TOWN OF YARMOUTH

Sewer Rate Review Study

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1 Introduction

The Town of Yarmouth operates the Town's sewer system. Like most municipalities in North America the Town's system is aging and in need of constant upgrading to meet the increasing quality and service level standards set by the Provincial and Federal Regulators. At the same time, funding sources from governments are changing leaving the Town and the system users challenged to develop cost recovery strategies that can assure financial sustainability. Historically the cost of these services was modest and sometimes included, in whole or in part, in property taxes. During these times the customers/users of the system often paid little attention to their sewer bills or the structure of the rates. More recently, this has changed significantly as the rates and charges for these services have been separated and identified to users at the same time as they were becoming an ever increasing percentage of the customers overall expenses. As the rates and charges for these services were separated, municipalities have sought methods to develop rate structures that are fair and equitable to users.

In Canada, four groups/organizations have provided guidance on ways for municipalities to develop rates to meet the long term financial needs of the water and sewer systems:

- The Canadian Water and Wastewater Association (CWWA) has published information on the procedures and guidelines for setting water and sewer rates for Canadian municipalities and continues to act a resource in this area;

- InfraGuide operated from 2001 to 2007 as a partnership between the Federation of Canadian Municipalities, the National Research Council and Infrastructure Canada published Best Practices for Water and Sewer Rates; and,

- The Water Environment Federation (WEF), the leading wastewater association in North America, has been publishing manuals and standards for the wastewater (sewage) industry since it was formed in the 1940's including a manual on Financing and Charges for Wastewater Systems, Manual of Practice No. 27.

In addition to the above the study team reviewed the methodology set out in the Nova Scotia Utility and Review Board's Water Utility Accounting and Reporting Handbook. This methodology, while focused on water is really a combination of several of the above groups and has been reviewed at public hearings in Nova Scotia by local groups as well as experts from across North America.

The Town of Yarmouth retained the consulting team to undertake a review of the current sewer rate structure and recommend revisions to meet the long term needs of the Sewer System. In

undertaking this review the consulting team utilized the above noted sources to prepare a list of common elements/themes which are summarized as follows:

- Identification of the full costs including operation and maintenance expenses, debt retirement and depreciation;
- Identification of the revenue sources available;
- The need for the sewer systems to be sustainable and self sufficient into the future;
- The need for rate structures that generate sufficient revenues to recover the cost of the sewer services (Full Cost Recovery);
- The need to allocate the system costs into cost causative components; and,
- The need to develop an allocation methodology for assigning costs to the identified customer classes.

The Town of Yarmouth currently has a system in place that sees the Water Utility funded separately from all other services provided by the Town. The Water Rates are set by the Nova Scotia Utility and Review Board after a public hearing process pursuant to the N.S. Public Utilities Act. Revenue for the Water Utility comes from the water rates charged to the existing users of the system. The sewer rates are set by the elected Town Council. While the rates generate significant revenue the Town continues to fund the debt repayment charges associated with the sewer system and the depreciation account from the property tax revenue.

2 Current Sewer System

Sewage is collected from the Town together with a section of Arcadia and Hebron and treated at the Yarmouth Wastewater Treatment Plant on Water Street. The sewer system also includes approximately 60 km of sewer mains and 5 sewer lift stations.

2.1 Sewer Services Budget

The sewer service currently has an operating budget of approximately $1,000,000 per year excluding debt repayment and depreciation. These two items, debt repayment and depreciation, are currently paid by the Town from the property taxes and amount to approximately $900,000 in the 2012/13 budget year. This amount will decrease to approximately $700,000 in 2013/14 as one of the existing loans is paid off. Ongoing capital expenditures are either taken from the depreciation funding or the Town's capital program with major expenditures generally funded through debt.

2.2 Existing Rate Structure

The existing rate structure was set by the Yarmouth Town Council. The present rate structure for service is as follows:

Sewer Service Base Charge

Single Family Residential	$46.75 per quarter ($187.00 per year)
Apartment with 2 or more Units	$57.00 per quarter ($228.00 per year)
Non Residential	$71.25 per quarter ($285.00 per year)

Sewer Volumetric Rate for Discharge $1.12 per 1,000 imperial gallons

2.3 Customer Count

Since sewer cannot be easily measured municipalities use the water meter readings as a "surrogate" for wastewater. The following table provides the number of water customers by meter size. This information will be used in the preparation of alternatives for the Yarmouth sewer system.

Table 2-1 Number of Existing Customers

Meter Size	No. of Customers
Unmetered	0
15mm - 5/8 inch	2748
19mm – ¾ inch	48
25 mm – 1 inch	73
37 mm – 1.5 inch	46
50 mm – 2 inch	37
75 mm – 3 inch	6
100 mm – 4 inch	1
150 mm – 6 inch	1
200 mm – 8 inch	0

3 Rate Setting Principals and Objectives

The development of rate setting models for sewer services needs to be based on a solid set of principals and objectives upon which to base the tariffs. These principal and objectives are fundamental to achieving equitable cost allocation and fair and equitable user-rates for sewer services. This section of the report sets out the basic principles to be considered in the recovery of sewer system costs and for the formulation of the user rates.

While the literature provides a number of principles and objectives it is important that the ones used suit the Town of Yarmouth as they are used to formulate the approach to develop user rates and tariffs as well as to support the approach used to develop other charges for customers of the systems.

While there are a number of principles and objectives for determining user rates and charges it is important to realize that while some do not conflict with others, some do, which results in the need to make choices between those in conflict.

3.1 Full Cost Recovery

The National Guide to Sustainable Municipal Infrastructure (InfraGuide) states:

> *"Full cost recovery requires the generation of sufficient revenues through appropriate pricing of the services to cover the full cost of water and sewerage services. These include operating, maintenance, administration (OM&A), research and development (R&D), expenditures, financial costs and capital investments in facilities (including depreciation, interest and equity return at a level sufficient to sustain the systems in perpetuity and achieve the mandated level of service as a minimum)."*

Full cost recovery in the Town of Yarmouth means that the sewer rates will be structured to cover all of the costs of operating and maintaining the sewer system, financing the existing and future debts of each system and the financing of the replacement of aging infrastructure. The primary purpose of full cost recovery is that it will ensure that the sewer system is adequately financed for sustainability over the long term.

The following list, taken from the InfraGuide program, summarizes some of the main benefits of identifying full costs and implementing a full cost recovery plan for water and sewer systems:

- *"Represents a sound business practice;*
- *Ensures sustainability of the water and sewer services;*
- *Improves knowledge of the urgency of investments and allows budget components to be effectively prioritized and financed;*

- *Provides a technically defensible financing plan (i.e., the municipality can demonstrate accountability to its customers);*
- *Helps municipal councils, utility commissions or utility regulators evaluate budget and rate requests in a more informed manner and to develop long term financial plans;*
- *Can be used to promote water efficiency;*
- *Facilitates rate stability by reducing the risk of sudden large increases or decreases in water and sewer rates;*
- *Facilitates "buy-in" from customers for proposed rate increases;*
- *Provides notice to high use customers of future rate increases, thus supporting economic stability for the community;*
- *Enables more accurate comparisons (e.g. benchmarking) between municipalities;*
- *Extends the life of assets since managers can better balance maintenance costs against capital replacement;*
- *Reduces the risk of non-compliance with regulations (i.e. municipality can demonstrate due-diligence); and,*
- *Helps to maintain (or improve) service levels (e.g. public health and safety) and demonstrates sound fiscal management, well-planned systems and a vision for the future."*

3.2 Revenue Adequacy/Stability

The rates structure must be set such that the sewer system can effectively yield the revenue requirements in a fair and reasonable manner from the customers of the systems while avoiding or reducing the financial risk associated with revenue variability and revenue loss.

Over and above the requirement to achieve a balanced budget is the responsibility of the Town to its customers to adopt a sound financial management plan to ensure that sufficient revenue is available to fund the full cost of providing, maintaining, operating and administering the sewerage works to meet the regulatory requirements in a sustainable manner including the replacement of the system and ensuring security of collection and treatment systems.

This objective is used to formulate the split between the base rate and the effluent charges in the rate structures and to provide revenue stability, predictability and sustainability with minimum unexpected changes.

3.3 Rate Continuity

The sewer rates should be predictable with a minimum of unexpected changes that have adverse effect on the customers. In Yarmouth, the Town Council sets the rates with information provided by staff. This methodology allows for long term planning of rates which results in rate

continuity. The rate structures proposed in this study are based on predicting rates for multiple years such that long term planning and future needs can be integrated into the rate structure over time.

3.4 Fairness

The model developed for the Town of Yarmouth is based on using the existing water meter readings for all customers. The current system in Yarmouth does make provision for several large industrial users (fish plants) to exclude any water consumed for industrial purposes that is not discharged into the Town's sewer system.

3.5 Affordability

The ability of customers to pay for essential sewer services is a key issue when developing rates for these services. There is always upward pressure on rates as adequate funds are needed to replace aging infrastructure and to meet ever changing regulatory requirements. Customers who are billed on the actual volume of water (and conversely sewer effluent) have the opportunity to exercise some control over their bills by conserving and reducing wastage.

While affordability is a difficult issue to define, the objective in setting rates for the Town of Yarmouth is to have rates that are comparable to others in the region.

3.6 Conservation

The rate structure must consider the impact of the rates on conservation of the water resource while at the same time limiting the volume of effluent to be treated.

Conservation can result in delayed spending on expansions for sewer pumping stations and treatment plant equipment which can result in lower costs for the overall service. It is pointed out that costs do not decrease proportionally with lower overall consumption/discharge due to the fixed or base charge as well as the need for all customers to share in the cost of the sewer system. While customers who conserve will see savings it is not as simple as saying that you can half your sewer bill by reducing your consumption by 50%. However, everyone will benefit in the longer term by limiting the needed investment in new infrastructure and delaying or postponing expansions in the systems.

3.7 Adaptable to Changing Circumstances

The rate structures must be dynamic and be able to react to the changing environmental regulations and quality standards. To do this the rate structure must be able to set rates for a number of years to allow for the anticipation of changes from both system upgrades and system expansion needs. The rates structure should promote innovation in both the Town of Yarmouth operations as well as the customers by being open to public review and input. The rate structure must be able to respond to changing demand and supply patterns. The rate structure should be such that changing circumstances or development patterns can be tested to determine which has the least (or the most) impact on rates.

The rate structure developed for the Town of Yarmouth is based on a 5 year planning horizon and allows for the testing of various growth scenarios, expansion of the system and upgrading the system to meet future regulatory requirements.

3.8 Understandable

The rate structures must be set up such that they are easy to incorporate into the existing financial management systems of the sewer department. Their usage should be straightforward and easy to understand, convenient, economic to implement and maintain, and, are publicly acceptable while meeting the requirements of the sewer department. To achieve this, the rate structures have been modeled after the existing budgeting process such that they can easily be populated and run for a variety of test scenarios to determine the impact on both short term and longer term rates.

4 Sewer Rate Structure

The existing rate structure in Yarmouth is based on having a base or fixed charge together with a volumetric charge. While this type of structure is widely used as it combines the need for stable funding with the need to promote conservation. Using a two part rate allows customers to be rewarded with lower bills by conserving water.

The alternative used by some Municipalities is to have a fixed flat rate for the sewer service. This type of rate structure is not widely used as it does nothing to enhance conservation as the bill is the same for those that generate a lot of wastewater as those that conserve. A Third alternative used by some systems is based on having only a volumetric charge (no fixed/base charge). The major drawback with this system is that all of the Town's revenue is dependent on usage. If for any reason the usage changes dramatically the revenue stream can be impacted resulting in revenue shortfalls.

The recommended method for Yarmouth is to have a two part rate structure, a fixed or base charge and a volumetric charge for each service.

4.1 Measurement of Sewage Flows

Since sewage is extremely difficult to measure reliably, water usage as measured by the existing network of water meters is commonly used as a surrogate for sewage generation. This method is currently widely used throughout Canada. Some areas have established a system of rebates to sewer customers such as ready mix concrete plants, food processing companies, some garden centres/nurseries, etc who can clearly show that they do not discharge a significant portion (more than 50%) of the water they use into the sewer system. Such rebates only apply to commercial customers. To apply for a rebate the customer must install one or more additional meters at their own cost in locations approved by the Town Engineer and provide monthly readings from these meters. If a customer can demonstrate that they discharge less than 50% of the water consumed into the Town's sewer system the customer then receives a rebate/reduction on their sewer bill only for that billing period. The customer must make application for these rebates annually. The Town has the right to inspect these meters at any time to verify that the readings and the usage is consistent with the exemption. The Town currently has a similar system in place for the fish processing plants by using a separate meter for domestic/staff usage from process usage as the process water does not get discharged to the Town's sewer system.

4.2 Base/Fixed Charges

The setting of base/fixed charges can be done by several different methods. The Town currently has a base charge based on land use with only three classifications. This system does not adequately reflect the capacity of the diverse customer classifications served by the system to be fairly represented. The existing base charge accounts for approximately 50% of the revenue stream with the volumetric rate accounting for the remaining 50%. The alternative must be based on acceptable principals while meeting the revenue requirements of the Town. In the case of Yarmouth the rate system recommended is based on recovering all billing and administrative costs and a portion of the depreciation and non-operating expenditures (less non-operating revenues). The system proposed would ultimately result in between 25% and 30% of the revenue being recovered from fixed costs with the remained being recovered from volumetric charges. Given the stability of the customer base served by the Town this distribution of costs will allow those that choose to reduce their consumption through conservation to see the benefit while leaving the Town with a stable revenue stream. The method proposed for Yarmouth is included in the attached Sewer Rate Model Report (see Appendix I). Given that the existing rate structure results in approximately 50% of the revenue coming from the base charge the proposed Sewer Rate Model has been developed to allow a smooth transition to approximately 25% of the revenue coming from the based charge over a five year period.

4.3 Volumetric Charges

There are a number of rate format options that are used, summarized and described in Table 4-1.

Table 4-1 Alternative Volumetric Rate Formats

Volumetric Rate Format Name	Description
Single Block Rate (SBR)	One rate for all usage – This approach is very common and the current one used in most water systems in Atlantic Canada.
Declining Block Rate (DBR)	Rates decrease in steps for as usage increases based on cost analysis or to benefit large-volume water user. - This is common in water systems with large single users such as a pulp mill and/or a fish processing plant. Used in Saint John, CBRM and Yarmouth
Increasing Block Rate (IBR)	Rates increase in steps as usage increases to encourage careful water use (normally aimed at residential) – This method is not common in Atlantic Canada . It is used in centres where water supply is limited.
Lifeline Rate (LR)	Low first block rate covering enough water to meet basic residential water needs for cooking and sanitation. Rare in Canada where poverty is normally dealt with by other means or agencies.
Humpback Rate (HBR)	Rates increase in steps until out of residential range then decrease at higher usage levels in steps to benefit large non-residential users - Rare
Seasonal Rate (SR)	Rates are increased in the summer. Not commonly used in Atlantic Canada
Seasonal Excess Use Rate (EUR)	A higher rate is applied for summer usage over a certain threshold level - Rare - Used in Windsor Ontario

Cost-of-service considerations can have a strong influence on the volumetric format adopted. For example, high summer peak demands due to residential lawn watering/irrigation, can result in DBR rates based on the highest rate – the first rate block – targeting summer use by residential customers if lawn watering were a major demand. Declining block rates are also used when a significant portion of the water sold goes to a single industry such as a pulp mill or a food processor. In these cases an analyses can be undertaken to look at the marginal cost of water for these large users.

Increasing block rates for customers can also target excess use by residential customers but one must be cautious as increasing block rates can exacerbate affordability issues for large non residential users and for residential users with large or extended families living in the same household. As well one must be cautious in the assumption that small users are low income users or that large users are high income users. For example, poor maintenance of fixtures can increase use by low-income users. Often increasing block rates are used as a deterrent to excess usage in areas where the supply of water available is limited.

Discussions with staff and observations of the development patterns of Yarmouth (primarily residential) do not support the adoption of a rate format other than the current single-block

approach. The sewer model report develops models based on a single block rate (see Appendix I).

5 Recommended Rate Structure

Revenue adequacy is enhanced with a higher proportion of revenues being generated from the base or fixed charge. Conversely, conservation can be better achieved with no base charge and the adoption of one of the rate formats intended to target excess use, such as the Increasing Block Rate. Given these opposite needs it is recommended that Yarmouth adopt a system that uses both a based/fixed service charge together with a volumetric charge based on a single block rate.

The attached rate model in Appendix I provides the background as well as the recommended rate structure / rate setting models for the Yarmouth Sewer System. The model is based on developing a base and volumetric (effluent) charge for sewer.

The rate model is based on having a base rate for each customer classification (meter size) and includes a gradual transition of the base charge from 50% of the revenue stream to 25% of the revenue stream over a five year period. As well, the model includes the gradual removal of the payment of the debt charges and depreciation from the Town's property taxes to the customers of the sewer system thereby making the sewer system full cost recovery. The transition proposed is for the entire cost of debt repayment and depreciation will be paid by the customers of the system at the end of five years. This transition will result in higher sewer costs but will result in a lowering to the demand for funds from the Town's property taxes.

5.1 Discussion of Rate Model Tables

The attached rate model is broken into a series of tables which are described below.

Table 1-1
This table provides inputs to the model including:

a) The assumed annual inflation rate;
b) The years to be reviewed;
c) The projected annual growth rate in the area served by the sewer system;
d) The number of customers by Class/meter sized for the current year;
e) Effluent flow by customer class/meter size for the current year; and,
f) Long term interest rate on borrowing

Table 2-1
This table provides the Existing Financial Information including projections of costs for the test years identified in item (b) in Table 1-1. The rates used for projected operating revenues on this table are based on the existing rate structure. The table included projected revenues from rates as well as projected revenues from Hebron/Arcadia and the operation of the collection system for First Nations. As well, the model includes a line item identified as "Municipal Operating Grant" in bold. This line represents the amount currently paid from Town property taxes to offset the depreciation expense together with the repayment of the existing loans for the years 2011/12 and 2012/13. The amount shown in subsequence years shows a steady decline based on the wastewater customers paying for the above noted items as part of the rates. The effect of the proposed decline in the Municipal Operating Grant will be to reduce the amount paid from property taxes. The output of the table is a projection excess (deficiency) of revenues over expenditures based on the existing rate structure. Based on the current rates and the phasing out of the Municipal Operating Grant together with the projected expenses indicates the sewer system will lose in the order of $107,385 (2012/13) to $916,595 (2016/17) per year if rates are not adjusted.

Table 3-1
This table lays out the revenue requirements from the customers after all other sources of funding are deducted. The table includes the projected other operating revenue from Hebron/Arcadia, the operation of the system for the First Nations as well as a deduction for the "Municipal Operating Grant" as discussed in Table 2-1 above.

Table 4-1
This table provides details of the operating budgets for three functions, Sewage Treatment Plant, Sewage Collection and Administration and General. The amounts included are from the information provided by Town Staff for the year 2012/13. Costs for subsequent years have been calculated based on the previous year plus a 3% allowance of inflation as noted in Table 1-1 above.

Tables 6-1 to 6-6
These tables are included to allow for proposed capital spending that is to be funded from the rates. At this time the tables are all set to zero as no capital spending has been identified that is to funded from the rates. The tables also include the balance for the depreciation fund for each year.

Tables 7-1 to 7-6
These tables allocate the required revenue from Table 3-1 to either base charge or to volumetric (effluent) charge ($ per 1,000 gallons). The allocations included in the attached rate model have been developed to transition the existing rate structure which is composed of 50% of the revenue from base charges to a rate structure that is less reliant on base charge. The proposed structure gets more revenue from volumetric charges which allow those that choose to conserve to reduce

their bill as they reduce their usage. This transition is proposed to happen over a five year period to reduce the impact on rates year over year.

Tables 8-1 to 8-6
These tables list the customers by meter size from the input provided on Table 1-1. The table also provides the Capacity Ratio for each meter size based on the AWWA testing as is used in the water utility. The Capacity Ratio indicates the capacity of the meter to transmit flow. For instance, a 2 inch meter has the capacity to handle 8 times the flow of a 5/8 inch meter.

Tables 9-1 to 9-6
These tables calculate the base charge for each year based on the information from Tables 7-1 et al and Tables 8-1 et al. The base charges are based on the Capacity Ratio of the meters. A customer with a 2 inch meter will pay 8 times the based charge of a customer with a 5/8 inch meter as they have the capability to takes 8 times the flow and therefore to generate a times as much wastewater.

Tables 10-1 to 10-6
These tables list the current consumption by meter size from the input provided on Table 1-1

Tables 11-1 to 11-6
These tables calculate the volumetric (effluent) charge per 1,000 gallons based on the inputs from Tables 7-1 et al and Tables 10-1 et al. Each customer will be charged a base flow as noted in Tables 9-1 et al and a volumetric charge based on the water consumed through their water meter.

Tables 12-1 to 12-6
These tables calculate the projected revenues based on the rates from Tables 9-1 et al and Tables 11-1 et al. These revenues are the same as identified in Table 3-1.

Tables 13-1 to 13-6
These tables provide a schedule of the rates for implementation by staff.

Tables 14-1 to 14-6
These tables provide a year over year percentage change in the total average bill for each customer meter size based on using average flows from all customers in each meter size. The percentage changes for the first year are based on assumed base charges for all customers greater than 5/8 inch in diameter. It is noted that each customer will need to calculate the change in the cost of the sewer service individually as the base charge may be different than the one assumed in this table.

Loans Appendix
These sheets will only be used if there is capital spending that requires a loan.

6 Comparison to of Rates with Other Communities

A comparison of the sewer rates is provided in Table 6-1.

Table 6-1 Sewer Rate Comparison for Single Family Residential User

Location	Average Yearly Consumption	Sewer Base Charge	Sewer Rate per 1,000 gallons	Average Annual Sewer Charge
Kentville - 2012/13	47,052	$88.56	1.920	$178.90
New Glasgow - 2012/13	45,096	$0.00	3.700	$166.86
Windsor - 2012/13	44,664	$79.76	3.027	$214.96
Amherst - 2012/13	51,920	$0.00	4.460	$231.56
Proposed Yarmouth - 2012/13	**49,068**	**$122.44**	**1.792**	**$210.37**
Proposed Yarmouth - 2013/14	**49,068**	**$129.46**	**2.393**	**$246.88**
Proposed Yarmouth - 2014/15	**49,068**	**$126.65**	**3.121**	**$279.79**
Proposed Yarmouth - 2015/16	**49,068**	**$131.01**	**3.948**	**$324.73**
Proposed Yarmouth - 2016/17	**49,068**	**$146.06**	**4.617**	**$372.61**

Appendix I
Sewer Rate Review Study

Town of Yarmouth Sewer System

Sewer Rate Model

Prepared By

G. A. Isenor Consulting Limited

in Association with

W. H. Gates Utility Consultants Ltd

16-Nov-12

INPUTS REQUIRED FOR RATE CALCULATION

The following Inputs are required

Table 1-1

(a)	**Assumed Inflation Rate**	**3%**	Per Year
(b)	**Current Year**	**2011/12**	
	Test Years	**2012/13**	
		2013/14	
		2014/15	
		2015/16	
		2016/17	
(c)	**Estimated Annual Growth Rate**	**0.00%**	
(d)	**Number of Customers by Class/Meter Size for Current Year**		
	Unmetered	**0**	
	15mm - 5/8"	**2748**	
	19 mm - 3/4"	**48**	
	25 mm - 1"	**73**	
	37 mm - 1.5"	**46**	
	50 mm - 2"	**37**	
	75 mm - 3 "	**6**	
	100 mm - 4"	**1**	
	150 mm - 6"	**1**	
	200 mm - 8"	**0**	
(e)	**Effluent Flow by Customer Class/Meter Size for Current Year** (imperial gallons)		
	Unmetered	**0**	
	15mm - 5/8"	**134,839,000**	
	19 mm - 3/4"	**5,289,000**	
	25 mm - 1"	**15,683,000**	
	37 mm - 1.5"	**14,168,000**	
	50 mm - 2"	**26,235,000**	
	75 mm - 3 "	**10,152,000**	
	100 mm - 4"	**22,385,000**	
	150 mm - 6"	**19,353,000**	
	200 mm - 8"	**0**	
	Arcadia	**0**	
	Hebron	**60,000,000**	
(g)	**Long Term Interest Rate on Borrowing**	**6.00%**	

Table 2-1 16-Nov-12

Town of Yarmouth Sewer System
Comparitive Statement of Operations
Fiscal Years ending March 31st

	2011/12 (Estimated)	Projection Using Current Rates 2012/13 Test	2013/14 Test	2014/15 Test	2015/16 Test	2016/17 Test
OPERATING REVENUES						
Sewer Rate	781,844	795,000	795,000	795,000	795,000	795,000
Revenue from Hebron/Arcadia	161,469	161,469	161,469	161,469	161,469	161,469
First Nations System Operations	3,000	3,000	3,000	3,000	3,000	3,000
Municipal Operating Grant	**931,667**	**914,208**	**550,000**	**400,000**	**200,000**	**0**
Other revenue	0	0	0	0	0	0
Total	**1,877,980**	**1,873,677**	**1,509,469**	**1,359,469**	**1,159,469**	**959,469**
OPERATING EXPENDITURES						
Sewage Treatment - Plant	833,115	925,364	953,125	981,719	1,011,170	1,041,505
Sewage Collection	121,927	133,060	137,052	141,163	145,398	149,760
Administration and General	9,335	8,430	8,683	8,943	9,212	9,488
Depreciation	447,001	447,001	447,001	447,001	447,001	447,001
Taxes	0	0	0	0	0	0
Foregiveness on Depreciation	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	**1,411,378**	**1,513,855**	**1,545,861**	**1,578,826**	**1,612,781**	**1,647,755**
OPERATING PROFIT (LOSS)	**466,602**	**359,822**	**-36,391**	**-219,357**	**-453,312**	**-688,285**
NON-OPERATING REVENUES						
Interest and other income	0	0	0	0	0	0
Contract Services	0	0	0	0	0	0
Sludge Handling	0	0	0	0	0	0
Transfer from Depreciaiton Fund	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**
NON-OPERATING EXPENDITURES						
Principal on Existing Debt	365,014	365,014	166,667	166,667	166,667	166,667
Interest on Existing Debt	119,652	102,193	84,314	76,929	69,366	61,643
New Debt - Principal	0	0	0	0	0	0
New Debt - Interest	0	0	0	0	0	0
New Debt - Principal		0	0	0	0	0
New Debt - Interest		0	0	0	0	0
New Debt - Principal		0	0	0	0	0
New Debt - Interest		0	0	0	0	0
New Debt - Principal					0	0
New Debt - Interest					0	0
New Debt - Principal						0
New Debt - Interest						0
Capital out of Revenue	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	**484,666**	**467,207**	**250,981**	**243,596**	**236,033**	**228,310**
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	-18,064	-107,385	-287,372	-462,953	-689,345	-916,595
DEFICIT BEGINNING OF THE YEAR	0	-18,064	-125,448	-412,820	-875,773	-1,565,118
ACCUMULATED SURPLUS (DEFICIT)	**-18,064**	**-125,448**	**-412,820**	**-875,773**	**-1,565,118**	**-2,481,713**

Table 3-1 16-Nov-12

Town of Yarmouth Sewer System
Statement of Operating Expenditures and Revenue Requirements

	2011/12 (Estimated)	2012/13 Test	2013/14 Test	2014/15 Test	2015/16 Test	2016/17 Test
OPERATING EXPENDITURES						
Sewage Treatment - Existing Lagoon	833,115	925,364	953,125	981,719	1,011,170	1,041,505
Sewage Collection	121,927	133,060	137,052	141,163	145,398	149,760
Administration and General	9,335	8,430	8,683	8,943	9,212	9,488
Depreciation	447,001	447,001	447,001	447,001	447,001	447,001
Taxes	0	0	0	0	0	0
Foregiveness on Depreciation	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	**1,411,378**	**1,513,855**	**1,545,861**	**1,578,826**	**1,612,781**	**1,647,755**
ADD NON-OPERATING EXPENDITURES						
Debt Charges - Principal	365,014	365,014	166,667	166,667	166,667	166,667
Debt Charges - Interest	119,652	102,193	84,314	76,929	69,366	61,643
New Debt - Principal	0	0	0	0	0	0
New Debt - Interest	0	0	0	0	0	0
New Debt - Principal	0	0	0	0	0	0
New Debt - Interest	0	0	0	0	0	0
New Debt - Principal	0	0	0	0	0	0
New Debt - Interest	0	0	0	0	0	0
New Debt - Principal	0	0	0	0	0	0
New Debt - Interest	0	0	0	0	0	0
New Debt - Principal	0	0	0	0	0	0
Capital our of Revenue	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	**484,666**	**467,207**	**250,981**	**243,596**	**236,033**	**228,310**
LESS NON-OPERATING REVENUES						
Interest and other income	0	0	0	0	0	0
Contract Services	0	0	0	0	0	0
Sludge Handling	0	0	0	0	0	0
Transfer from Depreciaiton Fund	0	0	0	0	0	0
Other						
Total	**0**	**0**	**0**	**0**	**0**	**0**
LESS OTHER OPERATING REVENUE						
Revenue from Hebron/Arcadia	161,469	166,314	171,303	176,442	181,735	187,187
First Nations	3,000	3,000	3,000	3,000	3,000	3,000
Municipal Operating Grant	931,667	914,208	550,000	400,000	200,000	0
Other	0	0	0	0	0	0
Total	1,096,136	1,083,522	724,303	579,442	384,735	190,187
REVENUE REQUIRED FROM CUSTOMERS	**799,908**	**897,540**	**1,072,539**	**1,242,980**	**1,464,079**	**1,685,877**

Table 4-1 16-Nov-12

Town of Yarmouth Sewer System
Statement of Operating Expenditures

	2011/12 (Estimated)	2012/13 Test	2013/14 Test	2014/15 Test	2015/16 Test	2016/17 Test
SEWAGE TREATMENT PLANT						
Salaries and Benefits	186,959	226,020	232,801	239,785	246,978	254,388
Telephone	2,326	2,700	2,781	2,864	2,950	3,039
Water and Sewer	121,139	195,000	200,850	206,876	213,082	219,474
Office Supplies	3,455	2,520	2,596	2,673	2,754	2,836
Env Health Chemicals	123,916	140,004	144,204	148,530	152,986	157,576
Plant Fuel/Fuel	111,289	102,000	105,060	108,212	111,458	114,802
Env Health Miscellaneous	0	1,000	1,030	1,061	1,093	1,126
Equipment Maintenance	63,170	60,000	61,800	63,654	65,564	67,531
Equipment Supplies	57,153	55,020	56,671	58,371	60,122	61,925
Digester Cleaning	55,000	20,000	20,600	21,218	21,855	22,510
Plant Power	71,863	65,000	66,950	68,959	71,027	73,158
Building Insurance	21,055	21,120	21,754	22,406	23,078	23,771
Building Maintenance	15,790	34,980	36,029	37,110	38,224	39,370
Other	0	0	0	0	0	0
Other	0	0	0	0	0	0
TOTAL WASTEWATER TREATMENT	**833,115**	**925,364**	**953,125**	**981,719**	**1,011,170**	**1,041,505**
			0	0	0	0
SEWAGE COLLECTION						
Salaries and Benefits	0	0	0	0	0	0
Lift Station Maintenance	7,010	25,000	25,750	26,523	27,318	28,138
Env. Health Office Lease	458	480	494	509	525	540
Sewer Repairs	2,261	5,000	5,150	5,305	5,464	5,628
Sewer Cleaning	17,589	20,000	20,600	21,218	21,855	22,510
Rodent Control	6,992	3,500	3,605	3,713	3,825	3,939
Manhole Repair	2,898	5,000	5,150	5,305	5,464	5,628
Supplies and Parts	937	2,500	2,575	2,652	2,732	2,814
Meetings and Training	5,932	6,000	6,180	6,365	6,556	6,753
Membership	307	500	515	530	546	563
DOT Rental	1,089	1,200	1,236	1,273	1,311	1,351
Env health Clothing	318	1,000	1,030	1,061	1,093	1,126
Env. Health Mileage	2,887	1,000	1,030	1,061	1,093	1,126
Vehicle Maintenance	2,704	2,500	2,575	2,652	2,732	2,814
Marked Gas	5,828	1,500	1,545	1,591	1,639	1,688
Vehicle Insurance	1,356	1,500	1,545	1,591	1,639	1,688
Vehicle Lease	4,808	4,380	4,511	4,647	4,786	4,930
Video Inspection	10,416	10,000	10,300	10,609	10,927	11,255
Projects	0	0	0	0	0	0
Lift Station Power	48,137	42,000	43,260	44,558	45,895	47,271
Other	0	0	0	0	0	0
Other	0	0	0	0	0	0
TOTAL SEWER COLLECTION	**121,927**	**133,060**	**137,052**	**141,163**	**145,398**	**149,760**
ADMINISTRATION AND GENERAL						
Public Works Administration Salaries(Non-Union)	0	0	0	0	0	0
Secretary salary	7,077	7,230	7,447	7,670	7,900	8,137
Liability Insurance	2,258	1,200	1,236	1,273	1,311	1,351
Legal	0	0	0	0	0	0
Special Services	0	0	0	0	0	0
Other	0	0	0	0	0	0
Other	0	0	0	0	0	0
	0	0	0	0	0	0
TOTAL ADMINISTRATION	**9,335**	**8,430**	**8,683**	**8,943**	**9,212**	**9,488**

16-Nov-12

Table 6-1

Town of Yarmouth Sewer System
Calculation of Depreciation of Tangible Plant at Total Cost
2011/12

	Planned Capital Spending Program	Capital Cost Contribution by Others	Net Capital Cost	Estimated Average Life in Years	Depreciation Rate	Annual Depreciation
LAND AND LAND RIGHTS						
Land - General	0		0			0
STRUCTURES AND IMPROVEMENTS						0
Power and Pumping Structures	0		0	83	0.0120	0
Wastewater Treatment Plant	0	0	0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Equipment	0		0			0
Electrical Pumping	0		0	20	0.05	0
Treatment Equipment	0		0	20	0.05	0
Office Furniture and Equipment	0		0	10	0.1	0
Transportation Equipment	0		0	5	0.2	0
Tools and Work Equipment	0		0	5	0.2	0
Lift Station Upgrade	0		0	20	0.05	0
Collection Mains & Manholes Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Collection System						0
Forcemain	0		0	83	0.0120	0
Mains	0		0	83	0.0120	0
Manholes	0		0	83	0.0120	0
Meters	0		0	20	0.05	0
Services	0		0	83	0.0120	0
Other	0		0	10	0.1	0
Other	0		0	10	0.1	0
TOTAL	0	0	0			0

Source of Funding			
External Funding	0	Depreciation fund at end of year	0
Depreciation fund	0	Foregiveness on Depreciation	0
Long Term Debt	0	Depreciation Expenditure in Current Year	0
Capital from Revenue	0	Depreciation Fund Balance	0
TOTAL	0		

Table 6-2

Town of Yarmouth Sewer System
Calculation of Depreciation of Tangible Plant at Total Cost
2012/13

	Planned Capital Spending Program	Capital Cost Contribution by Others	Net Capital Cost	Estimated Average Life in Years	Depreciation Rate	Annual Depreciation
LAND AND LAND RIGHTS						
Land - General	0		0			0
STRUCTURES AND IMPROVEMENTS						0
Power and Pumping Structures	0		0	83	0.0120	0
Wastewater Treatment Plant	0	0	0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Equipment	0		0			0
Electrical Pumping	0		0	20	0.05	0
Treatment Equipment	0		0	20	0.05	0
Office Furniture and Equipment	0		0	10	0.1	0
Transportation Equipment	0		0	5	0.2	0
Tools and Work Equipment	0		0	5	0.2	0
Lift Station Upgrade	0		0	20	0.05	0
Collection Mains & Manholes Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Collection System						0
Forcemain	0		0	83	0.0120	0
Mains	0		0	83	0.0120	0
Manholes	0		0	83	0.0120	0
Meters	0		0	20	0.05	0
Services	0		0	83	0.0120	0
Other	0		0	10	0.1	0
Other	0		0	10	0.1	0
TOTAL	0	0	0			0

Source of Funding			
External Funding	0	Depreciation fund at end of year	447,001
Depreciation fund	0	Foregiveness on Depreciation	0
Long Term Debt	0	Depreciation Expenditure in Current Year	0
Capital from Revenue	0	Depreciation Fund Balance	447,001
TOTAL	0		

Table 6-3

Town of Yarmouth Sewer System
Calculation of Depreciation of Tangible Plant at Total Cost
2013/14

	Planned Capital Spending Program	Capital Cost Contribution by Others	Net Capital Cost	Estimated Average Life in Years	Depreciation Rate	Annual Depreciation
						-
LAND AND LAND RIGHTS						
Land - General	0		0			0
STRUCTURES AND IMPROVEMENTS						0
Power and Pumping Structures	0		0	83	0.0120	0
Wastewater Treatment Plant	0	0	0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Equipment	0		0			0
Electrical Pumping	0		0	20	0.05	0
Treatment Equipment	0		0	20	0.05	0
Office Furniture and Equipment	0		0	10	0.1	0
Transportation Equipment	0		0	5	0.2	0
Tools and Work Equipment	0		0	5	0.2	0
Lift Station Upgrade	0		0	20	0.05	0
Collection Mains & Manholes Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Collection System						0
Forcemain	0		0	83	0.0120	0
Mains	0		0	83	0.0120	0
Manholes	0		0	83	0.0120	0
Meters	0		0	20	0.05	0
Services	0		0	83	0.0120	0
Other	0		0	10	0.1	0
Other	0		0	10	0.1	0
TOTAL	0	0	0			0

Source of Funding			
External Funding	0	Depreciation fund at end of year	894,002
Depreciation fund	0	Foregiveness on Depreciation	0
Long Term Debt	0	Depreciation Expenditure in Current Year	0
Capital from Revenue	0	Depreciation Fund Balance	894,002
TOTAL	0		

Table 6-4

Town of Yarmouth Sewer System
Calculation of Depreciation of Tangible Plant at Total Cost
2014/15

	Planned Capital Spending Program	Capital Cost Contribution by Others	Net Capital Cost	Estimated Average Life in Years	Depreciation Rate	Annual Depreciation
LAND AND LAND RIGHTS						
Land - General	0		0			0
STRUCTURES AND IMPROVEMENTS						0
Power and Pumping Structures	0		0	83	0.0120	0
Wastewater Treatment Plant	0	0	0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Equipment	0		0			0
Electrical Pumping	0		0	20	0.05	0
Treatment Equipment	0		0	20	0.05	0
Office Furniture and Equipment	0		0	10	0.1	0
Transportation Equipment	0		0	5	0.2	0
Tools and Work Equipment	0		0	5	0.2	0
Lift Station Upgrade	0		0	20	0.05	0
Collection Mains & Manholes Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Collection System						0
Forcemain	0		0	83	0.0120	0
Mains	0		0	83	0.0120	0
Manholes	0		0	83	0.0120	0
Meters	0		0	20	0.05	0
Services	0		0	83	0.0120	0
Other	0		0	10	0.1	0
Other	0		0	10	0.1	0
TOTAL	0	0	0			0

Source of Funding			
External Funding	0	Depreciation fund at end of year	1,341,003
Depreciation fund	0	Foregiveness on Depreciation	0
Long Term Debt	0	Depreciation Expenditure in Current Year	
Capital from Revenue	0	Depreciation Fund Balance	1,341,003
TOTAL	0		

Table 6-5

Town of Yarmouth Sewer System
Calculation of Depreciation of Tangible Plant at Total Cost
2015/16

	Planned Capital Spending Program	Capital Cost Contribution by Others	Net Capital Cost	Estimated Average Life in Years	Depreciation Rate	Annual Depreciation
						-
LAND AND LAND RIGHTS						
Land - General	0		0			0
STRUCTURES AND IMPROVEMENTS						0
Power and Pumping Structures	0		0	83	0.0120	0
Wastewater Treatment Plant	0	0	0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Other Wastewater Structures	0		0	83	0.0120	0
Equipment	0		0			0
Electrical Pumping	0		0	20	0.05	0
Treatment Equipment	0		0	20	0.05	0
Office Furniture and Equipment	0		0	10	0.1	0
Transportation Equipment	0		0	5	0.2	0
Tools and Work Equipment	0		0	5	0.2	0
Lift Station Upgrade	0		0	20	0.05	0
Collection Mains & Manholes Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Other Equipment	0		0	5	0.2	0
Collection System						0
Forcemain	0		0	83	0.0120	0
Mains	0		0	83	0.0120	0
Manholes	0		0	83	0.0120	0
Meters	0		0	20	0.05	0
Services	0		0	83	0.0120	0
Other	0		0	10	0.1	0
Other	0		0	10	0.1	0
TOTAL	0	0	0			0

Source of Funding			
External Funding	0	Depreciation fund at end of year	1,788,004
Depreciation fund	0	Foregiveness on Depreciation	0
Long Term Debt	0	Depreciation Expenditure in Current Year	0
Capital from Revenue	0	Depreciation Fund Balance	1,788,004
TOTAL	0		

Table 6-6

Town of Yarmouth Sewer System
Calculation of Depreciation of Tangible Plant at Total Cost
2016/17

	Planned Capital Spending Program	Capital Cost Contribution by Others	Net Capital Cost	Estimated Average Life in Years	Depreciation Rate	Annual Depreciation
						-
LAND AND LAND RIGHTS						
Land - General	0					0
STRUCTURES AND IMPROVEMENTS	0					0
Power and Pumping Structures				83	0.0120	0
Wastewater Treatment Plant	0			83	0.0120	0
Other Wastewater Structures	0			83	0.0120	0
Other Wastewater Structures	0			83	0.0120	0
Equipment	0					0
Electrical Pumping	0			20	0.05	0
Treatment Equipment	0			20	0.05	0
Office Furniture and Equipment	0			10	0.1	0
Transportation Equipment				5	0.2	0
Tools and Work Equipment				5	0.2	0
Lift Station Upgrade	0			20	0.05	0
Collection Mains & Manholes Equipment	0			5	0.2	0
Other Equipment	0			5	0.2	0
Other Equipment	0			5	0.2	0
Collection System						0
Forcemain				83	0.0120	0
Mains	0			83	0.0120	0
Manholes	0			83	0.0120	0
Meters				20	0.05	0
Services	0			83	0.0120	0
Other				10	0.1	0
Other				10	0.1	0
TOTAL	0	0	0			0

Source of Funding			
External Funding	0	Depreciation fund at end of year	2,235,005
Depreciation fund	0	Foregiveness on Depreciation	0
Long Term Debt	0	Depreciation Expenditure in Current Year	0
Capital from Revenue	0	Depreciation Fund Balance	2,235,005
TOTAL	0		

Table 7-1 16-Nov-12

Town of Yarmouth Sewer System
Calculation of Revenue Required for Each Billing/Cost Category
2012/13

	Total Revenue Required	Base		Effluent	
Sewage Treatment Plant	925,364	50%	462,682	50%	462,682
Sewage Collection	133,060	50%	66,530	50%	66,530
Administration and General	8,430	100%	8,430	0%	0
Depreciation	447,001	50%	223,501	50%	223,501
Foregiveness on Depreciation	0	50%	0	50%	0
Taxes	0	0%	0		0
Non Opt Expenditures less Non Opt Revenue	-616,315	50%	-308,157	50%	-308,157
SUBTOTAL	897,540		452,985		444,555
TOTAL	897,540		452,985		444,555

Table 7-2

Town of Yarmouth Sewer System
Calculation of Revenue Required for Each Billing/Cost Category
2013/14

	Total Revenue Required	Base		Effluent	
Sewage Treatment Plant	953,125	40%	381,250	60%	571,875
Sewage Collection	137,052	40%	54,821	60%	82,231
Administration and General	8,683	100%	8,683	0%	0
Depreciation	447,001	50%	223,501	50%	223,501
Foregiveness on Depreciation	0	50%	0	50%	0
Taxes	0	0%	0		
Non Opt Expenditures less Non Opt Revenue	-473,322	40%	-189,329	60%	-283,993
SUBTOTAL	1,072,539		478,925		593,613
TOTAL	1,072,539		478,925		593,613

Table 7-3

Town of Yarmouth Sewer System
Calculation of Revenue Required for Each Billing/Cost Category
2014/15

	Total Revenue Required	Base		Effluent	
Sewage Treatment Plant	981,719	30%	294,516	70%	687,203
Sewage Collection	141,163	30%	42,349	70%	98,814
Administration and General	8,943	100%	8,943	0%	0
Depreciation	447,001	50%	223,501	50%	223,501
Foregiveness on Depreciation	0	50%	0	50%	0
Taxes	0	0%	0		
Non Opt Expenditures less Non Opt Revenue	-335,846	30%	-100,754	70%	-235,092
SUBTOTAL	1,242,980		468,555		774,426
TOTAL	1,242,980		468,555		774,426

Table 7-4

Town of Yarmouth Sewer System
Calculation of Revenue Required for Each Billing/Cost Category
2015/16

	Total Revenue Required	Base		Effluent	
Sewage Treatment Plant	1,011,170	25%	252,793	75%	758,378
Sewage Collection	145,398	25%	36,350	75%	109,049
Administration and General	9,212	100%	9,212	0%	0
Depreciation	447,001	50%	223,501	50%	223,501
Foregiveness on Depreciation	0	50%	0	50%	0
Taxes	0	0%	0		
Non Opt Expenditures less Non Opt Revenue	-148,702	25%	-37,176	75%	-111,527
SUBTOTAL	1,464,079		484,679		979,400
TOTAL	1,464,079		484,679		979,400

Table 7-5

Town of Yarmouth Sewer System
Calculation of Revenue Required for Each Billing/Cost Category
2016/17

	Total Revenue Required	Base		Effluent	
Sewage Treatment Plant	1,041,505	25%	260,376	75%	781,129
Sewage Collection	149,760	25%	37,440	75%	112,320
Administration and General	9,488	100%	9,488	0%	0
Depreciation	447,001	50%	223,501	50%	223,501
Foregiveness on Depreciation	0	50%	0	50%	0
Taxes	0	0%	0		
Non Opt Expenditures less Non Opt Revenue	38,123	25%	9,531	75%	28,592
SUBTOTAL	1,685,877		540,336		1,145,542
TOTAL	1,685,877		540,336		1,145,542

Table 8-1 16-Nov-12

Town of Yarmouth Sewer System
Service Connections and Equivalents
2012/13

Meter Size	Number of Services	Capacity Ratio	System Equivalents
Unmetered	0	1	0
15mm - 5/8"	2748	1	2,748
19 mm - 3/4"	48	1.5	72
25 mm - 1"	73	2.5	183
37 mm - 1.5"	46	5	230
50 mm - 2"	37	8	296
75 mm - 3 "	6	16	96
100 mm - 4"	1	25	25
150 mm - 6"	1	50	50
200 mm - 8"	0	90	0
TOTAL	2960		3,700

Table 8-2

Town of Yarmouth Sewer System
Service Connections and Equivalents
2013/14

Meter Size	Number of Services	Capacity Ratio	System Equivalents
Unmetered	0.0	1	0
15mm - 5/8"	2748	1	2,748
19 mm - 3/4"	48	1.5	72
25 mm - 1"	73	2.5	183
37 mm - 1.5"	46	5	230
50 mm - 2"	37	8	296
75 mm - 3 "	6	16	96
100 mm - 4"	1	25	25
150 mm - 6"	1	50	50
200 mm - 8"	0	90	0
TOTAL	2960		3,700

Table 8-3

Town of Yarmouth Sewer System
Service Connections and Equivalents
2014/15

Meter Size	Number of Services	Capacity Ratio	System Equivalents
Unmetered	0.0	1	0
15mm - 5/8"	2748	1	2,748
19 mm - 3/4"	48	1.5	72
25 mm - 1"	73	2.5	183
37 mm - 1.5"	46	5	230
50 mm - 2"	37	8	296
75 mm - 3 "	6	16	96
100 mm - 4"	1	25	25
150 mm - 6"	1	50	50
200 mm - 8"	0	90	0
TOTAL	2960		3,700

Table 8-4

Town of Yarmouth Sewer System
Service Connections and Equivalents
2015/16

Meter Size	Number of Services	Capacity Ratio	System Equivalents
Unmetered	0.0	1	0
15mm - 5/8"	2748	1	2,748
19 mm - 3/4"	48	1.5	72
25 mm - 1"	73	2.5	183
37 mm - 1.5"	46	5	230
50 mm - 2"	37	8	296
75 mm - 3 "	6	16	96
100 mm - 4"	1	25	25
150 mm - 6"	1	50	50
200 mm - 8"	0	90	0
TOTAL	2960		3,700

Table 8-5

Town of Yarmouth Sewer System
Service Connections and Equivalents
2016/17

Meter Size	Number of Services	Capacity Ratio	System Equivalents
Unmetered	0.0	1	0
15mm - 5/8"	2748	1	2,748
19 mm - 3/4"	48	1.5	72
25 mm - 1"	73	2.5	183
37 mm - 1.5"	46	5	230
50 mm - 2"	37	8	296
75 mm - 3 "	6	16	96
100 mm - 4"	1	25	25
150 mm - 6"	1	50	50
200 mm - 8"	0	90	0
TOTAL	2960		3,700

Table 9-1 16-Nov-12

Town of Yarmouth Sewer System
Wastewater Base Charges
2012/13

Meter Size	Capacity Ratio	Base Charge	Total Base Charge		
			Annual	Quarterly	Bi-Monthly
Unmetered	1.0	122.44	122.44	30.61	20.41
15mm - 5/8"	1.0	122.44	122.44	30.61	20.41
19 mm - 3/4"	1.5	183.67	183.67	45.92	30.61
25 mm - 1"	2.5	306.11	306.11	76.53	51.02
37 mm - 1.5"	5.0	612.22	612.22	153.06	102.04
50 mm - 2"	8.0	979.56	979.56	244.89	163.26
75 mm - 3 "	16.0	1,959.12	1,959.12	489.78	326.52
100 mm - 4"	25.0	3,061.12	3,061.12	765.28	510.19
150 mm - 6"	50.0	6,122.25	6,122.25	1,530.56	1,020.37
200 mm - 8"	90.0	11,020.05	11,020.05	2,755.01	1,836.67
TOTAL					

Table 9-2

Town of Yarmouth Sewer System
Wastewater Base Charges
2013/14

Meter Size	Capacity Ratio	Base Charge	Total Base Charge		
			Annual	Quarterly	Bi-Monthly
Unmetered	1.0	129.46	129.46	32.36	21.58
15mm - 5/8"	1.0	129.46	129.46	32.36	21.58
19 mm - 3/4"	1.5	194.19	194.19	48.55	32.36
25 mm - 1"	2.5	323.64	323.64	80.91	53.94
37 mm - 1.5"	5.0	647.28	647.28	161.82	107.88
50 mm - 2"	8.0	1,035.65	1,035.65	258.91	172.61
75 mm - 3 "	16.0	2,071.31	2,071.31	517.83	345.22
100 mm - 4"	25.0	3,236.42	3,236.42	809.10	539.40
150 mm - 6"	50.0	6,472.84	6,472.84	1,618.21	1,078.81
200 mm - 8"	90.0	11,651.11	11,651.11	2,912.78	1,941.85
TOTAL					

Table 9-3

Town of Yarmouth Sewer System
Wastewater Base Charges
2014/15

Meter Size	Capacity Ratio	Base Charge	Total Base Charge		
			Annual	Quarterly	Bi-Monthly
Unmetered	1.0	126.65	126.65	31.66	21.11
15mm - 5/8"	1.0	126.65	126.65	31.66	21.11
19 mm - 3/4"	1.5	189.98	189.98	47.50	31.66
25 mm - 1"	2.5	316.63	316.63	79.16	52.77
37 mm - 1.5"	5.0	633.27	633.27	158.32	105.54
50 mm - 2"	8.0	1,013.23	1,013.23	253.31	168.87
75 mm - 3 "	16.0	2,026.46	2,026.46	506.61	337.74
100 mm - 4"	25.0	3,166.34	3,166.34	791.58	527.72
150 mm - 6"	50.0	6,332.68	6,332.68	1,583.17	1,055.45
200 mm - 8"	90.0	11,398.82	11,398.82	2,849.70	1,899.80
TOTAL					

Table 9-4

Town of Yarmouth Sewer System
Wastewater Base Charges
2015/16

Meter Size	Capacity Ratio	Base Charge	Total Base Charge		
			Annual	Quarterly	Bi-Monthly
Unmetered	1.0	131.01	131.01	32.75	21.84
15mm - 5/8"	1.0	131.01	131.01	32.75	21.84
19 mm - 3/4"	1.5	196.52	196.52	49.13	32.75
25 mm - 1"	2.5	327.53	327.53	81.88	54.59
37 mm - 1.5"	5.0	655.06	655.06	163.76	109.18
50 mm - 2"	8.0	1,048.10	1,048.10	262.02	174.68
75 mm - 3 "	16.0	2,096.19	2,096.19	524.05	349.37
100 mm - 4"	25.0	3,275.30	3,275.30	818.82	545.88
150 mm - 6"	50.0	6,550.60	6,550.60	1,637.65	1,091.77
200 mm - 8"	90.0	11,791.08	11,791.08	2,947.77	1,965.18
TOTAL					

Table 9-5

Town of Yarmouth Sewer System
Wastewater Base Charges
2016/17

Meter Size	Capacity Ratio	Base Charge	Total Base Charge		
			Annual	Quarterly	Bi-Monthly
Unmetered	1	146.06	146.06	36.51	24.34
15mm - 5/8"	1	146.06	146.06	36.51	24.34
19 mm - 3/4"	2	219.08	219.08	54.77	36.51
25 mm - 1"	3	365.14	365.14	91.29	60.86
37 mm - 1.5"	5	730.28	730.28	182.57	121.71
50 mm - 2"	8	1,168.45	1,168.45	292.11	194.74
75 mm - 3 "	16	2,336.90	2,336.90	584.23	389.48
100 mm - 4"	25	3,651.41	3,651.41	912.85	608.57
150 mm - 6"	50	7,302.82	7,302.82	1,825.70	1,217.14
200 mm - 8"	90	13,145.07	13,145.07	3,286.27	2,190.85
TOTAL					

Table 10-1 16-Nov-12

Town of Yarmouth Sewer System
Estimated Effluent Flow by Block

Meter Size	Actual Current Consumption 1st Block (Imperial Gallons)	2012/13 Estimated Consumption 1st Block (Imperial Gallons)
15mm - 5/8"	134,839,000	134,839,000
19 mm - 3/4"	5,289,000	5,289,000
25 mm - 1"	15,683,000	15,683,000
37 mm - 1.5"	14,168,000	14,168,000
50 mm - 2"	26,235,000	26,235,000
75 mm - 3 "	10,152,000	10,152,000
100 mm - 4"	22,385,000	22,385,000
150 mm - 6"	19,353,000	19,353,000
200 mm - 8"	0	0
Other	0	0
Other	0	0
TOTAL	248,104,000	248,104,000

Table 10-2

Town of Yarmouth Sewer System
Estimated Effluent Flow by Block

Meter Size	2013/14 Estimated Consumption 1st Block (Imperial Gallons)	2014/15 Estimated Consumption 1st Block (Imperial Gallons)
15mm - 5/8"	134,839,000	134,839,000
19 mm - 3/4"	5,289,000	5,289,000
25 mm - 1"	15,683,000	15,683,000
37 mm - 1.5"	14,168,000	14,168,000
50 mm - 2"	26,235,000	26,235,000
75 mm - 3 "	10,152,000	10,152,000
100 mm - 4"	22,385,000	22,385,000
150 mm - 6"	19,353,000	19,353,000
200 mm - 8"	0	0
Other	0	0
Other	0	0
TOTAL	248,104,000	248,104,000

Table 10-3

Town of Yarmouth Sewer System
Estimated Effluent Flow by Block

Meter Size	2015/16 Current Consumption 1st Block (Imperial Gallons)	2016/17 Estimated Consumption 1st Block (Imperial Gallons)
15mm - 5/8"	134,839,000	134,839,000
19 mm - 3/4"	5,289,000	5,289,000
25 mm - 1"	15,683,000	15,683,000
37 mm - 1.5"	14,168,000	14,168,000
50 mm - 2"	26,235,000	26,235,000
75 mm - 3 "	10,152,000	10,152,000
100 mm - 4"	22,385,000	22,385,000
150 mm - 6"	19,353,000	19,353,000
200 mm - 8"	0	0
Other	0	0
Other	0	0
TOTAL	248,104,000	248,104,000

Effluent Charge

Table 11-1 16-Nov-12

Town of Yarmouth Sewer System **Calculation of Wastewater Effluent Charge** **2012/13**	**BLOCK 1**
Total Charge Base and Commodity Worksheet (Table 9-1) Quantity from Effluent Flow Worksheet (Table 12-1)	1.792
TOTAL EFFLUENT CHARGE PER 1,000 imp gallons	**1.792**

Table 11-2

Town of Yarmouth Sewer System **Calculation of Wastewater Effluent Charge** **2013/14**	**BLOCK 1**
Total Charge Base and Commodity Worksheet (Table 9-2) Quantity from Effluent Flow Worksheet (Table 12-2)	2.393
TOTAL EFFLUENT CHARGE PER 1,000 imp gallons	**2.393**

Table 11-3

Town of Yarmouth Sewer System **Calculation of Wastewater Effluent Charge** **2014/15**	**BLOCK 1**
Total Charge Base and Commodity Worksheet (Table 9-3) Quantity from Effluent Flow Worksheet (Table 12-3)	3.121
TOTAL EFFLUENT CHARGE PER 1,000 imp gallons	**3.121**

Table 11-4

Town of Yarmouth Sewer System
Calculation of Wastewater Effluent Charge
2015/16

	BLOCK 1
Total Charge Base and Commodity Worksheet (Table 9-4)	3.948
Quantity from Effluent Flow Worksheet (Table 12-4)	
TOTAL EFFLUENT CHARGE PER 1,000 imp gallons	**3.948**

Table 11-5

Town of Yarmouth Sewer System
Calculation of Wastewater Effluent Charge
2016/17

	BLOCK 1
Total Charge Base and Commodity Worksheet (Table 9-5)	4.617
Quantity from Effluent Flow Worksheet (Table 12-5)	
TOTAL EFFLUENT CHARGE PER 1,000 imp gallons	**4.617**

Table 12-1 16-Nov-12

Town of Yarmouth Sewer System
Wastewater Effluent Charge
2012/13

BASE CHARGE

Meter Size	Number	Base Rate	Dollar Revenue
Unmetered	0	122.44	0
15mm - 5/8"	2,748	122.44	336,479
19 mm - 3/4"	48	183.67	8,816
25 mm - 1"	73	306.11	22,346
37 mm - 1.5"	46	612.22	28,162
50 mm - 2"	37	979.56	36,244
75 mm - 3 "	6	1,959.12	11,755
100 mm - 4"	1	3,061.12	3,061
150 mm - 6"	1	6,122.25	6,122
200 mm - 8"	0	11,020.05	0
Hebron	0	0.00	0
TOTAL BASE REVENUE			452,985

EFFLUENT CHARGE

	Quantity	$/ 1,000 imp gallons	
1st Block	248,104,000	1.792	444,555
TOTAL EFFLUENT REVENUE			444,555
TOTAL OPERATING REVENUES FOR YEAR (BASE + EFFLUENT)			897,540

Table 12-2

Town of Yarmouth Sewer System
Wastewater Effluent Charge
2013/14

BASE CHARGE

Meter Size	Number	Base Rate	Dollar Revenue
Unmetered	0	129.46	0
15mm - 5/8"	2,748	129.46	355,747
19 mm - 3/4"	48	194.19	9,321
25 mm - 1"	73	323.64	23,626
37 mm - 1.5"	46	647.28	29,775
50 mm - 2"	37	1,035.65	38,319
75 mm - 3 "	6	2,071.31	12,428
100 mm - 4"	1	3,236.42	3,236
150 mm - 6"	1	6,472.84	6,473
200 mm - 8"	0	11,651.11	0
Hebron	0	0.00	0
TOTAL BASE REVENUE			478,925

EFFLUENT CHARGE

	Quantity	$/ 1,000 imp gallons	
1st Block	248,104,000	2.393	593,613
TOTAL EFFLUENT REVENUE			593,613
TOTAL OPERATING REVENUES FOR YEAR (BASE + EFFLUENT)			1,072,539

Table 12-3

Town of Yarmouth Sewer System
Wastewater Effluent Charge
2014/15

BASE CHARGE

Meter Size	Number	Base Rate	Dollar Revenue
Unmetered	0	126.65	0
15mm - 5/8"	2,748	126.65	348,044
19 mm - 3/4"	48	189.98	9,119
25 mm - 1"	73	316.63	23,114
37 mm - 1.5"	46	633.27	29,130
50 mm - 2"	37	1,013.23	37,489
75 mm - 3 "	6	2,026.46	12,159
100 mm - 4"	1	3,166.34	3,166
150 mm - 6"	1	6,332.68	6,333
200 mm - 8"	0	11,398.82	0
Hebron	0	0.00	0
TOTAL BASE REVENUE			468,555

EFFLUENT CHARGE

	Quantity	$/ 1,000 imp gallons	
1st Block	248,104,000	3.121	774,426
TOTAL EFFLUENT REVENUE			774,426

TOTAL OPERATING REVENUES FOR YEAR (BASE + EFFLUENT) 1,242,980

Table 12-4

Town of Yarmouth Sewer System
Wastewater Effluent Charge
2015/16

BASE CHARGE

Meter Size	Number	Base Rate	Dollar Revenue
Unmetered	0	131.01	0
15mm - 5/8"	2,748	131.01	360,021
19 mm - 3/4"	48	196.52	9,433
25 mm - 1"	73	327.53	23,910
37 mm - 1.5"	46	655.06	30,133
50 mm - 2"	37	1,048.10	38,780
75 mm - 3 "	6	2,096.19	12,577
100 mm - 4"	1	3,275.30	3,275
150 mm - 6"	1	6,550.60	6,551
200 mm - 8"	0	11,791.08	0
Hebron	0	0.00	0
TOTAL BASE REVENUE			484,679

EFFLUENT CHARGE

	Quantity	$/ 1,000 imp gallons	
1st Block	248,104,000	3.948	979,400
TOTAL EFFLUENT REVENUE			979,400

TOTAL OPERATING REVENUES FOR YEAR (BASE + EFFLUENT) 1,464,079

Table 12-5

Town of Yarmouth Sewer System
Wastewater Effluent Charge
2016/17

BASE CHARGE

Meter Size	Number	Base Rate	Dollar Revenue
Unmetered	0	146.06	0
15mm - 5/8"	2,748	146.06	401,363
19 mm - 3/4"	48	219.08	10,516
25 mm - 1"	73	365.14	26,655
37 mm - 1.5"	46	730.28	33,593
50 mm - 2"	37	1,168.45	43,233
75 mm - 3 "	6	2,336.90	14,021
100 mm - 4"	1	3,651.41	3,651
150 mm - 6"	1	7,302.82	7,303
200 mm - 8"	0	13,145.07	0
Hebron	0	0.00	0
TOTAL BASE REVENUE			540,336

EFFLUENT CHARGE

	Quantity	$/ 1,000 imp gallons	
1st Block	248,104,000	4.617	1,145,542
TOTAL EFFLUENT REVENUE			1,145,542

TOTAL OPERATING REVENUES FOR YEAR (BASE + EFFLUENT) 1,685,877

Table 13-1 16-Nov-12

Town of Yarmouth Sewer System

Wastewater Rates 2012/13

(a) Base Charges

Size of Meter	Annual	Quarterly	Bi-Monthly
	Annual	Quarterly	
15mm - 5/8"	122.44	30.61	20.41
19 mm - 3/4"	183.67	45.92	30.61
25 mm - 1"	306.11	76.53	51.02
37 mm - 1.5"	612.22	153.06	102.04
50 mm - 2"	979.56	244.89	163.26
75 mm - 3 "	1,959.12	489.78	326.52
100 mm - 4"	3,061.12	765.28	510.19
150 mm - 6"	6,122.25	1,530.56	1,020.37
200 mm - 8"	11,020.05	2,755.01	1,836.67

(b) Consumption Rate (per cubic metre) **$ 1.792 per 1,000 imp. gallons**

(c) Hebron/Arcadia Rate **Set by existing Contract**

Table 13-2

Town of Yarmouth Sewer System

Wastewater Rates 2013/14

(a) Base Charges

Size of Meter	Annual	Quarterly	Bi-Monthly
	Annual	Quarterly	
15mm - 5/8"	129.46	32.36	21.58
19 mm - 3/4"	194.19	48.55	32.36
25 mm - 1"	323.64	80.91	53.94
37 mm - 1.5"	647.28	161.82	107.88
50 mm - 2"	1,035.65	258.91	172.61
75 mm - 3 "	2,071.31	517.83	345.22
100 mm - 4"	3,236.42	809.10	539.40
150 mm - 6"	6,472.84	1,618.21	1,078.81
200 mm - 8"	11,651.11	2,912.78	1,941.85

(b) Consumption Rate (per cubic metre) **$ 2.393 per 1,000 imp. gallons**

(c) Hebron/Arcadia Rate **Set by existing Contract**

Table 13-3

Town of Yarmouth Sewer System

Wastewater Rates 2014/15

(a) Base Charges

Size of Meter	Annual	Quarterly	Bi-Monthly
Standard	126.65	31.66	21.11
19 mm	189.98	47.50	31.66
25 mm	316.63	79.16	52.77
37 mm	633.27	158.32	105.54
50 mm	1,013.23	253.31	168.87
75 mm	2,026.46	506.61	337.74
100 mm	3,166.34	791.58	527.72
150 mm	6,332.68	1,583.17	1,055.45
200 mm	11,398.82	2,849.70	1,899.80

(b) Consumption Rate (per cubic metre) **$ 3.121 per 1,000 imp. gallons**

(c) Hebron/Arcadia Rate **Set by existing Contract**

Table 13-4

Town of Yarmouth Sewer System

Wastewater Rates 2015/16

(a) Base Charges

Size of Meter	Annual	Quarterly	Bi-Monthly
15mm - 5/8"	131.01	32.75	21.84
19 mm - 3/4"	196.52	49.13	32.75
25 mm - 1"	327.53	81.88	54.59
37 mm - 1.5"	655.06	163.76	109.18
50 mm - 2"	1,048.10	262.02	174.68
75 mm - 3 "	2,096.19	524.05	349.37
100 mm - 4"	3,275.30	818.82	545.88
150 mm - 6"	6,550.60	1,637.65	1,091.77
200 mm - 8"	11,791.08	2,947.77	1,965.18

(b) Consumption Rate (per cubic metre) **$ 3.948 per 1,000 imp. gallons**

(c) Hebron/Arcadia Rate **Set by existing Contract**

Table 13-5

Town of Yarmouth Sewer System

Wastewater Rates 2016/17

(a) Base Charges

Size of Meter	Annual	Quarterly	Bi-Monthly
		Annual	Quarterly
15mm - 5/8"	146.06	36.51	24.34
19 mm - 3/4"	219.08	54.77	36.51
25 mm - 1"	365.14	91.29	60.86
37 mm - 1.5"	730.28	182.57	121.71
50 mm - 2"	1,168.45	292.11	194.74
75 mm - 3 "	2,336.90	584.23	389.48
100 mm - 4"	3,651.41	912.85	608.57
150 mm - 6"	7,302.82	1,825.70	1,217.14
200 mm - 8"	13,145.07	3,286.27	2,190.85

(b) Consumption Rate (per cubic metre) **$ 4.617 per 1,000 imp. gallons**

(c) Hebron/Arcadia Rate **Set by existing Contract**

Table 14-1 16-Nov-12

Town of Yarmouth Sewer System
Comparison of Average Rates

2012/13

	Average Flow	Quarterly Base Rate		Change	Effluent Rate		Change	Charge per Quarter		Change
	gal/quarter	Estimated Existing	Proposed	%	Existing	Proposed	%	Existing	Proposed	%
15mm - 5/8"	12,267	46.75	40.50	-13.4%	13.74	21.98	60.0%	60.49	62.48	3.3%
19 mm - 3/4"	27,547	57.00	43.50	-23.7%	30.85	49.36	60.0%	87.85	92.86	5.7%
25 mm - 1"	53,709	57.00	76.53	34.3%	60.15	96.24	60.0%	117.15	172.76	47.5%
37 mm - 1.5"	77,000	57.00	153.06	168.5%	86.24	137.97	60.0%	143.24	291.03	103.2%
50 mm - 2"	177,264	71.25	244.89	243.7%	198.54	317.62	60.0%	269.79	562.51	108.5%
75 mm - 3 "	423,000	71.25	489.78	587.4%	473.76	757.94	60.0%	545.01	1,247.72	128.9%
100 mm - 4"	5,596,250	71.25	765.28	974.1%	6,267.80	10,027.42	60.0%	6,339.05	10,792.70	70.3%
150 mm - 6"	4,838,250	71.25	1,530.56	2048.2%	5,418.84	8,669.22	60.0%	5,490.09	10,199.79	85.8%
200 mm - 8"	-	-	2,755.01			-		-	2,755.01	0.0%

Table 14-2

Town of Yarmouth Sewer System
Comparison of Average Rates

2013/14

	Average Flow	Quarterly Base Rate		Change	Effluent Rate		Change	Charge per Quarter		Change
	gal/quarter	Estimated Existing	Proposed	%	Existing	Proposed	%	Existing	Proposed	%
15mm - 5/8"	12,267	40.50	33.60	-17.0%	21.98	29.35	33.5%	62.48	62.95	0.8%
19 mm - 3/4"	27,547	43.50	48.55	11.6%	49.36	65.91	33.5%	92.86	114.45	23.3%
25 mm - 1"	53,709	76.53	80.91	5.7%	96.24	128.50	33.5%	172.76	209.41	21.2%
37 mm - 1.5"	77,000	153.06	161.82	5.7%	137.97	184.23	33.5%	291.03	346.05	18.9%
50 mm - 2"	177,264	244.89	258.91	5.7%	317.62	424.12	33.5%	562.51	683.03	21.4%
75 mm - 3 "	423,000	489.78	517.83	5.7%	757.94	1,012.07	33.5%	1,247.72	1,529.90	22.6%
100 mm - 4"	5,596,250	765.28	809.10	5.7%	10,027.42	13,389.58	33.5%	10,792.70	14,198.69	31.6%
150 mm - 6"	4,838,250	1,530.56	1,618.21	5.7%	8,669.22	11,575.99	33.5%	10,199.79	13,194.20	29.4%
200 mm - 8"	-	2,755.01	2,912.78	5.7%	-	-	0.0%	2,755.01	2,912.78	0.0%

Table 14-3

Town of Yarmouth Sewer System
Comparison of Average Rates

2014/15

	Average Flow	Quarterly Base Rate		Change	Effluent Rate		Change	Charge per Quarter		Change
	gal/quarter	Estimated Existing	Proposed	%	Existing	Proposed	%	Existing	Proposed	%
15mm - 5/8"	12,267	33.60	31.66	-5.8%	29.35	38.29	30.5%	62.95	69.95	11.1%
19 mm - 3/4"	27,547	48.55	47.50	-2.2%	65.91	85.98	30.5%	114.45	133.48	16.6%
25 mm - 1"	53,709	80.91	79.16	-2.2%	128.50	167.65	30.5%	209.41	246.80	17.9%
37 mm - 1.5"	77,000	161.82	158.32	-2.2%	184.23	240.35	30.5%	346.05	398.66	15.2%
50 mm - 2"	177,264	258.91	253.31	-2.2%	424.12	553.31	30.5%	683.03	806.61	18.1%
75 mm - 3 "	423,000	517.83	506.61	-2.2%	1,012.07	1,320.34	30.5%	1,529.90	1,826.96	19.4%
100 mm - 4"	5,596,250	809.10	791.58	-2.2%	13,389.58	17,468.00	30.5%	14,198.69	18,259.58	28.6%
150 mm - 6"	4,838,250	1,618.21	1,583.17	-2.2%	11,575.99	15,101.99	30.5%	13,194.20	16,685.16	26.5%
200 mm - 8"	-	2,912.78	2,849.70	-2.2%	-	-	0.0%	2,912.78	2,849.70	0.0%

Table 14-4

Town of Yarmouth Sewer System
Comparison of Average Rates

2015/16

	Average Flow	Quarterly Base Rate		Change	Effluent Rate		Change	Charge per Quarter		Change
	gal/quarter	Estimated Existing	Proposed	%	Existing	Proposed	%	Existing	Proposed	%
15mm - 5/8"	12,267	31.66	32.75	3.4%	38.29	48.42	26.5%	69.95	81.18	16.0%
19 mm - 3/4"	27,547	47.50	49.13	3.4%	85.98	108.74	26.5%	133.48	157.87	18.3%
25 mm - 1"	53,709	79.16	81.88	3.4%	167.65	212.02	26.5%	246.80	293.90	19.1%
37 mm - 1.5"	77,000	158.32	163.76	3.4%	240.35	303.96	26.5%	398.66	467.73	17.3%
50 mm - 2"	177,264	253.31	262.02	3.4%	553.31	699.75	26.5%	806.61	961.78	19.2%
75 mm - 3 "	423,000	506.61	524.05	3.4%	1,320.34	1,669.81	26.5%	1,826.96	2,193.86	20.1%
100 mm - 4"	5,596,250	791.58	818.82	3.4%	17,468.00	22,091.41	26.5%	18,259.58	22,910.24	25.5%
150 mm - 6"	4,838,250	1,583.17	1,637.65	3.4%	15,101.99	19,099.18	26.5%	16,685.16	20,736.83	24.3%
200 mm - 8"	-	2,849.70	2,947.77	3.4%	-	-	0.0%	2,849.70	2,947.77	0.0%

Table 14-5

Town of Yarmouth Sewer System
Comparison of Average Rates

2016/17

	Average Flow	Quarterly Base Rate		Change	Effluent Rate		Change	Charge per Quarter		Change
	gal/quarter	Estimated Existing	Proposed	%	Existing	Proposed	%	Existing	Proposed	%
15mm - 5/8"	12,267	32.75	36.51	11.5%	48.42	56.64	17.0%	81.18	93.15	14.8%
19 mm - 3/4"	27,547	49.13	54.77	11.5%	108.74	127.19	17.0%	157.87	181.96	15.3%
25 mm - 1"	53,709	81.88	91.29	11.5%	212.02	247.98	17.0%	293.90	339.27	15.4%
37 mm - 1.5"	77,000	163.76	182.57	11.5%	303.96	355.52	17.0%	467.73	538.09	15.0%
50 mm - 2"	177,264	262.02	292.11	11.5%	699.75	818.46	17.0%	961.78	1,110.57	15.5%
75 mm - 3 "	423,000	524.05	584.23	11.5%	1,669.81	1,953.07	17.0%	2,193.86	2,537.29	15.7%
100 mm - 4"	5,596,250	818.82	912.85	11.5%	22,091.41	25,838.91	17.0%	22,910.24	26,751.76	16.8%
150 mm - 6"	4,838,250	1,637.65	1,825.70	11.5%	19,099.18	22,339.09	17.0%	20,736.83	24,164.79	16.5%
200 mm - 8"	-	2,947.77	3,286.27	11.5%	-	-	0.0%	2,947.77	3,286.27	0.0%

Loan Calculator
Long Term Debt

Interest Rate	**6.0%**
Term in years	**20**
Capital **$**	**-**

Payment Schedule **2011/12**

	Principal	Interest	Total	Balance
Year				
1	$0.00	$0.00	-	-
2	$0.00	$0.00	-	-
3	$0.00	$0.00	-	-
4	$0.00	$0.00	-	-
5	$0.00	$0.00	-	-
6	$0.00	$0.00	-	-
7	$0.00	$0.00	-	-
8	$0.00	$0.00	-	-
9	$0.00	$0.00	-	-
10	$0.00	$0.00	-	-
11	$0.00	$0.00	-	-
12	$0.00	$0.00	-	-
13	$0.00	$0.00	-	-
14	$0.00	$0.00	-	-
15	$0.00	$0.00	-	-
16	$0.00	$0.00	-	-
17	$0.00	$0.00	-	-
18	$0.00	$0.00	-	-
19	$0.00	$0.00	-	-
20	$0.00	$0.00	-	-

Loan Calculator
Long Term Debt

Interest Rate	**6.0%**
Term in years	**20**
Capital **$**	**-**

Payment Schedule **2012/13**

	Principal	Interest	Total	Balance
Year				
1	$0.00	-	-	-
2	$0.00	-	-	-
3	$0.00	-	-	-
4	$0.00	-	-	-
5	$0.00	-	-	-
6	$0.00	-	-	-
7	$0.00	-	-	-
8	$0.00	-	-	-
9	$0.00	-	-	-
10	$0.00	-	-	-
11	$0.00	-	-	-
12	$0.00	-	-	-
13	$0.00	-	-	-
14	$0.00	-	-	-
15	$0.00	-	-	-
16	$0.00	-	-	-
17	$0.00	-	-	-
18	$0.00	-	-	-
19	$0.00	-	-	-
20	$0.00	-	-	-

Loan Calculator
Long Term Debt

Interest Rate	**6.0%**
Term in years	**20**
Capital **$**	**-**

Payment Schedule **2013/14**

	Principal	Interest	Total	Balance
Year				
1	$0.00	$0.00	-	-
2	$0.00	$0.00	-	-
3	$0.00	$0.00	-	-
4	$0.00	$0.00	-	-
5	$0.00	$0.00	-	-
6	$0.00	$0.00	-	-
7	$0.00	$0.00	-	-
8	$0.00	$0.00	-	-
9	$0.00	$0.00	-	-
10	$0.00	$0.00	-	-
11	$0.00	$0.00	-	-
12	$0.00	$0.00	-	-
13	$0.00	$0.00	-	-
14	$0.00	$0.00	-	-
15	$0.00	$0.00	-	-
16	$0.00	$0.00	-	-
17	$0.00	$0.00	-	-
18	$0.00	$0.00	-	-
19	$0.00	$0.00	-	-
20	$0.00	$0.00	-	-

Loan Calculator
Long Term Debt

Interest Rate	**6.0%**
Term in years	**20**
Capital **$**	**-**

Payment Schedule **2014/15**

	Principal	Interest	Total	Balance
Year				
1	$0.00	$0.00	-	-
2	$0.00	$0.00	-	-
3	$0.00	$0.00	-	-
4	$0.00	$0.00	-	-
5	$0.00	$0.00	-	-
6	$0.00	$0.00	-	-
7	$0.00	$0.00	-	-
8	$0.00	$0.00	-	-
9	$0.00	$0.00	-	-
10	$0.00	$0.00	-	-
11	$0.00	$0.00	-	-
12	$0.00	$0.00	-	-
13	$0.00	$0.00	-	-
14	$0.00	$0.00	-	-
15	$0.00	$0.00	-	-
16	$0.00	$0.00	-	-
17	$0.00	$0.00	-	-
18	$0.00	$0.00	-	-
19	$0.00	$0.00	-	-
20	$0.00	$0.00	-	-

Loan Calculator
Long Term Debt

Interest Rate	**6.0%**
Term in years	**20**
Capital **$**	**-**

Payment Schedule **2015/16**

	Principal	Interest	Total	Balance
Year				
1	$0.00	$0.00	-	-
2	$0.00	$0.00	-	-
3	$0.00	$0.00	-	-
4	$0.00	$0.00	-	-
5	$0.00	$0.00	-	-
6	$0.00	$0.00	-	-
7	$0.00	$0.00	-	-
8	$0.00	$0.00	-	-
9	$0.00	$0.00	-	-
10	$0.00	$0.00	-	-
11	$0.00	$0.00	-	-
12	$0.00	$0.00	-	-
13	$0.00	$0.00	-	-
14	$0.00	$0.00	-	-
15	$0.00	$0.00	-	-
16	$0.00	$0.00	-	-
17	$0.00	$0.00	-	-
18	$0.00	$0.00	-	-
19	$0.00	$0.00	-	-
20	$0.00	-	-	-

Loan Calculator
Long Term Debt

Interest Rate	**6.0%**
Term in years	**20**
Capital **$**	**-**

Payment Schedule **2016/17**

	Principal	Interest	Total	Balance
Year				
1	$0.00	$0.00	-	-
2	$0.00	$0.00	-	-
3	$0.00	$0.00	-	-
4	$0.00	$0.00	-	-
5	$0.00	$0.00	-	-
6	$0.00	$0.00	-	-
7	$0.00	$0.00	-	-
8	$0.00	$0.00	-	-
9	$0.00	$0.00	-	-
10	$0.00	$0.00	-	-
11	$0.00	$0.00	-	-
12	$0.00	$0.00	-	-
13	$0.00	$0.00	-	-
14	$0.00	$0.00	-	-
15	$0.00	$0.00	-	-
16	$0.00	$0.00	-	-
17	$0.00	$0.00	-	-
18	$0.00	$0.00	-	-
19	$0.00	$0.00	-	-
20	$0.00	$0.00	-	-