

Revised

Tri-County Water System

Rate Report



Sharratt Water Management Ltd.
Sustainable Water Management Specialists

May 6, 2019



Contents

1.0	Executive Summary	2
2.0	Project Purpose.....	3
3.0	Background.....	3
4.0	Legislative Context.....	4
4.1	Financing.....	6
4.2	Water Rate Types.....	7
5.0	Proposed Water System Operating Plan and Rates.....	8
5.1	Water System Assumptions.....	8
5.2	Capital Expenditures.....	8
5.3	Water Operating Revenue and Expenditure Plan	10
5.4	Primary System Water Pumpage.....	12
6.0	Water Rate Calculations.....	13
	Appendix 1 Tri-County Water Capital Reserve - 2019-2095.....	15
	Appendix 2 Proposed Tri-County Rates 2019-2029 \$.....	15

1.0 Executive Summary

The Municipality retained the services of Sharratt Water Management Ltd. (SWML) to prepare rates and a Financial Plan under Ontario Regulation 453/07 for the Tri-County Water System. This rate report has been prepared to provide a basis for the Financial Plan that will meet the requirements of Ontario Regulation 453/07. This regulation specifies that “a person who makes an application under subsection 32 (4) of the Act for the renewal of a municipal drinking water licence shall, before making the application, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3. O. Reg. 453/07, s. 1 (2)”.

Rates have been developed, set out in a modified accrual format, covering the period from 2019 to 2029. This rate project takes into account capital replacement needs until 2095, with appropriate reserves to fund the identified projects. It has also estimated projected future operating expenses. Growth has been considered, and the plan has identified needed user fees and water rates to make the plan sustainable to 2029 and beyond. The financial plan, under a separate report cover, based on these rates, has been prepared in full accrual format for 2019-2025, as specified in the regulation, which provides consolidated statements of financial position, operations, and cash flows.

The proposed rates are set out in table 1:

Table 1 Proposed Water Rates for 2019 to 2025

	2019	2020	2021	2022	2023	2024	2025
Rate/M3 inflated\$	0.91	0.95	0.99	1.03	1.07	1.11	1.15
Rate/M3 2019\$	0.91	0.92	0.93	0.94	0.95	0.96	0.96

The rates, in inflated \$, are projected to increase by about just about 4% per annum until 2025 and then increase at about 3% per annum. The rates increase from \$0.91 per cubic metre in 2019 to \$1.15 in 2024 and \$1.33 in 2029. If the effects of inflation are removed from the projected rates, then the rates will increase from \$0.91 per cubic metre in 2019 to \$0.96 in 2025. The proposed rates to 2029 are set out in appendix 2.

Rates are influenced by water usage. Additional customers will be added to the system in the next few years; however, like most systems in Ontario, water demand from existing and new users in the Tri-County water system is decreasing as users install water efficient fixtures in their homes and offices. The use of water efficient fixtures such as low flush toilets, showerheads and faucet aerators was required for new construction in the mid 1990s, and new regulations will further restrict the sale of non-water efficient toilets. In addition, front load washing machines that use far less water than older top-load models, have become very popular.

Any increase in water use, over what is projected, will reduce rates from what is projected in table 1 above. A further decrease would have the opposite effect.

TRI-COUNTY WATER SYSTEM RATE REPORT

2.0 Project Purpose

The Municipality of West Elgin retained the services of Sharratt Water Management Ltd. to prepare a Financial Plan for the Primary (Tri-County) Water System, as required according to Ontario Regulation 453/07.

This rate report summarizes the capital requirements and proposes rates based on future capital needs, operating costs and in consideration of the volumes of water being used by system users. This rate report provides the basis for the Financial Plan. The Financial Plan, complete with financial statements needed to meet the requirements of Regulation 453/07, has been prepared in a separate report.

3.0 Background

The West Elgin (Tri-County) primary water system (the System) consists of a low lift pumping station at the Lake Erie shoreline south of Eagle, intake pipes extending into the Lake, two water lines running from the low lift station to the new water treatment plant near Eagle. The old water plant is also part of the system. A 400 mm asbestos concrete water main connects the new water plant to the West Elgin tower. The Tri-County system also has five valve chambers located throughout the service area at Eagle West, Eagle East, Silver Clay, Pioneer and Marsh. Each has water valves, a flow meter and SCADA to monitor performance. While this system is owned by the Municipality of West Elgin, it provides water service to five municipalities (Chatham-Kent, Dutton-Dunwich, Newbury, South West Middlesex, and West Elgin) which have representation on the Tri-County Water Management Committee (Committee). The Committee is responsible for the management and operation of the WTP, a connection to the Elgin Water Supply System, and the Primary System trunk water mains. Each of the municipalities on the Committee is responsible for their respective local water distribution systems.

The preparation of a Financial Plan has three components.

Financial Plan Component No. 1 provides a long-range assessment of capital needs to renew the system and ensures its long-term operational sustainability. The horizon chosen is 75 years in this study to be more consistent with the Ministry of Environment (MOE) August 2007 financial planning guidelines. It is also the lifetime of the longest assets in the system, the water mains. SWML has worked with OCWA in preparing this capital need forecast. OCWA's operation staff is fully familiar with the various systems and their components and has provided valuable input to the development of the capital asset base and the lifetimes for these assets.

Financial Plan Component No. 2 is the development of rates. SWML took the capital data developed in Financial Plan Component No. 1 (above) and updated the estimation of the annual contributions needed in order to have sufficient funds available when infrastructure renewal is required until 2095. Water demand forecasts were updated in view of developments over the past ten years. Financial requirements were totalled and incorporated into the updated rates. Components 1 and 2 are included in this rate report.

The Financial Plan comprising component No. 3 have been prepared by SWML and is based on this rate study and will cover the 2019-2025 period. The Financial Plan will be in a separate report.

4.0 Legislative Context

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. There are five elements that must be in place in order for the owner of a drinking water system to obtain a license:

1. A Drinking Water Works Permit to establish or alter a drinking-water system;
2. 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).
3. An Accredited Operating Authority. A third party audit of an operating authority's QMS will be the basis for accreditation.
4. A Permit to Take Water.
5. **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. This is one of the main purposes of this rate project.**

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 have not been published and the legislation has sunsetted and is no longer relevant. Accordingly, the requirements set by the Minister of Environment apply and these are the 2007 MOE guidelines set out below.

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 financial plans are supported by the review of capital and replacement needs and the preparation of fully sustainable rates. 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 recognize the inter-relationship between water and wastewater services. Many municipalities 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 reserve funds, 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:

- a. Avoiding large fluctuations in rates from year to year
 - b. Keeping debt within a sustainable level
 - c. 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.

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.

OCWA in cooperation with municipal staff have prepared the water capital projections setting out the future capital replacement needs, their timing and cost. Sharratt Water Management Ltd. carried out the financing plan, which includes the development of water rates, water service financing options and rate types

4.1 FINANCING

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

Development Charges - Such charges are applied to developers and others connecting new non-serviced areas to the existing water and wastewater systems. The growth related costs of building additions to the system can be passed on to these developers or new customers. Existing users are thus spared the capital cost of expanding infrastructure to accommodate new users to the system. The System is, in effect a water wholesaler, and so does not apply development charges.

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 or drain from the existing water main or large sewer to the edge of the property line. The System is a wholesaler and does not apply connection charges.

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. A very substantial grant was provided for the water plant construction that took place in 2008-10. No additional grants have been identified at this time.

Reserves - Reserves are set up to deal with unexpected equipment repairs and to provide sufficient on hand funds to renew ageing water and wastewater systems. Increasingly, municipalities are carrying out studies to look out many years to identify capital renewal or replacement projects that need to be funded by a reserve. The system currently has no reserves as all funds were used to pay for the new plant. A reserve fund is proposed to be replenished to help fund future water capital renewal projects.

Debentures - 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 from a larger cohort of water users over 15 or 20 years, rather than having the full cost burden fall on one group of water users at one time. There are currently no loans outstanding and no long term loans are foreseen.

User Fees – Smaller, recurring capital maintenance and renewal projects are often financed out of the annual operating funds of the water system. User fees 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 for the System will rely upon a simple user rate, reserves developed from user fees and government grants, if they become available.

4.2 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. The System is a wholesaler and does not apply flat rate charges.

Decreasing Block - Users pay less per cubic metre as water use increases. This rate provides an economic advantage to large industrial or institutional water users. The System is a wholesaler and does not apply decreasing block charges.

Increasing Block - Users pay more per cubic metre as water use increases. This is sometimes called the conservation rate, as it was designed to encourage large users to be more careful with their water use. It would be effective in forestalling treatment capacity expansion. The water treatment plant does not face a capacity issue. This rate is not utilized by the System.

Two Part Constant Unit – In this rate type, there is a fixed portion paid by all users and a variable part that is based on the water use. The fixed part for the City residential users is slightly different than for commercial users. For the variable part, the user pays the same for each and every cubic metre of water used. The System, as a wholesaler to member municipalities, applies only a variable rate for all water taken from the system.

Seasonal Rate – With a seasonal rate, higher charges are applicable in the summer to the portion of the water use that exceeds the winter usage. It is targeted at outdoor water usage in the summer when, typically, the system is closest to capacity. This rate is not used.

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 it provided some relief for large users. However the popularity of this rate type is declining. Increasing block rates are often employed by the management of a system that is reaching capacity and will face expensive expansion. It is utilized by an increasing number of municipalities in Ontario. It is recommended that the constant variable rate be continued in the System for the next few years.

5.0 Proposed Water System Operating Plan and Rates

5.1 WATER SYSTEM ASSUMPTIONS

The water rate setting approach begins by establishing an operations plan for 2019-2029. This plan contains information about various system attributes, such as currently available information concerning various revenue sources, the day-to-day expenditures needed to operate the system, estimated new capital requirements and reserve levels. Water sold and the number of connections is projected. Several assumptions have been made:

- | | |
|---|---------------------------------------|
| • Rate Type | Wholesale, volume based only |
| • Inflation (operating and capital/yr.) | 2% with 5% for energy, 3% for capital |
| • Interest on Investments | 3.0 % per annum |
| • Future Water Use | 2016-2018 average |

5.2 CAPITAL EXPENDITURES

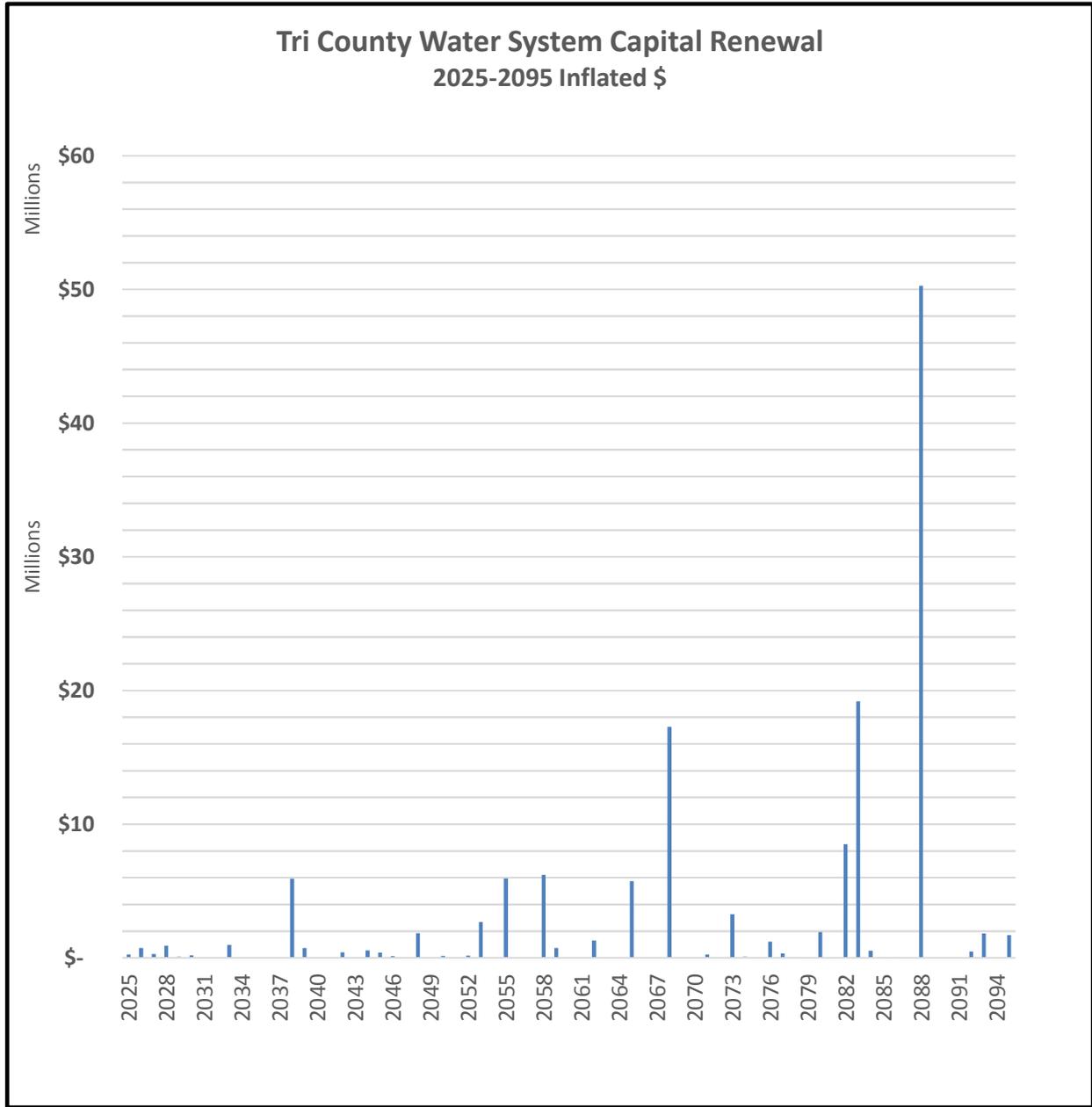
Capital expenditures are shown in the short-term 7-year projection and long term to 2095. The short-term projection is shown in table 2. The most significant costs are the replacement of an air compressor and the installation of a variable speed drive on pump #4 in 2019. Stainless steel pipe is replaced in 2020 and 2021 as is a turbimeter. Finally, there is the replacement of the membrane filters in 2023-2025. The balance tends to be small major maintenance items. The long-range picture based on asset life expectancy for the 2025 to 2095 period is shown in Chart 1. What is shown is the inflated replacement cost of an asset in the year it reaches the end of its expected life. The following are some of the key capital items in the short term part of that longer term period.

- 2038 – membrane filter replacement, process piping, plant upgrades
- 2048 – heater, road repairs, windows
- 2053 – water main replacement, membrane filter replacement
- 2055 – water line replacement, generator
- 2058 – water lines, water storage tanks.

Table 2 Capital/Major Maintenance Plan 2019-25

	2019	2020	2021	2022	2023	2024	2025
WEST LORNE STANDPIPE							
Altitude valve replacement			6,500				
Tank Inspection		5,000					
Overflow upgrade		6,000					
Interior coating replacement							
Eagle West Chamber Flowmeter (Wallacetown Train		12,000					
Subtotal	-	23,000	6,500	-	-	-	-
TRUNK WATER SYSTEM & IONA INTERCONNECTION & NEW VALVE CHAMBERS							
Low Lift motor rebuild		10,000	10,000	10,000			
Low lift pump inspection refurbishment		10,000	10,000	10,000			
Low lift motor #1 tetuning to prevent vibration	5,000						
Low lift motors replacement of solt starters	3,500	3,500	3,500	3,500			
VFDrive on motor #4	115,000						
High lift pump rebuild		5,000	5,000				
Trunk Water System Maintenance Costs							
Subtotal Trunk Water System	123,500	28,500	28,500	23,500	-	-	-
TREATMENT PLANT							
Intake Stucture Inspection			7,500				
pH control system pilot	2,500	2,500	2,500	2,500	2,500	2,500	
Pall Inspection				10,000			
Pall Inspection - programming					10,000		
Smart positioners	4,000		4,000		4,000		
Pneumatic actuators	3,000		3,000		3,000		
Rack Butterfly Valves		2,500					
Pall system PLC improvements		10,000					
Inplant process motors	5,000						
Chemical trasfer pump replacement	4,000			4,000	4,000		
Chorine and peroxide feed pumps			6,000	6,000	6,000		
Chlorine analyswer pH and Cl2 probes	6,500	6,500	6,500	6,500	6,500	6,500	
Turbimeter replacement		20,000					
UV system reactors	2,000	2,000	2,000	2,000	2,000	2,000	
Storage tank inspections	2,500					2,500	
Air manifold card replacement 3 year cycle		4,000				4,000	
Chemical room hanger and pipe replacement		10,000					
Air compressors	100,000						
Embankment Stabilization							
Mag Meter Eagle East							
Pall membrane replacement			12,000		200,000	200,000	200,000
Subtotal	129,500	57,500	43,500	31,000	238,000	217,500	200,000
Structural Components							
Raw waterwell maintenance/repairs/upgrades	10,000	10,000	10,000	10,000	10,000	10,000	
Chamber repairs		5,000		5,000		5,000	
Rapairing/replacing stanless steel pipe		20,000	20,000				
Facility condition assessment		10,000					
Subtotal Stuctural	10,000	45,000	30,000	15,000	10,000	15,000	-
Contingency	15,225	7,025	5,250	3,300	12,400	11,625	9,007
Total Costs 2019\$	278,225	161,025	113,750	72,800	260,400	244,125	209,007
Total Costs Inflated\$	\$278,225	\$165,051	\$119,509	\$78,398	\$287,433	\$276,205	\$242,384

Chart 1 Tri-County Water System Capital Renewal Needs 2025-2095



5.3 WATER OPERATING REVENUE AND EXPENDITURE PLAN

The summary combined operating cost statement for the water system is set out in Table 3.

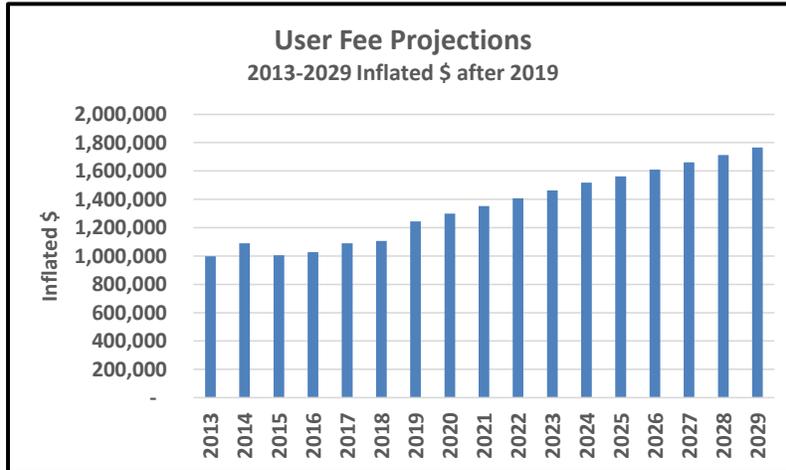
Table 3 Tri-County Revenue and Expenditure Plan 2018-2029

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenues												
1 Dutton Dunwich Combined User	(295,552)	(338,882)	(353,749)	(368,615)	(383,481)	(398,348)	(413,214)	(426,354)	(439,912)	(453,902)	(468,336)	(483,229)
2 Glencoe Combined User Rees	(385,555)	(438,287)	(457,546)	(476,805)	(496,064)	(515,324)	(534,583)	(551,583)	(569,123)	(587,221)	(605,895)	(625,162)
3 West Elgin Combined User Fee:	(403,744)	(444,337)	(463,798)	(483,260)	(502,722)	(522,184)	(541,646)	(558,870)	(576,642)	(594,979)	(613,900)	(633,422)
4 West Elgin Line Losses	(21,692)	(22,693)	(23,689)	(24,685)	(25,681)	(26,676)	(27,672)	(24,897)	(24,897)	(24,897)	(24,897)	(24,897)
5 Total Fees from All of the Above	(1,106,543)	(1,244,198)	(1,298,782)	(1,353,365)	(1,407,948)	(1,462,532)	(1,517,115)	(1,561,705)	(1,610,575)	(1,661,000)	(1,713,028)	(1,766,710)
6 Interest	-	(11,586)	(26,876)	(35,961)	(47,929)	(62,727)	(72,934)	(85,188)	(98,882)	(112,726)	(127,563)	(125,249)
7 Subtotal	(1,106,543)	(1,255,784)	(1,325,657)	(1,389,326)	(1,455,877)	(1,525,259)	(1,590,049)	(1,646,892)	(1,709,457)	(1,773,726)	(1,840,591)	(1,891,959)
8												
9 Expenditures for all Systems												
10 Energy	259,067	300,000	305,000	310,000	315,000	320,000	325,000	341,250	358,313	376,228	395,040	414,792
11 Gas	14,572	16,500	17,000	17,500	18,000	18,500	19,000	19,380	19,768	20,163	20,566	20,978
12 Repairs and Maintenance	-	-	-	-	-	-	-	-	-	-	-	-
13 Administrative Operations	23,663	6,000	6,000	6,000	6,000	6,000	6,000	6,120	6,242	6,367	6,495	6,624
14 Operations Contract	386,300	427,731	434,155	440,667	447,277	453,987	455,000	464,100	473,382	482,850	492,507	502,357
15 System Administrator	-	3,765	3,765	3,765	3,840	3,917	3,996	4,075	4,157	4,240	4,325	4,411
16 Insurance	-	13,718	14,130	14,554	14,990	15,440	15,903	16,221	16,546	16,877	17,214	17,558
17 Interconnection water (Southwolc	-	-	-	-	-	-	-	-	-	-	-	-
18 Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-
19 Taxes	65,092	66,394	67,722	68,399	69,083	69,774	70,472	71,881	73,319	74,785	76,281	77,806
20 Internet/Studies	-	20,000	10,000	10,000	10,000	10,000	10,000	25,000	-	-	-	-
21 Total Expenses	748,694	854,108	857,772	870,885	884,191	897,618	905,370	948,028	951,726	981,510	1,012,427	1,044,527
22 Revenues Less Expenses	(357,849)	(401,676)	(467,885)	(518,441)	(571,686)	(627,641)	(684,678)	(698,865)	(757,731)	(792,216)	(828,164)	(847,432)
23												
24 Capital Projects	211,199	215,000	20,500	-	-	220,763	226,282	231,939	296,263	297,653	905,316	80,489
25 Major Maintenance	-	63,225	144,551	119,509	78,398	66,670	49,923	10,445	-	-	-	-
26 Total Capital and Major Maint	211,199	278,225	165,051	119,509	78,398	287,433	276,205	242,384	296,263	297,653	905,316	80,489
27												
28 Net Operations	(146,651)	(123,451)	(302,835)	(398,932)	(493,289)	(340,208)	(408,473)	(456,480)	(461,469)	(494,563)	77,152	(766,944)
29												
30 Financial Transfers												
31 Reserve Fund to (from)	146,651	123,451	302,835	398,932	493,289	340,208	408,473	456,480	461,469	494,563	(77,152)	766,944
32												
33 Balance	-	-	-	-	-	-	-	-	-	-	-	-

3.1 User Fee Requirements

Total user fees revenues and future user fee revenue needs are set out in line 5 of Table 3 and are shown in chart 2 below:

Chart 2 User Fees Actual and Projected 2013-29

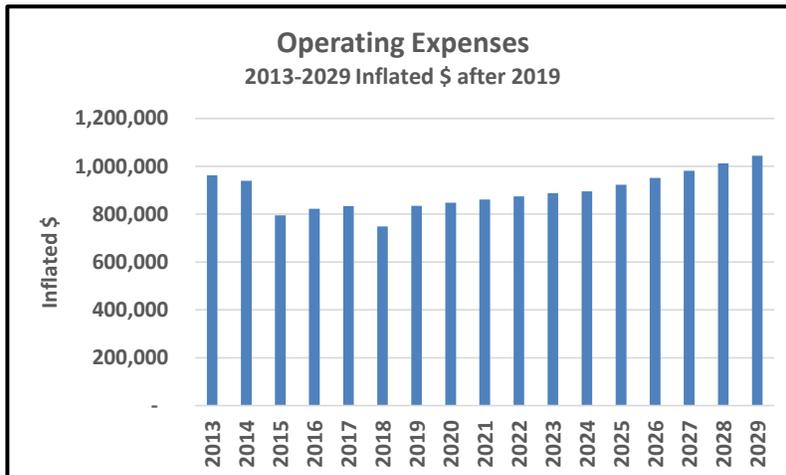


User fees and revenues from 2013 to 2018 were unchanged, meaning that they declined in 2013\$ if inflation is taken into consideration. In 2019, they are increased by just over 4% per annum, declining to 4% by 2023 and 3% by 2025 and then increase at this level to 2029 beyond.

6.3.2 Operating Expenses

Past and future operating expenditures are summarized in line 21 in Table 3 and are illustrated in chart 3:

Chart 3 Tri-County Water System Operating Expenses 2013-29



Operating costs are set to increase at 2% annually until 2029.

6.3.3 Lead Abatement

The Tri-County water system comprised of the low lift pumping station, treatment plant, large water mains and the West Elgin water tower contain no lead.

6.3.4 Source Water Protection

No further expenditures are planned at this time.

6.3.5 Debt

As of December 31, 2018, there was no debt on the system. No new long-term debt is anticipated through 2095 if the reserve contributions and associated interest on the annual reserve balances are built up in accordance with the projections below. There will be a need for a loan from 2088 to 2090 and then the reserve is back in surplus again to 2095. This could change if there is a sudden surge of growth in the area, and additional capacity is needed. Capital renewal requirements could change also if new more stringent water treatment regulations are established or new more effective treatment processes are developed in the future.

6.3.6 Reserve Fund

The water reserve fund is shown in Table 4:

Table 4 Tri- County Capital Renewal/Major Maintenance Reserve 2019-2025 in Inflated \$

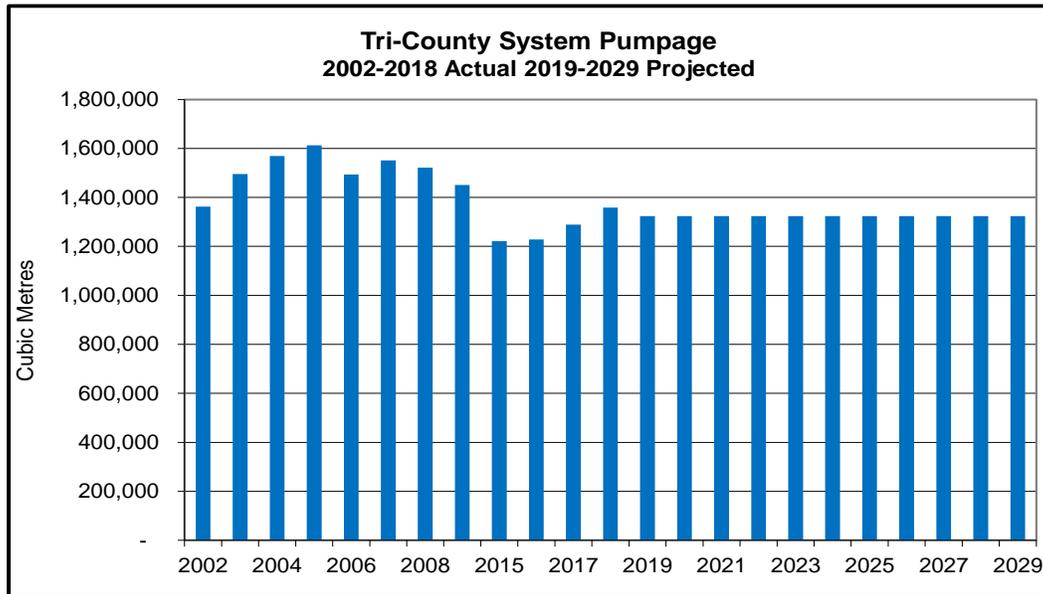
	2019	2020	2021	2022	2023	2024	2025
Opening Balance	\$772,402	\$895,853	\$1,198,688	\$1,597,620	\$2,090,909	\$2,431,117	\$2,839,590
Grant/Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer in from Revenue	\$123,451	\$302,835	\$398,932	\$493,289	\$340,208	\$408,473	\$456,480
Year End Balance	\$895,853	\$1,198,688	\$1,597,620	\$2,090,909	\$2,431,117	\$2,839,590	\$3,296,071

The reserve total was \$.772 million as of December 31, 2018. The annual reserve contributions are shown on line 31 of Table 3. The reserve is projected to operate from 2019 to a small deficit in 2088-90 and then to surplus through 2095. It will provide sufficient funding to cover all projected other capital renewal, replacement costs until 2095. The reserve to 2095 is set out in Appendix 1.

5.4 PRIMARY SYSTEM WATER PUMPAGE

Water pumpage and sales are expected to remain constant for the next ten years with any increase from new growth being offset by the continual installation of more water efficient fixtures and appliances in new construction and renovations. Water pumpage from 2002-2029 is set out in chart 4 (excluding 2010-2014):

Chart 4 Tri-County Water System Pumpage 2002-2029



Overall, water pumpage has declined since 2005 and then further declined between 2010 and 2015. At this time, the service centres were upgraded and, no doubt, now use much less water than before. Some of the expected growth in the area has not materialized. The decline in usage is part of a general pattern of lower water use across the Province. This is due to natural conservation arising from provincial plumbing regulations instituted in 1995, 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 much more water efficient ones. Front load washing machines, which use far less water than machines built a few years ago, have become very popular with consumers. Because of all of these developments, overall pumpage is projected to remain constant, even after allowing for the effects of limited growth.

6.0 Water Rate Calculations

Rates are calculated by considering the user fee revenue requirements, taking into account future water use. The projected rates are shown in table 5

Table 5 Proposed Water Rates 2019-2029

	2019	2020	2021	2022	2023	2024	2025
Rate/M3 inflated\$	0.91	0.95	0.99	1.03	1.07	1.11	1.15
Rate/M3 2019\$	0.91	0.92	0.93	0.94	0.95	0.96	0.96

The rates in inflated \$ are projected to increase by about just about 4% per annum until 2025 and then increase at about 3% per annum. The rates increase from \$0.91 per cubic metre in 2019 to \$1.15 in 2025. If the effects of inflation are removed from the projected rates, then the rates will increase from \$0.91 per cubic metre in 2019 to \$0.96 in 2025. Should water use increase, then rates would decline, compared to the above projection and of course, should water sales decline, then rate would need to be increased. The proposed water rates to 2029 are shown in appendix 2.

Appendix 1 Tri-County Water Capital Reserve - 2019-2095 Inflated \$

	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Opening Reserves	772,402	895,853	1,198,688	1,597,620	2,090,909	2,431,117	2,839,590	3,296,071	3,757,539	
Reserves from (to) Operations	123,451	302,835	398,932	493,289	340,208	408,473	456,480	461,469	494,563	
Reserve Value at Year End	895,853	1,198,688	1,597,620	2,090,909	2,431,117	2,839,590	3,296,071	3,757,539	4,252,102	
	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Opening Reserves	4,252,102	4,174,950	4,941,894	5,639,922	6,567,197	7,499,081	7,401,570	8,413,879	9,504,306	
Reserves from (to) Operations	(77,152)	766,944	698,029	927,275	931,884	(97,510)	1,012,308	1,090,428	1,156,784	
Reserve Value at Year End	4,174,950	4,941,894	5,639,922	6,567,197	7,499,081	7,401,570	8,413,879	9,504,306	10,661,090	
	2037	2038	2039	2040	2041	2042	2043	2044	2045	
Opening Reserves	10,661,090	11,892,663	7,266,157	7,703,841	8,919,256	10,204,160	11,139,654	12,534,399	13,533,122	
Reserves from (to) Operations	1,231,573	(4,626,506)	437,685	1,215,414	1,284,904	935,494	1,394,745	998,723	1,138,598	
Reserve Value at Year End	11,892,663	7,266,157	7,703,841	8,919,256	10,204,160	11,139,654	12,534,399	13,533,122	14,671,720	
	2046	2047	2048	2049	2050	2051	2052	2053	2054	
Opening Reserves	14,671,720	16,141,798	17,729,614	17,638,039	19,398,283	21,097,514	22,463,722	24,303,775	23,714,363	
Reserves from (to) Operations	1,470,078	1,587,816	(91,575)	1,760,244	1,699,231	1,366,208	1,840,053	(589,413)	2,076,314	
Reserve Value at Year End	16,141,798	17,729,614	17,638,039	19,398,283	21,097,514	22,463,722	24,303,775	23,714,363	25,790,677	
	2055	2056	2057	2058	2059	2060	2061	2062	2063	
Opening Reserves	25,790,677.2	22,049,892.6	24,135,946.8	26,317,907.8	22,416,135.5	23,882,260.5	26,145,182.4	28,528,272.7	29,724,965.6	
Reserves from (to) Operations	(3,740,784.7)	2,086,054.2	2,181,961.0	(3,901,772.2)	1,466,124.9	2,262,922.0	2,383,090.3	1,196,692.9	2,552,406.5	
Reserve Value at Year End	22,049,892.6	24,135,946.8	26,317,907.8	22,416,135.5	23,882,260.5	26,145,182.4	28,528,272.7	29,724,965.6	32,277,372.1	
	2064	2065	2066	2067	2068	2069	2070	2071	2072	
Opening Reserves	32,277,372	34,913,423	37,233,141	40,047,087	43,011,370	28,803,276	31,447,120	34,214,808	36,831,144	
Reserves from (to) Operations	2,636,051	2,319,717	2,813,947	2,964,283	(14,208,095)	2,643,844	2,767,688	2,616,335	2,945,229	
Reserve Value at Year End	34,913,423	37,233,141	40,047,087	43,011,370	28,803,276	31,447,120	34,214,808	36,831,144	39,776,373	
	2073	2074	2075	2076	2077	2078	2079	2080	2081	
Opening Reserves	39,776,373	39,576,920	42,569,826	45,695,934	47,764,419	50,577,783	53,926,895	57,415,779	59,313,624	
Reserves from (to) Operations	(199,453)	2,992,906	3,126,108	2,068,485	2,813,364	3,349,111	3,488,885	1,897,845	3,667,633	
Reserve Value at Year End	39,576,920	42,569,826	45,695,934	47,764,419	50,577,783	53,926,895	57,415,779	59,313,624	62,981,257	
	2082	2083	2084	2085	2086	2087	2088	2089	2090	
Opening Reserves	62,981,257	58,238,480	42,652,251	45,220,296	38,741,823	41,598,210	44,534,064	(2,746,201)	(1,271,875)	
Reserves from (to) Operations	(4,742,778)	(15,586,228)	2,568,045	(6,478,473)	2,856,387	2,935,854	(47,280,265)	1,474,325	1,496,623	
Reserve Value at Year End	58,238,480	42,652,251	45,220,296	38,741,823	41,598,210	44,534,064	(2,746,201)	(1,271,875)	224,748	
	2091	2092	2093	2094	2095					
Opening Reserves	224,748	1,696,363	2,340,315	1,861,047	3,050,091					
Reserves from (to) Operations	1,471,616	643,952	(479,269)	1,189,045	(555,934)					
Reserve Value at Year End	1,696,363	2,340,315	1,861,047	3,050,091	2,494,157					

Appendix 2 Proposed Tri-County Rates 2019-2029 \$

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Rate/M3 inflated\$	0.91	0.95	0.99	1.03	1.07	1.11	1.15	1.20	1.25	1.29	1.33
Rate/M3 2019\$	0.91	0.92	0.93	0.94	0.95	0.96	0.96	0.98	0.99	0.99	0.99