

# Township of Amaranth

## Water Rate Study

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 Planning for growth



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# 1. Introduction

## 1.1 Background

The Township of Amaranth has a present population of approximately 3,900 people and contains approximately 1,400 households. There are currently 116 households on the Waldemar Heights Water Supply System.

All customers are currently charged a flat rate charge for water, billed monthly. The water rates currently imposed are summarized below.

**Table 1-1  
2015 Water Rates**

Flat Rate Charge	
Annual Flat Rate	\$ 680.00

In addition to the flat rate charge, customers are also paying a capital charge over various terms in relation to previously constructed water assets.

## 1.2 Study Process

Watson & Associates Economists Ltd. was retained by the Township of Amaranth to undertake a water rate study. The objectives of the study and the steps involved in carrying out this assignment are summarized below:

- Build a capital program that blends lifecycle needs arising from the Township's Asset Management Plan with specific needs identified by Township staff;
- Identify potential methods of cost recovery from the capital needs listing, as an offset to recovery through the water rates;
- Forecast annual operating costs and rate-based funding requirements;
- Assess adequacy of forecast water rates in addressing long-term financial plan needs; and
- Develop a long-term water rate forecast and present findings to Township staff and Council for their consideration.

In approaching this study, the following analysis is provided herein:

Chapter 1 – Introduction

Chapter 2 – Forecast Growth and Service Demands

- Chapter 3 – Capital Infrastructure Needs
- Chapter 4 – Capital Cost Financing Options
- Chapter 5 – Operating Expenditure Forecast
- Chapter 6 – Forecast Water Rates

### **1.3 Regulatory Changes in Ontario**

Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario. These changes arose as a result of the Walkerton Commission and the 93 recommendations made by the Walkerton Inquiry Part II report. Areas of recommendation included:

- watershed management and source protection;
- quality management;
- preventative maintenance;
- research and development;
- new performance standards;
- sustainable asset management; and
- lifecycle costing.

The following sections describe significant applicable regulatory areas.

### **1.4 Sustainable Water and Sewage Systems Act**

The Sustainable Water and Sewage Systems Act was passed on December 13, 2002. The intent of the Act was to introduce the requirement for municipalities to undertake an assessment of the “full cost” of providing their water and the wastewater services. In total, there were 40 areas within the Act to which the Minister may make Regulations, however regulations were never issued. On December 31, 2012, the Sustainable Water and Sewage Systems Act was repealed.

### **1.5 Safe Drinking Water Act**

The Safe Drinking Water Act was passed in December, 2002. The Safe Drinking Water Act provides for 50 of the 93 Walkerton Part II recommendations. It focuses on the administrative and operational aspects of the provision of water. The Safe Drinking Water Act is being implemented in stages.

“The purpose of the Safe Drinking Water Act is to protect human health through the control and regulation of drinking-water systems and drinking-

water testing. Building on existing policy and practice in Ontario's treatment and distribution of drinking water, the Safe Drinking Water Act requires that all municipal drinking water systems obtain an approval from the Director of the Ministry of the Environment in order to operate. Operators are required to be trained and certified to provincial standards. The act also provides legally binding standards for testing of drinking water and requires that testing be done in licensed and accredited laboratories.”<sup>1</sup>

The following is a brief summary of the key elements included in the Safe Drinking Water Act:

- Mandatory licensing and accreditation of testing laboratories;
- New standards for treatment, distribution quality and testing;
- Mandatory operator training and certification;
- Mandatory licensing of municipal water providers;
- Stronger enforcement and compliance provisions; and
- “Standard of care” requirements for municipalities.

This legislation impacts the costs of operating a water system with the need for higher skilled operators including increased training costs, increased reporting protocols and requirements, continuing enhancements to quality standards and the costs to licence each water system.

## **1.6 Financial Plans Regulation**

On August 16, 2007, the Ministry of Environment introduced Ontario Regulation 453/07 which requires the preparation of financial plans for water systems (and municipalities are encouraged to prepare plans for wastewater systems). The Ministry of Environment has also provided a Financial Plan Guideline to assist municipalities with preparing the plans. A brief summary of the key elements of the regulation is provided below:

- The financial plan will represent one of the key elements to obtain a Drinking Water License.
- The plan is to be completed, approved by Council Resolution and submitted to the Ministry of Municipal Affairs and Housing as part of the application for receiving approval of a water license.

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<sup>1</sup> The Ministry of Environment  
[http://www.ene.gov.on.ca/environment/en/legislation/safe\\_drinking\\_water\\_act/index.html](http://www.ene.gov.on.ca/environment/en/legislation/safe_drinking_water_act/index.html)

- The financial plans shall be for a period of at least six years but longer planning horizons are encouraged.
- As the regulation is under the Safe Drinking Water Act, the preparation of the plan is mandatory for water services and encouraged for wastewater services.
- The plan is considered a living document (i.e. can be updated if there are significant changes to budgets) but will need to be undertaken at a minimum every five years.
- The plans generally require the forecasting of capital, operating and reserve fund positions, and providing detailed capital inventories. In addition, Public Sector Accounting Board full accrual information on the system must be provided for each year of the forecast (i.e. total non-financial assets, tangible capital asset acquisitions, tangible capital asset construction, betterments, write-downs, disposals, total liabilities, net debt, etc.).
- The financial plans must be made available to the public (at no charge) upon request and be available on the municipality's web site. The availability of this information must also be advertised.

In general, the financial principles of this regulation follow the intent of the Sustainable Water and Sewage Systems Act, 2002 to move municipalities towards financial sustainability for water services. However, many of the prescriptive requirements have been removed (e.g. preparation of two separate documents for provincial approval, auditor opinions, engineer certifications, etc.).

A guideline ("Towards Financially Sustainable Drinking-Water Systems") has been developed to assist municipalities in understanding the Province's direction and provides a detailed discussion on possible approaches to sustainability. The Province's Principles of Financially Sustainable Water Services are provided below:

Principle #1: Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.

Principle #2: An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

Principle #3: Revenues collected for the provision of water services should ultimately be used to meet the needs of those services.



- Principle #4: Lifecycle planning with mid-course corrections is preferable to planning over the short-term, or not planning at all.
- Principle #5: An asset management plan is a key input to the development of a financial plan.
- Principle #6: A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.
- Principle #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 received.
- Principle #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.
- Principle #9: Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council.

## **1.7 Water Opportunities Act**

The Water Opportunities Act received Royal Assent on November 29, 2010. The Act provides for the following elements:

- Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Prepare water conservation plans to achieve water conservation targets established by the regulations;
- Prepare sustainability plans for municipal water services, municipal wastewater services and municipal stormwater services.

With regard to the sustainability plans:

- The Bill extends from the water financial plan and requires a more detailed review of the water financial plan and requires a full plan for wastewater and stormwater services;

- Regulations (when issued) will provide performance targets for each service – these targets may vary based on the jurisdiction of the regulated entity or the class of entity.

The Sustainability Plan shall include:

- An asset management plan for the physical infrastructure;
- Financial Plan;
- For water, a water conservation plan;
- Assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks;
- Strategies for maintaining and improving the municipal service, including strategies to ensure the municipal service can satisfy future demand, consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and increase co-operation with other municipal service providers.

Performance indicators will be established by service:

- May relate to the financing, operation or maintenance of a municipal service or to any other matter in respect of which information may be required to be included in a plan;
- May be different for different municipal service providers or for municipal services in different areas of the Province.

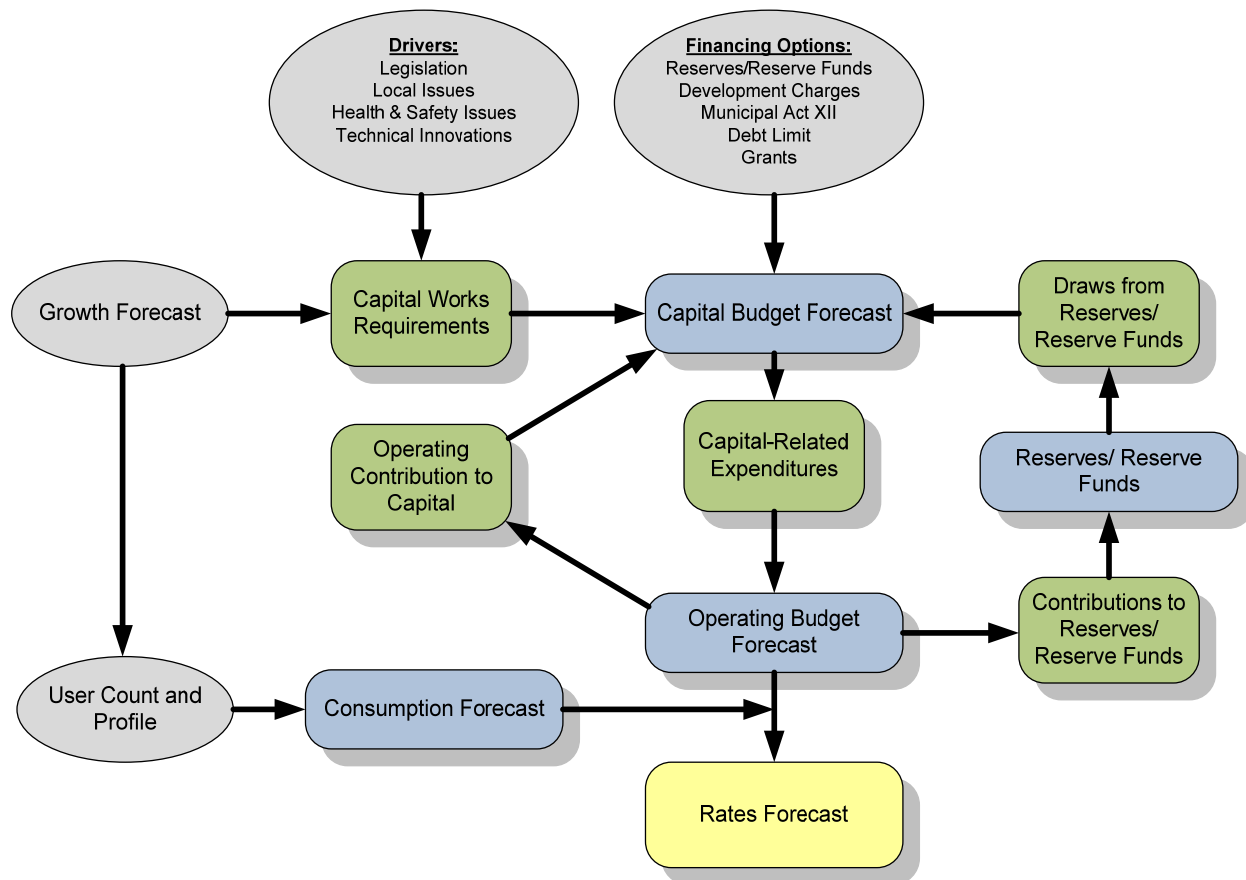
Regulations will prescribe:

- Timing;
- Contents of the plans;
- Identifying what portions of the plan will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.

## **1.8 Water Rate Calculation Methodology**

Figure 1-1 illustrates the general methodology used in determining the full cost recovery water rate forecast.

**Figure 1-1  
Water Rate Calculation Methodology**



The methodology employed generally consists of 5 major elements:

1. Customer Demands Forecast

The water customer forecast is prepared by considering potential new water users connecting to the system. Through discussions with Township staff, projected total water users over the forecast have been included within the rate study calculations.

2. Capital Needs Forecast

The capital needs forecast is developed to measure program/service level adjustments and lifecycle requirements. The Township's recently completed asset management plan provided the base capital forecast with adjustments made by Township staff for specific projects. Capital expenditures are forecast with inflationary adjustments based on capital costs indices.

3. Capital Funding Plan

The capital funding plan considers the potential funding sources available to address the capital needs forecast. The sources of capital funding include rate-based support, reserves and debt for program/service level improvements. The use of rate-based funding is measured against the revenue projections and affordability impacts. The capital reserve is measured against the sustainability of these funds, relative to lifecycle demands, revenue projections and affordability impacts. Debt financing is considered for significant capital expenditures, where funding is required beyond long-term lifecycle needs or to facilitate rate transition policies. Debt financing is measured in against the Township's debt policies and annual repayment limits to ensure a practical and sustainable funding mix.

4. Operating Budget Forecast

The operating budget forecast considers adjustments to the Township's base budget reflecting program/service level changes, operating fund impacts associated with infrastructure and financing for capital needs. The operating expenditures are forecast with inflationary adjustments, based on fixed and variable cost characteristics. The operating budget forecast ties the capital funding plan and reserve continuity forecast to the rate-based revenue projections. This ensures sufficient funding for both the ongoing annual operation and maintenance of water services, as well as the capital cost requirements to ensure service sustainability.

5. Rate Forecast and Structure

The rate forecast and structure component of the analysis considers various rate structures to recover the forecast rate-based revenue from the projected customer demands. At this stage in the analysis the full costs of service are measured against the customer growth demands to determine full cost recovery rates. The analysis may consider alternative rate structures, consistent with municipal policies/strategies, industry practice and customer affordability. Providing context to the rate forecast, the results are quantified to measure the impacts on customers in relation to other municipalities.

## 2. Forecast Growth and Service Demands

### 2.1 Current Service Demands

In preparing the demand forecast for water, a summary of water customer accounts was obtained from Township staff. There are currently 116 water customers serviced by the Township's water system.

### 2.2 Forecast Service Demands

For the purposes of calculating future water rates, users were forecast for the period 2015-2025. Based on discussions with Township staff on future development potential, the number of water system customers is anticipated to remain constant through 2016, then increase by 75 customers through the years 2017 to 2019. This results in an increase from 116 customers currently, to 191 customers by 2025 for the water system. Table 2-1 provides the detailed growth forecast for the period.

**Table 2-1  
Township of Amaranth  
Water Customer Forecast**

Water Customer Forecast	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	116	116	116	116	116	116	116	116	116	116	116
New - Growth	-	-	25	50	75	75	75	75	75	75	75
Total	116	116	141	166	191	191	191	191	191	191	191



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## 3. Capital Infrastructure Needs

### 3.1 Overview of Lifecycle Costing

#### 3.1.1 Definition

For many years, lifecycle costing has been used in the field of maintenance engineering and to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use in the areas of industrial decision-making and the management of physical assets.

By definition, lifecycle costs are all the costs which are incurred during the lifecycle of a physical asset, from the time its acquisition is first considered, to the time it is taken out of service for disposal or redeployment. The stages which the asset goes through in its lifecycle are specification, design, manufacture (or build), installation, commissioning, operation, maintenance and disposal. Figure 3-1 depicts these stages in a schematic form.

#### 3.1.2 Financing Costs

This section will focus on financing mechanisms in place to fund the costs incurred throughout the asset's life.

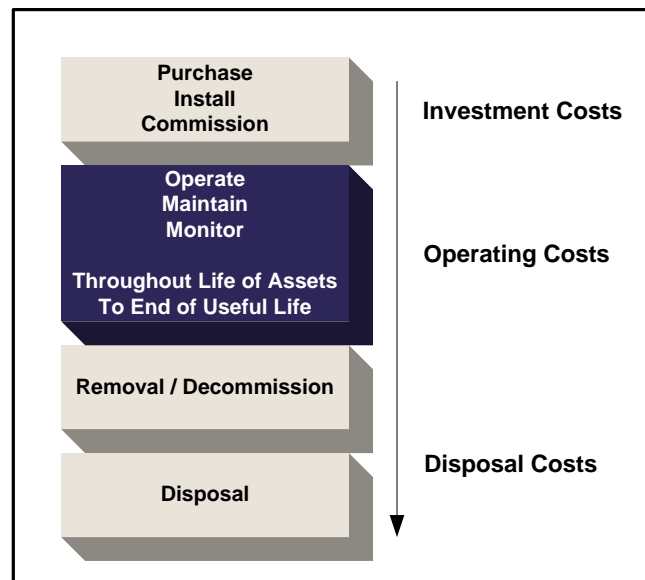
In a municipal context, services are provided to benefit tax/rate payers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the municipality. Over the past few decades, new financing techniques such as development charges have been employed based on the underlying principle of having tax/rate payers who benefit directly from the service paying for that service. Operating costs which reflect the cost of the service for that year are charged directly to all existing tax/rate payers who have received the benefit. Operating costs are normally charged through the tax base or user rates.

Capital expenditures are recouped through several methods, the most common being operating budget contributions, development charges, reserves, developer contributions and debentures.

New construction related to growth could produce development charges and developer contributions (e.g. works internal to a subdivision which are the responsibility of the

developer to construct) to fund a significant portion of projects, where new assets are being acquired to allow growth within the municipality to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

**Figure 3-1  
Lifecycle Costing**



However, capital construction to replace existing infrastructure is largely not growth-related and will therefore not yield development charges or developer contributions to assist in financing these works. Hence, a municipality will be dependent upon debentures, reserves and contributions from the operating budget to fund these works.

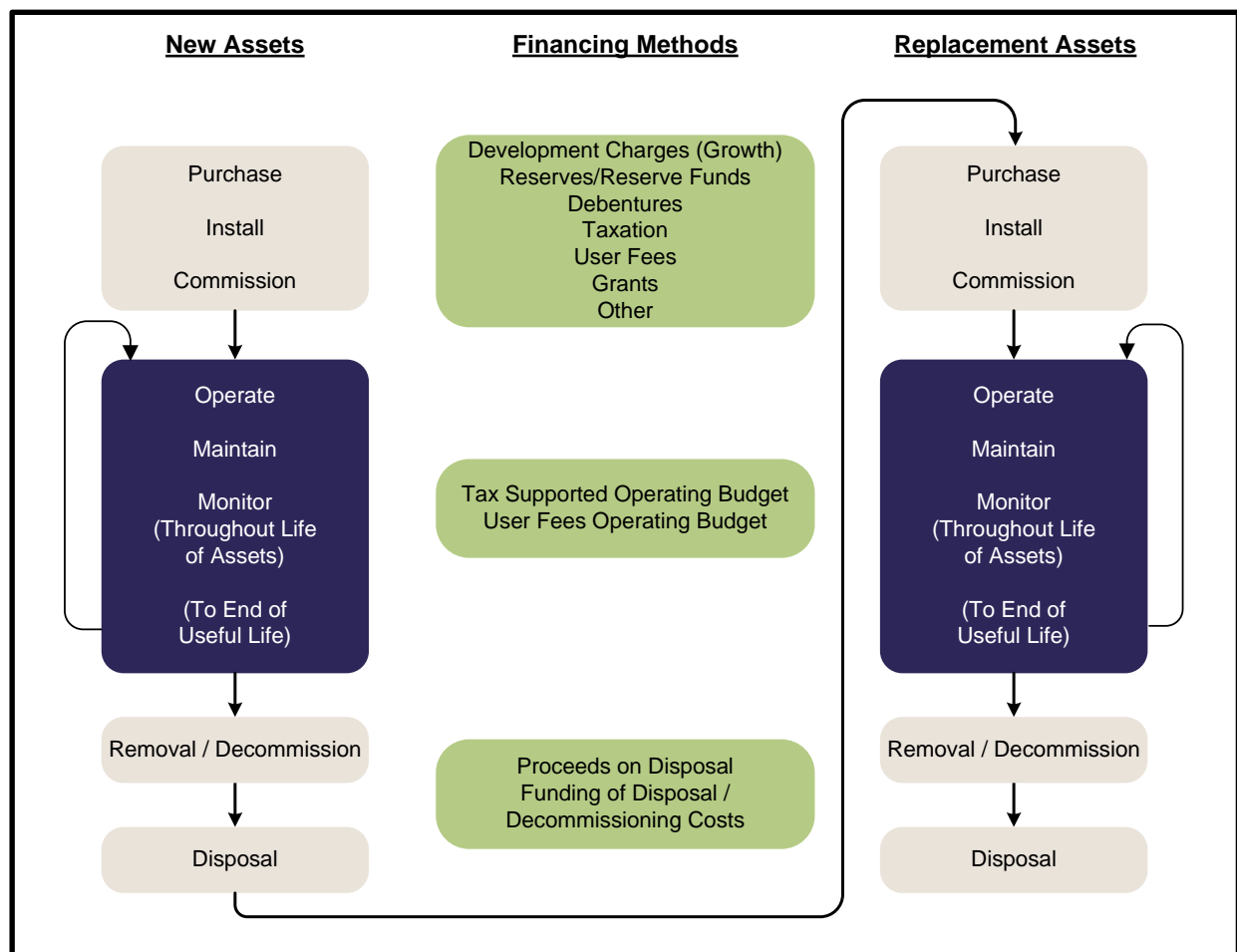
Figure 3-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

As referred to earlier, growth-related financing methods such as development charges and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of this asset. Other financing methods may be used as well to finance the non-growth related component of this project; reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers and debenturing which will be carried by future tax/rate payers. Ongoing costs for monitoring, operating and maintaining the asset will be charged annually to the existing tax/rate payer.



When the asset requires replacement, the sources of financing will be limited to reserves, debentures and contributions from the operating budget. At this point, the question is raised; "If the cost of replacement is to be assessed against the tax/rate payer who benefits from the replacement of the asset, should the past tax/rate payer pay for this cost or should future rate payers assume this cost?" If the position is taken that the past user has used up the asset, hence he should pay for the cost of replacement, then a charge should be assessed annually, through the life of the asset to have funds available to replace it when the time comes. If the position is taken that the future tax/rate payer should assume this cost, then debenturing and, possibly, a contribution from the operating budget should be used to fund this work.

**Figure 3-2  
Financing Lifecycle Costs**



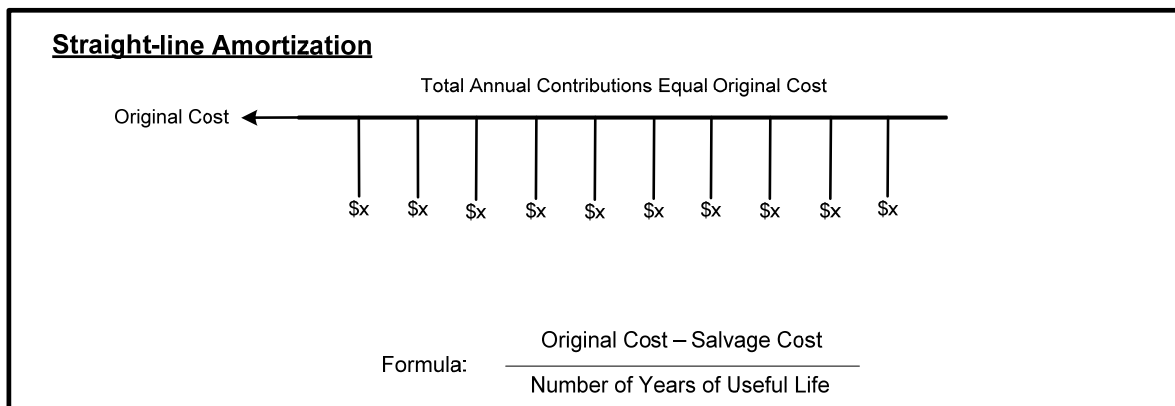
Charging for the cost of using up of an asset is the fundamental concept behind amortization methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms part of the product's selling price and hence end users are charged for the asset's

amortization. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.

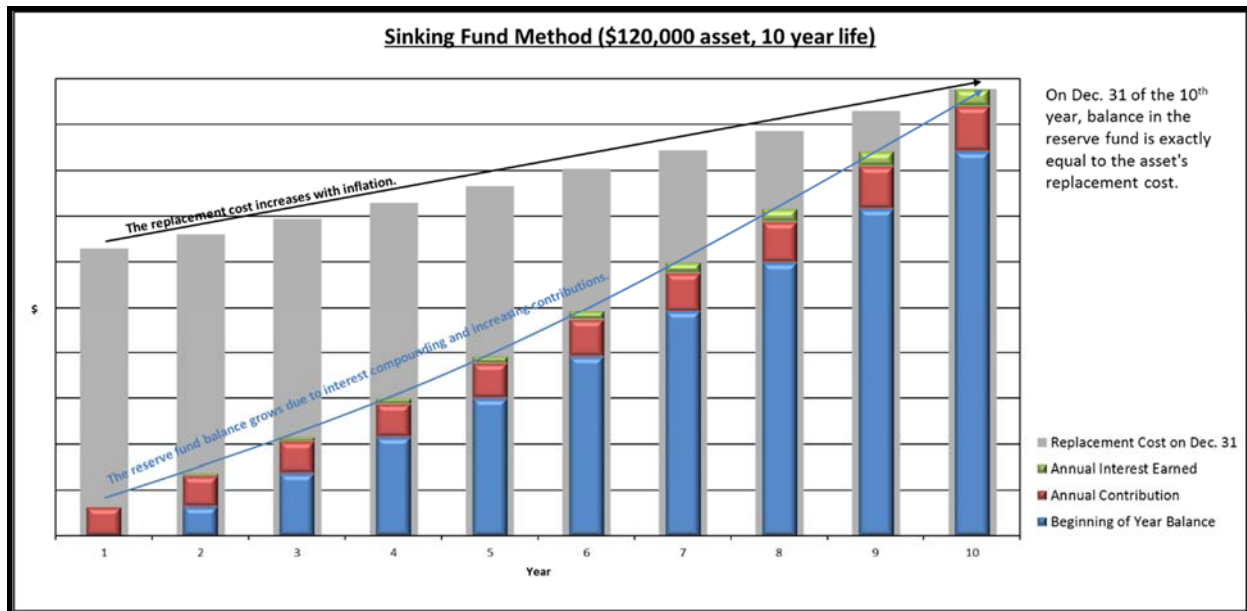
### 3.1.3 Costing Methods

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Amortization Method. This method recognizes the reduction in the value of the asset through wear and tear, and aging. There are two commonly used forms of amortization: the straight-line method and the reducing balance method.

The straight line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing a fixed percentage rate and this rate is applied annually to the undepreciated balance of the asset value.



The second method of lifecycle costing is the sinking fund method. This method first estimates the future value of the asset at the time of replacement. This is done by inflating the original cost of the asset at an assumed annual inflation rate. A calculation is then performed to determine annual contributions (equal or otherwise) which, when invested, will grow with interest to equal the future replacement cost.



The preferred method used herein is the sinking fund method of lifecycle costing.

### 3.2 Asset Inventory

Water capital asset inventory information was obtained from the Township's Asset Management Plan as prepared by R.J. Burnside and Associates Limited in December 2013. Please refer to the Township's 2013 Asset Management Plan for a more detailed discussion on capital needs.

Table 3-1 summarizes the estimated 2015 asset replacement value and long-term annual lifecycle replacement needs in 2015 and 2025 dollars, representing the first and last years of the forecast period.

**Table 3-1**  
**Township of Amaranth**  
**Summary of Water Infrastructure**

<b>Water Infrastructure</b>	<b>Total Replacement Value (2015 \$)</b>	<b>Annual Lifecycle Contribution (2015 \$)</b>	<b>Annual Lifecycle Contribution (2025 \$)</b>
Water Mains	5,101,247	63,768	77,733
Hydrants	241,951	3,142	3,831
Wells	134,418	4,336	5,286
Water Facilities	1,132,922	141,616	172,629
Water Fittings	352,846	14,114	17,205
Hydrant Laterals	33,816	439	535
Water System Valves	489,504	18,827	22,950
<b>Total</b>	<b>7,486,704</b>	<b>246,243</b>	<b>300,169</b>

### 3.3 Capital Forecast

A ten-year capital forecast has been developed for the water system to address capital needs across all areas for the system. The forecasts includes projections from the Township's Asset Management Plan and other staff identified needs.

The water capital forecast is summarized in Table 3-2. These capital needs are forecast in current year dollars (i.e. 2015 \$). The water capital plan totals \$286,000. For rate determination purposes, the capital needs forecast will be indexed by 2% annually.

**Table 3-2**  
**Township of Amaranth**  
**Water Service**  
**Capital Budget Forecast – Uninflated\$**

Description	Total	Budget 2015	Forecast									
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Capital Expenditures</b>												
<b>Well One</b>												
Camera inspection of well casing	3,000	-	-	3,000	-	-	-	-	-	-	-	-
Submersible pump replacement	7,000	-	-	-	-	-	-	-	-	-	7,000	-
Transmission main repairs	2,500	-	-	-	-	-	-	-	-	-	2,500	-
<b>Well One</b>												
Camera inspection of well casing	3,000	-	-	3,000	-	-	-	-	-	-	-	-
Submersible pump replacement	7,000	-	-	-	-	-	-	-	-	-	7,000	-
Transmission main repairs	3,000	-	-	3,000	-	-	-	-	-	-	-	-
<b>Well One</b>												
Camera inspection of well casing	3,000	-	-	3,000	-	-	-	-	-	-	-	-
Submersible pump replacement	7,000	-	-	-	-	-	-	-	-	-	-	7,000
Transmission main repairs	2,500	-	-	-	-	-	-	-	-	-	-	2,500
<b>Pumphouse Raw Water Piping</b>												
Replace pressure gauges	1,500	-	-	-	-	1,500	-	-	-	-	-	-
Service flow control valves	5,000	-	-	-	-	5,000	-	-	-	-	-	-
Service pressure relief valve	5,000	-	-	-	-	5,000	-	-	-	-	-	-
Process piping repairs	5,000	-	-	5,000	-	-	-	-	-	-	-	-
Replace raw water meters	10,000	-	-	-	-	-	-	-	-	-	-	10,000
<b>Pumphouse Treatment Equipment</b>												
Chemical metering pumps	15,000	-	-	-	-	15,000	-	-	-	-	-	-
Discharge piping/valves	25,000	-	-	5,000	-	15,000	-	-	-	-	5,000	-
Centreline Injectors	5,500	500	500	500	500	500	500	500	500	500	500	500
<b>Reservoir</b>												
Camera inspection/clean	2,500	-	-	-	-	2,500	-	-	-	-	-	-
<b>Treated Water Process</b>												
Replace pressure gauges	2,000	-	-	2,000	-	-	-	-	-	-	-	-
Service flow control valves	5,000	-	-	5,000	-	-	-	-	-	-	-	-
Service pressure relief valve	5,000	-	-	5,000	-	-	-	-	-	-	-	-
Rebuild high lift pumps	15,000	-	-	-	-	5,000	-	-	-	-	5,000	5,000
Service emergency pump	5,500	-	-	2,500	-	-	-	-	-	-	3,000	-
Replace treated water meters	12,000	-	-	-	4,000	-	4,000	-	4,000	-	-	-
<b>Instrumentation and SCADA</b>												
Replace free chlorine analyzer	7,000	-	-	-	-	-	-	-	-	-	7,000	-
Replace laptop	3,000	-	-	-	-	3,000	-	-	-	-	-	-
Replace data logger	2,500	-	-	-	-	-	-	-	-	-	2,500	-
Replace well level transducers	3,000	-	-	-	-	3,000	-	-	-	-	-	-
<b>Building Services</b>												
Electrical	12,500	2,500	-	2,500	-	2,500	-	2,500	-	-	2,500	-
Heating	5,500	500	500	500	500	500	500	500	500	500	500	500
Lighting	2,500	-	500	-	500	-	500	-	500	-	500	-
Generator Service	5,000	-	1,000	-	1,000	-	1,000	-	1,000	-	1,000	-
<b>Treated Water Distribution</b>												
Distribution mains leak repairs	15,500	-	500	-	-	5,000	-	-	5,000	-	-	5,000
Valve repair	4,500	-	1,500	-	-	1,500	-	-	-	-	1,500	-
Hydrant repair	12,500	-	-	2,500	-	2,500	-	-	2,500	-	-	5,000
Service repairs	7,500	-	-	1,500	-	1,500	-	-	1,500	-	3,000	-
<b>Studies:</b>												
Water Rate Study & Financial Plan	48,000	16,000	-	-	-	-	16,000	-	-	-	-	16,000
<b>Total Capital Expenditures</b>	<b>286,000</b>	<b>19,500</b>	<b>4,500</b>	<b>44,000</b>	<b>6,500</b>	<b>69,000</b>	<b>22,500</b>	<b>3,500</b>	<b>15,500</b>	<b>1,000</b>	<b>48,500</b>	<b>51,500</b>



## 4. Capital Cost Financing Options

### 4.1 Summary of Capital Cost Financing Alternatives

Historically, the powers that municipalities have had to raise alternative revenues to taxation to fund capital services have been restrictive. Over the past number of years, legislative reforms have been introduced. Some of these have expanded municipal powers (e.g. Bill 130 providing for natural person powers for fees and charges bylaws); while others appear to restrict them (Bill 98 in 1997 providing amendments to the Development Charges Act).

The most recent Municipal Act came into force on January 1, 2003, with significant amendments in 2006 through the Municipal Statute Law Amendment Act. Part XII of the Act and Ontario Regulation 584/06, govern a municipality's ability to impose fees and charges. This Act provides municipalities with broadly defined powers and provides the ability to impose fees for both operating and capital purposes. Under s.484 of the Municipal Act, 2001, the Local Improvement Act was repealed with the in force date of the Municipal Act (January 1, 2003). The municipal powers granted under the Local Improvement Act now fall under the jurisdiction of the Municipal Act.

The methods of capital cost recovery available to municipalities are provided as follows:

<b>Recovery Methods</b>	<b>Section Reference</b>
• Development Charges Act, 1997	4.2
• Municipal Act <ul style="list-style-type: none"> <li>○ Fees and Charge</li> <li>○ Local Improvements</li> </ul>	4.3
• Grant Funding	4.4
• Reserves/Reserve Funds	4.5
• Debenture Financing	4.6

### 4.2 Development Charges Act, 1997

The Development Charges Act received royal assent on December 8, 1997, replacing the previous act, which had been in-force since November 23, 1989.

The Province's stated intentions were to "create new construction jobs and make home ownership more affordable" by reducing the charges and to "make municipal Council decisions more accountable and more cost effective." The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality. The Development Charges Act provides for limitations and ceilings on services that can be included in the charges.

The Township does not impose water development charges on new development therefore the capital funding plan does not identify Development Charges as a source of funding for anticipated capital needs.

### **4.3 Municipal Act**

4.3.1 Part XII of the Municipal Act provides municipalities with broad powers to impose fees and charges via passage of a by-law. These powers, as presented in s.391(1), include imposing fees or charges:

- "for services or activities provided or done by or on behalf of it;
- for costs payable by it for services or activities provided or done by or on behalf of any other municipality or local board; and
- for the use of its property including property under its control."

Restrictions are provided to ensure that the form of the charge is not akin to a poll tax. Any charges not paid under this authority may be added to the tax roll and collected in a like manner. The fees and charges imposed under this part are not appealable to the Ontario Municipal Board.

4.3.2 s 391(2) of the Municipal Act permits municipalities to impose charges to recover capital costs, by by-law, from owners or occupants of land who receive an immediate benefit or a benefit at some later point in time. For a by-law imposed under this section of the Act:

- A variety of different means could be used to establish the rate, and recovery of the costs could be imposed by a number of methods at the discretion of Council (i.e. lot size, frontage, number of benefiting properties, etc.);
- Rates could be imposed in respect to costs of major capital works, even though an immediate benefit is not enjoyed;
- Non-abutting owners could be charged;



- Recovery could be authorized against existing works, where new infrastructure was added to such works, "notwithstanding that the capital costs of existing works has in whole or in part been paid";
- Charges on individual parcels could be deferred;
- Exemptions could be established; and
- Ontario Municipal Board approval is not required.

#### 4.3.3 Under the previous Local Improvement Act:

- A variety of different types of works could be undertaken, such as water main, storm and sanitary sewer projects, supply of electrical light or power, bridge construction, sidewalks, road widening and paving;
- Council could pass a by-law for undertaking such work on petition of a majority of benefiting taxpayers, on a 2/3 vote of Council and on sanitary grounds, based on the recommendation of the Minister of Health. The by-law was required to go to the Ontario Municipal Board, which might hold hearings and alter the by-law, particularly if there were objections;
- The entire cost of a work was assessed only upon the lots abutting directly on the work, according to the extent of their respective frontages, using an equal special rate per metre of frontage; and
- As noted, this Act was repealed as of April 1, 2003; however, Ontario Regulation 119/03 was enacted on April 19, 2003 which restores many of the previous Local Improvement Act provisions; however, the authority is now provided under the Municipal Act.

## 4.4 Grant Funding Availability

In August 2012, the Province of Ontario initiated the Municipal Infrastructure Investment Initiative. In supporting the efforts of communities to restore and revitalize their public infrastructure, this initiative provides one-time provincial funding to improve asset management planning in small municipalities and local service boards. In addition, funding will be made available for municipal infrastructure projects under this initiative. Any municipality or local service board seeking capital funding in the future must demonstrate how its proposed project fits within a detailed asset management plan. To assist in defining the components of an asset management plan, the Province produced a document entitled, "Building Together: Guide for Municipal Asset Management Plans." This guide documents the components, information and analysis that are required to be included in a municipality's asset management plan under this initiative.

The Township does not anticipate receiving grant funding during the forecast period. To the extent that the Township is successful in achieving grant funding for future infrastructure needs and the financial impacts are material, the rate forecast may be revisited.

#### 4.5 Existing Reserves/Reserve Funds

The Township has established a reserve for water capital costs. The established water reserve has been used in the capital funding forecast for rate-based needs.

The following table summarizes the water reserve utilized in this analysis and the respective 2015 opening balances. It is recommended that the Township consider converting the reserve into a reserve fund, which would allow for earned interest to accumulate within the funds.

**Table 4-1**  
**Township of Amaranth**  
**Water Projected Reserve Balances**  
**(as at Jan. 1, 2015)**

Reserves	Projected Balance
Water Capital Reserve	\$60,475

#### 4.6 Debenture Financing

Although it is not a direct method of minimizing the overall cost to the ratepayer, debentures are used by municipalities to assist in cash flowing large capital expenditures.

The Ministry of Municipal Affairs regulates the level of debt incurred by Ontario municipalities, through its powers established under the Municipal Act. Ontario Regulations 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue may be allotted for servicing the debt (i.e. debt charges).

The Township has an instalment bank loan which was secured in 2006 to pay for capital works in that year. The principal and interest costs of the bank loan have been identified in capital related expenses as a Part XII Repayment and have been offset by

operating revenue amounts noted as Municipal Act Capital Charge Recovery, discussed in section 5.2.

#### **4.7 Recommended Approach**

It is recommended that the capital program be funded exclusively from the water capital reserves.

Table 4-3 provides for the capital expenditure and funding program summary by year for water services. The capital funding plan is provided in inflated dollars.

**Table 4-3**  
**Township of Amaranth**  
**Water Service**  
**Capital Budget Forecast – Inflated\$**

<b>Capital Expenditures</b>	<b>Total</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>
Well One	14,500	-	-	3,100	-	-	-	-	-	-	11,400	-
Well Two	14,600	-	-	6,200	-	-	-	-	-	-	8,400	-
Well Three	14,600	-	-	3,100	-	-	-	-	-	-	-	11,500
Pumphouse Raw Water Piping	29,800	-	-	5,200	-	12,400	-	-	-	-	-	12,200
Pumphouse Treatment Equipment	49,700	500	500	5,700	500	32,900	600	600	600	600	6,600	600
Reservoir	2,700	-	-	-	-	2,700	-	-	-	-	-	-
Treated Water Process	49,400	-	-	15,100	4,200	5,400	4,400	-	4,600	-	9,600	6,100
Instrumentation and SCADA	17,800	-	-	-	-	6,400	-	-	-	-	11,400	-
Building Services	28,000	3,000	2,000	3,100	2,100	3,200	2,300	3,400	2,300	600	5,400	600
Treated Water Distribution	45,400	-	2,000	4,200	-	11,300	-	-	10,300	-	5,400	12,200
Studies	52,400	16,000	-	-	-	-	17,300	-	-	-	-	19,100
<b>Total Capital Expenditures</b>	<b>318,900</b>	<b>19,500</b>	<b>4,500</b>	<b>45,700</b>	<b>6,800</b>	<b>74,300</b>	<b>24,600</b>	<b>4,000</b>	<b>17,800</b>	<b>1,200</b>	<b>58,200</b>	<b>62,300</b>
<b>Capital Financing</b>												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Capital Reserve	318,900	19,500	4,500	45,700	6,800	74,300	24,600	4,000	17,800	1,200	58,200	62,300
<b>Total Capital Financing</b>	<b>318,900</b>	<b>19,500</b>	<b>4,500</b>	<b>45,700</b>	<b>6,800</b>	<b>74,300</b>	<b>24,600</b>	<b>4,000</b>	<b>17,800</b>	<b>1,200</b>	<b>58,200</b>	<b>62,300</b>

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## 5. Operating Expenditure Forecast

### 5.1 Operating Expenditures

In this report the forecasted operating budget figures for water services are based on the Township's 2015 operating budget. The expenditures for each component of the operating budget have been reviewed with staff to establish any revisions and inflationary adjustments.

Capital-related annual expenditures in the forecast include annual debt repayments and contributions to reserve to support the capital forecast and other future needs. While operating aspects identified above generally increase with inflation over the period (i.e. 2% annually), the capital-related aspects tend to increase more specifically with the increase in capital funding requirements.

As a result of the inflationary and capital-related expenditure increases, the water operating expenditures are anticipated to increase over the forecast period. Gross operating expenditures for water services are anticipated to increase from \$76,500 in 2015 to \$90,800 by 2025.

### 5.2 Operating Revenues

The Township has a Municipal Act capital charge recovery which was initiated in 2007 to recover the capital costs associated with specific capital works in 2006. These operating revenues have been forecast over the period in accordance with payment recovery schedules, and are offset by the cost of loan payments discussed in section 4.6. For customers who opted to pay their capital charge recovery over a ten-year period, the final instalment occurs in 2016. The customers who had opted for the twenty-year period, the capital charge will continue with payments to 2026. Billing revenues have been forecast in total for this chapter, and will be addressed in the rate structure outlined in Chapter 6.

The annual operating revenues for water services, representing the capital charge recovery amounts, are forecast to decrease from \$33,091 in 2015 and 2016, to \$6,027 for 2017 to 2025.

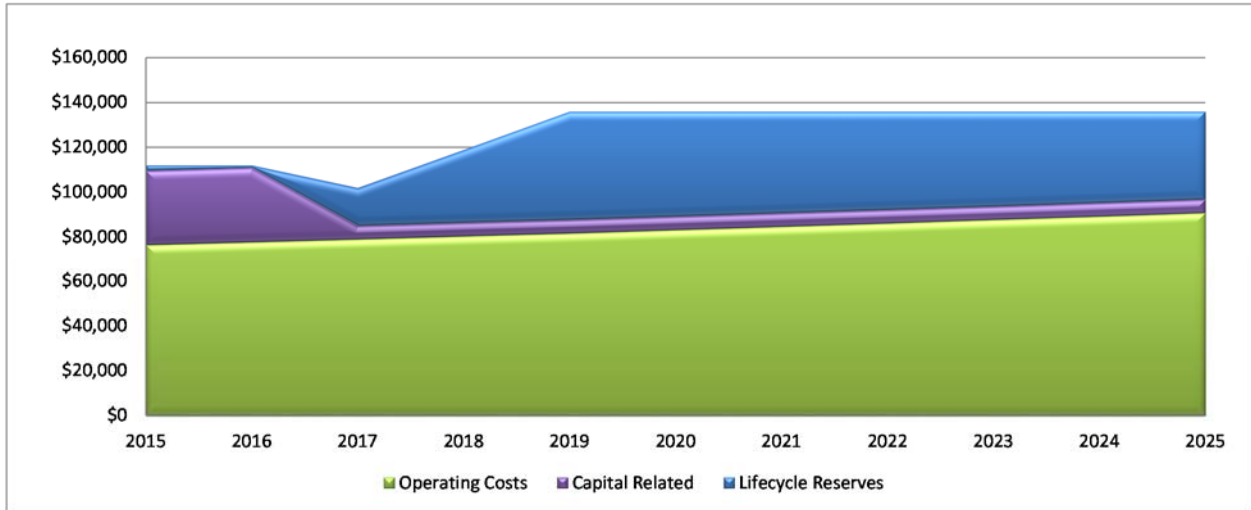
Table 5-1 provides the water operating budget forecast. The forecast operating budget is provided in inflated dollars. Most operating expenditures have been increased annually based on operating cost inflation assumed at 2%.

**Table 5-1**  
**Township of Amaranth**  
**Water Service**  
**Operating Budget Forecast – Inflated\$**

Description	Budget 2015	Forecast										
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
<b>EXPENDITURES</b>												
<b>Operating Costs</b>												
Hydro	16,300	16,600	16,900	17,200	17,500	17,900	18,300	18,700	19,100	19,500	19,900	
Telephone	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	
Operating Contract	49,000	50,000	51,000	52,000	53,000	54,100	55,200	56,300	57,400	58,500	59,700	
Contingencies and Other	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	
<i>Sub Total Operating</i>	<i>76,500</i>	<i>77,800</i>	<i>79,100</i>	<i>80,400</i>	<i>81,700</i>	<i>83,200</i>	<i>84,700</i>	<i>86,200</i>	<i>87,700</i>	<i>89,200</i>	<i>90,800</i>	
<b>Capital-Related</b>												
<i>Debentures</i>												
New Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-	
New Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-	
A/R Part XII Repayment	33,091	33,091	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	
<i>Transfers</i>												
Transfer to Reserve	2,380	1,080	16,780	32,480	48,180	46,680	45,180	43,680	42,180	40,680	39,080	
<i>Sub Total Capital Related</i>	<i>35,471</i>	<i>34,171</i>	<i>22,807</i>	<i>38,507</i>	<i>54,207</i>	<i>52,707</i>	<i>51,207</i>	<i>49,707</i>	<i>48,207</i>	<i>46,707</i>	<i>45,107</i>	
<b>Total Expenditures</b>	<b>111,971</b>	<b>111,971</b>	<b>101,907</b>	<b>118,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	
<b>Revenues</b>												
<i>Operating Revenue</i>												
Municipal Act Capital Charge Recovery	33,091	33,091	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	
Transfer from Reserve	-	-	-	-	-	-	-	-	-	-	-	
<i>Sub Total Operating Revenue</i>	<i>33,091</i>	<i>33,091</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	
<b>Water Billing Recovery</b>	<b>78,880</b>	<b>78,880</b>	<b>95,880</b>	<b>112,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	
<i>Revenue Summary</i>												
10 Year Capital Charge	27,064	27,064	-	-	-	-	-	-	-	-	-	
20 Year Capital Charge	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	
Flat Rate Charge	78,880	78,880	95,880	112,880	129,880	129,880	129,880	129,880	129,880	129,880	129,880	
<b>Total Revenue</b>	<b>111,971</b>	<b>111,971</b>	<b>101,907</b>	<b>118,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	

Figure 5-1 illustrates the annual net operating budget increase for water service over the forecast period by component.

**Figure 5-1**  
**Township of Amaranth**  
**2015-2025 Water Annual Net Operating Forecast by Major Component**







## **6. Forecast Water Rates**

### **6.1 Introduction**

To summarize the analysis undertaken thus far, Chapter 3 reviewed capital-related investment for all customers within the water system and responds to the lifecycle needs of the Township. Chapter 4 provided a review of capital financing options of which internal sources (i.e. reserve transfers) will be the predominant basis for financing future capital needs. Chapter 5 established the 10-year operating forecast of expenditures for the Township's water system. The following calculations will be based on the net operating expenditures provided in Chapter 5.

### **6.2 Water Rates**

In maintaining the Township's current rate structure, the billing revenue requirement is divided by the number of customers to calculate a monthly flat rate fee to be paid by each water customer. The resultant rate forecast for water services are presented in Tables 6-1. As was noted in Chapter 5, the capital recovery charge is being eliminated for most customers by 2017. In addition, new customers are expected to join the water system in 2017 to 2019. In the event that this does not happen, refinements to the rate forecast may be needed by 2017 to ensure positive cash flows going forward.

The detailed financial forecast and rate calculations for water services are provided in Appendix A to this report.

**Table 6-1**  
**Township of Amaranth**  
**Water Rate Forecast – Inflated\$**

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	78,880	78,880	95,880	112,880	129,880	129,880	129,880	129,880	129,880	129,880	129,880
Total Customers	116	116	141	166	191	191	191	191	191	191	191
<b>Current Rates - 10 Year Replacement</b>											
Flat Rate (Annual)	680	680	680	680	680	680	680	680	680	680	680
Capital Charge (10 Year)	398	398	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1,078</b>	<b>1,078</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>
<b>Annual Increase in Total Rate</b>		0.0%	-36.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Current Rates - 20 Year Replacement</b>											
Flat Rate (Annual)	680	680	680	680	680	680	680	680	680	680	680
Capital Charge (20 Year)	287	287	287	287	287	287	287	287	287	287	287
<b>Total</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>
<b>Annual Increase in Total Rate</b>		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### **6.3 Recommendations**

Based upon the above analysis, the following recommendations are put forth for Council's consideration:

1. That Council approve the 2015 water rates as shown in Chapter 6;
2. That Council consider transitioning the water capital reserves into reserve funds;  
and
3. That Council direct staff to consider the results of the rate study in future amendments to the Township's asset management plan.



# **Appendix A – Detailed Water Rate Calculations**

# Appendix A – Detailed Water Rate Calculations

The following appendix contains the tables outlining the detailed water rate calculations as follows:

- Page A-3 Water Capital Budget - Uninflated
- Page A-4 Water Capital Budget - Inflated
- Page A-5 Water Debenture Schedule and Reserve Schedule
- Page A-6 Water Operating Budget Forecast and Rate Forecast

**Table 2**  
**Township of Amaranth**  
**Waldemar Water Services**  
**Capital Budget Forecast**  
 Inflated \$

Description	Total	Budget 2015	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
<b>Capital Expenditures</b>													
<b>Well One</b>													
Camera inspection of well casing	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Submersible pump replacement	8,400	-	-	-	-	-	-	-	-	-	-	8,400	-
Transmission main repairs	3,000	-	-	-	-	-	-	-	-	-	-	3,000	-
<b>Well Two</b>													
Camera inspection of well casing	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Submersible pump replacement	8,400	-	-	-	-	-	-	-	-	-	-	8,400	-
Transmission main repairs	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
<b>Well Three</b>													
Camera inspection of well casing	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Submersible pump replacement	8,500	-	-	-	-	-	-	-	-	-	-	-	8,500
Transmission main repairs	3,000	-	-	-	-	-	-	-	-	-	-	-	3,000
<b>Pumphouse Raw Water Piping</b>													
Replace pressure gauges	1,600	-	-	-	-	1,600	-	-	-	-	-	-	-
Service flow control valves	5,400	-	-	-	-	5,400	-	-	-	-	-	-	-
Service pressure relief valve	5,400	-	-	-	-	5,400	-	-	-	-	-	-	-
Process piping repairs	5,200	-	-	5,200	-	-	-	-	-	-	-	-	-
Replace raw water meters	12,200	-	-	-	-	-	-	-	-	-	-	-	12,200
<b>Pumphouse Treatment Equipment</b>													
Chemical metering pumps	16,200	-	-	-	-	16,200	-	-	-	-	-	-	-
Discharge piping/valves	27,400	-	-	5,200	-	16,200	-	-	-	-	-	6,000	-
Centreline Injectors	6,100	500	500	500	500	500	600	600	600	600	600	600	600
<b>Reservoir</b>													
Camera inspection/clean	2,700	-	-	-	-	2,700	-	-	-	-	-	-	-
<b>Treated Water Process</b>													
Replace pressure gauges	2,100	-	-	2,100	-	-	-	-	-	-	-	-	-
Service flow control valves	5,200	-	-	5,200	-	-	-	-	-	-	-	-	-
Service pressure relief valve	5,200	-	-	5,200	-	-	-	-	-	-	-	-	-
Rebuild high lift pumps	17,500	-	-	-	-	5,400	-	-	-	-	-	6,000	6,100
Service emergency pump	6,200	-	-	2,600	-	-	-	-	-	-	-	3,600	-
Replace treated water meters	13,200	-	-	-	4,200	-	4,400	-	4,600	-	-	-	-
<b>Instrumentation and SCADA</b>													
Replace free chlorine analyzer	8,400	-	-	-	-	-	-	-	-	-	-	8,400	-
Replace laptop	3,200	-	-	-	-	3,200	-	-	-	-	-	-	-
Replace data logger	3,000	-	-	-	-	-	-	-	-	-	-	3,000	-
Replace well level transducers	3,200	-	-	-	-	3,200	-	-	-	-	-	-	-
Replace wireless link	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Building Services</b>													
Electrical	13,600	2,500	-	2,600	-	2,700	-	2,800	-	-	-	3,000	-
Heating	6,100	500	500	500	500	500	600	600	600	600	600	600	600
Lighting	2,800	-	500	-	500	-	600	-	600	-	600	-	-
Generator Service	5,500	-	1,000	-	1,100	-	1,100	-	1,100	-	1,200	-	-
<b>Treated Water Distribution</b>													
Distribution mains leak repairs	17,700	-	500	-	-	5,400	-	-	5,700	-	-	-	6,100
Valve repair	4,900	-	1,500	-	-	1,600	-	-	-	-	-	1,800	-
Hydrant repair	14,300	-	-	2,600	-	2,700	-	-	2,900	-	-	-	6,100
Service repairs	8,500	-	-	1,600	-	1,600	-	-	1,700	-	-	3,600	-
<b>Studies</b>													
Water Rate Study & Financial Plan	52,400	16,000	-	-	-	-	17,300	-	-	-	-	-	19,100
<b>Total Capital Expenditures</b>	<b>318,900</b>	<b>19,500</b>	<b>4,500</b>	<b>45,700</b>	<b>6,800</b>	<b>74,300</b>	<b>24,600</b>	<b>4,000</b>	<b>17,800</b>	<b>1,200</b>	<b>58,200</b>	<b>62,300</b>	
<b>Capital Financing</b>													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Debtenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital Reserve	318,900	19,500	4,500	45,700	6,800	74,300	24,600	4,000	17,800	1,200	58,200	62,300	
<b>Total Capital Financing</b>	<b>318,900</b>	<b>19,500</b>	<b>4,500</b>	<b>45,700</b>	<b>6,800</b>	<b>74,300</b>	<b>24,600</b>	<b>4,000</b>	<b>17,800</b>	<b>1,200</b>	<b>58,200</b>	<b>62,300</b>	

**Table 3**  
**Township of Amaranth**  
**Waldemar Water Services**  
**Schedule of Debenture Repayments**  
 Inflated \$

Debenture Year	Principal (Inflated)	Budget 2015	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016	-			-	-	-	-	-	-	-	-	-	-
2017	-				-	-	-	-	-	-	-	-	-
2018	-					-	-	-	-	-	-	-	-
2019	-						-	-	-	-	-	-	-
2020	-							-	-	-	-	-	-
2021	-								-	-	-	-	-
2022	-									-	-	-	-
2023	-										-	-	-
2024	-											-	-
2025	-												-
<b>Total Annual Debt Charges</b>	-	-	-	-	-	-	-	-	-	-	-	-	-

**Table 4**  
**Township of Amaranth**  
**Waldemar Water Services**  
**Water Reserve Continuity**  
 Inflated \$

Water Reserve	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	60,475	43,355	39,935	11,015	36,695	10,575	32,655	73,835	99,715	140,695	123,175
Transfer from Operating	2,380	1,080	16,780	32,480	48,180	46,680	45,180	43,680	42,180	40,680	39,080
Transfer to Capital	19,500	4,500	45,700	6,800	74,300	24,600	4,000	17,800	1,200	58,200	62,300
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	43,355	39,935	11,015	36,695	10,575	32,655	73,835	99,715	140,695	123,175	99,955
Interest	-	-	-	-	-	-	-	-	-	-	-



**Table 5**  
**Township of Amaranth**  
**Waldemar Water Services**  
**Operating Budget Forecast**  
 Inflated \$

Description	Budget 2015	Forecast									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>EXPENDITURES</b>											
<b>Operating Costs</b>											
Hydro	16,300	16,600	16,900	17,200	17,500	17,900	18,300	18,700	19,100	19,500	19,900
Telephone	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Operating Contract	49,000	50,000	51,000	52,000	53,000	54,100	55,200	56,300	57,400	58,500	59,700
Contingencies and Other	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
<i>Sub Total Operating</i>	<i>76,500</i>	<i>77,800</i>	<i>79,100</i>	<i>80,400</i>	<i>81,700</i>	<i>83,200</i>	<i>84,700</i>	<i>86,200</i>	<i>87,700</i>	<i>89,200</i>	<i>90,800</i>
<b>Capital-Related</b>											
<b>Debentures</b>											
New Debt (Principal)	-	-	-	-	-	-	-	-	-	-	-
New Debt (Interest)	-	-	-	-	-	-	-	-	-	-	-
A/R Part XII Repayment	33,091	33,091	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027
<b>Transfers</b>											
Transfer to Reserve	2,380	1,080	16,780	32,480	48,180	46,680	45,180	43,680	42,180	40,680	39,080
<i>Sub Total Capital Related</i>	<i>35,471</i>	<i>34,171</i>	<i>22,807</i>	<i>38,507</i>	<i>54,207</i>	<i>52,707</i>	<i>51,207</i>	<i>49,707</i>	<i>48,207</i>	<i>46,707</i>	<i>45,107</i>
<b>Total Expenditures</b>	<b>111,971</b>	<b>111,971</b>	<b>101,907</b>	<b>118,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>
<b>Revenues</b>											
<b>Operating Revenue</b>											
Municipal Act Capital Charge Recovery	33,091	33,091	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027
Transfer from Reserve	-	-	-	-	-	-	-	-	-	-	-
<i>Sub Total Operating Revenue</i>	<i>33,091</i>	<i>33,091</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>	<i>6,027</i>
<b>Water Billing Recovery</b>	<b>78,880</b>	<b>78,880</b>	<b>95,880</b>	<b>112,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>	<b>129,880</b>
<b>Revenue Summary</b>											
10 Year Capital Charge	27,064	27,064	-	-	-	-	-	-	-	-	-
20 Year Capital Charge	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027	6,027
Flat Rate Charge	78,880	78,880	95,880	112,880	129,880	129,880	129,880	129,880	129,880	129,880	129,880
<b>Total Revenue</b>	<b>111,971</b>	<b>111,971</b>	<b>101,907</b>	<b>118,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>	<b>135,907</b>

**Table 6**  
**Township of Amaranth**  
**Waldemar Water Services**  
**Water Rate Forecast**  
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	78,880	78,880	95,880	112,880	129,880	129,880	129,880	129,880	129,880	129,880	129,880
Total Customers	116	116	141	166	191	191	191	191	191	191	191
<b>Current Rates - 10 Year Replacement</b>											
Flat Rate (Annual)	680	680	680	680	680	680	680	680	680	680	680
Capital Charge (10 Year)	398	398	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1,078</b>	<b>1,078</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>	<b>680</b>
<b>Annual Increase in Total Rate</b>		0.0%	-36.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Current Rates - 20 Year Replacement</b>											
Flat Rate (Annual)	680	680	680	680	680	680	680	680	680	680	680
Capital Charge (20 Year)	287	287	287	287	287	287	287	287	287	287	287
<b>Total</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>	<b>967</b>
<b>Annual Increase in Total Rate</b>		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%