)	(24,617)	(25,356)	(26,116)	(26,900)	(27,707)	(28,538)	(29,394)	(30,276)	(31,184)	(32,120)
5	SEWER BILLING - VOLUMETRIC CHARGE	(260,369)	(271,560)	(321,600)	(351,750)	(372,855)	(395,226)	(418,940)	(444,076)	(470,721)	(498,964)	(528,902)	(550,058)	(572,060)	(594,943)
6	TOTAL BASE RATE AND VOLUMETRIC REVENUES	536,715	519,288	711,360	753,690	798,911	846,846	897,657	951,516	1,008,607	1,069,124	1,133,271	1,178,602	1,225,746	1,274,776
7	SEWER CONNECTION FEES	(1,700)	-	-	-	-	-	-	-	-	-	-	-	-	-
8	CAPITAL COST RECOVERIES	(25,230)	(67,349)	(20,000)	(19,940)	(19,940)	(19,940)	(19,940)	(19,940)	(19,940)	-	-	-	-	-
9	INSURANCE PROCEEDS	-	(5,283)	-	-	-	-	-	-	-	-	-	-	-	-
10	TRANSFER FROM RESERVE FUND	-	(286,259)	(449,680)	-	-	-	-	-	-	-	-	-	-	-
11	TRANSFER FROM RESERVE	-	(72,253)	-	-	-	-	-	-	-	-	-	-	-	-
12	TOTAL OPERATING REVENUE	(600,381)	(999,844)	(1,197,040)	(822,530)	(869,218)	(918,664)	(971,031)	(1,026,494)	(1,085,236)	(1,127,513)	(1,193,412)	(1,240,547)	(1,289,549)	(1,340,493)
13															
14	**EXPENDITURES**														
15	SALARIES - FULL TIME	26,114	33,726	4,650	1,700	1,751	1,804	1,858	1,913	1,971	2,030	2,091	2,154	2,218	2,285
16	FRINGE BENEFITS	4,983	6,895	1,400	510	525	541	557	574	591	609	627	646	665	685
17	UTILITIES	76,107	98,257	80,000	84,800	89,888	95,281	100,998	107,058	113,482	120,290	127,508	135,158	143,268	151,864
18	MAJOR MAINTENANCE	1,073	6,217	4,870	40,000	41,200	42,436	43,709	45,020	46,371	47,762	49,195	50,671	52,191	53,757
19	LAGOON SLUDGE REMOVAL	-	-	665,000	-	-	-	-	-	-	-	-	-	-	-
20	SUPPLIES	13,286	15,568	15,000	15,400	15,862	16,338	16,828	17,333	17,853	18,388	18,940	19,508	20,094	20,696
21	LEGAL	1,663	3,620	10,000	2,500	2,575	2,652	2,732	2,814	2,898	2,985	3,075	3,167	3,262	3,360
22	PROFESSIONAL FEES	13,188	2,719	5,000	-	-	-	-	-	-	-	-	-	-	-
23	POSTAGE	1,801	2,035	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914	4,032	4,153
24	TELEPHONE	1,837	1,930	1,800	1,850	1,906	1,963	2,022	2,082	2,145	2,209	2,275	2,344	2,414	2,486
25	RENTALS - TOWN	595	2,431	3,550	1,320	1,360	1,400	1,442	1,486	1,530	1,576	1,623	1,672	1,722	1,774
26	RENTALS - CONTRACTORS	-	12,652	12,000	-	-	-	-	-	-	-	-	-	-	-
27	SERVICE AGREEMENT (OPERATIONS)	152,019	167,535	156,940	161,650	166,500	171,494	176,639	181,938	187,397	193,019	198,809	204,773	210,917	217,244
28	SERVICE AGREEMENT (CONTINGENCIES)	31,141	12,691	10,000	22,660	23,340	24,040	24,761	25,504	26,269	27,057	27,869	28,705	29,566	30,453
29	SEWER FLUSHING	-	2,447	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720	6,921
30	INSURANCE	15,089	11,943	27,850	21,600	22,248	22,915	23,603	24,311	25,040	25,792	26,565	27,362	28,183	29,029
31	DEBT REPAYMENT - PRINCIPAL	60,472	62,257	64,100	65,990	67,934	69,939	72,003	74,128	76,316	78,569	80,887	83,275	42,555	-
32	DEBT REPAYMENT - INTEREST	25,806	23,957	22,300	20,370	18,422	16,417	14,353	12,228	10,030	7,788	5,469	3,081	623	-
33	DEBT REPAYMENT - PRINCIPAL 2019 LOAN	-	-	-	-	-			14,100	15,355	15,047	15,582	16,136	16,710	17,304
34	DEBT REPAYMENT - INTEREST 2019 LOAN	-	-	-	-	-			13,676	12,420	12,729	12,194	11,640	11,066	10,472
35	DEBT REPAYMENT - WILLIAM, WATSON, DIVISION	25,230	57,349	19,940	16,460	16,459	16,459	16,459	16,459	16,459					
36	INTERFUNCTIONAL CHARGE - WATER	12,398	16,347	25,000	25,750	26,523	27,318	28,138	28,982	29,851	30,747	31,669	32,619	33,598	34,606
37	FROSTLINE ADJUSTMENT	-		-	-	-	-	-	-	-	-	-	-	-	-
38	UTILITY CLERK-SEWER WRITE OFFS	-		250	260	268	276	284	293	301	310	320	329	339	349
39	CHANGE FOR YEAR - TCA	(166,799)	-	-	-	-	-	-	-	-	-	-	-	-	-
40	PAYROLL INTERNAL CHARGE	-		42,030	42,890	44,177	45,502	46,867	48,273	49,721	51,213	52,749	54,332	55,962	57,641
41	TOTAL DAY TO DAY EXPENSES	296,003	540,577	1,179,680	533,950	549,423	565,518	582,258	627,447	645,553	647,959	667,582	688,011	666,104	645,078
42															
43	REVENUES LESS DAY TO DAY EXPENSES	(304,378)	(459,268)	(17,360)	(288,580)	(319,795)	(353,146)	(388,774)	(399,047)	(439,683)	(479,554)	(525,830)	(552,536)	(623,445)	(695,415)
44															
45	**TRANSFERS**														
46	TRANSFER TO RESERVE - WSIB	1,288	1,588	-											
47	TRANSFER TO CAPITAL RESERVE	303,090	449,680	17,360	204,250	173,928	192,224	214,383	188,635	204,437	219,572	230,366	230,388	274,562	319,744
48	TRANSFER TO OPERATING RESERVE	-	-	-	59,330	95,867	85,922	74,391	85,412	85,246	84,982	95,464	97,148	98,883	100,671
49	LONG TERM ASSET RENEWAL	-	-	-	25,000	50,000	75,000	100,000	125,000	150,000	175,000	200,000	225,000	250,000	275,000
50	TOTAL TRANSFERS	304,378	451,268	17,360	288,580	319,795	353,146	388,774	399,047	439,683	479,554	525,830	552,536	623,445	695,415
51	TOTAL OPERATING EXPENSE	600,381	991,845	1,197,040	822,530	869,218	918,664	971,032	1,026,494	1,085,236	1,127,513	1,193,412	1,240,547	1,289,549	1,340,493
52	TOTAL WIARTON SEWER SYSTEM REQUIREMENT	0	(8,000)	-	-	(0)	(0)	0	0	0	(0)	0	0	(0)	0
53															
54	**SBP WIARTON WASTEWATER SYSTEM CAPITAL PLAN 2012-2025 Inflated $**														
56	**REVENUES**														
57	TRANSFER FROM CAPITAL RESERVE	-	(1,379)	(360,490)	(579,250)	(404,610)	(540,750)	(186,430)	(277,070)	(661,260)	(224,540)	(37,080)	(75,190)	(350,000)	(350,000)
58	PROVINCIAL CAPITAL GRANT	-	-	(482,300)	-	-	-	-	-	-	-	-	-	-	-
59	DEVELOPMENT CHARGE		-	-	(425,000)	(9,118,380)	-	(4,960,488)	(683,215)	(619,710)	(354,120)	(206,570)	-	(590,200)	-
60	LOAN - DEBENTURE	-	-	-	-	-	-	-	(400,000)	-	-	-	-	-	-
61	TOTAL CAPITAL REVENUE	-	(1,379)	(842,790)	(1,004,250)	(9,522,990)	(540,750)	(5,146,918)	(1,360,285)	(1,280,970)	(578,660)	(243,650)	(75,190)	(940,200)	(350,000)
62															
63	**EXPENDITURES**														
64	TCA - CAPITAL EXPENDITURES	2,981	1,379	842,790	1,004,250	9,522,990	540,750	5,146,918	960,285	1,280,970	578,660	243,650	75,190	940,200	350,000
65	TRANSFER TO THE CAPITAL RESERVES	-	-	-	-	-		-	400,000		-	-	-	-	-
66	TOTAL CAPITAL EXPENSE	2,981	1,379	842,790	1,004,250	9,522,990	540,750	5,146,918	1,360,285	1,280,970	578,660	243,650	75,190	940,200	350,000
67															
68	TOTAL CAPITAL PROGRAM	2,981.5	-	-	-	-	-	-	-	-	-	-	-	-	-

7.3.2 Operating Expenses

Future operating expenditures are summarized in line 41 in table 7.2, and are illustrated in figure 7.3:



Operating costs are projected to be in line with inflation from 2012 until 2025. The increase in 2014 was for lagoon sludge removal. The decline in 2024 and 2025 is due to payment of loan principal and interest charges.

7.3.3 Debt

As of December 31, 2013, there is one loan outstanding. It was for the sewage lagoon and will be paid off in 2023. It is proposed that a $400,000 loan be taken out in 2019 to cover the substantial capital and expenditures anticipated in the 2014 to 2019 period. The loan will be for 20 years at 3.5% interest. The use of the loan avoids raising rates further in the near term to pay for major capital renewal. It also spreads the capital renewal costs over a larger number of users. The actual loan amount in 2019 will be further refined in the next rate study, anticipated in 2019.

7.3.4 Reserve Fund

The operating reserve fund has a surplus of $126,021 at the end of 2013. The reserve is intended to provide funding to maintain revenues in cool wet summers when less water is sold. It also provides

funding for planned major maintenance projects, such as the clean out of the lagoon every 15 years, as well as unplanned maintenance items. The reserve is set out in table 7.3.

Table 7.3 Wiarton Wastewater System Operating Rate Stablization Reserves 2014-2025 - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Value	126,021	127,911	166,500	241,525	307,030	361,265	426,592	491,967	557,272	633,226	711,167	791,152
Investment		22,660	23,340	24,040	24,761	25,504	26,269	27,057	27,869	28,705	29,566	30,453
Addition (Withdrawl)	-	59,330	95,867	85,922	74,391	85,412	85,246	84,982	95,464	97,148	98,883	100,671
Interest Balance (deficit)	1,890	1,919	2,497	3,623	4,605	5,419	6,399	7,380	8,359	9,498	10,668	11,867
Close	127,911	166,500	241,525	307,030	361,265	426,592	491,967	557,272	633,226	711,167	791,152	873,237
Close in 2014$	127,911	161,650	227,660	280,976	320,979	367,982	412,015	453,113	499,874	545,051	588,691	630,845

The capital reserve has a surplus of $877,290 on December 31, 2013. The projected withdrawals to fund capital renewal and the anticipated additions are set out in table 7.4.

Table 7.4 Wiarton Wastewater System Capital Reserves 2014-2025 - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Value	877,290	529,959	198,508	24,774	(247,885)	(123,651)	311,060	15,124	185,685	585,470	986,159	1,175,514
Investment		(579,250)	(404,610)	(540,750)	(186,430)	(277,070)	(661,260)	(224,540)	(37,080)	(75,190)	(350,000)	(350,000)
Long Term Asset Renewal		25,000	50,000	75,000	100,000	125,000	150,000	175,000	200,000	225,000	250,000	275,000
Addition (Withdrawl)	(360,490)	204,250	173,928	192,224	214,383	588,635	204,437	219,572	230,366	230,388	274,562	319,744
Interest on Cash Balance	13,159	18,549	6,948	867	(3,718)	(1,855)	10,887	529	6,499	20,491	14,792	17,633
Close	529,959	198,508	24,774	(247,885)	(123,651)	311,060	15,124	185,685	585,470	986,159	1,175,514	1,437,890
Close in 2014$	529,959	192,726	23,351	(226,850)	(109,862)	268,323	12,666	150,979	462,175	755,809	874,693	1,038,763

The reserve is drawn into deficit in 2017 and 2018. In 2019, a proposed loan of $400,000 pays off the accumulated deficits and reserves begin to build again. By 2025, the reserve is slightly more in 2014$ than it was at the start of 2014. The asset management study determined that an annual contribution of $554,000 was needed to provide for future asset renewal. This level of contribution is reached for the long-term renewal, plus general additions to the reserve, in 2024-5.

7.4 Wastewater Rate Calculations

Wastewater rates depend on two things: the number of users and the amount of water that will be billed for wastewater purposes.

7.4.1 Water Used by Those Connected to the Wastewater System

Wastewater users pay a volumetric charge based on the amount of water used. Table 7.5 provides an estimate of water used for wastewater billings from 2015 to 2025.

Table 7.5 Wiarton Wastewater System - Water Billed for Wastewater Revenues by Year in M3

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Volume billed to Water Users	201,786	200,797	199,824	198,867	198,343	197,834	197,341	196,864	196,401	195,954	195,521	195,103
Water Use by those not connected to Wastewater	17,534	17,534	17,534	17,534	17,534	17,534	17,534	17,534	17,534	17,534	17,534	17,534
Water volume billed to Wastewater Users	184,252	183,263	182,290	181,333	180,809	180,300	179,807	179,330	178,867	178,420	177,987	177,569

Water used by those connected to the wastewater system is projected to decline slightly over the next ten years.

7.4.2 Number of Wastewater Users Connected to the System

The estimated number of wastewater rate payers was determined by examining the billings for the base rate in the second half of 2013 and the first half of 2014. The numbers are set out in table 7.6.

Table 7.6 Wiarton Wastewater Number of Connections - 2014-2025

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Meter Size (in)												
Not Metered	4	4	4	4	4	4	4	4	4	4	4	4
0.62	871	874	877	880	885	890	895	900	905	910	915	920
0.75	13	13	13	13	13	13	13	13	13	13	13	13
1	14	14	14	14	14	14	14	14	14	14	14	14
1.5	8	8	8	8	8	8	8	8	8	8	8	8
2	6	6	6	6	6	6	6	6	6	6	6	6
2.5	0		0	0	0	0	0	0	0	0	0	0
3	1	1	1	1	1	1	1	1	1	1	1	1
4	2	2	2	2	2	2	2	2	2	2	2	2
6	0	0	0	0	0	0	0	0	0	0	0	0
Total Metered	919	922	925	928	933	938	943	948	953	958	963	968

These data indicate that about 111 water users are not connected to the wastewater system. Only those metered will be included in the computation of the proposed rate.

7.5 Proposed Wastewater Rates

The proposed 2015-2025 rates are set out in table 7.7. For 2015, it is proposed that the fixed wastewater charge be $33.05 per month for the 5/8 by ¾-inch meter, the smallest most common residential and small business meter, and that the metered water use charge be $1.99 per cubic metre of water used for all users. Larger meters are proposed to be assessed a higher fixed charge than smaller meters with the charge increasing with the size of the meter. The 1-inch meter charge would be $46.27 per month plus $1.99 per cubic metre of water used. The 2019 fixed water charge for the 5/8 by ¾-inch meter is proposed to be $42.51 per month meters, and the metered volume charge be $2.46 per cubic metre of water used.

7.6 Sample Monthly Wastewater Bills for Various User Groups

A number of hypothetical user groups were selected to determine the impacts of the proposed rate. The wastewater bills are set out in table 7.8. A user taking 70 cubic metres of water per year is projected to pay $536 in 2015, or $71 more than 2014, $683 in 2019 and $898 in 2025. Someone using 125 cubic metres of water per year in 2015 will pay $646 or $79 more than in 2014, $818 in 2019 and $1,082 in 2025. A user of 300 cubic metres of water per year, such as a family, will pay a wastewater bill of $995 in 2015, or an increase of $105 over the 2014 annual bill, $1,249 in 2019 and $1,669 in 2025.

Table 7.7 Wiarton Wastewater Rates - Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Water Rate												
Meter Size					**Monthly Fixed Wastewater Charge**							
5/8 x 3/4	28	33.05	35.94	38.22	40.31	42.51	44.84	47.29	49.88	51.62	53.42	55.29
0.75	31	36.35	39.54	42.04	44.34	46.76	49.32	52.02	54.87	56.78	58.76	60.82
1	39	46.27	50.32	53.51	56.43	59.52	62.77	66.21	69.83	72.27	74.79	77.40
1.5	50	59.49	64.70	68.80	72.55	76.52	80.71	85.12	89.78	92.92	96.16	99.52
2	81	95.84	104.23	110.84	116.89	123.28	130.03	137.14	144.65	149.70	154.92	160.33
2.5	196	231.35	251.60	267.54	282.16	297.58	313.86	331.04	349.16	361.34	373.95	387.01
3	307	363.55	395.37	420.42	443.39	467.63	493.21	520.20	548.68	567.82	587.64	608.16
4	391	462.70	503.20	535.08	564.32	595.17	627.72	662.07	698.32	722.68	747.90	774.02
6	-	-	-		-	-	-	-	-	-	-	-
Wastewater Charge based on Water Used - All Users												
Cost per M3	1.85	1.99	2.06	2.18	2.32	2.46	2.62	2.78	2.96	3.08	3.21	3.35
Flat Rate Charge for those refusing to Meter/Mo	486	515	546	579	614	650	689	731	775	821	870	923

Table 7.8 Wiarton Hypothetical Wastewater Bills 2014 - 2025 Inflated $

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Single Person with 70 M3/Year	465	536	576	611	646	683	721	762	806	835	866	898
Couple with 125 M3 per Year	567	646	689	731	773	818	865	915	968	1,005	1,043	1,082
Family 300 M3 per Year	890	995	1,049	1,113	1,179	1,249	1,323	1,402	1,486	1,544	1,605	1,669
Large User 8000 M3 per Year 4 ir	18,489	20,320	21,223	22,481	23,857	25,315	26,862	28,501	30,240	31,477	32,764	34,102

7.6 SAMPLE WASTEWATER BILLS IN VARIOUS COMMUNITIES

Following in table 7.8 are some sample wastewater from a number of communities in the area.

7.8 Wastewater Yearly Bill Comparisons (2014)

Utility	Wastewater Bill
Clearview	$697
Penetanguishene	$703
Collingwood	$799
Springwater Residential	$870
Wiarton	$880
Springwater Commercial	$953
Adjala-Tosorontio	$1,313

Based on average use of 294 M3 per Year

Appendices

Appendix A Water Revenues Generated from the Wiarton Rate Plan 2015-2025 Inflated $

Wiarton Water Revenue 2015-2025													
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Charge Revenues													
Meter Size - inches		-	-	-	-					-	-	-	-
	5/8 x 3/4	319,464	322,868	342,249	362,763	384,547	407,604	427,893	449,155	471,435	494,780	519,241	544,869
	0.75	4,380	4,668	4,934	5,214	5,499	5,800	6,058	6,328	6,609	6,903	7,209	7,528
	1	6,004	6,399	6,762	7,146	7,537	7,949	8,304	8,673	9,059	9,461	9,881	10,318
	1.5	4,411	4,701	4,968	5,250	5,537	5,840	6,101	6,372	6,656	6,951	7,259	7,581
	2	5,330	5,680	6,003	6,344	6,691	7,057	7,372	7,700	8,042	8,399	8,772	9,160
	2.5	-	-	-	-	-	-	-	-	-	-	-	-
	3	3,369	3,591	3,795	4,010	4,230	4,461	4,660	4,868	5,084	5,310	5,545	5,791
	4	8,577	9,141	9,660	10,208	10,767	11,356	11,862	12,390	12,941	13,516	14,115	14,740
	6	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Water Charge Revenues		**351,535**	**357,048**	**378,372**	**400,935**	**424,809**	**450,068**	**472,250**	**495,486**	**519,826**	**545,320**	**572,022**	**599,987**
Variable Charge Revenues			-										
Water Sold		**201,786**	**200,797**	**199,824**	**198,867**	**198,343**	**197,834**	**197,341**	**196,864**	**196,401**	**195,954**	**195,521**	**195,103**
Cost per Metre		**1.47**	**1.51**	**1.58**	**1.65**	**1.72**	**1.79**	**1.84**	**1.90**	**1.96**	**2.02**	**2.08**	**2.14**
Total fees from Variable Charges		**297,360**	**304,152**	**315,888**	**328,038**	**340,613**	**353,625**	**363,591**	**373,788**	**384,219**	**394,887**	**405,793**	**416,940**
Grand Total Revenues from User Fees		**648,895**	**661,200**	**694,260**	**728,973**	**765,422**	**803,693**	**835,840**	**869,274**	**904,045**	**940,207**	**977,815**	**1,016,928**
Operating Plan User Fee Projection		**632,680**	**661,200**	**694,260**	**728,973**	**765,422**	**803,693**	**835,840**	**869,274**	**904,045**	**940,207**	**977,815**	**1,016,928**
Variance			-	-	-	-	-	-	-	-	-	-	-

Appendix B Water Revenues Generated from the Amabel Rate Plan 2015-2025 Inflated $

Amabel Water Revenue 2015-2025												
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Charge Revenues (Occupied)												
Meter Size - inches												
	5/8 x 3/4	393,777	414,342	435,962	458,691	482,583	507,699	528,515	550,180	572,726	596,190	620,610
	0.75	-	-	-	-	-	-	-	-	-	-	-
	1	1,416	1,484	1,561	1,642	1,728	1,818	1,892	1,970	2,051	2,135	2,222
	1.5	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	2.5	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	-	-	-	-
Fixed Water Revenues (Vacant)		48,884	50,350	51,861	53,417	55,019	56,670	58,370	60,121	61,925	63,782	65,696
Total Fixed Water Charge Revenues		**444,076**	**466,176**	**489,384**	**513,750**	**539,330**	**566,187**	**588,778**	**612,270**	**636,701**	**662,107**	**688,528**
Variable Charge Revenues												
Water Sold		**32,023**	**31,735**	**31,450**	**31,168**	**30,889**	**30,612**	**30,338**	**30,067**	**29,799**	**29,533**	**29,270**
Cost per Metre		**$1.36**	**$1.46**	**$1.55**	**$1.64**	**$1.74**	**$1.85**	**$1.94**	**$2.04**	**$2.14**	**$2.25**	**$2.36**
Total fees from Variable Charges		**43,552**	**46,203**	**48,614**	**51,148**	**53,812**	**56,613**	**58,934**	**61,350**	**63,864**	**66,481**	**69,204**
Grand Total Revenues from User Fees		**487,628**	**512,379**	**537,998**	**564,898**	**593,143**	**622,800**	**647,712**	**673,620**	**700,565**	**728,588**	**757,731**
Operating Plan User Fee Projection		**487,980**	**512,379**	**537,998**	**564,898**	**593,143**	**622,800**	**647,712**	**673,620**	**700,565**	**728,588**	**757,731**
Variance	-	352	-	-	-	-	-	-	-	-	-	-

Appendix C Revenues Generated by the Wiarton Wastewater Rate – Inflated $

Wiarton Wastewater Revenue 2015-2025												
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fixed Charge Revenues												
Meter Size - inches									-	-	-	-
	5/8 x 3/4	346,627	378,264	403,600	428,074	454,028	481,553	510,743	541,700	563,689	586,567	610,370
	0.75	5,671	6,168	6,559	6,917	7,295	7,694	8,115	8,559	8,858	9,167	9,487
	1	7,773	8,454	8,989	9,481	9,999	10,546	11,123	11,732	12,141	12,565	13,004
	1.5	5,711	6,211	6,604	6,965	7,346	7,748	8,172	8,619	8,920	9,231	9,554
	2	6,901	7,505	7,980	8,416	8,877	9,362	9,874	10,415	10,778	11,154	11,544
	2.5	-	-	-	-	-	-	-	-	-	-	-
	3	4,363	4,744	5,045	5,321	5,612	5,919	6,242	6,584	6,814	7,052	7,298
	4	11,105	12,077	12,842	13,544	14,284	15,065	15,890	16,760	17,344	17,950	18,576
	6	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Water Charge Revenues		**388,150**	**423,423**	**451,620**	**478,717**	**507,440**	**537,886**	**570,160**	**604,369**	**628,544**	**653,686**	**679,833**
Variable Charge Revenues												
Water Sold		**183,263**	**182,290**	**181,333**	**180,809**	**180,300**	**179,807**	**179,330**	**178,867**	**178,420**	**177,987**	**177,569**
Cost per Metre		**1.99**	**2.06**	**2.18**	**2.32**	**2.46**	**2.62**	**2.78**	**2.96**	**3.08**	**3.21**	**3.35**
Total fees from Variable Charges		**365,540**	**375,488**	**395,226**	**418,940**	**444,076**	**470,721**	**498,964**	**528,902**	**550,058**	**572,060**	**594,943**
Grand Total Revenues from User Fees		**753,690**	**798,911**	**846,846**	**897,657**	**951,516**	**1,008,607**	**1,069,124**	**1,133,271**	**1,178,602**	**1,225,746**	**1,274,776**
Operating Plan User Fee Projection		**753,690**	**798,911**	**846,846**	**897,657**	**951,516**	**1,008,607**	**1,069,124**	**1,133,271**	**1,178,602**	**1,225,746**	**1,274,776**
Variance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix D Estimates of the Number of Water/Wastewater Customers/Water Use

South Bruce Peninsula - Calculation of Water and Wastewater Number of Users and Volumes Used

The numbers of bill paying users and the amount of water actually paid for were derived by utilizing the monthly Town base revenues from July 2013 to June 30, 2014 and dividing by the rate per month for 6 months to determine number of users and by dividing the volumetric revenue by the rate per M3 to obtain the volumes used.

Wiarton Water

Number of Users	**Interim Report**	**Rate/Mo**	**Rate for 6 mos**	**No of Users**
Base Rate 2013 July to Dec	-$ 155,153.80	25	150	- 1,034
Base Rate 2014 Jan to June	-$ 167,486.90	27	162	- 1,034

Water Sold	Revenues	Rate/M3	Amount of water sold to yield this revenue M3	
Volumetric Rate 2013 July to Dec	-$ 158,195.22	1.45	109,100	Cubic Metres
Volumetric Rate 2014 Jan to June	-$ 149,321.64	1.48	100,893	Cubic Metres
			-	

Amabel Water

No of Users	Interim Report	Rate/mo	Rate for 6 mos	Number	Revenues
Base Rate 2014 Jan to June Connected		85	510	392	199,920
Base Rate 2014 Jan to June Not Connected		35	210	113	23,730
Total Base Rate 2014 Jan to June	-223,188.32			505	223,650

Amount of Water Used				Amount of water sold to yield this revenue M3
Metered Volume 2013 July to Dec	-26,561.04	1.32		- 20,122
Metered Volume 2014 Jan to June	-21,437.64	1.36		- 15,763
Flat Rate	-11904	486	2916	2 -5952

Wiarton Wastewater

No of Users	Revenue Interim Report	Rate	Rate for 6 mos	No of Users
Base Rate 2013 July to Dec	-$ 137,842	$ 25	$ 150	- 919
Base Rate 2014 Jan to June	-$ 154,370	$ 28	$ 168	- 919

Water Sold to those Connected to Wastewater				Amount of water sold to yield this revenue M3
Water Sold to Wastewater Users				
Sewer 2013 July to Dec	-$ 138,003	$ 1.85		- 74,596
Sewer 2014 Jan to June	-$ 170,433	$ 1.85		- 92,126
				- 184,252
Water Sold to All Water Users				
Water Billed 2013 July to Dec	-$ 149,321.64	1.48		- 100,893
Water Billed 2014 Jan to June	-$ 149,321.64	1.48		- 100,893
				- 201,786
Water Volume Difference				17,534