



CLEARVIEW

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**The Township of Clearview  
Drinking Water and Wastewater System**

**Rate Report**

**August 22, 2014**



**Sharratt Water Management Ltd.**  
Sustainable Water Management Specialists

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## 1.0 EXECUTIVE SUMMARY

The Township of Clearview is a municipality with a population of approximately 13,800, according to the 2014 estimate provided by the Township's planning department, and is situated in Simcoe County. The Township's water system is comprised of six separate communities: Stayner, Creemore, New Lowell, Buckingham Woods, McKean and Collingwoodlands. The system has 2,684 water connections. Approximately 80% of the water connections are in Stayner and Creemore. All water users in Clearview are metered. The wastewater system is comprised of separate systems in Creemore and Stayner. Users in all water and wastewater systems pay the same water and wastewater rates.

The Township has undertaken this project to prepare water rates, which will ensure that sufficient funds will be in place to cover the future water system operating costs, water and wastewater system life-cycle asset renewal and replacement costs. It will also provide the basis for the preparation and submission of a water system financial plan. The preparation of a water system financial plan is one of the statutory requirements for obtaining a renewal of the water system operating license. Two rate options have been developed that fully provide the needed funds.

This rate project carried out the following tasks:

- 1) Compiled the current and projected operating costs for the 2014-2025 period
- 2) Utilized the capital renewal and replacement costs to 2105 provided by the Township staff
- 3) Estimated the most likely quantities of water sold, and number of connections in future years, according to two options derived from the Development Charges Plan (DC) dated May 2014
- 4) Developed two optional water rates for 2015 to 2025
- 5) Smoothed the rates through the 2015 to the 2025 period
- 6) Estimated the projected bills of various customers using different quantities of water
- 7) Compared the rates in Clearview with those in other communities

The intent of the project is to develop a sustainable financing plan that will fully meet the current financial needs, as well as making full provision for renewing all water system financial assets. The Township has identified the cost of renewing financial assets for the 2015 to 2105 period, which is about the life of the assets with the longest lifetimes. This means that each year, from 2015-2025, user fees have been set at a level, that when needed, funds will be available to meet future projected operating, capital renewal and replacement needs.

The costs of the identified current and long-range 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, 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 smaller capital costs. Two rate options are proposed. Both generate sufficient funds to meet the projected needs of the financing plan. The first rate option is based on a full projection that is consistent with the development charges plan estimates. The second option is a half projection of the estimates in DC study. Rate options are projected in this report only for 2015-2025. In view of the difficulty of predicting the rate of new development and in consideration of the substantial impact the anticipated growth could have on future water revenues, it is recommended that rates be monitored annually to determine if projected revenues and expenditures are in line with expectations. If necessary, they should be adjusted and they should be recalculated at least every five years.

## 1.1 WATER RATE OPTIONS

Rates are calculated by considering the user fee 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 Clearview, the projected number of new users will offset some of the projected increase in user fees. In 2015, the cost of water sold, including operating costs, reserve transfers and capital investment was \$2.37 per cubic metre. This provides a context for assessing the rate options. Two rate options are presented.

### 1.1.1 Option 1 Full Projection Forecast Consistent with the DC Projections

The Development Charge Background Study (DC) carried out for the Township in early 2014 sets out a potential anticipated population of 18,750 by mid-2024, representing an increase in the population of 4,960, or a 36% increase. The increase, in this period, is anticipated to be concentrated in Stayner, Creemore and New Lowell. The number users that this represents is set out in table 5.5. The rates for this option from 2015 to 2025 were developed by assuming that all of the development projected in the DC study will be realized on the schedule set out in the DC study. The proposed 2015-2025 rates for each option are set out in table 1.1.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Full Projection</b>												
Fixed Portion per Year	163	163	164	165	167	168	169	169	169	169	169	169
Variable Portion per M3	1.94	1.99	2.06	2.08	2.17	2.23	2.27	2.30	2.33	2.39	2.40	2.43
<b>Half Projection</b>												
Fixed Portion per Year	163	173	187	191	201	208	213	217	220	226	229	233
Variable Portion per M3	1.94	1.99	2.08	2.16	2.32	2.43	2.54	2.62	2.70	2.82	2.91	3.00

The proposed rates in table 1.1 represent an increase in the volumetric rate of 2% per annum from 2015 to 2025. In the full projection option, shown in the upper part of table 1.1, the 2015 rate is \$163 per year, with the volumetric charge at \$1.99. By 2019, the fixed charge is projected at \$168 per year, and \$2.23 for all the water that passes through the meter. The figures for 2025 are \$169 for the fixed portion and \$2.43 for the volumetric. This includes inflation in capital and operating costs, plus sufficient funds to sustainably operate and renew the system from 2015 to 2105.

### 1.1.2 Option 2 Half Projection Forecast

This option assumes that only 50% of the potential anticipated growth projections in the DC study will be realized in each year. Otherwise, the rate setting process is the same as was used for option 1.

The proposed rates represent an increase in the volumetric rate of 4.1% per annum for 2015 to 2025. The projected water rates for this option for 2015, 2019 and 2024 is set out in the lower portion of table 1.1. The rate for 2015 is \$173 for the fixed portion, and \$1.99 for each cubic metre used. The 2019 figures are \$208 for the annual fixed charge and \$2.43 for the variable charge. The figures for 2025 are \$233 for the annual fixed portion and \$3.00 for each cubic metre used for all users. This includes inflation in capital and operating costs, as well as investment for growth accommodation, plus sufficient funds to sustainably operate and renew the system from 2015 to 2105.

## 1.2. PROJECTED HYPOTHETICAL WATER AND WASTEWATER BILLS WITH EACH OPTION

Table 1.2 illustrates the differences between the rate options in terms of their impact on total monthly water bills. The examples are hypothetical only. In fact, water bills will vary widely for any group of users.

**Table 1.2 Clearview Hypothetical Water Bills 2014 - 2025 Inflated \$**

<b>Full Projection</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Single Person with 70 M3/Year	299	301	304	308	319	324	328	330	331	337	337	338
Couple with 125 M3 per Year	406	410	422	423	438	447	453	456	460	469	469	472
Family 300 M3 per Year	745	758	782	787	818	837	851	859	867	886	890	896
Average User (use declines over time)	732	735	745	733	746	750	751	747	743	749	740	734
User with 195,870 M3/Year	380,152	389,774	403,556	407,753	425,479	436,733	445,730	451,255	456,542	467,406	470,682	475,389
<b>Half Projection</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Single Person with 70 M3/Year	299	312	333	342	363	378	391	400	409	423	433	443
Couple with 125 M3 per Year	406	422	447	461	491	512	530	544	558	578	592	608
Family 300 M3 per Year	745	771	811	838	896	938	974	1,003	1,031	1,071	1,101	1,133
Average User (use declines over time)	732	747	773	783	820	843	862	875	886	909	919	932
User with 195,870 M3/Year	380,152	390,841	407,362	422,928	453,957	476,824	497,244	513,680	529,659	552,050	569,356	587,827

**Table 1.3 Clearview Wastewater Hypothetical Bills by Option 2015 - 2025 Inflated \$**

<b>Full Projection</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Single Person with 70 M3/Year	261	268	270	265	259	258	258	259	262	265	263	262
Couple with 125 M3 per Year	353	366	369	363	356	355	356	359	363	368	365	365
Family 300 M3 per Year	649	677	685	675	665	665	669	676	685	696	693	693
Average User (decreases over time)	638	656	652	629	607	597	590	587	586	588	576	568
User with 36,500 M3/Year	61,839	65,145	66,585	67,802	68,953	70,848	73,010	75,429	78,103	81,034	82,812	84,913
<b>Half Projection</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Single Person with 70 M3/Year	261	279	294	301	306	314	323	333	344	356	362	369
Couple with 125 M3 per Year	353	377	396	405	414	426	439	453	469	486	495	506
Family 300 M3 per Year	649	690	717	737	756	780	807	836	867	900	920	944
Average User (decreases over time)	638	668	684	688	691	702	714	729	745	764	769	777
User with 36,500 M3/Year	61,839	65,283	67,310	69,470	71,499	74,098	76,900	79,911	83,140	86,601	88,910	91,480

In option 1, the full projection option, a user taking 70 cubic metres per year is projected to pay \$301 in 2015, or \$4 more per year compared to what was paid in 2014. The bill will be \$324 in 2019, and \$338 in 2025. Someone using 125 cubic metres per year will pay \$410 in 2015, or \$4 more than 2014, \$447 in 2019, and \$472 in 2025. A user of 300 cubic metres per year will pay a water bill of \$758 in 2015, or \$13 more than 2014, \$837 in 2019, and \$896 in 2025. An average user has been included in the table as average use is declining over time. The average user of 293 cubic metres per year will pay \$735 in 2015 or \$3 more than in 2014, will take 261 cubic metres in 2019 and pay \$750, and is projected to take 233 cubic metres per year in 2025 and pay \$734. Water use by the average user in all systems is expected to decline during 2015 to 2025. All figures are in inflated dollars.

In option 2, the half projection option, a user taking 70 cubic metres per year is projected to pay \$312 in 2015, or \$13 more than 2014. They will pay \$378 in 2019, and \$443 in 2025. Someone using 125 cubic metres per year will pay \$422 in 2015, or \$16 more than 2014. They are projected to pay \$512 in 2019, and \$608 in 2025. A user of 300 cubic metres per year will pay a water bill of \$771 in 2014, or \$26 more than 2014, \$938 in 2019, and \$1,133 in 2025. The average user of 293 cubic metres per year will pay \$747 in 2015, or \$15 more than 2014. They will take 261 cubic metres in 2019 and pay \$843, and is projected to take 233 cubic metres per year in 2025 and pay \$932. All figures are in inflated dollars.

### 1.3 WASTEWATER RATE OPTIONS

Wastewater rates are calculated by considering the user fee 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 Clearview, the anticipated growth in the projected number of new users will offset some of the projected increase in user fees. Wastewater rates are proposed to be surcharged to the water rates. Two rate options are presented that are the same as those used above for the water system. The proposed surcharges for 2015 to 2025 are shown in table 1.4.

Option	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Full Projection Option	87.1%	89.1%	87.5%	85.5%	81.3%	79.5%	78.6%	78.6%	78.9%	78.7%	77.9%	77.3%
Half Projection Option	87.1%	89.4%	88.5%	87.9%	84.3%	83.2%	82.8%	83.3%	84.0%	84.0%	83.6%	83.3%

The projected wastewater bills are shown in table 1.3.

In option 1, the full projection option, a user taking 70 cubic metres per year is projected to pay \$268 in 2015, \$258 in 2019, and \$262 in 2025. Someone using 125 cubic metres per year will pay \$366 in 2015, \$355 in 2019, and \$365 in 2025. A user of 300 cubic metres per year will pay a wastewater bill of \$677 in 2014, \$665 in 2019, and \$693 in 2025. An average user has been included in the table as average use is declining over time. The average user of 293 cubic metres per year, in 2015, will pay \$656 in 2015, will take 261 cubic metres in 2019 and pay \$597, and is projected to take 233 cubic metres per year in 2025 and pay \$568. All figures are in inflated dollars.

In option 2, the half projection option, a user taking 70 cubic metres per year is projected to pay \$279 in 2015, \$314 in 2019, and \$369 in 2025. Someone using 125 cubic metres per year will pay \$377 in 2015, \$426 in 2019, and \$506 in 2025. A user of 300 cubic metres per year will pay a wastewater bill of \$690 in 2014, \$780 in 2019, and \$944 in 2025. The average user of 293

cubic metres per year will pay \$668 in 2015, will take 261 cubic metres in 2019 and pay \$702, and is projected to take 233 cubic metres per year in 2025 and pay \$777. All figures are in inflated dollars.

#### 1.4 VALUE OF CLEARVIEW WATER

This section discusses what water, at Clearview's proposed water rates, will buy in terms of practical use. The cost per litre of drinking water in 2015, for someone using 293 cubic metres of water per year, the average use, is just under one fifth of a cent. In 2019, it is projected to be just over one fifth of a cent. Table 1.5 provides an indication of the number of water uses that can be undertaken for \$1.00 with the 2015 and 2019 proposed rates. In the case of lawn watering, it is the number of minutes that the lawn can be watered for \$1.00.

	Amount Used (litres)	What \$1.00 will buy	
		Quantity Purchased	
		2015 Rate	2019 Rate
Drink a 340 ml glass of Clearview tap water	0.3	1,039	854
Drink a 500 ml bottle of Clearview tap water	0.5	707	581
Buy a 500 ml bottle of water at Tim Hortons	0.5	two thirds bottle	?
<b>Shower</b>			
Shower 30 minutes	270.0	1	1
Shower 10 minutes	90.0	4	3
Shower 5 minutes	45.0	8	6
<b>Dishwasher</b>			
Run dishwasher start to finish - new	25.0	14	12
Run dishwasher start to finish - older	38.0	9	8
<b>Toilet</b>			
Flush an older 15 litre toilet	15.0	24	19
Flush a 6 litre toilet	6.0	59	48
Flush a high efficiency toilet	4.5	79	65
<b>Washing Machine</b>			
Wash clothes - older top load	175.0	2	2
Wash clothes - new front load	90.0	4	3
Length of time to water lawn for \$1 - 1/2 in hose	1,097.0	19	16
Assume the cost of water in option 2 if use 300 m3 per year			

Table 1.5 shows that \$1.00 worth of water in 2015, with option 2, half projection rates, will buy one of the following uses: 1,039 normal glasses of tap water, 8 five-minute showers, 14 runs of a water-efficient dishwasher, 79 toilet flushes with a high efficiency toilet, or 4 washer loads using a high efficiency washing machine. A dollar will get 19 minutes of lawn watering time. When wastewater fees are added, then each of the number of uses is divided by half.

The proposed rates for option 1 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 into the future.

#### 1.5 RECOMMENDATIONS

It is recommended that option 1, the full projection, be utilized for the next two years. If the projected development occurs at the projected rate, then option 1 rates should be utilized for the following three years. If the anticipated development is less than the full-anticipated level, then option 2 rates should be utilized for the next three years.



## 2.0 THE TOWNSHIP OF CLEARVIEW RATE DEVELOPMENT PROJECT

### 2.1 PROJECT PURPOSE

The Township intends to develop full cost life-cycle water rates for the water system in Clearview. This report projects life cycle water system capital replacement costs to 2105, and develops a financing plan for the water system to provide funding for these needs, 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 and debt to fund operating and capital replacement to 2105. Projections of water sold, and the number of connections are a key part of the analysis. 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. All water users pay the same rates. Finally, the report compares the water bills of a number of communities with those for Clearview.

### 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 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, 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 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. The Township has commissioned a development charge study in accordance with the development charges act (DC). Council is currently reviewing it and development charges will be applied to new development. Development charge funds are placed in a dedicated reserve fund and used to fund growth-related projects, including reservoir expansions, and pipe oversizing.

**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.

**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 to financially assist in projects to accommodate growth. No additional grants are assumed for the water projects set out in this study.

**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 30 to 100 years to identify capital renewal or replacement projects that need to be sustainably funded, in large part, by reserves. The Township currently has a water system capital reserve deficit of \$32,909 and the operating reserve has a deficit of \$40,729 as of December, 2013. The capital reserve will need to be replenished in the future and be used to fund future water capital renewal projects. Funds are set aside from the water and wastewater operating plans to sustain these funding needs. The operating reserve will provide a cushion for a revenue shortfall in the years where summers are wet and cool. They will also cover unexpected large repairs. The water and wastewater operating reserves are proposed to be supported by annual allocations from the operating plan expenses.

**Debentures/Loans** – 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 long 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 water system has two outstanding loans at this time. The wastewater system also has two loans 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, loans 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. All Clearview users are metered.

**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 Township, 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 Township 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 small amount of the total water costs, usually metering and billing costs, plus the same charge for all users for each and every cubic metre of water used. The Township currently utilizes this rate type and it is recommended that this be continued in the 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 Township, 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 Township continue with the two-part constant unit rate for setting 2015 and future rates. The current rate is set out in table 4.1.

### 4.1 CLEARVIEW 2014 WATER RATE

Fixed Meter Charge per Year	\$163.90
Volumetric Rate per Cubic Metre (220 gallons)	\$1.94
Stayner Sewer Surcharge on the Total Water Bill	87.10%
Creemore Sewer Surcharge on the Total Water Bill	87.10%

The water bill for someone using 200 cubic metres of water per year would be \$163.90 plus 200 multiplied by \$1.93 (\$386) for a total water bill of \$549.90. The wastewater bill would be the total water bill of \$549.90 multiplied by 87.1% or \$478.96.

## 5.0 PROPOSED WATER SYSTEM RATES FOR 2015-2025

### 5.1 WATER SYSTEM RATE SETTING ASSUMPTIONS

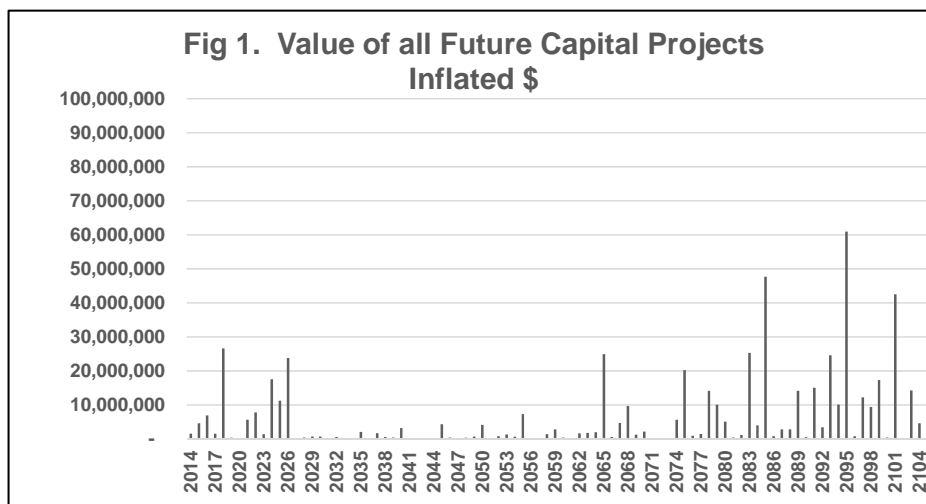
The water rate setting process in this report begins by establishing a financing plan for 2015-2105, that also will provide full funding for all renewal and replacement to 2105. This plan contains information about various system attributes, such as future revenue sources, the projected day-to-day expenditures 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, 6% for energy–2015-25
- Inflation (capital) 3.0% per annum 2015-2105
- Interest on investments 1.5% to 2025
- Debt interest/Loan period 3.5% for a 20 year term
- New connections Two options based on the 2014 DC study
- Water main life expectancy 100 years

### 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 Township’s asset database prepared by Burnside in 2005, and updated by Township staff since then, was a starting point. This database sets out the initial costs, when the asset was installed. Based on the life expectancies of each asset, a future renewal and replacement schedule was developed for 2015-2105. For example, an asset installed in 1994, with a 30-year life, is scheduled for replacement in 2024. The 2005 values were inflated to 2024 replacement costs, the year when the asset is scheduled for replacement. Water mains, with a 100-year life, installed in 1994 will be replaced in 2094, with 2005 values inflated to 2094 costs. This approach was used for all assets to 2105. The projected asset replacement schedule for 2015 to 2105 is summarized in figure 5.1.

The Township is also anticipated to experience very substantial growth over the next twenty years. This anticipated growth is documented in the DC study carried out for the Township in 2014. This is set out in table 5.1 and illustrated in Figure 1. The user fee supported renewal costs are set out in figure 2:





**Table 5.1 Clearview Water System Capital Expenditures and Sources of Financing 2014-2025 Inflated \$**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Capital Renewal and Replacement Needs</b>												
1 Water Plant Capital Future :	55,583	222,956	160,377	30,853	321,345	369,526	53,127	73,175	321,876	777,501	75,050	218,810
2 Water Line Capital Future \$	455,363	1,399,140	-	190,810	493,191	-	101,498	-	5,381,557	-	-	200,667
3 Total	510,946	1,622,096	160,377	221,664	814,535	369,526	154,625	73,175	5,703,432	777,501	75,050	419,478
4												
5 <b>Financing</b>												
6 Grants	-	-	-	-	-	-	-	-	-	-	-	-
7 User Fees	510,946	1,622,096	160,377	221,664	814,535	369,526	154,625	73,175	5,703,432	777,501	75,050	419,478
8												
9 <b>Capital Renewal Investments Supported Largely by Non-User Fee Revenue Sources to 2025 as per the DC Study</b>												
10 Water Plant/Equipment Fut	-	626,574	4,535,348	1,352,796	24,874,870	-	-	4,802,657	-	-	15,718,446	10,801,177
11 Water Line Capital Future \$	1,052,000	2,375,180	2,238,499	-	907,160	-	91,942	787,119	2,110,439	626,291	1,767,250	-
12 Total	1,052,000	3,001,754	6,773,847	1,352,796	25,782,030	-	91,942	5,589,777	2,110,439	626,291	17,485,696	10,801,177
13												
14 <b>Financing</b>												
15 Grants, Subsidies etc	414,000	1,494,000	1,266,000	-	660,000	-	77,000	-	616,000	-	1,315,000	-
16 Development Charges	586,228	1,386,089	4,606,309	1,352,796	25,122,030	-	14,942	5,439,731	1,152,441	626,291	16,170,696	10,801,177
17 Local Improvement Charges												
18 User Fees	51,772	121,665	901,538	-	-	-	-	150,046	341,998	0	0	-
19 Total	1,052,000	3,001,754	6,773,847	1,352,796	25,782,030	-	91,942	5,589,777	2,110,439	626,291	17,485,696	10,801,177
20												
21												
22 <b>Grand Total</b>	<b>1,562,946</b>	<b>4,623,850</b>	<b>6,934,224</b>	<b>1,574,460</b>	<b>26,596,566</b>	<b>369,526</b>	<b>246,567</b>	<b>5,662,951</b>	<b>7,813,871</b>	<b>1,403,792</b>	<b>17,560,746</b>	<b>11,220,655</b>
23												
24 <b>Grand Total User Fee Fund</b>	<b>562,718</b>	<b>1,743,761</b>	<b>1,061,915</b>	<b>221,664</b>	<b>814,535</b>	<b>369,526</b>	<b>154,625</b>	<b>223,220</b>	<b>6,045,430</b>	<b>777,501</b>	<b>75,050</b>	<b>419,478</b>

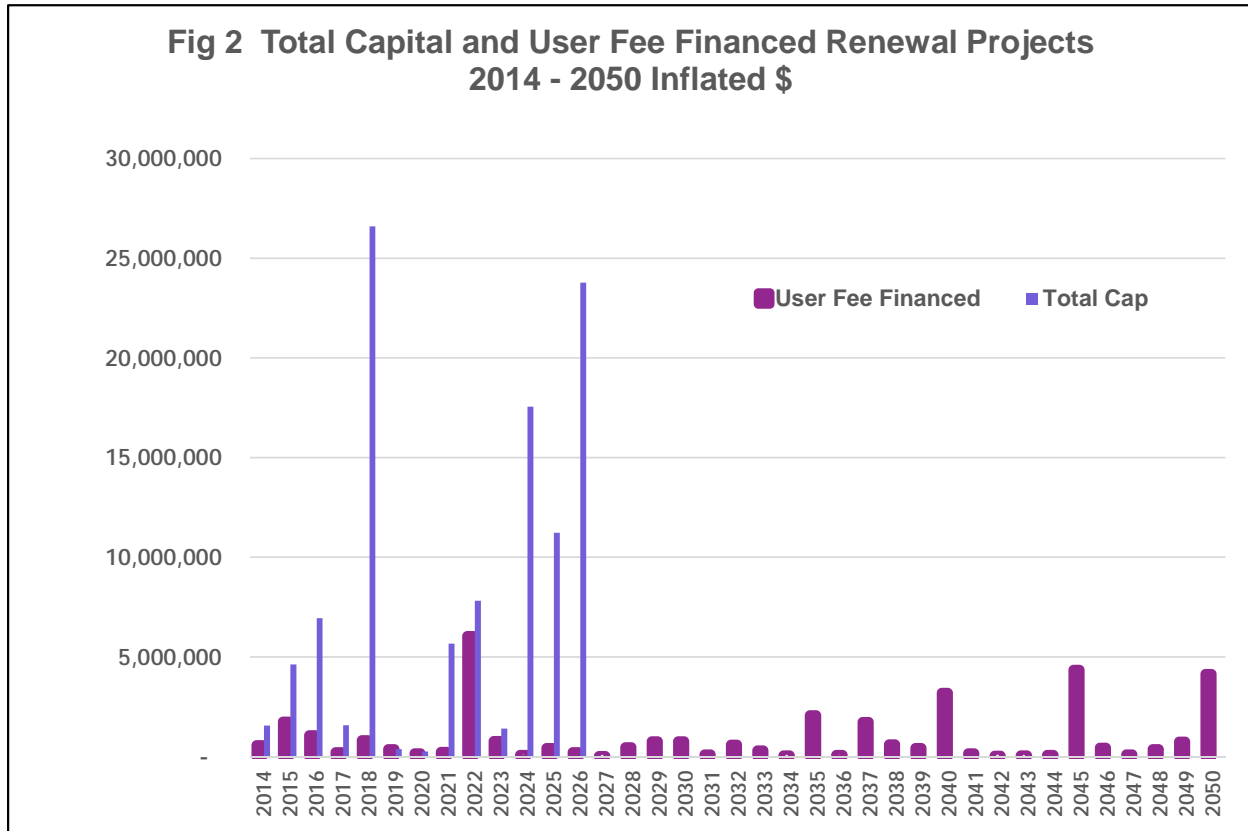


Figure 1 provides a long-term perspective on capital needs. It is clear that there are substantial capital needs in the 2025-6 period, and there are very substantial capital needs in the latter part of the century, as buildings and underground assets are projected to have reached the end of their life and need replacing. Figure 2 provides a clearer perspective on the total projected investment, as well as the user fee supported capital renewal to 2050.

Capital projects are estimated to cost an average of \$862,177 per year in 2014\$ from 2015 to 2025. The major capital projects projected in the near term include the following:

- 2014-16 Water main upsizing in various locations in Stayner – covered largely by development fees
- 2015 – Well #4 upgrade in Stayner
- 2017 – Reservoir expansion in Creemore
- 2018 – Construction of an expanded network of water mains in Creemore
- 2019 – Reservoir expansion, infrastructure to access the CNT pipeline in Stayner and New Lowell
- 2022 - Several water mains replaced that were installed in 1917

The capital investment needed to for ongoing capital replacement and renewal needs represents a substantial cost pressure on rates over many years. The financing plan is designed to finance all of these and other projected renewals to 2105. Not included are capital expenditures needed to comply with new regulations that may be implemented in the future. The capital plan is set out in appendix A.

### 5.3 SUMMARY OPERATING PLAN

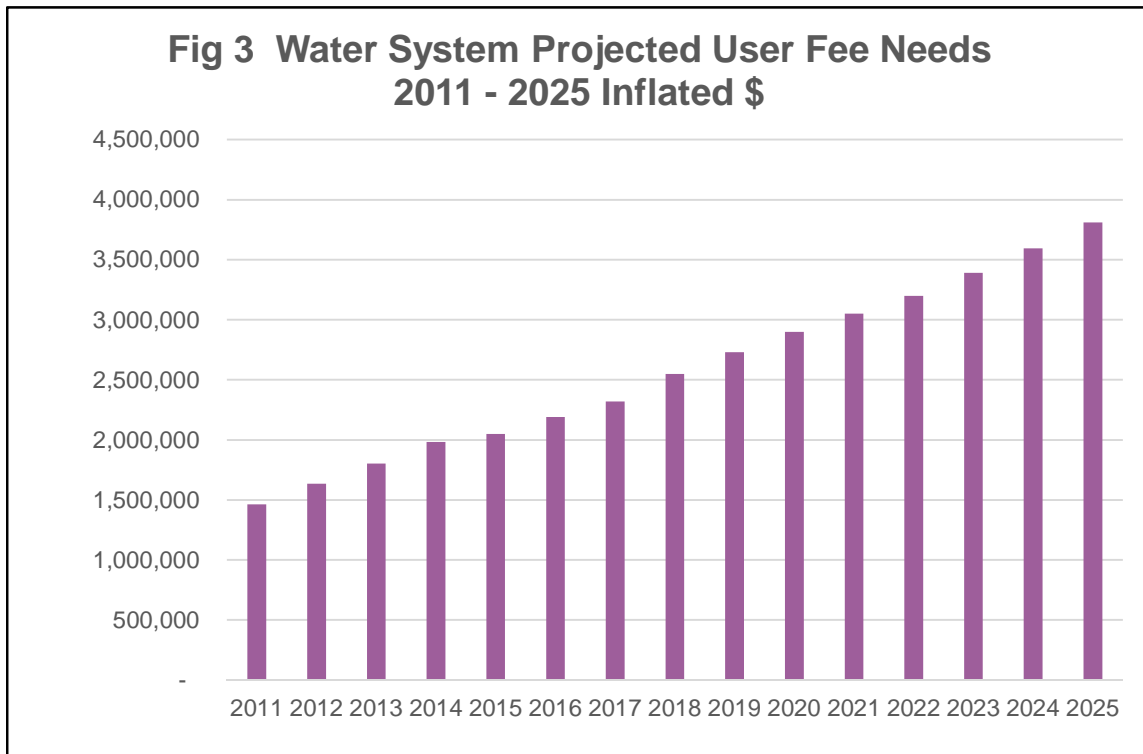
The summary operating financial plan for the water system sets out the revenues and expenditures, and summarizes the financing strategy for the water system. The objective, adopted in this study, is to use user fees



as much as possible to finance projected asset renewal expenditures with loans used to finance major projects in the near term. The summarized operating financial transactions for 2011 to 2025 are shown in table 5.2. Detailed transactions setting out various revenue sources, routine day-to-day expenses, transfers and debt repayment are shown in appendix B.

### 5.3.1 User Fee Requirements

Revenues are comprised primarily of revenues from user fees, development charges and to a lesser degree from hook-up fees and late payment charges on overdue accounts. Contributions from the capital reserve augment revenues in particular years, when large capital expenditures occur. The projected user fee revenue needs are set out in line 1 of table 5.2, and are illustrated graphically in Figure 3 below:



User fees are projected to increase at about 6% per year from 2015 to 2025. Rate increases, associated with these user fee increases, will be lower due to the anticipated increases in the number of users. Included in the user fee increase is provision for the inflation of operating costs of 3-6% per year, and inflation of currently projected capital costs of 3% per year. The proposed schedule of user fee increases funds all routine projected operating costs, and provides sufficient revenue, coupled with timely borrowings, to cover the currently projected capital asset renewal and replacement needs to 2105.

### 5.3.2 Operating Expenses

Operating expenditures represent the routine day-to-day costs of operating the system, and include electrical, chemical, testing and a variety of other costs, including the cost of purchased water. Excluded for purposes of this analysis are debt payments and transfers to capital or reserves. Projected day-to-day operating expenditures are summarized in line 3 in table 5.2, and are illustrated in figure 4.

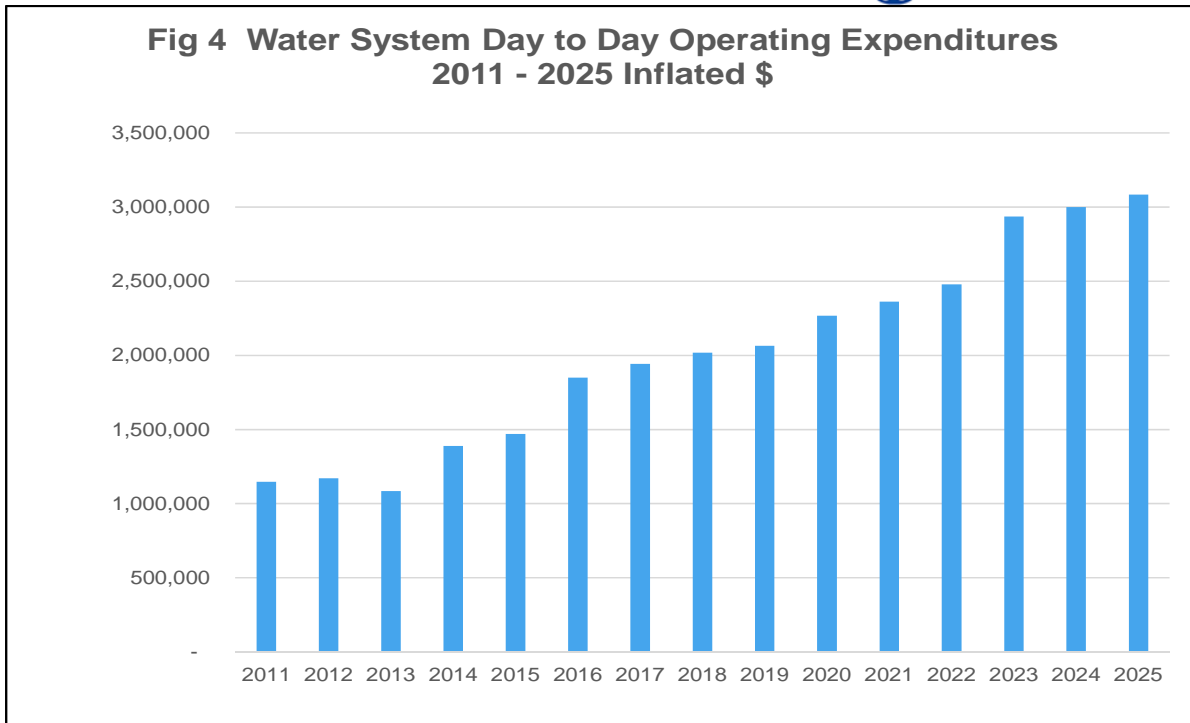


Figure 4 excludes debt servicing costs from day to day expenses. Fluctuations in expenditures are normal. For instance, equipment expenditures in 2013 were lower than earlier years. Day-to-day operating costs are projected to increase overall at the rate of inflation to 2025.

### 5.3.3 Debt

The water system has two outstanding loans at this time. One is a 20-year loan taken out for Stayner water in 2006 with an outstanding principal of \$3 million as of December 31, 2013. This loan is partially recovered through development charges. The second is a Creemore water loan taken out in 2009 for 20 years, with a balance outstanding of \$684,399 as of December 31, 2013.

New debt is projected for 2016 in order to supply funds to renew assets. It is projected that a \$2.8 million loan will be needed at that time. This will pay for recent capital renewal projects as well as the near term renewal of some older water mains in Stayner and Creemore. In 2022, it is projected that a \$5.5 million loan would be needed to renew/replace water mains installed in Stayner in 1917. The debt needed is shown in line 31 of the capital renewal plan in appendix A. All loans are proposed to be amortized over 20 years. Utilizing long-term loans is a sound strategy, as the benefits of the capital renewal will last many years, and it is appropriate that the cost be spread over both current and future users. All debt will be paid off in 2042. At this time, no other debt is projected to be required before the end of the century.

**Table 5.2 Clearview Water System Summary Operating Financial Plan - 2011-2025 - Inflated \$ Post 2014**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Operational</b>															
1 User Fees	1,463,021	1,633,970	1,801,139	1,981,635	2,050,000	2,190,000	2,321,400	2,550,000	2,730,000	2,900,000	3,050,000	3,200,000	3,392,000	3,595,520	3,811,251
2 Total Revenues	1,628,439	1,886,724	1,966,855	2,132,333	2,201,693	2,342,938	2,476,205	2,706,672	2,888,538	3,060,405	3,212,272	3,364,139	3,558,006	3,764,015	3,982,235
3 Day to Day Expenses	1,147,277	1,170,950	1,084,773	1,389,307	1,470,175	1,849,877	1,942,416	2,018,011	2,063,979	2,267,374	2,361,776	2,478,834	2,936,353	2,999,407	3,084,290
4 Debt Charges	295,597	298,847	295,946	298,827	298,847	298,827	298,847	298,847	298,847	298,847	298,846	298,847	298,848	298,848	298,848
5 Transfer to Operating Reserves		-	-	-	-	75,000	75,000	75,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
6 Transfer to Capital Reserves	142,700	-	163,453	118,520	1,311,090	-	61,724	499,721	106,186	289,559	278,429	8,973	504,697	340,708	129,619
7 Transfer to Capital	25,087	63,371	-	562,718	1,743,761	119,233	221,664	814,535	369,526	154,625	223,220	545,430	777,501	75,050	419,478
8 Total Expenses	1,610,661	1,533,168	1,544,171	2,132,332	2,201,693	2,342,937	2,476,203	2,706,672	2,888,538	3,060,404	3,212,271	3,364,138	3,558,005	3,764,014	3,982,235
9 Total	17,778	353,556	422,683	-	0	0	1	1	0	0	-	0	0	0	0
10															
<b>Capital</b>															
12 Capital Revenues	134,605	63,371	35,284	562,718	1,743,761	2,919,233	221,664	814,535	369,526	154,625	223,220	6,045,430	777,501	75,050	419,478
13 Capital Expenditures	134,604	63,371	35,284	562,718	1,743,761	2,919,233	221,664	814,535	369,526	154,625	223,220	6,045,430	777,501	75,050	419,478
14 Revenue less All Expenses	0	0	0	-	0	0	-	-	-	-	-	0	-	-	-

All projected asset renewal projects from 2026 to 2105 are proposed to be funded from the user fees and the reserves. The actual size of the 2022 loan will depend on the rate of new growth.

#### **5.3.4 Reserves**

The operating reserve as of December 31, 2013 had a deficit of \$42,729. It is proposed that \$75,000 be contributed in 2016 to 2018, and then \$50,000 for each year following, to a cap of \$300,000. This reserve would be used to even out seasonal variations, such as a wet summer, that will reduce revenues below expectations. It will also be used to fund larger than expected repairs.

The capital reserve, shown in table 5.3, as of mid-December 2013, was in a deficit \$32,909. This reserve, with its current deficit, will not meet the capital renewal needs in the immediate future. Accordingly, a \$2.8 million loan is proposed for 2016. This places the reserve on a more solid footing, however, a \$5.5 million loan is projected for 2022. Subsequently, the future proposed rates, are projected to meet all capital needs until the end of the century. The use of loan means that the funds in the reserves do not reach unwarranted high levels prior to 2025, and the increase in user fees, and hence rates, can be kept smooth from 2015 well into the middle of the century.

### **5.4 TOWNSHIP WATER SALES/CONNECTIONS**

#### **5.4.1 Water Sales 2013-2025**

Water sold is water that a user had paid for. The actual projected sales from 2013, and projected sales from 2014 to 2025, are set out in table 5.4:

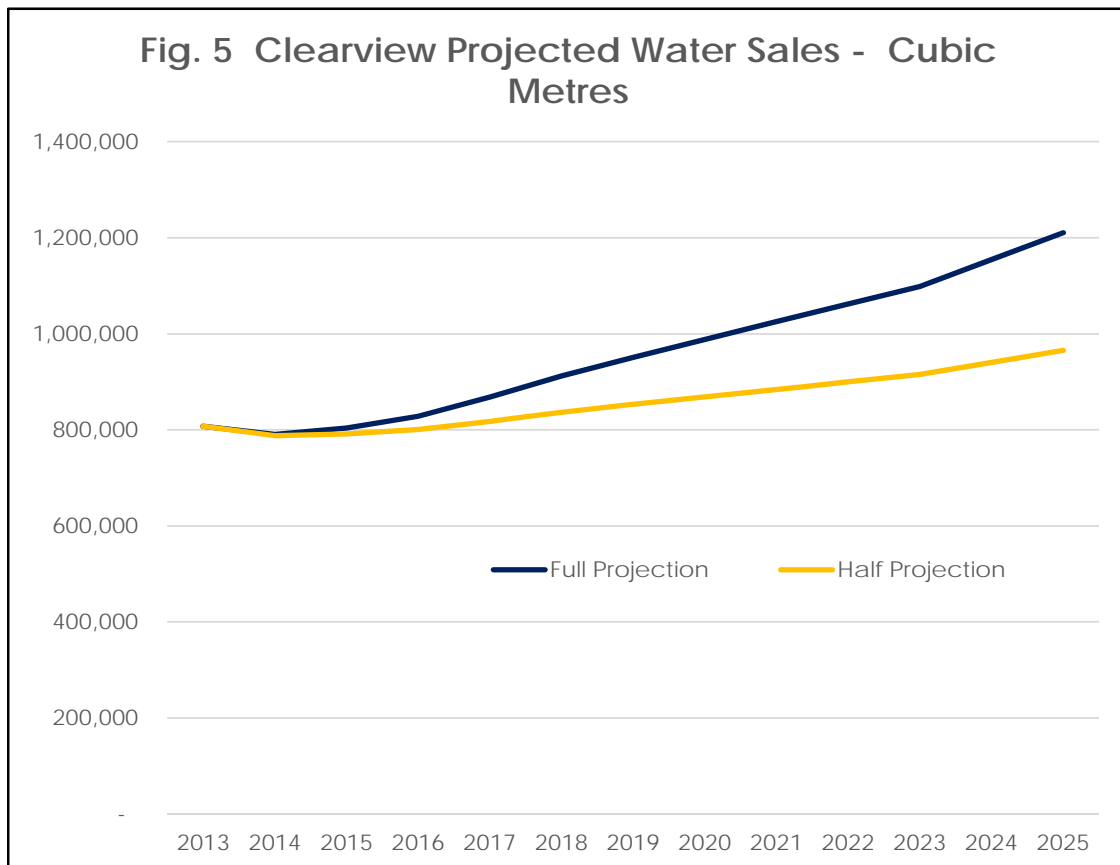
The water sold data are based on actual readings for 2011 - 2013. Two options are presented. The first is the full projection option, as per the anticipated development set out in the DC study, and the second is a half projection option that has one-half the growth of the full projection option.

From 2015 to 2025, the rate setting time 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 1.3% per annum is assumed in all connections, meaning a decline in water sold of about 1.3%. In addition, some 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 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. This is illustrated with the case of the average user's water bill shown in table 5.8

New residential users added to the system from the anticipated growth will start with water efficient fixtures. These will generally be using water efficient fixtures required by the changes to the plumbing code. 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. New users as a group, even though they have more efficient fixtures than existing users, will add significantly to overall water sales by the Township.

Industrial, commercial and institutional use, apart from one large user in Stayner and one in Creemore account for about 15-20% of the amount of water sold. These users will improve their water efficiency over the next decade. As new ICI users are added, due to anticipated growth, they will be more efficient than existing users.

The projected water sales to all water users from 2014 to 2025 are set out in figure 5.



**Table 5.3 Clearview Water System Capital Reserves 2014-2025 - Inflated \$**

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Opening Value	(32,909)	(152,581)	(1,469,011)	336,891	280,221	(215,297)	(116,646)	168,830	449,791	447,564	(50,419)	288,524
Addition (Withdrawal)	(118,520)	(1,311,090)	1,857,318	(61,724)	(499,721)	106,186	289,559	278,429	(8,973)	(504,697)	340,708	129,619
Interest on Cash Balance	(1,152)	(5,340)	(51,415)	5,053	4,203	(7,535)	(4,083)	2,532	6,747	6,713	(1,765)	4,328
Close	(152,581)	(1,469,011)	336,891	280,221	(215,297)	(116,646)	168,830	449,791	447,564	(50,419)	288,524	422,471
Close in 2014\$	(152,581)	(1,426,225)	317,552	256,442	(191,289)	(100,620)	141,392	365,721	353,312	(38,642)	214,689	305,202

**Table 5.4 Clearview Water System Quantities of Water Sold 2013-2025**
**Full Projection - Cubic Metres**

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Stayner	572,247	555,636	568,325	584,989	611,715	638,116	664,193	689,950	715,389	740,514	765,326	799,673	833,595
Creemore	122,287	119,642	121,572	130,640	144,683	163,611	172,461	181,203	189,836	198,362	206,782	214,902	222,919
New Lowell	60,333	59,722	59,119	58,521	57,931	57,347	59,120	60,871	62,601	64,309	65,996	74,886	83,668
Buckingham Woods	3,162	3,635	3,595	3,555	3,516	3,478	3,439	3,402	3,364	3,327	3,291	3,254	3,219
Nottawa (McKean)	36,809	36,404	36,004	35,608	35,216	34,829	36,379	37,911	39,424	40,918	42,394	47,604	52,751
Collingwoodlands	12,823	15,345	15,253	15,162	15,071	14,980	14,890	14,801	14,712	14,624	14,536	14,449	14,362
<b>Total</b>	<b>807,661</b>	<b>790,385</b>	<b>803,867</b>	<b>828,475</b>	<b>868,132</b>	<b>912,360</b>	<b>950,483</b>	<b>988,138</b>	<b>1,025,327</b>	<b>1,062,054</b>	<b>1,098,325</b>	<b>1,154,768</b>	<b>1,210,515</b>

**Half Projection - Cubic Metres**

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Stayner	572,247	553,545	557,934	564,332	575,782	587,090	598,258	609,286	620,175	630,927	641,544	656,947	672,157
Creemore	122,287	119,124	119,513	123,478	129,936	138,842	142,717	146,542	150,320	154,050	157,733	161,271	164,764
New Lowell	60,333	59,802	59,119	58,521	57,931	57,347	57,944	58,534	59,117	59,691	60,258	64,430	68,551
Buckingham Woods	3,162	3,635	3,595	3,555	3,516	3,478	3,439	3,402	3,364	3,327	3,291	3,254	3,219
Nottawa (McKean)	36,809	36,404	36,004	35,608	35,216	34,829	35,412	35,989	36,558	37,120	37,674	40,098	42,492
Collingwoodlands	12,823	15,345	15,253	15,162	15,071	14,980	14,890	14,801	14,712	14,624	14,536	14,449	14,362
<b>Total</b>	<b>807,661</b>	<b>787,855</b>	<b>791,418</b>	<b>800,655</b>	<b>817,451</b>	<b>836,566</b>	<b>852,661</b>	<b>868,554</b>	<b>884,246</b>	<b>899,740</b>	<b>915,036</b>	<b>940,449</b>	<b>965,545</b>

The projected quantities of water sold play a key part in estimated future revenues, and in setting rates. Generally, the full projection model is estimated to increase water sales from 800,000 cubic metres now to 1,200,000 by 2025, or a 50% increase. The half projection option is projected to result in one-half the increase projected for the full projection option.

#### 5.4.2 Projected Number of Connections

The current number of billing units and metered connections, and the projected distribution of metered connections by the high and medium option, are set out in table 5.5. The increase is made up of residential as well as industrial, commercial and institutional (ICI) connections.

<b>Full Projection</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Stayner	1,587	1,607	1,687	1,787	1,937	2,087	2,237	2,387	2,537	2,687	2,837	3,037	3,237
Creemore	515	520	535	585	660	760	811	862	913	964	1,015	1,065	1,115
New Lowell	332	332	332	332	332	332	344	356	368	380	392	442	492
Buckingham Woods	23	23	23	23	23	23	23	23	23	23	23	23	23
Nottawa (McKean)	137	137	137	137	137	137	147	157	167	177	187	217	247
Collingwoodlands	77	77	77	77	77	77	77	77	77	77	77	77	77
<b>Total</b>	<b>2,671</b>	<b>2,696</b>	<b>2,791</b>	<b>2,941</b>	<b>3,166</b>	<b>3,416</b>	<b>3,639</b>	<b>3,862</b>	<b>4,085</b>	<b>4,308</b>	<b>4,531</b>	<b>4,861</b>	<b>5,191</b>
<b>Half Projection</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Stayner	1,587	1,597	1,637	1,687	1,762	1,837	1,912	1,987	2,062	2,137	2,212	2,312	2,412
Creemore	515	518	525	550	588	638	663	689	714	740	765	790	815
New Lowell	332	332	332	332	332	332	338	344	350	356	362	387	412
Buckingham Woods	23	23	23	23	23	23	23	23	23	23	23	23	23
Nottawa (McKean)	137	137	137	137	137	137	142	147	152	157	162	177	192
Collingwoodlands	77	77	77	77	77	77	77	77	77	77	77	77	77
<b>Total</b>	<b>2,671</b>	<b>2,684</b>	<b>2,731</b>	<b>2,806</b>	<b>2,919</b>	<b>3,044</b>	<b>3,155</b>	<b>3,267</b>	<b>3,378</b>	<b>3,490</b>	<b>3,601</b>	<b>3,766</b>	<b>3,931</b>

The number of connections by 2025, in the full projection option, is 94% higher than the number in 2013. The figure for the half projection option is about half of this increase, or about 47%. These numbers play an important role in developing rates that will generate sufficient revenues to provide the ongoing capital renewal.

#### 5.5 WATER RATE CALCULATIONS

Rates are calculated by considering the user fee revenue requirements, and by taking into account future projected water use and the number of connections. As illustrated in figure 3, user fees are projected to increase. This causes rates to rise. However, the number of new users will help offset some of the projected increase in user fees. In 2013, the cost of water sold, including the operating, capital and debt servicing charges, was \$2.35 per cubic metre. This provides a context for assessing the rate options. Two rate options are presented. Both rate options 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. 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 usually generate about 20-30% of revenues, while the variable charge generates the balance of the revenue.

### 5.5.1 Option 1 Full Projection

This option assumes that all growth anticipated and documented in the Township DC study will come to fruition, on schedule. The rates are set out in table 5.6.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Full Projection</b>												
Fixed Portion per Year	163	163	164	165	167	168	169	169	169	169	169	169
Variable Portion per M3	1.94	1.99	2.06	2.08	2.17	2.23	2.27	2.30	2.33	2.39	2.40	2.43
<b>Half Projection</b>												
Fixed Portion per Year	163	173	187	191	201	208	213	217	220	226	229	233
Variable Portion per M3	1.94	1.99	2.08	2.16	2.32	2.43	2.54	2.62	2.70	2.82	2.91	3.00

The proposed rates in table 1.1 represent an increase in the volumetric rate of 2.0% per annum from 2015 to 2025. In the full projection option, shown in the upper part of table 1.1, the 2015 rate is \$163 per year, with the volumetric charge at \$1.99. By 2019, the fixed charge is projected at \$168 per year, and \$2.23 for all the water that passes through the meter. The figures for 2025 are \$169 for the fixed portion and \$2.43 for the volumetric. This includes inflation in capital and operating costs, plus sufficient funds to sustainably operate and renew the system from 2015 to 2105.

### 5.5.2 Option 2 Half Projection

This option is based on a growth rate half of that in option 1. The proposed rates for option 2 are set out in the lower portion of table 5.6.

The proposed rates represent an increase in the volumetric rate of 4.1% per annum for 2015 to 2025. A comparison of the projected water rates for this option for 2014, 2019 and 2024 is set out in the lower portion of table 1.1. The rate for 2015 is \$173 for the fixed portion, and \$1.99 for each cubic metre used. The 2019 figures are \$208 for the annual fixed charge and \$2.43 for the variable charge. The figures for 2025 are \$233 for the annual fixed portion and \$3.00 for each cubic metre used for all users. This includes inflation in capital and operating costs, as well as investment for growth accommodation, plus sufficient funds to sustainably operate and renew the system from 2015 to 2105.

Clearly, rates and the annual increase in rates is very much related to the number of new users in the future.

## 5.6 SAMPLE MONTHLY WATER BILLS FOR VARIOUS USER GROUPS

A number of hypothetical user groups were selected to determine the impacts of the two proposed rate options. Both options produce the required operating and future capital needs of the system. The water bills with the high and half projection options are set out in table 5.8.

In option 1, the full projection option, a user taking 70 cubic metres per year is projected to pay \$301 in 2015, or \$4 more per year compared to what they paid in 2014. The bill will be \$324 in



2019, and \$338 in 2025. Someone using 125 cubic metres per year will pay \$410 in 2015, or \$4 more than 2014, \$447 in 2019, and \$472 in 2025. A user of 300 cubic metres per year will pay a water bill of \$758 in 2015, or \$13 more than 2014, \$837 in 2019, and \$896 in 2025. An average user has been included in the table as average use is declining over time. The average user of 293 cubic metres per year will pay \$735 in 2015 or \$3 more than in 2014, will take 261 cubic metres in 2019 and pay \$750, and is projected to take 233 cubic metres per year in 2025 and pay \$734. Water use by the average user in all systems is expected to decline during 2015 to 2025. All figures are in inflated dollars.

In option 2, the half projection option, a user taking 70 cubic metres per year is projected to pay \$312 in 2015, or \$13 more than 2014. They will pay \$378 in 2019, and \$443 in 2025. Someone using 125 cubic metres per year will pay \$422 in 2015, or \$16 more than 2014. They are projected to pay \$512 in 2019, and \$608 in 2025. A user of 300 cubic metres per year will pay a water bill of \$771 in 2014, or \$26 more than 2014, \$938 in 2019, and \$1,133 in 2025. The average user of 293 cubic metres per year will pay \$747 in 2015, or \$15 more than 2014. They will take 261 cubic metres in 2019 and pay \$843, and is projected to take 233 cubic metres per year in 2025 and pay \$932. All figures are in inflated dollars. The revenues generated by the proposed water rates is set out in appendix 3.

### 5.7 WATER BILL COMPARISONS WITH OTHER COMMUNITIES

The projected water bill for Clearview user is compared with water bills for a number of communities in Ontario. The usage for all communities is 293 cubic metres per year, which is the estimated average water usage per connection in Clearview. All users are assumed to have a standard 15mm (5/8 by 3/4") meter. The bill comparisons are set out in table 5.7.

<b>5.7 Water Bill Comparisons (2014 Rates)</b>	
<u>Utility</u>	<u>Water Bill</u>
Barrie	\$406
Collingwood	\$422
Penetanguishene	\$527
Springwater Residential	\$658
<b>Clearview</b>	<b>\$747</b>
Springwater Commercial	\$783
Kawartha Lakes	\$985
Adjala-Tosorontio	\$1,335
Based on Average Usage of 294 M3 per Year	

Clearview's rates are for 2014 and are based on full life-cycle capital renewal of all assets to 2105. Many communities have not developed a long-range plan for managing their water assets. They 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.

**Table 5.8 Clearview Hypothetical Water Bills 2014 - 2025 Inflated \$**

<b>Full Projection</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Single Person with 70 M3/Year	299	301	304	308	319	324	328	330	331	337	337	338
Couple with 125 M3 per Year	406	410	422	423	438	447	453	456	460	469	469	472
Family 300 M3 per Year	745	758	782	787	818	837	851	859	867	886	890	896
Average User (use declines over time)	732	735	745	733	746	750	751	747	743	749	740	734
User with 195,870 M3/Year	380,152	389,774	403,556	407,753	425,479	436,733	445,730	451,255	456,542	467,406	470,682	475,389
<b>Half Projection</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Single Person with 70 M3/Year	299	312	333	342	363	378	391	400	409	423	433	443
Couple with 125 M3 per Year	406	422	447	461	491	512	530	544	558	578	592	608
Family 300 M3 per Year	745	771	811	838	896	938	974	1,003	1,031	1,071	1,101	1,133
Average User (use declines over time)	732	747	773	783	820	843	862	875	886	909	919	932
User with 195,870 M3/Year	380,152	390,841	407,362	422,928	453,957	476,824	497,244	513,680	529,659	552,050	569,356	587,827

## 6.0 PROPOSED WASTEWATER SYSTEM RATES FOR 2015-2025

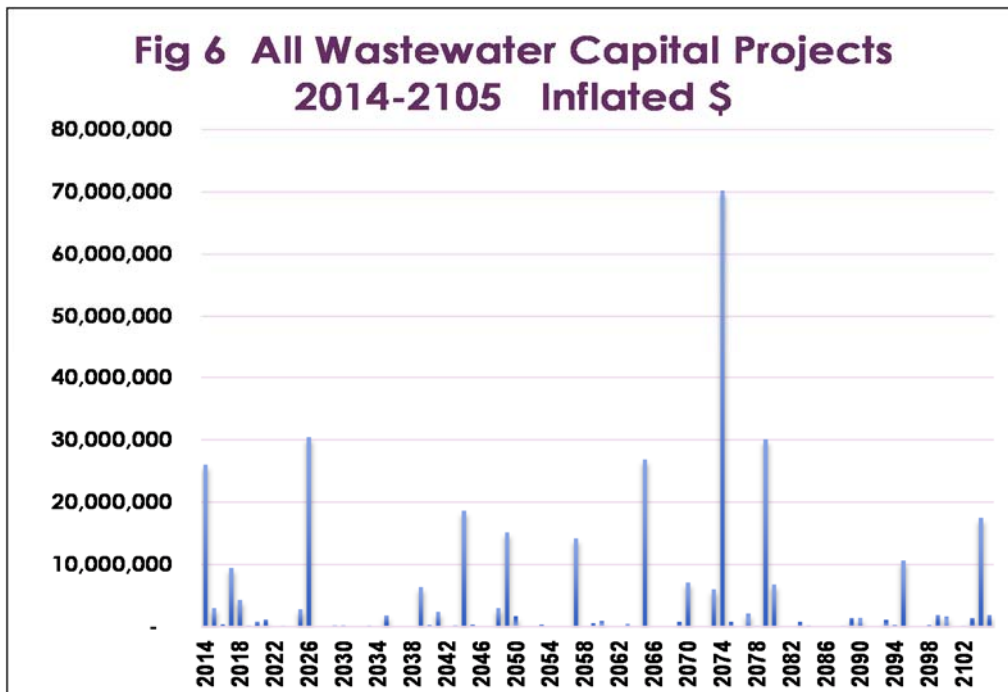
### 6.1 WASTEWATER RATE SETTING ASSUMPTIONS

The wastewater rate setting approach begins by establishing a capital and major maintenance-financing plan, as well as an operating plan for 2011-2025. The capital plan is based on the capital needs estimates prepared by Burnside in 2005, and updated by Township staff. They cover the period from 2015 to 2105. The operating 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, debt-servicing requirements, and existing reserve levels. The capital needs projections include funding for capital investments to renew assets. This is combined with the operating plan to produce an overall wastewater capital and operating financing plan, with user-fee revenues and loans adjusted to ensure sustainability. Users in both Creemore and Stayner pay the same wastewater rates. Several assumptions were made in preparing the capital and major maintenance programs as well as the operating plan:

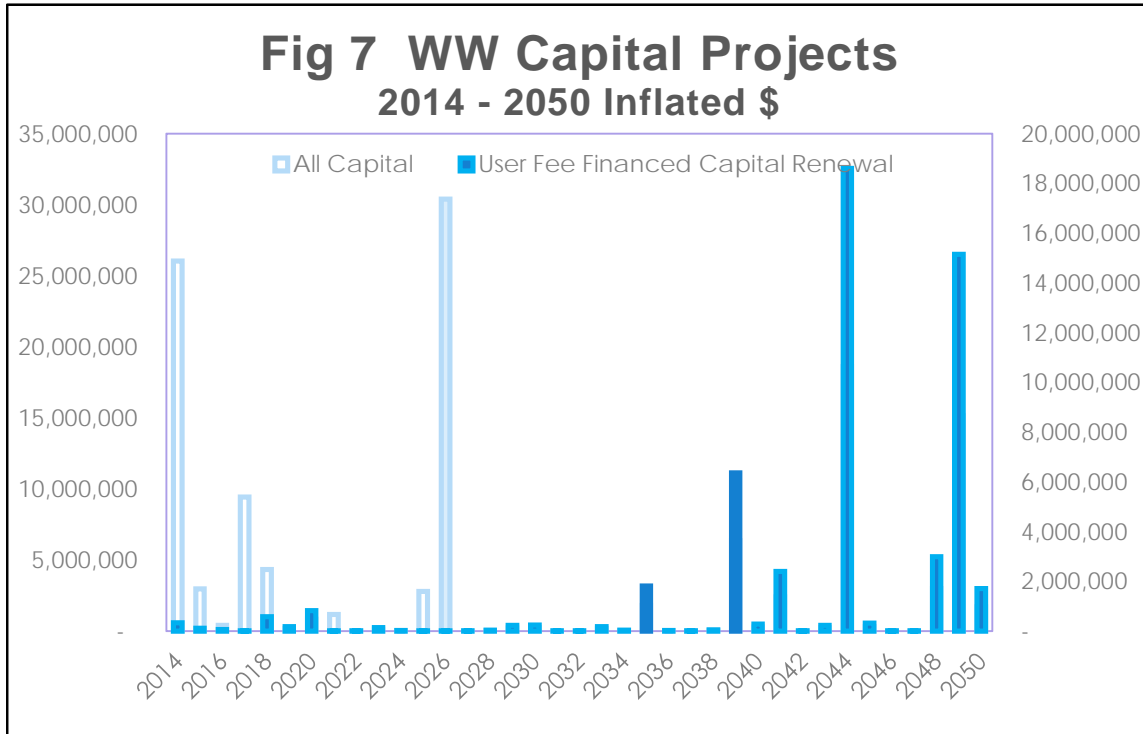
Inflation	capital and major maintenance 3% per annum, operating 3%, 6% for energy
Interest on investments	1.5%
Interest on loans	3.5%
Population growth/new connections	as anticipated in the DC Background Study 2014

### 6.2 CAPITAL AND MAJOR MAINTENANCE EXPENDITURES

Projected capital and major maintenance renewals were prepared by Burnside in 2005, and updated by Township staff since then. Also included are the projects anticipated in the 2014 DC for 2014 to 2025. The user fee paid portion of the capital costs for the 2014 to 2105, in inflated dollars, are shown graphically in Figure 6.



The long-term outlook presented in Figure 6 shows some substantial near-term investments and then large expenditures in the 2066-2078 period as major system components need to be replaced. The short-term capital needs are set out in Figure 7. This shows the total cost of all projects, including those anticipated from 2014 to 2025 in the DC study in the light shade and the user fee paid portion in the darker color.



The projected major projects in this period include the following:

- 2014 – Capital in Stayner, including a new pumping station, a large sewage force main, substantial sewage infrastructure and additional sewage treatment capacity
- 2017 – Provision of basic sewage infrastructure in Nottawa including sewage treatment tanks, a Pumping station, a force main and a large sewer
- 2018 – Installing a pumping station and force main for Creemore, and a trunk sewer upgrade in Stayner
- 2026- Provision of basic sewage infrastructure in New Lowell, including the provision of sewage treatment tanks, a pumping station, and a force main
- 2039 – Renew/replace the Zenon treatment package, process control equipment and replacement of the generator

Much of the cost of the above, from 2015 to 2025, is projected to come from development charges and other fees. User fees are responsible for a relatively small portion of the project costs. This is shown in table 6.1 and figure 7. Table 6.2 shows the revenue and expense flows for capital investments from 2011 to 2025.

**Table 6.1 Clearview Wastewater System Capital Costs 2014 to 2025 - Inflated \$**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>1 Capital Renewal and Replacement Needs</b>												
2 Sewer Plant Capital Future \$	-	5,400	37,227	5,400	5,400	-	654,346	-	-	-	-	5,418
3 Creemore detailed Plant Capital Breakout Future \$	-	106,832	-	-	19,190	175,630	168,236	7,379	18,748	140,655	29,969	1,384
4 Sewer Line Capital Future \$	0	0	0	0	0	0	0	0	0	0	0	0
5 Total	-	112,232	37,227	5,400	24,590	175,630	822,582	7,379	18,748	140,655	29,969	6,803
6												
7 Financing												
8 Grants	-	-	-	-	-	-	-	-	-	-	-	-
9 User Fees	-	112,232	37,227	5,400	24,590	175,630	822,582	7,379	18,748	140,655	29,969	6,803
10												
<b>11 Capital Renewal Investments Supported Largely by Non-User Fee Revenue Sources to 2025 as per the DC Study</b>												
12 Plant/Equipment	20,414,000	-	137,917	9,413,843	-	-	-	1,168,380	-	-	-	433,265
13 Sewer Main Capital	5,718,454	2,858,250	222,789	-	4,301,695	-	-	-	-	-	-	2,353,198
14 Total	26,132,454	2,858,250	360,706	9,413,843	4,301,695	-	-	1,168,380	-	-	-	2,786,463
15												
16 Financing												
17 Grants, Subsidies etc.	11,791,466	-	-	-	2,644,946	-	-	-	-	-	-	-
18 Development Charges	10,378,388	2,858,250	327,272	6,445,863	1,104,574	-	-	1,168,380	-	-	-	2,786,463
19 Post Benefit	3,632,600	-	-	-	-	-	-	-	-	-	-	-
20 Local Improvement Charges	-	-	-	2,967,980	-	-	-	-	-	-	-	-
21 User Fees for Capital Renewal	330,000	-	33,434	-	552,175	-	-	-	-	-	-	-
22 Total	26,132,454	2,858,250	360,706	9,413,843	4,301,695	-	-	1,168,380	-	-	-	2,786,463
23												
24												
25 Grand Total Capital	26,132,454	2,970,482	397,933	9,419,243	4,326,285	175,630	822,582	1,175,759	18,748	140,655	29,969	2,793,265
26												
27 Total Supported by User Fees	330,000	112,232	70,661	5,400	576,765	175,630	822,582	7,379	18,748	140,655	29,969	6,803

**Table 6.2 Clearview Wastewater Capital Plan for User Fee Financed Portion - 2011 to 2025 - Inflated \$**

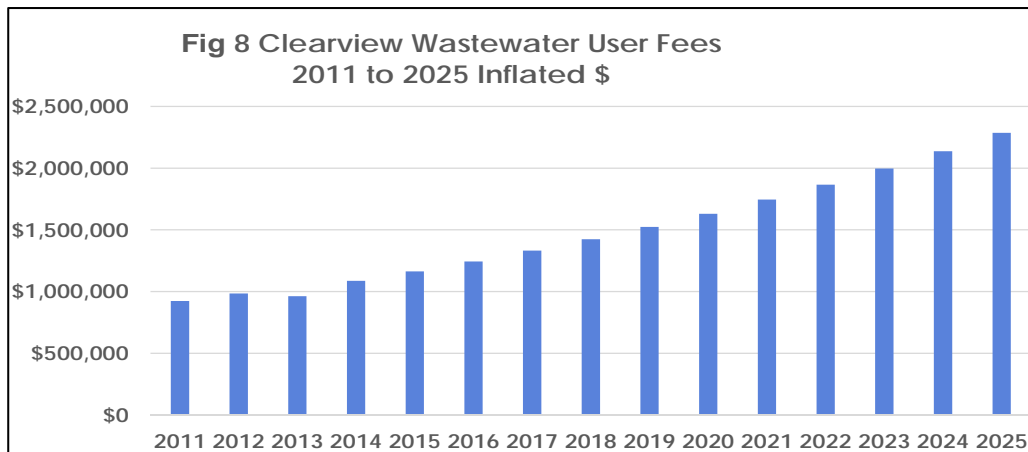
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenue</b>															
Grants Canada	4,116	121,282	236,890	966,667	-	-	-	-	-	-	-	-	-	-	-
Grants Ontario	4,116	121,282	236,890	966,667	-	-	-	-	-	-	-	-	-	-	-
Transfer from Revenue Fund	22,068	57,535	-	1,296,667	-	70,661	5,400	576,765	175,630	822,582	7,379	18,748	140,655	29,969	6,803
Reserve	36,773	161,710	716,206	-	-	-	-	-	-	-	-	-	-	-	-
Loan/Debenture Sale					2,000,000										
Sub Total	71,034	461,809	1,229,335	3,230,000	2,000,000	70,661	5,400	576,765	175,630	822,582	7,379	18,748	140,655	29,969	6,803
<b>Expenditures</b>															
Administration Capital	-	-	916	-	-	-	-	-	-	-	-	-	-	-	-
Sewer Plant 407	34,516	5,143	-	-	-	-	-	-	-	-	-	-	-	-	-
Machinery/Equipment 407	10,239	56,425	320,391	2,900,000	-	-	-	-	-	-	-	-	-	-	-
Building, Property Improvements	-	-	763,124	-	-	-	-	-	-	-	-	-	-	-	-
Structures and Appurtenances	22,319	400,242	144,905	-	-	-	-	-	-	-	-	-	-	-	-
Capital Renewal/Replacement - User Fee Cost Only				330,000	112,232	70,661	5,400	576,765	175,630	822,582	7,379	18,748	140,655	29,969	6,803
Transfer to Capital Reserves					1,887,768										
Subtotal for Capital Expenditures	67,073	461,809	1,229,337	3,230,000	2,000,000	70,661	5,400	576,765	175,630	822,582	7,379	18,748	140,655	29,969	6,803
Net Capital Expenditures	3,961	-	-	1	-	0	-	-	-	-	-	-	-	-	-

### 6.3 WASTEWATER OPERATING PLAN

The summary operating financial statement for the wastewater system is set out in table 6.3. The operating fund numbers for 2011-2013 are based on actual year-end values, the figures for 2014 are budgeted and those for 2015 to 2025 based on the trends established in 2009-2011, with adjustments for changes in operation as new system components come on line. All figures for 2015 to 2025 are inflated.

#### 6.3.1 User Fee Requirements

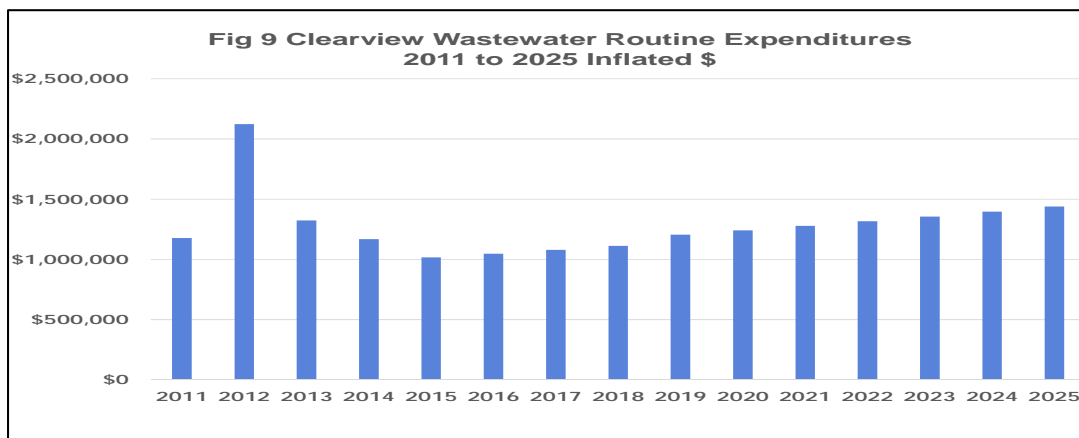
User fee needs projections are set out in line 4 of table 6.3 and are shown in figure 8 below:



User fee revenues were relatively unchanged from 2011 to 2013. They are projected to increase at about 7% per year, including inflation, from 2015 to 2025. This increase is needed to fund the renewal and replacement of infrastructure that has come to the end of its working life, to operate the system, and to cover projected inflation.

#### 6.3.2 Routine Operating Expenses

Future routine operating expenditures are summarized in line 30 in table 6.3, and are illustrated in figure 9:



**Table 6.3 Clearview Wastewater System Operating Financial Statement 2011 to 2025 Inflated \$**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenues</b>															
Grants	-	-	48,394	-	-	-	-	-	-	-	-	-	-	-	-
Sewer Connection Fee	-	24,958	11,000	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	2,768
Extra Strength Sewer Surcharge	49,642	12,825	134,620	140,000	144,200	148,526	152,982	157,571	162,298	167,167	172,182	177,348	182,668	188,148	193,793
User Fees	923,428	984,807	961,922	1,086,700	1,162,769	1,244,163	1,331,254	1,424,442	1,524,153	1,630,844	1,745,003	1,867,153	1,997,854	2,137,703	2,287,343
Reserves	191,508	1,310,278	251,468	1,156,283	-	-	-	-	-	-	-	-	-	-	-
Sewer Debenture Charge (LIC Cree)	317,722	325,264	333,443	175,880	181,880	187,880	193,880	199,880	205,880	211,880	217,880	-	-	-	-
<b>Total Revenues (Excl Reserves)</b>	<b>1,292,254</b>	<b>1,348,212</b>	<b>1,465,711</b>	<b>1,404,580</b>	<b>1,490,909</b>	<b>1,582,691</b>	<b>1,680,301</b>	<b>1,784,144</b>	<b>1,894,650</b>	<b>2,012,279</b>	<b>2,137,525</b>	<b>2,047,034</b>	<b>2,183,131</b>	<b>2,328,540</b>	<b>2,483,904</b>
<b>Total Revenues with Reserves</b>	<b>1,483,762</b>	<b>2,658,490</b>	<b>1,717,179</b>	<b>2,560,863</b>	<b>1,490,909</b>	<b>1,582,691</b>	<b>1,680,301</b>	<b>1,784,144</b>	<b>1,894,650</b>	<b>2,012,279</b>	<b>2,137,525</b>	<b>2,047,034</b>	<b>2,183,131</b>	<b>2,328,540</b>	<b>2,483,904</b>
<b>Expenditures for all Systems</b>															
Administration	566,578	694,923	447,770	405,382	191,272	197,010	202,921	209,008	215,279	221,737	228,389	235,241	242,298	249,567	257,054
Wages	20,471	17,759	24,895	26,000	26,780	27,583	28,411	29,263	30,141	31,045	31,977	32,936	33,924	34,942	35,990
Benefits	299	4,781	6,176	7,800	8,034	8,275	8,523	8,779	9,042	9,314	9,593	9,881	10,177	10,483	10,797
Vacation Pay	857	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equip Maintenance	26,556	8,186	28,726	23,500	24,205	24,931	25,679	26,449	27,243	28,060	28,902	29,769	30,662	31,582	32,529
Vehicle Expense	6,794	7,488	7,703	8,555	8,812	9,076	9,348	9,629	9,918	10,215	10,522	10,837	11,162	11,497	11,842
Facility Maintenance	15,891	12,593	25,515	26,270	42,058	43,320	44,619	45,958	62,337	64,207	66,133	68,117	70,161	72,265	74,433
Sludge Haulage	-	-	103,516	69,000	71,070	73,202	75,398	77,660	79,990	82,390	84,861	87,407	90,029	92,730	95,512
Sewer Line Maintenance	30,485	32,534	32,065	49,927	51,425	52,968	54,557	56,193	57,879	59,615	61,404	63,246	65,143	67,098	69,111
Hydro	183,827	177,643	194,404	180,081	210,245	216,553	223,049	229,741	251,633	259,182	266,957	274,966	283,215	291,711	300,463
Gas	9,957	8,982	7,916	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159	20,764
Contracting	-	-	35,189	-	-	-	-	-	-	-	-	-	-	-	-
Consulting	3,846	1,750	2,196	2,476	2,550	2,627	2,706	2,787	2,870	2,956	3,045	3,137	3,231	3,328	3,427
Contracts	278,109	1,115,148	367,659	303,897	313,014	322,404	332,076	342,039	382,300	393,769	405,582	417,749	430,282	443,190	456,486
Telephone	3,367	2,843	3,705	4,529	4,665	4,805	4,949	5,097	5,250	5,408	5,570	5,737	5,909	6,087	6,269
Insurance	23,133	27,980	25,323	36,730	37,832	38,967	40,136	41,340	42,580	43,858	45,173	46,528	47,924	49,362	50,843
Payment in Lieu	9,979	10,849	11,673	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	13,842
<b>Subtotal - Routine Op. Expenses</b>	<b>1,178,433</b>	<b>2,123,458</b>	<b>1,324,432</b>	<b>1,169,147</b>	<b>1,017,712</b>	<b>1,048,243</b>	<b>1,079,691</b>	<b>1,112,081</b>	<b>1,205,444</b>	<b>1,241,607</b>	<b>1,278,855</b>	<b>1,317,221</b>	<b>1,356,738</b>	<b>1,397,440</b>	<b>1,439,363</b>
<b>Non Res.Revenues Less Routine Expenditures</b>	<b>113,821</b>	<b>(775,246)</b>	<b>141,279</b>	<b>235,433</b>	<b>473,197</b>	<b>534,447</b>	<b>600,611</b>	<b>672,063</b>	<b>689,206</b>	<b>770,672</b>	<b>858,670</b>	<b>729,813</b>	<b>826,394</b>	<b>931,100</b>	<b>1,044,541</b>
Old Debt Principal- OCWA + OSIFA	465,737	449,088	289,261	295,915	247,815	199,856	207,389	215,087	223,070	231,322	79,308	-	-	-	-
Old Debt Interest	140,526	85,944	59,146	56,112	46,668	38,982	31,449	23,751	15,768	7,516	605	-	-	-	-
Debt Principal 2015	-	-	-	-	70,500	76,775	75,233	77,909	80,680	83,549	86,521	89,598	92,784	96,085	99,502
Debt Interest 2015	-	-	-	-	68,379	62,104	63,646	60,970	58,199	55,330	52,358	49,281	46,094	42,794	39,377
Transfer to Capital	-	-	-	1,296,667	-	70,661	5,400	576,765	175,630	822,582	7,379	18,748	140,655	29,969	6,803
Transfer to Operating Reserves	-	-	-	-	39,835	93,296	23,572	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Transfer to (from) Capital Reserves	(17,912)	-	-	(238,804)	-	(7,227)	193,922	(382,419)	35,859	(529,627)	532,498	472,186	446,861	662,251	798,859
<b>Subtotal - Debt and Transfers</b>	<b>588,350</b>	<b>535,032</b>	<b>348,406</b>	<b>1,409,890</b>	<b>473,197</b>	<b>534,447</b>	<b>600,611</b>	<b>672,063</b>	<b>689,206</b>	<b>770,672</b>	<b>858,669</b>	<b>729,813</b>	<b>826,394</b>	<b>931,099</b>	<b>1,044,541</b>
<b>Total All Expenses</b>	<b>1,766,783</b>	<b>2,658,490</b>	<b>1,672,838</b>	<b>2,579,037</b>	<b>1,490,909</b>	<b>1,582,691</b>	<b>1,680,302</b>	<b>1,784,144</b>	<b>1,894,650</b>	<b>2,012,279</b>	<b>2,137,525</b>	<b>2,047,034</b>	<b>2,183,131</b>	<b>2,328,539</b>	<b>2,483,903</b>
<b>All Revenue Less All Expenses</b>	<b>(283,021)</b>	<b>(0)</b>	<b>44,341</b>	<b>(18,174)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Operating costs are projected to increase with inflation, with additional costs needed to operate the expanded system, from 2015 to 2025.

### **6.3.3 Debt**

As of December 31, 2013, there are two loans outstanding. One is the Creemore sewage system with a principal of \$1,534,762. This will be paid off in 2021. The second is a loan for the Stayner sewage system which has a balance of \$165,000. This will be paid off in 2015.

One new loan is projected for the future. A \$2.0 million loan is projected in 2015 that will clear the current operating and capital deficits and finance impending capital renewal. These deficits have occurred because of capital renewal investments such as the equalization tank in Creemore and extensive sewer work in Stayner. It has an interest rate of 3.5% and all have 20-year terms. The long-term loan has been chosen to assist in spreading these one-time costs over a large group of future users.

### **6.3.4 Reserves**

The operating reserve has a deficit of \$409,223 at December 31, 2013 due to capital renewal. It is proposed that this deficit be covered in the \$2.0 million loan proposed for 2015. It is proposed that \$50,000 be added to this reserve in 2015 and \$100,000 per year after, with a cap of \$400,000. This reserve would be used to even out seasonal variations, such as a cool wet summer, that will reduce revenues below expectations. It will also be used to fund larger than expected repairs.

The capital reserve fund has a deficit of \$403,173 at the end of 2013. The projected wastewater reserve fund for the 2015 – 2025 period is shown in table 6.4. The loan mentioned above plus substantial contributions from user fees keeps the reserve in balance for the next ten years. The reserves are utilized to carry out the renewal and replacement of infrastructure that has reached the end of its life. The reserve is viable beyond 2025 provided the rates are increased at 1% above the rate of inflation. Projecting the longer term is challenging due to the very large amount of development currently projected for the Township.

## **6.4 Wastewater Rate Calculations**

The Township recovers its wastewater costs through a surcharge on water bills. Computing this surcharge requires that a calculation be made of the water used by those connected to the wastewater system. Also considered, is the ratio of water revenues to wastewater revenues. The calculation of the rates is shown in appendix D. The summary results of this calculation is shown in table 6.5. The 2015 surcharge on the water bill is proposed to be 89.2% for the full projection option and 89.4% for the half projection option.

## **6.5 Wastewater Bills for Selected Customers**

Sample wastewater bills have been prepared for various hypothetical user groups. This shows the impact on wastewater bills. The bills are set out in table 6.6:

In option 1, the Full projection option, a user taking 70 cubic metres per year is projected to pay \$268 in 2015, \$258 in 2019, and \$262 in 2025. Someone using 125 cubic metres per year will pay \$366 in 2015, \$355 in 2019, and \$365 in 2025. A user of 300 cubic metres per year will pay a wastewater bill of \$677 in 2014, \$665 in 2019, and \$693 in 2025. An average user has been included in the table as average use is declining over time. The average user of 293 cubic metres per year in 2015, will pay \$656 in 2015, will take 261 cubic metres in 2019 and



**Table 6.4 Clearview Wastewater System Reserves 2014-2025 - Inflated \$**

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Opening Value	\$ (403,173)	\$ (1,812,372)	\$ 11,963	\$ 5,155	\$ 199,257	\$ (180,173)	\$ (150,620)	\$ (685,519)	\$ (177,014)	\$ 288,977	\$ 740,172	\$ 1,413,526
Addition (Withdrawal)	(1,395,087)	1,887,768	(7,227)	193,922	(382,419)	35,859	(529,627)	532,498	472,186	446,861	662,251	798,859
Interest on Cash Balance	(14,111)	(63,433)	419	180	2,989	(6,306)	(5,272)	(23,993)	(6,195)	4,335	11,103	21,203
Close	(1,812,372)	11,963	5,155	199,257	(180,173)	(150,620)	(685,519)	(177,014)	288,977	740,172	1,413,526	2,233,588
Close in 2014\$	(1,812,372)	11,615	4,859	182,349	(160,081)	(129,926)	(574,111)	(143,928)	228,121	567,281	1,051,796	1,613,591

**Table 6.5 Township of Clearview Wastewater Surcharge by Option 2014 to 2025 Inflated \$**

Option	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Full Projection Option	87.1%	89.1%	87.5%	85.5%	81.3%	79.5%	78.6%	78.6%	78.9%	78.7%	77.9%	77.3%
Half Projection Option	87.1%	89.4%	88.5%	87.9%	84.3%	83.2%	82.8%	83.3%	84.0%	84.0%	83.6%	83.3%

**Table 6.6 Clearview Wastewater Hypothetical Bills by Option 2015 - 2025 Inflated \$**

<b>Full Projection</b>												
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Single Person with 70 M3/Year	261	268	270	265	259	258	258	259	262	265	263	262
Couple with 125 M3 per Year	353	366	369	363	356	355	356	359	363	368	365	365
Family 300 M3 per Year	649	677	685	675	665	665	669	676	685	696	693	693
Average User (decreases over time)	638	656	652	629	607	597	590	587	586	588	576	568
User with 36,500 M3/Year	61,839	65,145	66,585	67,802	68,953	70,848	73,010	75,429	78,103	81,034	82,812	84,913
<b>Half Projection</b>												
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Single Person with 70 M3/Year	261	279	294	301	306	314	323	333	344	356	362	369
Couple with 125 M3 per Year	353	377	396	405	414	426	439	453	469	486	495	506
Family 300 M3 per Year	649	690	717	737	756	780	807	836	867	900	920	944
Average User (decreases over time)	638	668	684	688	691	702	714	729	745	764	769	777
User with 36,500 M3/Year	61,839	65,283	67,310	69,470	71,499	74,098	76,900	79,911	83,140	86,601	88,910	91,480

pay \$597, and is projected to take 233 cubic metres per year in 2025 and pay \$568. All figures are in inflated dollars.

In option 2, the half projection option, a user taking 70 cubic metres per year is projected to pay \$279 in 2015, \$314 in 2019, and \$369 in 2025. Someone using 125 cubic metres per year will pay \$377 in 2015, \$426 in 2019, and \$506 in 2025. A user of 300 cubic metres per year will pay a wastewater bill of \$690 in 2014, \$780 in 2019, and \$944 in 2025. The average user of 293 cubic metres per year will pay \$668 in 2015, will take 261 cubic metres in 2019 and pay \$702, and is projected to take 233 cubic metres per year in 2025 and pay \$777. All figures are in inflated dollars. The bills for other users are set out in table 6.6. The revenues generated by the above rate options are set out in appendix E.

### 6.6 WASTEWATER BILL COMPARISONS WITH OTHER COMMUNITIES

The projected wastewater water bills for Clearview are compared with bills for a number of communities. The water usage, the basis for a wastewater surcharge, for all communities is 294 cubic metres per year, which is the estimated Clearview average water usage per connection for 2014. All users are assumed to have a standard 15mm (5/8 by 3/4") meter. The bill comparisons are set out in table 6.7.

<b>6.7 Wastewater Yearly Bill Comparisons (2014)</b>	
<u>Utility</u>	<u>Wastewater Bill</u>
Wasaga Beach	\$345
Barrie	\$550
Kawartha Lakes	\$625
<b>Clearview</b>	<b>\$697</b>
Penetanguishene	\$703
Collingwood	\$799
Springwater Residential	\$870
Springwater Commercial	\$953
Adjala-Tosorontio	\$1,313
Based on average use of 294 M3 per Year	

Clearview's rates are based on full life-cycle capital renewal of all assets to 2105. The rates are comparable with those in nearby communities. Comparisons with other communities are problematic. Many communities, that have less expensive wastewater now, may have to make major investments in new capital soon, and this will then move to a more expensive placing in the table. In addition, they may vary in the length of the time horizon where they estimate capital costs.



## APPENDICES



## APPENDIX A - WATER SYSTEM CAPITAL PLAN (2011-2025)

Clearview Water System Capital Plan 2011-2025 Inflated \$															
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenue</b>															
1 Grants Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Grants Ontario	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Developer Contribution 420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Developer Contribution 421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Developer Contribution 422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Developer Contribution 423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Developer Contribution 424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Developer Contribution 425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Developer Contribution 426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Total Developer Contribution	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Development Charges Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Transfer from Reserves 420	-	-	27,579	-	-	-	-	-	-	-	-	-	-	-	-
13 Transfer from Reserves 421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Transfer from Reserves 422	49,330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Transfer from Reserves 423	60,187	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Transfer from Reserves 424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 Transfer from Reserves 425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 Transfer from Reserves 426	-	-	5,330	-	-	-	-	-	-	-	-	-	-	-	-
19 Total Transfer from Reserves	109,517	-	32,909	-	-	-	-	-	-	-	-	-	-	-	-
20 Transfer from Infrastructure Reserv	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21															
22 Transfer from Revenue Fund 420	5,950	16,031	-	562,718	1,743,761	119,233	221,664	814,535	369,526	154,625	223,220	545,430	777,501	75,050	419,478
23 Transfer from Revenue Fund 421	5,287	29,465	-	-	-	-	-	-	-	-	-	-	-	-	-
24 Transfer from Revenue Fund 422	5,170	1,564	-	-	-	-	-	-	-	-	-	-	-	-	-
25 Transfer from Revenue Fund 423	2,496	4,637	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Transfer from Revenue Fund 424	-	4,584	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Transfer from Revenue Fund 425	897	7,089	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Transfer from Revenue Fund 426	5,287	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29 Total Transfer from Revenue Fund	25,087	63,371	-	562,718	1,743,761	119,233	221,664	814,535	369,526	154,625	223,220	545,430	777,501	75,050	419,478
30															
31 Loan/Debentures - User Fee Base	-	-	2,375	-	-	2,800,000	-	-	-	-	-	5,500,000	-	-	-
32 Sub Total	134,605	63,371	35,284	562,718	1,743,761	2,919,233	221,664	814,535	369,526	154,625	223,220	6,045,430	777,501	75,050	419,478
33															
<b>Expenditures</b>															
35 Machinery/Equipment 420	5,950	16,031	7,631	-	-	-	-	-	-	-	-	-	-	-	-
36 Machinery/Equipment 421	5,287	29,465	9,929	-	-	-	-	-	-	-	-	-	-	-	-
37 Machinery/Equipment 422	5,170	1,564	-	-	-	-	-	-	-	-	-	-	-	-	-
38 Machinery/Equipment 423	62,683	4,637	-	-	-	-	-	-	-	-	-	-	-	-	-
39 Machinery/Equipment 424	-	4,584	-	-	-	-	-	-	-	-	-	-	-	-	-
40 Machinery/Equipment 425	-	7,089	4,523	-	-	-	-	-	-	-	-	-	-	-	-
41 Machinery/Equipment 426	-	-	9,852	-	-	-	-	-	-	-	-	-	-	-	-
42 Total	79,090	63,371	31,935	-	-	-	-	-	-	-	-	-	-	-	-
43															
44 Structures/Appurtenances 420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45 Structures/Appurtenances 421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46 Structures/Appurtenances 422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47 Structures/Appurtenances 423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48 Structures/Appurtenances 424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49 Structures/Appurtenances 425	897	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50 Structures/Appurtenances 426	5,287	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51 Total	6,184	-	-	562,718	1,743,761	1,061,915	221,664	814,535	369,526	154,625	223,220	6,045,430	777,501	75,050	419,478
52															
53 System Upgrades 422	49,330	-	3,349	1	-	-	-	-	-	-	-	-	-	-	-
54 Transfer to Capital Reserves	-	-	-	-	-	1,857,318	-	-	-	-	-	-	-	-	-
55 Subtotal for Capital Expenditures	134,604	63,371	35,284	562,718	1,743,761	2,919,233	221,664	814,535	369,526	154,625	223,220	6,045,430	777,501	75,050	419,478
56															
57 Net Expenditures	0	0	0	-	0	0	-	-	-	-	-	0	-	-	-

## APPENDIX B - CLEARVIEW WATER SYSTEM OPERATING PLAN

Clearview Water System Operating Financial Plan - 2011-2025 Page 1 of 2															
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenues</b>															
1 Water Meter Fees - Admin	9,825	4,875	2,700	8,000	8,398	8,896	9,643	10,390	11,136	11,883	12,630	13,376	14,123	15,119	16,114
2 Penalties and Interest	21,224	19,749	24,454	12,000	12,597	13,344	14,464	15,584	16,704	17,825	18,945	20,065	21,185	22,678	24,172
3 Cost Recovery	-	297	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Stayner Water Hookup Fees	2,350	32,417	828	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
5 Stayner Billing Revenue	982,538	1,091,112	1,237,528	1,343,167	-	-	-	-	-	-	-	-	-	-	-
6 Discounts	-	-	1,926	-	-	-	-	-	-	-	-	-	-	-	-
7 Creemore Water Hookup Fees	-	2,000	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Water Meter Fees - Creemore	500	-	100	-	-	-	-	-	-	-	-	-	-	-	-
9 Creemore Billing Revenue	244,252	267,663	287,293	322,893	-	-	-	-	-	-	-	-	-	-	-
10 New Lowell Billing Revenue	126,404	146,780	151,568	171,772	-	-	-	-	-	-	-	-	-	-	-
11 Buckingham Billing Revenue	8,295	8,689	8,851	10,895	-	-	-	-	-	-	-	-	-	-	-
12 McKean Billing Revenue	71,275	83,960	84,381	93,741	-	-	-	-	-	-	-	-	-	-	-
13 Woodlands Billing Revenue	29,756	33,766	33,343	39,167	-	-	-	-	-	-	-	-	-	-	-
14 Total Water Billing Revenue	1,463,021	1,633,970	1,801,139	1,981,635	2,050,000	2,190,000	2,321,400	2,550,000	2,730,000	2,900,000	3,050,000	3,200,000	3,392,000	3,595,520	3,811,251
15 Misc Revenue	3,423	4,196	9,136	100	100	100	100	100	100	100	100	100	100	100	100
16 Reserves	-	62,621	-	-	-	-	-	-	-	-	-	-	-	-	-
17 DCA Reserves	128,597	128,597	128,598	128,598	128,598	128,598	128,598	128,598	128,598	128,598	128,598	128,598	128,598	128,598	128,598
18 Total Revenues	1,628,439	1,886,724	1,966,855	2,132,333	2,201,693	2,342,938	2,476,205	2,706,672	2,888,538	3,060,405	3,212,272	3,364,139	3,558,006	3,764,015	3,982,235
19															
<b>Expenditures</b>															
23 Salaries	194,434	204,047	180,459	202,064	208,126	276,170	284,455	292,988	301,778	310,831	320,156	329,761	339,654	349,844	360,339
24 Benefits	57,338	63,056	57,785	63,044	63,044	95,835	98,710	101,672	104,722	107,863	111,099	114,432	117,865	121,401	125,043
25 Accrual Vacation Pay	-	2,966	4,754	3,939	-	1,432	1,475	1,519	1,565	1,611	1,660	1,710	1,761	1,814	1,868
26 Standby Pay	8,925	9,100	9,100	6,790	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
27 Salaries - Operations	237,129	249,101	250,625	270,000	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962	380,031	391,432	403,175
28 Benefits	68,539	64,115	61,862	86,672	95,672	98,542	101,498	104,543	107,680	110,910	114,237	117,664	121,194	124,830	128,575
29 Accrual Vacation Pay	5,539	2,929	14,592	-	-	-	-	-	-	-	-	-	-	-	-
30 Total	568,938	591,245	549,178	628,570	677,274	790,022	813,453	837,586	862,444	888,047	914,418	941,581	969,558	998,375	1,028,056
31															
32 Postage	5,488	9,053	6,525	11,940	12,298	12,667	13,047	13,439	13,842	14,257	14,685	15,125	15,579	16,046	16,528
33 Telephone 420	656	2,090	164	400	412	424	437	450	464	478	492	507	522	538	554
34 Answering Service	2,759	2,639	2,935	3,077	3,077	3,077	3,077	3,077	3,077	3,077	3,077	3,077	3,077	3,077	3,077
35 Printing	595	610	623	2,435	2,508	2,583	2,661	2,741	2,823	2,908	2,995	3,085	3,177	3,272	3,371
36 Photocopy	9	-	125	-	-	-	-	-	-	-	-	-	-	-	-
37 Adv and Publicity	2,277	2,427	1,278	2,508	3,500	3,605	3,713	3,825	3,939	4,057	4,179	4,305	4,434	4,567	4,704
38 Office Supplies	389	455	572	1,433	1,476	1,520	1,566	1,613	1,661	1,711	1,762	1,815	1,870	1,926	1,984
39 Book, Publications	42	195	278	298	307	632	651	671	691	712	733	755	778	801	825
40 Memberships	927	919	684	986	986	2,031	986	986	986	986	986	986	986	986	986
41 Conferences and Seminars	596	2,297	555	3,600	1,762	3,629	3,738	3,850	3,966	4,085	4,207	4,334	4,464	4,598	4,735
42 Courses and Training	6,173	8,467	9,556	10,609	8,701	17,925	18,463	19,016	19,587	20,175	20,780	21,403	22,045	22,707	23,388
43 Transfer - Payment in Lieu 420	-	-	5,563	-	-	-	-	-	-	-	-	-	-	-	-
44 Transfer - Admin Fee	81,886	84,275	86,803	129,157	133,032	137,023	141,133	145,367	149,728	154,220	158,847	163,612	168,521	173,576	178,783
45 Allowance for Doubtful Accounts	-	-	39	1,000	-	-	-	-	-	-	-	-	-	-	-
46 Telephone 421	11,291	12,206	14,128	12,300	12,669	13,049	13,441	13,844	14,259	14,687	15,127	15,581	16,049	16,530	17,026
47 Payment in Lieu 421	18,548	18,850	17,121	14,000	14,420	14,853	15,298	15,757	16,230	16,717	17,218	17,735	18,267	18,815	19,379
48 Debt Principal 421	114,455	119,944	125,697	131,725	138,043	144,644	151,602	158,873	166,493	174,478	182,847	191,616	200,807	210,438	220,531
49 Debt Interest 421	116,654	113,870	105,731	102,089	95,771	89,150	82,212	74,941	67,321	59,336	50,967	42,198	33,008	23,377	13,284
50 Structures and Appurtenances	-	-	972	-	-	-	-	-	-	-	-	-	-	-	-
51 Water Line Maintenance 422	-	2,461	-	-	-	-	-	-	-	-	-	-	-	-	-
52 Debt Principal Ops 422	25,305	26,648	28,063	29,552	31,121	32,773	34,513	36,345	38,275	40,307	42,446	44,700	47,073	49,572	52,203
53 Debt Interest Ops 422	39,183	38,385	36,456	35,461	33,912	32,260	30,520	28,688	26,758	24,726	22,586	20,333	17,960	15,461	12,830
54 Debt Principal 2016 Loan	-	-	-	-	-	98,700	107,485	105,326	109,072	112,951	116,969	121,129	125,437	129,900	134,519
55 Debt Interest 2016 Loan	-	-	-	-	-	95,731	86,945	89,105	85,358	81,479	77,462	73,301	69,993	64,532	59,912
56 Debt Principal 2022 Loan	-	-	-	-	-	-	-	-	-	-	-	-	193,875	211,130	206,890
57 Debt Interest 2022 Loan	-	-	-	-	-	-	-	-	-	-	-	-	188,043	170,788	175,026
58 Total	427,231	445,791	443,867	492,570	493,995	706,277	711,488	717,914	724,530	731,346	738,366	745,596	1,135,963	1,142,636	1,150,535



Clearwater Water System Operating Financial Plan - 2011-2025 Page 2

Expenditure	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
59															
60															
61	Legal	4,499	-	-	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
62	Audit	6,026	-	12,621	7,595	7,823	14,003	8,299	8,548	14,856	9,069	9,341	15,760	9,910	10,207
63	Consulting Services 420	2,657	-	1,909	22,164	22,829	23,514	24,219	24,946	25,694	26,465	27,259	28,077	28,919	29,787
64	Contract - Software Support	12,135	7,467	5,507	9,000	9,270	9,548	9,835	10,130	10,433	10,746	11,069	11,401	11,743	12,095
65	Consulting 421	-	-	634	24,372	25,103	25,856	26,632	27,431	28,254	29,101	29,974	30,874	31,800	32,754
66	TWT Agreement	64,889	68,346	65,928	72,513	74,688	76,929	79,237	81,614	84,062	266,000	273,980	282,199	290,665	299,385
67	Contract - Lab Testing	26,735	37,871	26,213	36,500	37,595	38,723	39,885	41,081	42,314	43,583	44,890	46,237	47,624	49,053
	Source Protection Costs					40,000	41,200	42,436	43,709	45,020	46,371	47,762	49,195	50,671	52,191
68	Total	116,942	113,684	112,812	175,144	220,308	232,773	233,542	240,459	253,633	434,336	447,276	466,743	474,332	488,472
69															
70	Utilities	80,377	70,673	84,190	103,500	112,215	122,436	135,712	150,063	165,567	182,307	200,370	219,852	240,852	266,760
71															
72															
73	Facility Maintenance 420	82	-	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
74	Water Meters	23,272	5,622	5,126	8,000	8,398	8,896	9,643	10,390	11,136	11,883	12,630	13,376	14,123	15,119
75	Clothing	41	18	261	522	522	522	522	522	522	522	522	522	522	522
76	Small Misc Tools	3,136	3,981	2,047	4,058	4,180	4,305	4,434	4,567	4,704	4,845	4,991	5,141	5,295	5,454
77	Facility Maintenance 421	21,135	16,565	18,377	37,500	22,842	28,372	47,758	41,848	23,439	34,737	27,274	25,613	58,728	39,447
78	Water Line Maintenance 421	36,449	58,418	36,305	35,534	36,600	37,698	38,829	39,994	41,194	42,429	43,702	45,013	46,364	47,755
79	Chemicals	31,340	19,046	26,869	36,000	39,031	42,586	47,204	52,196	57,589	63,411	69,694	76,470	83,774	92,786
80	Small tools and Equipment	-	265	280	-	-	-	-	-	-	-	-	-	-	-
81	Facility Maintenance 422	-	57	-	-	-	-	-	-	-	-	-	-	-	-
82	Facility Maintenance 423	4,139	-	-	-	-	-	-	-	-	-	-	-	-	-
83	Total	119,594	103,973	91,263	123,614	113,573	124,379	150,390	151,516	140,584	159,828	160,813	168,136	210,806	203,083
84															
85	Insurance	19,632	23,955	21,205	32,524	33,500	34,505	35,540	36,606	37,704	38,835	40,000	41,200	42,436	43,710
86															
87	Equipment Maintenance 420	14	7	-	836	861	887	914	941	969	998	1,028	1,059	1,091	1,124
88	Vehicle Expense 420	4,334	6,645	6,406	9,552	9,839	10,134	10,438	10,751	11,073	11,406	11,748	12,100	12,463	12,837
89	Equipment Maintenance 421	42,412	50,463	7,652	46,500	29,873	47,380	67,479	86,245	79,000	29,178	53,964	85,995	49,419	40,030
90	Vehicle Expenses 421	63,399	62,529	64,145	75,324	77,584	79,911	82,309	84,778	87,321	89,941	92,639	95,418	98,281	101,229
91	Equipment Maintenance 426	-	833	-	-	-	-	-	-	-	-	-	-	-	-
92	Vehicle Machinery Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	Total	110,160	120,477	78,203	132,212	118,156	138,312	161,139	182,714	178,364	131,523	159,379	194,572	161,254	155,219
94															
95	Amortization of Water Works	350,018	353,490	355,888	1	1	1	1	1	1	1	1	1	1	1
96															
97	Total Expenses (less Amortization)	1,442,874	1,469,797	1,380,719	1,688,134	1,769,022	2,148,704	2,241,263	2,316,858	2,362,826	2,566,221	2,660,622	2,777,681	3,235,201	3,298,255
98															
99	Revenue Less Expenses (Excl. Am	185,565	416,927	586,136	444,199	432,672	194,234	234,942	389,814	525,712	494,184	551,650	586,458	322,805	465,759
100															
101	Transfer to (from) Capital Reserve	142,700	-	163,453	(118,520)	(1,311,090)		(61,724)	(499,721)	106,186	289,559	278,429	(8,973)	(504,697)	340,708
102	Transfer to Operating Reserve						75,000	75,000	75,000	50,000	50,000	50,000	50,000	50,000	50,000
103	Transfer to Capital	25,087	63,371	-	562,718	1,743,761	119,233	221,664	814,535	369,526	154,625	223,220	545,430	777,501	75,050
104															
105	Total Expense	1,960,679	1,886,659	1,900,059	2,132,333	2,201,694	2,342,938	2,476,204	2,706,673	2,888,539	3,060,405	3,212,272	3,364,139	3,558,006	3,764,015
	Net	-\$332,240	\$0	\$66,795	\$0	\$0	\$0	\$1	-\$1	\$0	\$0	\$0	\$0	\$0	\$0



### APPENDIX C – WATER REVENUE CALCULATION

Clearview Water Revenue 2015-2025	Inflated \$										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Full Projection Option</b>											
<b>Fixed Charge Revenues</b>											
Number of Connections	2,791	2,941	3,166	3,416	3,639	3,862	4,085	4,308	4,531	4,861	5,191
Annual fixed Rate	\$163	\$164	\$165	\$167	\$168	\$169	\$169	\$169	\$169	\$169	\$169
Total Fixed Revenue	\$454,933	\$483,771	\$522,390	\$568,905	\$611,520	\$652,210	\$688,690	\$728,052	\$765,739	\$821,509	\$877,279
<b>Variable Rate Revenues</b>											
Amount of Water Sold (M3)	803,867	828,475	868,132	912,360	950,483	988,138	1,025,327	1,062,054	1,098,325	1,154,768	1,210,515
Cost/Cubic Metre	\$1.99	\$2.06	\$2.08	\$2.17	\$2.23	\$2.27	\$2.30	\$2.33	\$2.39	\$2.40	\$2.43
Total Variable Revenue	\$ 1,599,000	\$ 1,706,229	\$ 1,806,513	\$ 1,981,095	\$ 2,118,480	\$ 2,247,790	\$ 2,361,310	\$ 2,474,560	\$ 2,619,981	\$ 2,773,944	\$ 2,936,950
<b>Total All User Fee Revenues</b>	<b>\$2,053,933</b>	<b>\$2,190,000</b>	<b>\$2,328,903</b>	<b>\$2,550,000</b>	<b>\$2,730,000</b>	<b>\$2,900,000</b>	<b>\$3,050,000</b>	<b>\$3,202,612</b>	<b>\$3,385,720</b>	<b>\$3,595,453</b>	<b>\$3,814,229</b>
<b>Projected Needed Revenues</b>	<b>2,050,000</b>	<b>2,190,000</b>	<b>2,321,400</b>	<b>2,550,000</b>	<b>2,730,000</b>	<b>2,900,000</b>	<b>3,050,000</b>	<b>3,200,000</b>	<b>3,392,000</b>	<b>3,595,520</b>	<b>3,811,251</b>
	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
<b>Half Projection Option</b>											
<b>Fixed Charge Revenues</b>											
Number of Connections	2,731	2,806	2,919	3,044	3,155	3,267	3,378	3,490	3,601	3,766	3,931
Annual fixed Rate	\$173	\$187	\$191	\$201	\$208	\$213	\$217	\$220	\$226	\$229	\$233
Total Fixed Revenue	\$471,500	\$525,600	\$557,136	\$612,000	\$655,200	\$696,000	\$732,000	\$768,000	\$814,080	\$862,925	\$914,700
<b>Variable Rate Revenues</b>											
Amount of Water Sold (M3)	791,418	800,655	817,451	836,566	852,661	868,554	884,246	899,740	915,036	940,449	965,545
Cost/Cubic Metre	\$1.99	\$2.08	\$2.16	\$2.32	\$2.43	\$2.54	\$2.62	\$2.70	\$2.82	\$2.91	\$3.00
Total Variable Revenue	\$1,578,500	\$1,664,400	\$1,764,264	\$1,938,000	\$2,074,800	\$2,204,000	\$2,318,000	\$2,432,000	\$2,577,920	\$2,732,595	\$2,896,551
<b>Total All User Fee Revenues</b>	<b>\$2,050,000</b>	<b>\$2,190,000</b>	<b>\$2,321,400</b>	<b>\$2,550,000</b>	<b>\$2,730,000</b>	<b>\$2,900,000</b>	<b>\$3,050,000</b>	<b>\$3,200,000</b>	<b>\$3,392,000</b>	<b>\$3,595,520</b>	<b>\$3,811,251</b>
<b>Projected Needed Revenues</b>	<b>2,050,000</b>	<b>2,190,000</b>	<b>2,321,400</b>	<b>2,550,000</b>	<b>2,730,000</b>	<b>2,900,000</b>	<b>3,050,000</b>	<b>3,200,000</b>	<b>3,392,000</b>	<b>3,595,520</b>	<b>3,811,251</b>





## APPENDIX D – WASTEWATER RATE CALCULATION

Clearview Wastewater Surcharge by Option 2015-2025 - Inflated \$											
Full Projection											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Sold to Pre 2014 Users	469,127	464,119	459,166	454,268	449,424	444,633	439,895	435,208	430,574	425,990	421,457
Number of Pre 2014 Users	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102
Use per Connection Pre 2014 Users	223	221	218	216	214	212	209	207	205	203	201
Number of Water Users Not Connected to Sewer	184	184	184	184	184	184	184	184	184	184	184
Water User Per Water User not Connected to Sewer	223	221	218	216	214	212	209	207	205	203	201
Total Water Sales to those not Connected to Sewer	41,065	40,627	40,193	39,765	39,341	38,921	38,506	38,096	37,691	37,289	36,893
Total Water Sales to those Connected to Sewer	428,062	423,492	418,973	414,504	410,083	405,712	401,388	397,112	392,883	388,701	384,564
Water Sales to Post 2013 Connections	24,900	55,640	101,362	151,588	195,645	239,167	282,161	324,630	366,579	428,638	489,939
Water Sold to Rinehart Subject to Sewer Surcharge	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467
Total Water Sales Subject to WW Surcharge	489,428	515,599	556,802	602,559	642,195	681,346	720,016	758,209	795,929	853,806	910,970
Water Revenue from fixed Water Charge	332,194	359,909	398,145	443,499	484,981	525,044	561,742	600,795	638,482	694,252	750,022
Water Var. Charge Rev. Subject to the Sewer Surcharge	973,538	1,061,866	1,158,659	1,308,394	1,431,353	1,549,909	1,658,185	1,766,607	1,898,635	2,050,982	2,210,196
Total Water Revenue Subject to Sewer Surcharge	1,305,732	1,421,774	1,556,804	1,751,893	1,916,335	2,074,953	2,219,927	2,367,402	2,537,117	2,745,234	2,960,218
Wastewater Revenue Needs	1,162,769	1,244,163	1,331,254	1,424,442	1,524,153	1,630,844	1,745,003	1,867,153	1,997,854	2,137,703	2,287,343
Wastewater Revenue as % of Water Revenue	89.1%	87.5%	85.5%	81.3%	79.5%	78.6%	78.6%	78.9%	78.7%	77.9%	77.3%
Final Wastewater Surcharge	89.1%	87.5%	85.5%	81.3%	79.5%	78.6%	78.6%	78.9%	78.7%	77.9%	77.3%
Half Projection											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Sold to Pre 2014 Users	469,127	464,119	459,166	454,268	449,424	444,633	439,895	435,208	430,574	425,990	421,457
Number of Pre 2014 Users	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102	2,102
Use per Connection Pre 2014 Users	223	221	218	216	214	212	209	207	205	203	201
Number of Water Users Not Connected to Sewer	184	184	184	184	184	184	184	184	184	184	184
Water User Per Water User not Connected to Sewer	223	221	218	216	214	212	209	207	205	203	201
Total Water Sales to those not Connected to Sewer	41,065	40,627	40,193	39,765	39,341	38,921	38,506	38,096	37,691	37,289	36,893
Total Water Sales to those Connected to Sewer	428,062	423,492	418,973	414,504	410,083	405,712	401,388	397,112	392,883	388,701	384,564
Water Sales to Post 2013 Connections	12,450	27,820	50,681	75,794	97,761	119,461	140,898	162,073	182,989	213,771	244,177
Water Sold to Rinehart Subject to Sewer Surcharge	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467	36,467
Total Water Sales Subject to WW Surcharge	476,978	487,779	506,121	526,765	544,311	561,640	578,753	595,652	612,339	638,939	665,209
Water Revenue from fixed Water Charge	348,748	392,421	421,407	469,029	507,546	544,506	577,929	611,517	653,344	700,009	749,258
Water Var. Charge Rev. Subject to the Sewer Surcharge	951,344	1,013,993	1,092,335	1,220,310	1,324,485	1,425,190	1,517,167	1,610,050	1,725,135	1,856,518	1,995,568
Total Water Revenue Subject to Sewer Surcharge	1,300,092	1,406,414	1,513,742	1,689,339	1,832,031	1,969,696	2,095,096	2,221,567	2,378,479	2,556,527	2,744,826
Wastewater Revenue Needs	1,162,769	1,244,163	1,331,254	1,424,442	1,524,153	1,630,844	1,745,003	1,867,153	1,997,854	2,137,703	2,287,343
Wastewater Revenue as % of Water Revenue	89.4%	88.5%	87.9%	84.3%	83.2%	82.8%	83.3%	84.0%	84.0%	83.6%	83.3%
Final Wastewater Surcharge	89.4%	88.5%	87.9%	84.3%	83.2%	82.8%	83.3%	84.0%	84.0%	83.6%	83.3%

## APPENDIX E – WASTEWATER REVENUE CALCULATION

<b>Clearview Wastewater Revenue Calculation by Option - 2015-2025 Inflated \$</b>											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Full Projection Option</b>											
<b>Fixed Charge Revenues</b>											
Number of Connections	2,038	2,188	2,413	2,663	2,886	3,109	3,332	3,555	3,778	4,108	4,438
Annual fixed Rate	163	164	165	167	168	169	169	169	169	169	169
Wastewater Surcharge	89.1%	87.5%	85.5%	81.3%	79.5%	78.6%	78.6%	78.9%	78.7%	77.9%	77.3%
<b>Total Fixed Revenue</b>	<b>295,822</b>	<b>314,948</b>	<b>340,462</b>	<b>360,604</b>	<b>385,729</b>	<b>412,667</b>	<b>441,565</b>	<b>473,843</b>	<b>502,773</b>	<b>540,611</b>	<b>579,537</b>
<b>Variable Rate Revenues</b>											
Water Sold to WW Connected Users (	489,428	515,599	556,802	602,559	642,195	681,346	720,016	758,209	795,929	853,806	910,970
Cost/Cubic Metre	1.99	2.06	2.08	2.17	2.23	2.27	2.30	2.33	2.39	2.40	2.43
Wastewater Surcharge	89.1%	87.5%	85.5%	81.3%	79.5%	78.6%	78.6%	78.9%	78.7%	77.9%	77.3%
<b>Total Variable Revenue</b>	<b>866,947</b>	<b>929,215</b>	<b>990,793</b>	<b>1,063,838</b>	<b>1,138,424</b>	<b>1,218,176</b>	<b>1,303,438</b>	<b>1,393,310</b>	<b>1,495,081</b>	<b>1,597,092</b>	<b>1,707,805</b>
<b>Total All User Fee Revenues</b>	<b>1,162,769</b>	<b>1,244,163</b>	<b>1,331,254</b>	<b>1,424,442</b>	<b>1,524,153</b>	<b>1,630,844</b>	<b>1,745,003</b>	<b>1,867,153</b>	<b>1,997,854</b>	<b>2,137,703</b>	<b>2,287,343</b>
<b>Projected Needed Revenues</b>	<b>1,162,769</b>	<b>1,244,163</b>	<b>1,331,254</b>	<b>1,424,442</b>	<b>1,524,153</b>	<b>1,630,844</b>	<b>1,745,003</b>	<b>1,867,153</b>	<b>1,997,854</b>	<b>2,137,703</b>	<b>2,287,343</b>
<b>Half Projection Option</b>											
	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
<b>Fixed Charge Revenues</b>											
Number of Connections	2,020	2,095	2,208	2,333	2,444	2,556	2,667	2,779	2,890	3,055	3,220
Annual fixed Rate	\$173	\$187	\$191	\$201	\$208	\$213	\$217	\$220	\$226	\$229	\$233
Wastewater Surcharge	89.4%	88.5%	87.9%	84.3%	83.2%	82.8%	83.3%	84.0%	84.0%	83.6%	83.3%
<b>Total Fixed Revenue</b>	<b>\$311,911</b>	<b>\$347,149</b>	<b>\$370,605</b>	<b>\$395,483</b>	<b>\$422,252</b>	<b>\$450,833</b>	<b>\$481,356</b>	<b>\$513,960</b>	<b>\$548,790</b>	<b>\$585,330</b>	<b>\$624,379</b>
<b>Variable Rate Revenues</b>											
Amount of Water Sold (M3)	476,978	487,779	506,121	526,765	544,311	561,640	578,753	595,652	612,339	638,939	665,209
Cost/Cubic Metre	\$1.99	\$2.08	\$2.16	\$2.32	\$2.43	\$2.54	\$2.62	\$2.70	\$2.82	\$2.91	\$3.00
Wastewater Surcharge	89.4%	88.5%	87.9%	84.3%	83.2%	82.8%	83.3%	84.0%	84.0%	83.6%	83.3%
<b>Total Variable Revenue</b>	<b>\$850,858</b>	<b>\$897,014</b>	<b>\$960,649</b>	<b>\$1,028,959</b>	<b>\$1,101,901</b>	<b>\$1,180,011</b>	<b>\$1,263,647</b>	<b>\$1,353,193</b>	<b>\$1,449,064</b>	<b>\$1,552,373</b>	<b>\$1,662,964</b>
<b>Total All User Fee Revenues</b>	<b>\$1,162,769</b>	<b>\$1,244,163</b>	<b>\$1,331,254</b>	<b>\$1,424,442</b>	<b>\$1,524,153</b>	<b>\$1,630,844</b>	<b>\$1,745,003</b>	<b>\$1,867,153</b>	<b>\$1,997,854</b>	<b>\$2,137,703</b>	<b>\$2,287,343</b>
<b>Projected Needed Revenues</b>	<b>1,162,769</b>	<b>1,244,163</b>	<b>1,331,254</b>	<b>1,424,442</b>	<b>1,524,153</b>	<b>1,630,844</b>	<b>1,745,003</b>	<b>1,867,153</b>	<b>1,997,854</b>	<b>2,137,703</b>	<b>2,287,343</b>