



Township of Assiginack

ASSET MANAGEMENT PLAN

December 2013



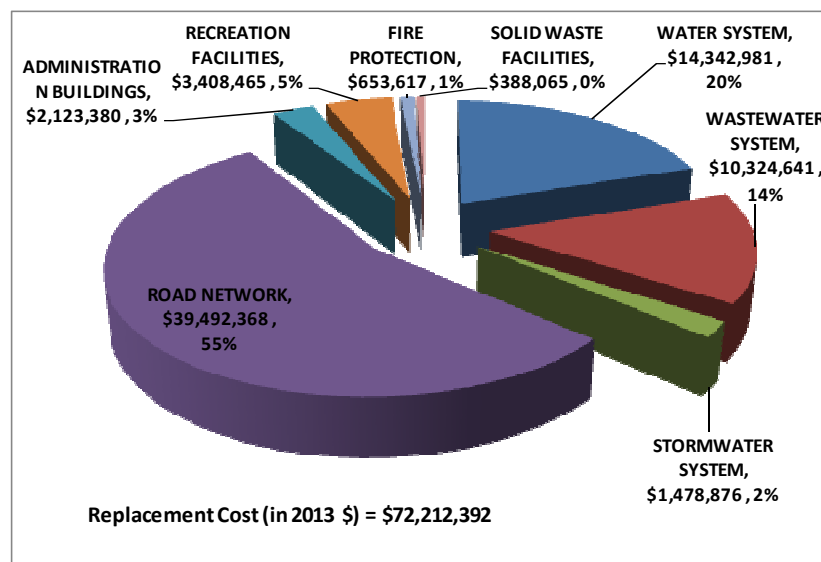
DFA Infrastructure International Inc.

Executive Summary

ES1 Background

The Township of Assiginack is responsible for providing a range of services to its community. These services support the local life style and economy and rely on the performance of the respective assets to deliver the required levels of service. The asset classes covered by this Asset Management Plan (AMP) and their respective replacement values are included in Figure ES-1.

Figure ES-1: Replacement Cost Valuation of Assets (in 2013 Dollars)



ES2 State of Infrastructure Report

The asset condition is rated as: *good, fair and poor*. Table ES-1 summarizes the asset condition for each asset class and shows the replacement cost in each condition category. In terms of replacement cost, the majority of the assets are in good condition, \$1.9 Million (3%) of the assets are in fair condition and \$0.76 Million (1%) in poor condition. The condition by asset class is summarized as follows:

- Water System – Generally good condition except for the membrane filter at the treatment plant which is in fair to poor condition. Operations personnel have indicated that there are major challenges with the existing filter and increased risks related to water production. The filter replacement is critical to sustaining the water supply and is estimated to be approximately \$1.34 million by 2018 at the latest. Earlier replacement would be preferred.

- Wastewater System – Generally good condition except for 2 facilities valued at approximately \$370,000 in poor condition;
- Road Network – The road base and surfaces are generally good condition except for approximately 2.7km of road base and 1.3 km of gravel road valued at approximately \$682,000 assessed to be in poor condition. In terms of vehicles, equipment and facilities, 13 equipment units valued at approximately \$858,000 and 4 (of the 5 facilities) valued at approximately \$ 319,000 are in fair or poor condition;
- Storm Water System – Generally good condition;
- Administration Facilities – One or more components (i.e. electrical, mechanical, structural, roof) valued at approximately \$691,000 at 22 of the 32 facilities are in mostly poor to fair condition. The other facilities are in good condition;
- Recreation Facilities – One or more components (i.e. electrical, mechanical, structural, roof) valued at approximately \$105,000 at 4 of the 20 facilities are in mostly poor to fair condition. The other facilities are in good condition;
- Fire Protection Equipment – Only 1 of the 5 units valued at approximately \$85,000 is in poor condition. The remaining units are in good condition; and
- Solid Waste Facilities – Generally in good condition.

Table ES-1: Asset Condition by Replacement Value

Asset	Condition Rating			Total
	Good	Fair	Poor	
Total Water System	\$ 13,001,731	\$ 1,341,250	\$ -	\$ 14,342,981
Percentage (%)	91%	9%	0%	100%
Total Wastewater System	\$ 9,955,050	\$ -	\$ 369,591	\$ 10,324,641
Percentage (%)	96%	0%	4%	100%
Total Stormwater System	\$ 1,478,876	\$ -	\$ -	\$ 1,478,876
Percentage (%)	100%	0%	0%	100%
Total Road Network	\$ 36,949,180	\$ 1,356,630	\$ 1,186,558	\$ 39,492,368
Percentage (%)	94%	3%	3%	100%
Total Administration Assets	\$ 1,431,801	\$ 67,702	\$ 623,877	\$ 2,123,380
Percentage (%)	67%	3%	29%	100%
Total Recreation Assets	\$ 3,303,398	\$ 21,631	\$ 83,436	\$ 3,408,465
Percentage (%)	97%	1%	2%	100%
Total Fire Protection Assets	\$ 568,145	\$ -	\$ 85,472	\$ 653,617
Percentage (%)	87%	0%	13%	100%
Total Solid Waste Assets	\$ 388,065	\$ -	\$ -	\$ 388,065
Percentage (%)	100%	0%	0%	100%
Total Assets	\$ 67,076,246	\$ 2,787,213	\$ 2,348,934	\$ 72,212,392
Percentage (%)	93%	4%	3%	100%

The future infrastructure requirements are summarized in Table ES-2.

Table ES-2: Infrastructure Requirements

Assets	Total Replacement Costs (\$2013)	25 Year Requirement (2013-2038)	%	Requirement Beyond 25 years (>2038)	%
<i>Total Water System</i>	\$ 14,342,981	\$ 3,948,328	14%	\$ 10,394,653	24%
<i>Total Wastewater System</i>	\$ 10,324,641	\$ 4,413,012	15%	\$ 5,911,629	14%
<i>Total Storm Water System</i>	\$ 1,478,876	\$ -	0%	\$ 1,478,876	3%
<i>Total Road Network</i>	\$ 39,492,368	\$ 16,435,939	57%	\$ 23,056,429	53%
<i>Administration</i>	\$ 2,123,380	\$ 1,220,599	4%	\$ 902,781	2%
<i>Recreation</i>	\$ 3,408,465	\$ 2,177,381	8%	\$ 1,231,084	3%
<i>Fire Protection</i>	\$ 653,617	\$ 653,617	2%	\$ -	0%
<i>Solid Waste</i>	\$ 388,065	\$ 19,412	0%	\$ 368,653	1%
Total Assets	\$ 72,212,392	\$ 28,868,288	100%	\$ 43,344,105	100%

ES3 Levels of Service

The levels of service related to the assets shall include the targets noted in Table ES-3.

Table ES-3: Level of Service Targets

Service	Desired AMP Standard	Indicator	Target Value
Water Treatment & Distribution	Meet Regulatory Requirements	Weighted number of days when a Boil Water Advisory issued by the Medical Officer of Health, applicable to a municipal water supply, was in effect	0
	Minimize Service Interruptions	Number of breaks in water mains per 100 km of water distribution pipe in a year	0
		Percentage of Water Mains where Condition is rated Good	80%
		Percentage of Facility components where Condition is rated Good	100%
Wastewater Collection & Treatment	Meet regulatory requirements	Percentage of wastewater estimated to have bypassed treatment	0%
	Minimize Service Interruptions	Number of wastewater main backups per 100 km of wastewater main in a year	0
		Percentage of Wastewater Mains where Condition is rated Good	80%
		Percentage of Facility components where Condition is rated Good	100%
Storm Water	Maintain Adequate Service	Percentage of Storm Water Mains where Condition is rated Good	80%
		Percentage of Storm Water Catch Basins where Condition is rated Good	80%
		Percentage of Storm Water Manholes where Condition is rated Good	80%
Roads	Maintain Adequate Road Condition	Percentage of Lane Kilometres (Paved & Unpaved) where Condition is rated Good	89%
	Meeting Minimum Road Maintenance Standards	Indicators are those identified in the Township's Road Maintenance Policy & Procedures (By-Law 04-42) for the respective road class	Meeting the minimum maintenance standards 100% of the time
Recreation /Heritage	Minimize Service Interruptions	Number of Facilities unable to be used due to failure of one or more asset components	0
	Maintain Adequate Service	Percentage of Facilities where accessibility standards are met	100%
	Maintain Adequate Service	Percentage of Facility components where Condition is rated Good	100%
Library Services	Minimize Service Interruptions	Number of Days Facility unable to be used due to failure of one or more asset components	0
Fire Protection	Maintain Adequate Service	Percentage of Fire Trucks where Condition is rated Good	100%
Administration	Minimize Service Interruptions	Number of Days Facilities unable to be used due to failure of one or more asset components	0
	Maintain Adequate Service	Percentage of Facilities where accessibility standards are met	100%
	Maintain Adequate Service	Percentage of Facility components where Condition is rated Good	100%
Solid Waste	Maintain Adequate Service	Number of complaints received in a year concerning the collection of garbage and recycled materials per 1,000 households	0
	Maintain Adequate Service	Percentage of Facilities where Condition is rated Good	100%
	Meet Regulatory Requirements	Number of Leachate Breakouts per year	0

ES4 Preferred Asset Management Strategy

The Township's AMP shall include the following policy statements:

- Developing an asset database to track the inventory of assets and their respective attributes and condition;
- Using age as an indicator of asset condition in the absence of actual condition information;
- Identifying deteriorating asset performance through the normal operations and maintenance functions and flagging these assets for potential future rehabilitation and/or replacement;
- Undertaking asset condition inspections on specific assets as needed based on age and/or indications of declining asset performance and regulatory requirements, to confirm asset condition;
- Allocating staff and equipment resources to long-term asset management;
- Giving priority to rehabilitation versus replacement to the extent possible in order to reduce costs;
- Allocating budgets on a prioritized basis for asset replacement and/or rehabilitation while having regard to affordability and risks of delaying required work;
- Working with other municipalities when beneficial to do so in undertaking projects and initiatives;
- Seeking provincial government, federal government and other third party funding as much as possible for asset management projects and activities;
- Funding the respective asset management costs from the respective sources of funding including user rates, taxes, provincial government, federal government and other third party sources; and
- Updating the Asset Management Plan every 5 years as a minimum.

The main components of the preferred strategy include the following:

- A mix of rehabilitation and replacement of assets. Rehabilitation is considered for assets where the risk to the operation and/or service is acceptable when compared to replacement;
- Addressing the assets that are deemed to be in fair or poor condition as soon as possible;
- Replacing the Water treatment Plant Membrane Filter as a priority due to its criticality and the potential high risk to the water production process;
- Addressing all of the road surface needs in the 25- year period through an annual program over the next 25 years. This approach considers road rehabilitation as the

primary activity with replacement as needed based on inspections. Major road replacement is expected to be deferred to future years due to the annual rehabilitation program;

- Undertaking building inspections;
- Rehabilitation of buildings and deferral of replacement; and
- Increasing the wastewater annual operations budget by \$5000 to allow for CCTV inspections

ES5 Financial Strategy

The water system and wastewater system costs, including any asset related costs, are recovered through user rates. These are flat fees which are set by the Township each year for water and wastewater. The annual revenues required over the 25-year period through these rates are presented in Appendix G. Table 5-1 summarizes the short-term revenue requirements i.e. for the next 5 years for the water system. Table 5-2 shows the short-term wastewater revenue requirements.

Table 5-1: Short-Term Water Rate Revenue Requirements

Water System Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018
Township 5-Year Capital Forecast	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 23,185
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ -	\$ -	\$ -	\$ -	\$ 1,554,876
<i>Total Capital Requirements</i>	<i>\$ 20,600</i>	<i>\$ 21,218</i>	<i>\$ 21,855</i>	<i>\$ 22,510</i>	<i>\$ 1,578,062</i>
Debt Financing	\$ -	\$ -	\$ -	\$ -	\$ 1,181,652
Capital Reserve Financing	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 396,410
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Financing</i>	<i>\$ 20,600</i>	<i>\$ 21,218</i>	<i>\$ 21,855</i>	<i>\$ 22,510</i>	<i>\$ 1,578,062</i>
Operations & Maintenance	\$ 263,444	\$ 268,712	\$ 274,087	\$ 279,568	\$ 285,160
Transfers to Capital Reserves	\$ 40,036	\$ 49,976	\$ 60,554	\$ 71,804	\$ 83,763
Debt Repayment	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803
Less Non-Rate Revenues	\$ 98,749	\$ 99,331	\$ 99,926	\$ 100,533	\$ 101,151
<i>Revenue Requirements (from Users)</i>	<i>\$ 292,534</i>	<i>\$ 307,160</i>	<i>\$ 322,518</i>	<i>\$ 338,643</i>	<i>\$ 355,575</i>
Annual Increase (\$)	\$ 13,930	\$ 14,626	\$ 15,358	\$ 16,125	\$ 16,932
Annual Increase (%)	5%	5%	5%	5%	5%

Increases in water rate revenue of approximately 5 % per year between 2014 and 2018 are required mainly to finance the replacement of the failing membrane filter required in 2018. It is recommended that the Township pursue available grant funding to partially offset the cost of the replacement and lower the revenue required from the users through the water rates.

Table 5-2: Short-Term Wastewater Rate Revenue Requirements

Waste Water System Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018
Township 5-Year Capital Forecast	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ 380,679	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Requirements</i>	<i>\$ 380,679</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>
Debt Financing	\$ 352,134	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 28,545	\$ -	\$ -	\$ -	\$ -
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Financing</i>	<i>\$ 380,679</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>
Operations & Maintenance	\$ 118,079	\$ 120,441	\$ 122,850	\$ 125,307	\$ 127,813
Transfers to Capital Reserves	\$ 10,284	\$ 8,155	\$ 24,226	\$ 42,101	\$ 50,777
Debt Repayment	\$ 25,671	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245
Less Non-Rate Revenues	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Revenue Requirements (from Users)</i>	<i>\$ 154,034</i>	<i>\$ 184,841</i>	<i>\$ 203,321</i>	<i>\$ 223,653</i>	<i>\$ 234,835</i>
Annual Increase (\$)	\$ 25,672	\$ 30,807	\$ 18,480	\$ 20,332	\$ 11,182
Annual Increase (%)	20%	20%	10%	10%	5%

Significant increases in wastewater rate revenue of approximately 20% in 2014 and 2015 are required mainly to finance the replacement of the failing membrane filter required in 2014. Revenue increases of approximately 10% are required in 2016 and 2017 down to approximately 5% by 2018. It is recommended that the Township pursue available grant funding to partially offset the cost of asset replacement and/ or rehabilitation projects over the period 2021 to 2018.

All services provided by the Township except for water and wastewater system costs, including any asset related costs, are recovered through the annual tax levy. The annual revenues required over the 25-year period through the Tax Levy are presented in Appendix G. Table 5-3 summarizes the short-term tax levy requirements i.e. for the next 5 years.

Table 5-3: Short-Term Tax Levy Requirements

Tax Supported Services Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018
Township 5-Year Capital Forecast	\$ 1,699,500	\$ 1,591,350	\$ 273,182	\$ -	\$ -
Asset Rehabilitation	\$ 670,334	\$ 398,776	\$ 410,739	\$ 423,061	\$ 435,753
Asset Replacement	\$ 778,709	\$ 66,071	\$ -	\$ 239,333	\$ 212,974
<i>Total Capital Requirements</i>	<i>\$ 3,148,543</i>	<i>\$ 2,056,197</i>	<i>\$ 683,921</i>	<i>\$ 662,394</i>	<i>\$ 648,727</i>
Debt Financing	\$ 2,307,569	\$ 1,584,015	\$ 248,077	\$ 140,476	\$ 24,627
Capital Reserve Financing	\$ 840,974	\$ 472,182	\$ 435,844	\$ 521,918	\$ 624,100
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Financing</i>	<i>\$ 3,148,543</i>	<i>\$ 2,056,197</i>	<i>\$ 683,921</i>	<i>\$ 662,394</i>	<i>\$ 648,727</i>
Operations & Maintenance	\$ 2,363,957	\$ 2,412,769	\$ 2,462,557	\$ 2,513,341	\$ 2,565,140
Transfers to Capital Reserves	\$ 570,041	\$ 464,793	\$ 428,455	\$ 514,528	\$ 616,710
Debt Repayment	\$ 76,637	\$ 276,992	\$ 414,524	\$ 436,063	\$ 448,260
Less Non-Rate Revenues	\$ 220,430	\$ 224,839	\$ 229,336	\$ 233,922	\$ 238,601
<i>Revenue Requirements (from Users)</i>	<i>\$ 2,790,205</i>	<i>\$ 2,929,715</i>	<i>\$ 3,076,200</i>	<i>\$ 3,230,010</i>	<i>\$ 3,391,510</i>
Annual Increase (\$)	\$ 132,867	\$ 139,510	\$ 146,486	\$ 153,809	\$ 161,500
Annual Increase (%)	5%	5%	5%	5%	5%

Increases in the tax levy revenue of 5% are required between 2014 and 2018. These are due mainly to rehabilitation of buildings in poor condition and the increasing the annual road rehabilitation allocation required to keep up with the annual needs. It is also recommended that the Township pursue available grant funding to partially offset the cost of rehabilitating the critical buildings and road sections to lower the revenue required from the tax payers through the general tax levy.

ES6 Recommendations

The following are the recommendations:

1. That the Asset Management policy statements noted in Section 2.6 be adopted by the Township;
2. That the levels of service targets presented in Section 3 be adopted by the Township;
3. That the preferred Asset Management Strategy presented in Section 4 be adopted by the Township; and
4. That the Financial Strategy presented in Section 5 be adopted by the Township to support the asset management strategy

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Appendix E: Alternative Asset Management Strategies

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Appendix G: 25-Year Financial Projections (Alternative Strategy No.2)

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Tables

Table 2-1: Asset Inventory

Table 2-2: Accounting (PSAB) Valuation of Assets

Table 2-3: Water System Age

Table 2-4: Wastewater System Age

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Table 5-1: Short-Term Water Revenue Requirements

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Figure 2-1: Replacement Cost Valuation of Assets (in 2013 Dollars)

1 Introduction

1.1 Background

The Township of Assiginack (Township) with a population of approximately 960 persons is located on Manitoulin Island, Ontario which is renowned for its natural environment. The Township is an active partner in promoting “Manitoulin Living”, an initiative designed to attract new residents to Manitoulin Island. These include retirees and young adults who are interested in an active outdoor lifestyle. The area is an attraction for foreign and domestic boaters and cruise ships. The private and public marinas offer residents and visitors various levels of service to harbour their vessels and easily access the Great Lakes.

The Township provides a range of services to support the local life style and economy and relies on the performance of its assets to deliver the required levels of service. These include the following assets which are included in this Asset Management Plan (AMP):

- Water System Assets (treatment plant, mains, booster stations etc.);
- Wastewater System Assets (treatment plant, mains, sewage pumping stations etc.);
- Storm Water System Assets (mains, manholes, catch basins etc.);
- Road Network Assets (Buildings, road base, road surface, vehicles, equipment etc.);
- Fire Protection Assets (vehicles, equipment, etc.)
- Solid Waste Management System Assets (landfill, building etc.); and
- Administration Buildings (Municipal Office/ Library, Post Office, museum, etc.)

A complete listing of the assets included in the AMP is provided in Section 2.1.

The condition of these assets due to aging and deterioration could have a major impact on service delivery if it goes unchecked. Sufficient investments are required to ensure that these assets are maintained, rehabilitated and/or replaced in a timely fashion to ensure that services are delivered at the desired levels. The importance of the assets (i.e. consequence of failure), their respective needs based on existing condition and using appropriate solutions must be considered in determining the most economical asset management strategy. The required investment amounts would be included the future annual operating and capital budgets. The financing of these expenditures through an appropriate financial plan that includes a combination of taxes, user rates, reserves and debt must also be developed to support the asset management strategy having regard to the Township’s financial policies and debt capacity.

The purpose of the Asset Management Plan (AMP) is to establish a “road map” for the next 25 years (2013 to 2037) for the Township to assess the condition of its critical assets, identify the maintenance, rehabilitation and replacement needs and finance the work required to ensure that services are maintained at the desired levels.

A 100-year asset renewal outlook is used to capture the full life cycle of the assets when identifying the timing of asset replacement and/or rehabilitation requirements and associated costs. Many of the assets have life expectancies that span decades so a 100-year timeframe will ensure that the complete lifespan of each asset is captured. A 25-year life cycle cost projection as well as the annual amount required over the next 25 years for asset renewal beyond 2037 is included. This is intended to provide the full picture of “what is to come”.

The AMP was developed using the best available information provided by the Township and based on input from senior staff throughout its development.

The AMP presents a schedule for works to be undertaken and is intended to become effective in 2014 based on the schedule and be updated every 5 years to reflect changes to the asset data, Township priorities and financial opportunities over time.

Limitations of the AMP

This AMP is based on using the best information available to the Township and making assumptions using professional judgment to address the gaps. The limitations of this AMP include assumptions made regarding the following for some assets:

- Installation dates where these were not available;
- Allocation of total historical cost of an asset to the various asset components (e.g. structural, electrical, mechanical, roof etc.) due to the different life expectancies of each component;
- Use of age-based condition assessment in the absence of actual condition information;
- Estimates of costs based on professional judgment where cost information was unavailable;
- Timing of asset replacement and/ or rehabilitation within the 100-year period; and
- Debt financing rate and term and other financial rates

2 State of Local Infrastructure

2.1 Asset Inventory

The Township’s asset inventory covered under this asset management plan is summarized in Table 2-1. This asset inventory was developed from the PSAB 3150 TCA data and the 2008 Asset Condition Report prepared by Walker Engineering and refined based on discussions with the Township to ensure as much accuracy as possible. The inventory forms part of the overall Asset Management and Financial Planning Model developed in MS Excel to establish the preferred asset management strategy and related financial strategy for the Township. The inventory includes all of the relevant asset attributes and was segmented by service to facilitate cost recovery from the appropriate funding sources e.g. taxes, user rates etc.

The Township’s ability to achieve and sustain its services at desired levels depends on the performance and condition of the assets related to the respective services. Therefore the timing of asset maintenance, rehabilitation and replacement activities is essential to sustaining performance so that service levels are maintained. Note that Assiginack does not own any bridges.

Table 2-1: Asset Inventory

Service	Assets	Quantity
Water	Watermains	7014 Metres
	Valves	109 Units
	Services	235 Service Connections
	Hydrants	46 Units
	Buildings	2 Water Treatment Plants
		2 Pump Stations
		2 Reservoirs
Wastewater	Wastewater Mains	5611 Metres
	Laterals	199 Lateral Connections
	Manholes	67 Units
	Forcemains	1701 Metres
	Buildings	1 Pumping Station
		2 Treatment Lagoons
Storm	Stormwater Mains	2116 Metres
	Manholes	15 Units
	Catch basins	32 Units
Road	Gravel	52,614 Metres
	Asphalt	18475 Metres
	Surface Treatment	26052 Metres
	Vehicles and Equipment	17 Vehicles/Equipment
	Buildings	1 Public Works Salt Shed
		Coverall Vinyl Storage
		1 Building
Administration		Public Works Garage and
		1 Fire Hall
	Buildings	1 Municipal Office and Library
		1 Post Office and Bank
		1 Hilly Grove Chapel
		1 Medical Clinic
		1 Log General Blacksmithing
		1 Museum
		1 Burn Warehouse
		1 Log Drive Shed
		1 Old Mill
		1 Log Pioneer
		1 Log Schoolhouse
Fire Protection		1 Information Booth
	Mechanical and Electrical Equipment	Unspecified Quantity Computers
	Vehicles	3 Fire Trucks/Vehicles
	Mechanical and Electrical Equipment	Unspecified Quantity Bunker Suits
Solid Waste		Unspecified Quantity FD Autoext. Equipment
	Landfill	1 Recycling Depot

2.2 Financial Valuation

Two perspectives of the financial valuation of the Township's assets are presented below:

- *The Accounting Valuation.* This is based on historical costs and depreciation assumptions over the expected life of the asset; and
- *The Replacement Cost Valuation.* This is based on current industry pricing and inflation to the year of replacement and/ or rehabilitation.

2.2.1 Accounting Valuation

The Accounting Valuation is based on the Township's PSAB 3150 reporting at December 31, 2012 and assumes straight line depreciation over the useful life of the assets. The valuation of assets by service area is reflected in Table 2-1 which indicates the following:

- The total historical cost of the of all the assets is approximately \$25.7 Million;
- The accumulated depreciation is approximately \$9.9 Million which means that the total asset base (i.e. as a "basket of goods") is approximately 39% through its life expectancy; and
- The Net Book Value (NBV) of the asset base is approximately \$15.8 Million.

Most asset classes appear to have 50% or more of their expected life remaining with the water system and solid waste facilities being the newest. However, the road network's is estimated to have only 22% of its expected life remaining.

Table 2-2: Accounting (PSAB) Valuation of Assets

Asset Class	Historical Cost	Accumulated Amortization	Net Book Value	Remaining Life
WATER SYSTEM	\$9,770,022	\$1,504,257	\$8,265,765	84.60%
WASTEWATER SYSTEM	\$4,893,824	\$2,307,815	\$2,586,009	52.84%
STORMWATER SYSTEM	\$350,067	\$112,207	\$237,860	67.95%
ROAD NETWORK	\$5,973,497	\$4,668,019	\$1,305,478	21.85%
ADMINISTRATION BUILDINGS	\$1,150,116	\$506,870	\$643,247	55.93%
RECREATION FACILITIES	\$2,651,921	\$614,093	\$2,037,828	76.84%
FIRE PROTECTION	\$499,696	\$164,444	\$335,252	67.09%
SOLID WASTE FACILITIES	\$395,037	\$47,290	\$347,747	88.03%
TOTAL	\$25,684,180	\$9,924,993	\$15,759,187	61.36%

2.2.2 Replacement Cost Valuation

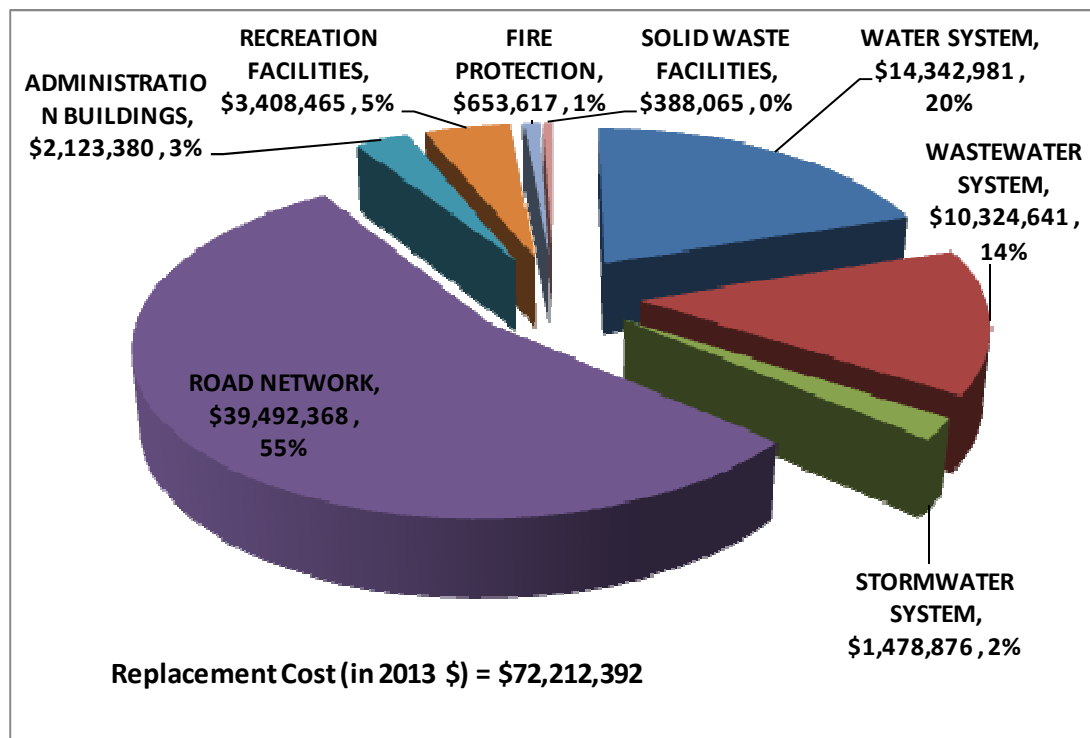
The Replacement Cost Valuation is based on the using a combination of current industry prices for the infrastructure assets and indexing historical costs to current year for vehicles and buildings to reflect the replacement value in 2013 Dollars. The 2013 replacement value is indexed using an annual inflation rate of 2% to the year in which future replacement and/ or rehabilitation work is expected to be undertaken.

The useful lives were also adjusted where necessary from those used in the accounting valuation to reflect life expectancies from an engineering perspective.

Figure 3-1 shows the replacement value of the assets by service. The total replacement value of all the assets is estimated to be approximately \$72 Million in 2013 dollars. This is the estimated cost that would be incurred if the Township were to replace all of its assets today. The Road Network accounts for most of the value at approximately \$39.5 Million (55% of total assets) followed by the Water System at \$14 Million (19%) and the Wastewater System at 10.3 Million (14%).

This indicates that the replacement cost valuation is almost five (5) times higher than the accounting valuation (NBV) of the assets. Therefore the replacement costs valuation, which is a more realistic estimate of real costs that can be expected, is used for asset management planning as the Township looks to the future.

Figure 3-1: Replacement Cost Valuation of Assets (in 2013 Dollars)



2.3 Asset Age

2.3.1 Water System Age

The age of the water system is summarized in Table 2-4. It consists of 7 kilometres of water main, 109 valves, 234 service connections, 46 hydrants and 13 facilities.

The pipe system is all PVC ranging in diameter from 100mm to 250 mm. Approximately 2.4 km (34%) is 100mm and 3.9 km (56%) is 150mm. The water system is 31 to 50 years old with some hydrants and facilities less than 10 years old. This suggests that the water system is generally at half its life expectancy which is projected to be approximately 80 years.

Table 2-3: Water System Age

Age of Water System Assets												
Water System Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Watermains by Diameter (mm)												
100	-	-	-	-	2,356	-	-	-	-	-	2,356	33.59%
150	-	-	-	3,894	-	-	-	-	-	-	3,894	55.52%
200	-	-	-	624	-	-	-	-	-	-	624	8.90%
250	-	-	-	140	-	-	-	-	-	-	140	2.00%
Length (m) by Age	-	-	-	4,658	2,356	-	-	-	-	-	7,014	
Percent (%) by Age	0.00%	0.00%	0.00%	66.41%	33.59%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Watermains by Material												
PVC CL-160	0	-	-	4,658	2,356	-	-	-	-	-	7,014	100.00%
Length (m) by Age	0	-	-	4,658	2,356	-	-	-	-	-	7,014	
Percent (%) by Age	0.00%	0.00%	0.00%	66.41%	33.59%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Water Valves												
No. of Units by Age	-	-	-	104	5	-	-	-	-	-	109	
Percent (%) by Age	0.00%	0.00%	0.00%	95.41%	4.59%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Service Connections												
No. of Units by Age	-	-	-	199	36	-	-	-	-	-	235	
Percent (%) by Age	0.00%	0.00%	0.00%	84.68%	15.32%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Hydrants												
No. of Units by Age	7	-	-	39	-	-	-	-	-	-	46	
Percent (%) by Age	15.22%	0.00%	0.00%	84.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Water Facilities												
No. of Units by Age	13	-	-	-	-	-	-	-	-	-	13	
Percent (%) by Age	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.3.2 Wastewater System Age

The age of the water system is summarized in Table 2-5. It consists of 5.6 kilometres of sanitary sewer main, 1.7 kilometres of forcemain, 67 manholes, 199 service connections and 6 facilities.

Most of the pipe system (approximately 5.2 kilometres or 93%) is asbestos cement. Approximately 5.1 km (92%) is 200mm and the remainder 150mm. These are all between 31 and 40 years old. All of the forcemains are 150mm diameter PVC pipe and less than 10 years old. Four (4) facilities are 31 to 40 years old and the remaining 2 less than 10 years old. This suggests that the wastewater system is generally at less than half its life expectancy which is projected to be approximately 80 years.

Table 2-4: Wastewater System Age

Age of Sanitary System Assets												
Sanitary System Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Sanitary Mains by Diameter (mm)												
200	-	-	-	5,181	-	-	-	-	-	-	5,181	92.34%
300	-	-	-	425	-	-	-	-	-	-	425	7.57%
Unknown	-	-	-	5	-	-	-	-	-	-	5	0.09%
Length (m) by Age	-	-	-	5,611	-	-	-	-	-	-	5,611	
Percent (%) by Age	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Sanitary Mains by Material												
Abs-Cem	-	-	-	5,230	-	-	-	-	-	-	5,230	93.21%
Concrete C76	-	-	-	254	-	-	-	-	-	-	254	4.53%
Ductile Iron	-	-	-	5	-	-	-	-	-	-	5	0.09%
PE	-	-	-	122	-	-	-	-	-	-	122	2.17%
Length (m) by Age	-	-	-	5,611	-	-	-	-	-	-	5,611	
Percent (%) by Age	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Sanitary Laterals												
Length (m) by Age	-	-	-	199	-	-	-	-	-	-	199	
Percent (%) by Age	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Sanitary Manholes												
No. of Units by Age	-	-	-	67	-	-	-	-	-	-	67	
Percent (%) by Age	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Force Mains by Diameter (mm)												
150	1,701	-	-	-	-	-	-	-	-	-	1,701	100.00%
Length (m) by Age	1,701	-	-	-	-	-	-	-	-	-	1,701	
Percent (%) by Age	30.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Force Mains by Material												
PVC CL160	1,701	-	-	-	-	-	-	-	-	-	1,701	100.00%
Length (m) by Age	1,701	-	-	-	-	-	-	-	-	-	1,701	
Percent (%) by Age	30.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Sanitary Facilities												
No. of Facilities by Age	2	0	0	4	0	0	0	0	0	0	6	
Percent (%) by Age	33.33%	0.00%	0.00%	66.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.3.3 Roads System Age

The age of the road system is summarized in Table 2-6. It consists of approximately 98 kilometres of surface treated, asphalt and gravel road, 5 facilities and vehicles and equipment.

Approximately 53 km (54%) of the roads is gravel, 27 km (27%) surface treated and 18 km (19%) asphalt. Most (64km or 65%) of the road surfaces and 87 km (89%) of the road base, are 41 to 50 years old. Almost all the asphalt surfaces (17.2 km), 6.7km (25%) of the surface treated surfaces and 40.3km (77%) of the gravel surfaces fall in this age group. This suggests that many of the road surfaces have exceeded their life expectancy which is projected to be approximately 40 years.

Most of the vehicles and equipment and 1 facility are less than 20 years old and 4 facilities are 40 to 50 years old.

Table 2-5: Road Network Age

Age of Road System Assets												
Road System Assets	Age (Years)											
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown	Total Length (m) or Units	Percent (%)
Road Base												
Length (m) by Age	8,320	2,300	84	37	87,130	-	-	-	-	-	97,871	
Percent (%) by Age	8.50%	2.35%	0.09%	0.04%	89.03%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Road Surface												
Surface Treatment	17,725	2,300	-	37	6,720	-	-	-	-	-	26,782	27.36%
Asphalt	840	475	-	-	17,160	-	-	-	-	-	18,475	18.88%
Gravel	12,200	-	-	84	40,330	-	-	-	-	-	52,614	53.76%
Length (m) by Age	30,765	2,775	-	121	64,210	-	-	-	-	-	97,871	
Percent (%) by Age	31.43%	2.84%	0.00%	0.12%	65.61%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Road Vehicles												
Equipment	7	5	2	0	1	0	0	0	0	0	15	88.24%
Vehicle	2	0	0	0	0	0	0	0	0	0	2	11.76%
Quantity by Age	9	5	2	0	1	0	0	0	0	0	17	
Percent (%) by Age	52.94%	29.41%	11.76%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Road Facilities												
No. of Facilities by Age	1	0	0	0	4	0	0	0	0	0	5	
Percent (%) by Age	20.00%	0.00%	0.00%	0.00%	80.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.3.4 Storm Water System Age

The age of the storm water system is summarized in Table 2-7. It consists of approximately 2.1 kilometres of storm sewer main, 15 manholes, and 32 catch basins.

The pipes are all PVC with approximately 50% less than 10 years old and 50% in the 31 to 40 age group along with the manholes and catch basins.

This suggests that the storm water system is generally at the early stages of its life expectancy which is projected to be approximately 80 years.

Table 2-6: Storm Water System Age

Age of Stormwater System Assets												
Stormwater System Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Stormwater Mains by Diameter (mm)												
300	-	-	-	631	-	-	-	-	-	-	631	29.82%
375	-	-	-	129	-	-	-	-	-	-	129	6.10%
450	600	-	-	102	-	-	-	-	-	-	702	33.18%
525	-	-	-	102	-	-	-	-	-	-	102	4.82%
750	-	-	-	102	-	-	-	-	-	-	102	4.82%
900	450	-	-	-	-	-	-	-	-	-	450	21.27%
Length (m) by Age	1,050	-	-	1,066	-	-	-	-	-	-	2,116	
Percent (%) by Age	49.62%	0.00%	0.00%	50.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Stormwater Mains by Material												
PVC	1,050	-	-	1,066	-	-	-	-	-	-	2,116	100.00%
Length (m) by Age	1,050	-	-	1,066	-	-	-	-	-	-	2,116	
Percent (%) by Age	49.62%	0.00%	0.00%	50.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Stormwater Manholes												
No. of Units by Age	0	-	-	15	-	-	-	-	-	-	15	
Percent (%) by Age	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%
Stormwater Catch Basins												
No. of Units by Age	-	-	-	32	-	-	-	-	-	-	32	
Percent (%) by Age	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.3.5 Administration/Heritage Facilities Age

The age of the administration/ heritage facilities is summarized in Table 2-8. Most of these buildings (18 or 56%) are more than 40 years old with 14 (44%) greater than 60 years old. The remaining 14 buildings (44%) are less than 30 years old. This suggests that more than half of the buildings are older than 50 years i.e. passed their projected life expectancy of 40 years.

Table 2-7: Administration Facilities Age

Age of Administration Assets												
Administration Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Administration												
Quantity by Age	8	2	4	0	2	0	14	0	2	0	32	
Percent (%) by Age	25.00%	6.25%	12.50%	0.00%	6.25%	0.00%	43.75%	0.00%	6.25%	0.00%		100.00%

2.3.6 Recreation Facilities Age

The age of the recreation facilities is summarized in Table 2-9. Most of these facilities (13 or 65%) are less than 10 years old. The others are less than 50 years old. This suggests that these facilities are relatively new based on a projected life expectancy of 40 years.

Table 2-8: Recreation Facilities Age

Age of Recreation Assets												
Recreation Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Recreation Assets												
Quantity by Age	13	2	0	2	3	0	0	0	0	0	20	
Percent (%) by Age	65.00%	10.00%	0.00%	10.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.3.7 Fire Protection Equipment Age

The age of the fire protection equipment is summarized in Table 2-10. Note that the fire hall is part of the public works garage which is included under the roads facilities assets. Three (3) units are less than 10 years old, 1 unit between 10 and 10 years old and 1 unit between 31 and 40 years old.

Table 2-9: Fire Protection Assets Age

Age of Fire Prtction Assets												
Fire Protection Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Fire Protection												
Quantity by Age	3	1	0	1	0	0	0	0	0	0	5	
Percent (%) by Age	60.00%	20.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.3.8 Solid Water Facilities Age

The age of the solid waste facilities is summarized in Table 2-11. All facilities are less than 10 years old.

Table 2-10: Solid Water Facilities Age

Age of Solid Waste Assets												
Solid Waste Assets	Age (Years)										Total Length (m) or Units	Percent (%)
	<10	10 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	>80	Unknown		
Road Facilities												
No. of Facilities by Age	6	0	0	0	0	0	0	0	0	0	6	
Percent (%) by Age	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		100.00%

2.4 Asset Condition

The condition of each asset was determined based on age and adjusted as necessary using the condition assessment information from the 2008 Asset Management Study discussions with staff to identify any operational issues due to deteriorating asset condition and capital works completed since 2008. Recent condition information and discussions with staff to identify any issues were used to gauge asset condition. Age was used as the condition indicator in cases where condition information was not available. The asset condition is rated as: *good, fair and poor*. Table 2-12 summarizes the asset condition for each asset class and shows the replacement cost in each condition category. Further breakdown of the condition of each asset class is provided in Appendix A.

In terms of replacement cost, the majority of the assets are in good condition, \$1.9 Million (3%) of the assets are in fair condition and \$0.76 Million (1%) in poor condition. The condition by asset class is summarized as follows:

- Water System – Generally good condition except for the membrane filter at the treatment plant which is in fair to poor condition. Operations personnel have indicated that there are major challenges with the existing filter and increased risks related to water production. The filter replacement is critical to sustaining the water supply and is estimated to be approximately \$1.34 million by 2018 at the latest. Earlier replacement would be preferred.
- Wastewater System – Generally good condition except for 2 facilities valued at approximately \$370,000 in poor condition;
- Road Network – The road base and surfaces are generally good condition except for approximately 2.7km of road base and 1.3 km of gravel road valued at approximately \$682,000 assessed to be in poor condition. In terms of vehicles, equipment and facilities, 13 equipment units valued at approximately \$858,000 and 4 (of the 5 facilities) valued at approximately \$ 319,000 are in fair or poor condition;
- Storm Water System – Generally good condition;
- Administration Facilities – One or more components (i.e. electrical, mechanical, structural, roof) valued at approximately \$691,000 at 22 of the 32 facilities are in mostly poor to fair condition. The other facilities are in good condition;

- Recreation Facilities – One or more components (i.e. electrical, mechanical, structural, roof) valued at approximately \$105,000 at 4 of the 20 facilities are in mostly poor to fair condition. The other facilities are in good condition;
- Fire Protection Equipment – Only 1 of the 5 units valued at approximately \$85,000 is in poor condition. The remaining units are in good condition; and
- Solid Waste Facilities – Generally in good condition.

Table 2-11: Asset Condition by Replacement Value

Asset	Condition Rating			Total
	Good	Fair	Poor	
Watermains	\$ 3,218,859	\$ -	\$ -	\$ 3,218,859
Water Valves	\$ 74,120	\$ -	\$ -	\$ 74,120
Service Connections	\$ 612,761	\$ -	\$ -	\$ 612,761
Water Hydrants	\$ 191,912	\$ -	\$ -	\$ 191,912
Water Facilities	\$ 8,904,079	\$ 1,341,250	\$ -	\$ 10,245,329
Total Water System	\$ 13,001,731	\$ 1,341,250	\$ -	\$ 14,342,981
Percentage (%)	91%	9%	0%	100%
Wastewater Mains	\$ 2,926,079	\$ -	\$ -	\$ 2,926,079
Service Connections	\$ 622,670	\$ -	\$ -	\$ 622,670
Manholes	\$ 384,345	\$ -	\$ -	\$ 384,345
Force Mains	\$ 887,070	\$ -	\$ -	\$ 887,070
Waste Water Facilities	\$ 5,134,887	\$ -	\$ 369,591	\$ 5,504,478
Total Wastewater System	\$ 9,955,050	\$ -	\$ 369,591	\$ 10,324,641
Percentage (%)	96%	0%	4%	100%
Storm Mains	\$ 1,324,190	\$ -	\$ -	\$ 1,324,190
Manholes	\$ 86,047	\$ -	\$ -	\$ 86,047
Catch Basins	\$ 68,638	\$ -	\$ -	\$ 68,638
Total Stormwater System	\$ 1,478,876	\$ -	\$ -	\$ 1,478,876
Percentage (%)	100%	0%	0%	100%
Road Base	\$ 16,179,865	\$ -	\$ 459,023	\$ 16,638,888
Road Surface	\$ 20,606,458	\$ 684,311	\$ 222,711	\$ 21,513,480
Vehicles and Equipment	\$ 155,824	\$ 368,028	\$ 490,365	\$ 1,014,217
Road Facilities	\$ 7,033	\$ 304,291	\$ 14,458	\$ 325,782
Total Road Network	\$ 36,949,180	\$ 1,356,630	\$ 1,186,558	\$ 39,492,368
Percentage (%)	94%	3%	3%	100%
Administration	\$ 1,431,801	\$ 67,702	\$ 623,877	\$ 2,123,380
Total Administration Assets	\$ 1,431,801	\$ 67,702	\$ 623,877	\$ 2,123,380
Percentage (%)	67%	3%	29%	100%
Recreation	\$ 3,303,398	\$ 21,631	\$ 83,436	\$ 3,408,465
Total Recreation Assets	\$ 3,303,398	\$ 21,631	\$ 83,436	\$ 3,408,465
Percentage (%)	97%	1%	2%	100%
Fire Protection	\$ 568,145	\$ -	\$ 85,472	\$ 653,617
Total Fire Protection Assets	\$ 568,145	\$ -	\$ 85,472	\$ 653,617
Percentage (%)	87%	0%	13%	100%
Solid Waste	\$ 388,065	\$ -	\$ -	\$ 388,065
Total Solid Waste Assets	\$ 388,065	\$ -	\$ -	\$ 388,065
Percentage (%)	100%	0%	0%	100%
Total Assets	\$ 67,076,246	\$ 2,787,213	\$ 2,348,934	\$ 72,212,392
Percentage (%)	93%	4%	3%	100%

2.5 Infrastructure Requirements

Table 2-13 summarizes the infrastructure needs based on replacement for the study period i.e. 2013 – 2037 and beyond. This reflects the future costs facing the Township over the next 100 years. The assumptions made to develop these costs projections are included in Appendix B.

Approximately \$28.9 Million is required between 2013 and 2037 and \$43.3 Million beyond 2037. The latter amount translates to an annual requirement of approximately \$2.4 Million to ensure that sufficient funds are available for replacement beyond 2037.

Approximately 57% (\$15.3 Million) of the \$28.9 Million requirement over the next 25 years is road related mostly resurfacing. Water accounts for approximately \$3.9 Million (14%) and Wastewater \$4.4 Million (15%).

Regarding the needs beyond 2037, Roads account for the majority of costs (53%) estimated at \$23.1 Million. Water accounts for \$10.4 Million (24%) and Wastewater \$5.9 Million (14%).

A Report Card reflecting the asset condition and projected costs is provided in Appendix C.

Table 2-12: Infrastructure Requirements (Next 25 years and Beyond)

Assets	Total Replacement Costs (\$2013)	25 Year Requirement (2013-2038)	%	Requirement Beyond 25 years (>2038)	%	Annual Lifecycle Replacement
Water Mains	\$ 3,218,859	\$ -		\$ 3,218,859		\$ 172,254
Water Valves	\$ 74,120	\$ -		\$ 74,120		\$ 3,938
Water Services	\$ 612,761	\$ -		\$ 612,761		\$ 32,645
Water Hydrants	\$ 191,912	\$ -		\$ 191,912		\$ 10,212
Water Buildings Land	\$ 10,245,329	\$ 3,948,328		\$ 6,297,001		\$ 332,637
Total Water System	\$ 14,342,981	\$ 3,948,328	14%	\$ 10,394,653	24%	\$ 551,686
Wastewater Mains	\$ 2,926,079	\$ -		\$ 2,926,079		\$ 155,303
Wastewater Laterals	\$ 622,670	\$ -		\$ 622,670		\$ 33,048
Wastewater Manholes	\$ 384,345	\$ -		\$ 384,345		\$ 20,399
Wastewater Force Mains	\$ 887,070	\$ -		\$ 887,070		\$ 48,490
Wastewater Buildings and Land	\$ 5,504,478	\$ 4,413,012		\$ 1,091,466		\$ 57,405
Total Wastewater System	\$ 10,324,641	\$ 4,413,012	15%	\$ 5,911,629	14%	\$ 314,646
Stormwater Mains	\$ 1,324,190	\$ -		\$ 1,324,190		\$ 71,089
Stormwater Manholes	\$ 86,047	\$ -		\$ 86,047		\$ 4,567
Stormwater Catch Basins	\$ 68,638	\$ -		\$ 68,638		\$ -
Total Storm Water System	\$ 1,478,876	\$ -	0%	\$ 1,478,876	3%	\$ 75,656
Road Base	\$ 16,638,888	\$ 459,023		\$ 16,179,865		\$ 890,995
Road Surface	\$ 21,513,480	\$ 14,636,916		\$ 6,876,564		\$ 384,564
Road Vehicles and Equipment	\$ 1,014,217	\$ 1,014,217		\$ -		\$ -
Road Buildings and Land	\$ 325,782	\$ 325,782		\$ -		\$ -
Street Lights and Signs	\$ -	\$ -		\$ -		\$ -
Total Road Network	\$ 39,492,368	\$ 16,435,939	57%	\$ 23,056,429	53%	\$ 1,275,559
Administration	\$ 2,123,380	\$ 1,220,599	4%	\$ 902,781	2%	\$ 52,780
Recreation	\$ 3,408,465	\$ 2,177,381	8%	\$ 1,231,084	3%	\$ 64,447
Fire Protection	\$ 653,617	\$ 653,617	2%	\$ -	0%	\$ -
Solid Waste	\$ 388,065	\$ 19,412	0%	\$ 368,653	1%	\$ 19,257
Total Assets	\$ 72,212,392	\$ 28,868,288	100%	\$ 43,344,105	100%	\$ 2,354,032

2.6 Asset Management Policy

The Township's asset management policy with respect to asset data verification and undertaking condition assessments shall include:

- Developing an asset database to track the inventory of assets and their respective attributes and condition;
- Using age as an indicator of asset condition in the absence of actual condition information;
- Identifying deteriorating asset performance through the normal operations and maintenance functions and flagging these assets for potential future rehabilitation and/ or replacement;
- Undertaking asset condition inspections on specific assets as needed based on age and/or indications of declining asset performance and regulatory requirements, to confirm asset condition;
- Allocating staff and equipment resources to long-term asset management;
- Giving priority to rehabilitation versus replacement to the extent possible in order to reduce costs;
- Allocating budgets on a prioritized basis for asset replacement and/ or rehabilitation while having regard to affordability and risks of delaying required work;
- Working with other municipalities when beneficial to do so in undertaking projects and initiatives;
- Seeking provincial government, federal government and other third party funding as much as possible for asset management projects and activities;
- Funding the respective asset management costs from the respective sources of funding including user rates, taxes, provincial government, federal government and other third party sources; and
- Updating the Asset Management Plan every 5 years as a minimum.

3 Desired Levels of Service

The Township's corporate strategic objectives related to service levels and their respective asset classes are not explicitly documented in a strategic plan. However the general objectives of providing services at levels that meet the community expectations and compliance with regulatory requirements are inherent in the Township's current levels of service.

The Municipal Performance Measurement Program (MPMP) 2010 results form the basis for defining the expected service levels for asset classes where MPMP information is available. The target values for the Township are the 2010 median MPMP values for the group of similar municipalities, i.e. northern communities with populations of less than 5,000.

The Township's road maintenance policy document entitled: "Minimum Maintenance Standards for Municipal Highways – Policy and Procedures" approved under By-Law 04-42 identifies the desired level of service for each road class. These standards are consistent with requirements of O.Reg. 239/02 which sets the minimum road maintenance service levels in Ontario. The current annual maintenance budget and staff resources allow the Township to meet these targets.

In other cases the desired level of service is identified as the percentage of the asset class that is deemed to be in "good" condition. The initial target is set at 80% for water, wastewater and storm water mains

and 100% for buildings and vehicles, recognizing that these targets would be adjusted over time as more detailed asset condition information become available.

Appendix D identifies the Township's level of service by asset class. It shows the performance measure and the target (desired) and current values for each asset class. These service level targets were reviewed and discussed with Township staff prior to finalization.

As noted the target service levels are not currently being met for the following assets:

- **Water Treatment.** 87% (based on replacement costs) of the facility components are in good condition. This is mainly due to the membrane filters which require replacement. The target requires that 100% of the components be in good condition.
- **Wastewater Treatment.** 67% (based on replacement costs) of the facility components are in good condition. This is mainly due to a pumping station structure and mechanical/electrical components potentially being in need of work due to age. The target requires that 100% of the components be in good condition.
- **Recreation Facilities.** 80% (based on replacement costs) of the facility components are in good condition. This is mainly due to the structures and mechanical/electrical components at the facilities potentially being in need of work due to age. The target requires that 100% of the components be in good condition.
- **Fire Protection Equipment.** 80% of the equipment units are in good condition. This is mainly due one unit potentially being in need of replacement due to age. The target requires that 100% of the components be in good condition.
- **Administration Facilities.** 31% (based on replacement costs) of the facility components are in good condition. This is mainly due to the structures and mechanical/electrical components at the facilities potentially being in need of work due to age. The target requires that 100% of the components be in good condition.

This suggests that higher levels of proactive (as opposed to reactive) facility maintenance are required in addition to replacement of the membrane filter at the water treatment plants and continuation of the road resurfacing and maintenance program.

The timing for achieving these service levels is considered in development of preferred asset management strategy as discussed in Section 4.5.

4 Asset Management Strategy

Two (2) alternative asset management strategies were identified based on a high level qualitative assessment of the potential likelihood and consequence of failure given the current asset condition in each system. The components of each strategy are summarized in Appendix E and generally include the following:

- Asset Management Strategy No.1. This strategy is generally based primarily on replacement of assets as they reach their respective life expectancies but includes maintenance and rehabilitation activities;
- Asset Management Strategy No.2. This strategy is generally based on a combination of inspection, maintenance, rehabilitation and replacement of assets to offer a balanced approach. It focuses on the assets that are a priority from a condition perspective and uses rehabilitation as the primary approach to defer replacement to future years.

In addition each strategy includes the following components:

- *Growth Considerations.* Growth is expected to be through infilling and conversion of seasonal to permanent residential units and accommodated through the existing infrastructure capacity i.e. no infrastructure capacity expansions are anticipated. Therefore the preferred strategy does not attempt to dovetail replacement and/ or rehabilitation work with any infrastructure expansion that may be required in the future if and when a major new development is identified;
- *Procurement.* The Township's policy on group procurement on a case specific basis when there is a potential benefit to be derived would continue;
- *Contracted Water & Wastewater Operations.* The water and wastewater operations are currently outsourced. This allows the Township to access the required expertise, control costs and manage risks. Under the contract the Township is responsible for major capital expenditures and maintenance call outs that exceed the specified allocation in the contract. This arrangement is expected to continue in the future; and
- *Operations and Maintenance.* Increasing the annual wastewater operations and maintenance budget by \$5,000 to facilitate sewer inspections over time. Other water and wastewater maintenance would remain the same as these are covered under the operating contract and the existing budgets are sufficient to cover additional annual maintenance not included in the operations contract.

The life cycle costs of each alternative strategy were developed based on the projected capital, operating and maintenance costs over the life expectancy of each asset using the financial assumptions noted in Appendix B. The operating costs and non-rate revenue projections were based on the 2013 operating budget. The life cycle costs are presented in Appendix F.

4.1 Asset Management Strategy No.1

The main components of this strategy include the following:

- Replacement of assets as a priority over rehabilitation;
- Addressing the assets that are deemed to be in fair or poor condition as soon as possible;

- Replacing the Water treatment Plant Membrane Filter as a priority due to its criticality and the potential high risk to the water production process;
- Addressing the road surface replacement needs through an annual program throughout the 25-year period;
- Replacement of buildings as their life expectancy expires; and
- Increasing the wastewater annual operations budget by \$5000 to allow for CCTV inspections

The type of activity, timing of projects, estimated costs, reserve contributions and balances and available debt capacity over the 25-year period are presented in Appendix F.

4.2 Asset Management Strategy No.2

The main components of this strategy include the following:

- A mix of rehabilitation and replacement of assets. Rehabilitation is considered for assets where the risk to the operation and/ or service is acceptable when compared to replacement;
- Addressing the assets that are deemed to be in fair or poor condition as soon as possible;
- Replacing the Water treatment Plant Membrane Filter as a priority due to its criticality and the potential high risk to the water production process;
- Addressing all of the road surface needs in the 25- year period through an annual program over the next 25 years. This approach considers road rehabilitation as the primary activity with replacement as needed based on inspections. Major road replacement is expected to be deferred to future years due to the annual rehabilitation program;
- Undertaking building inspections;
- Rehabilitation of buildings and deferral of replacement; and
- Increasing the wastewater annual operations budget by \$5000 to allow for CCTV inspections

The type of activity, timing of projects, estimated costs, reserve contributions and balances and available debt capacity over the 25-year period are presented in Appendix G.

4.3 Risk Analysis

A high level qualitative risk analysis was undertaken for the alternative strategies. The results are summarized in Appendix H. The risk assessment indicates that Alternative No.1 generally offers lower overall risk as assets would be replaced for the most part versus rehabilitation. However, the combination of replacement and rehabilitation activities included in Alternative No.2 also offers reduced risks to the service delivery. Therefore from a risk perspective both Alternatives No.1 and No.2 offer acceptable risks. Alternative No.2 is preferred due its potential lower cost over the 25-year period and deferral of costs while lowering the risk of asset failure.

4.4 Preferred Strategy

A qualitative comparison of both strategies was completed and Alternative Strategy No.2 was selected as the preferred asset management strategy due mainly to its lower cost over the 25-year period and deferral of costs to beyond 2037. It also lowers the risks of asset failure and related impacts. The comparison is summarized in Table 4-1.

Table 4-1: Comparison of Alternative Strategies

Criteria	Alternative Strategy No.1 - Replacement Based	Alternative Strategy No.2 - Rehabilitation Based
Water System Costs		
Within 25 years (2013-2037)	\$ 3,948,328	\$ 3,948,328
Beyond 25 years (> 2037)	\$ 10,394,643	\$ 10,394,653
Wastewater System Costs		
Within 25 years (2013-2037)	\$ 4,413,012	\$ 2,391,302
Beyond 25 years (> 2037)	\$ 5,911,629	\$ 9,955,050
Tax Supported Asset Costs		
Within 25 years (2013-2037)	\$ 20,506,948	\$ 16,403,279
Beyond 25 years (> 2037)	\$ 27,037,823	\$ 31,125,146
Total Asset Costs		
Within 25 years (2013-2037)	\$ 28,868,288	\$ 22,742,909
Beyond 25 years (> 2037)	\$ 43,344,095	\$ 51,474,849
	Higher 25- year costs	Lower 25- year costs and deferral of costs to later years
Revenue Requirements for Water Services	Short-term increases in revenue requirements are: 2014 = \$292,534 (5%) 2015 = \$307,160 (5%) 2016 = \$322,518 (5%) 2017 = \$338,643 (5%) 2018 = \$355,575 (5%)	Same as Alternative No.1
	NPV of Revenues Required over the 25-year period = \$10,268,392	Same as Alternative No.1
Revenue Requirements for Wastewater Services	Short-term increases in revenue requirements are: 2014 = \$160,452 (25%) 2015 = \$192,943 (20%) 2016 = \$221,424 (15%) 2017 = \$243,566 (10%) 2018 = \$267,922 (10%)	Lower Short-term increases in revenue requirements are: 2014 = \$154,034 (20%) 2015 = \$184,841(20%) 2016 = \$203,321 (10%) 2017 = \$223,653 (10%) 2018 = \$234,835 (5%)
	NPV of Revenues Required over the 25-year period = \$8,045,094	Lower NPV of Revenues Required over the 25-year period = \$6,682,517
Revenue Requirements for Tax Supported Services	Higher short-term increases in revenue requirements: 2014 = \$2,923,072 (10%) 2015 = \$3,215,379 (10%) 2016 = \$3,536,916 (10%) 2017 = \$3,713,761 (5%) 2018 = \$3,899,448 (5%)	Lower short-term increases in revenue requirements: 2014 = \$2,790,205 (5%) 2015 = \$2,929,715 (5%) 2016 = \$3,076,200 (5%) 2017 = \$3,230,010 (5%) 2018 = \$3,391,510 (5%)
	Higher NPV of Revenues Required over the 25-year period = \$77,973,847	Lower NPV of Revenues Required over the 25-year period = \$75,170,232
Debt Capacity (5-year)	Higher Available Debt Capacity Range : Between \$409,000 and \$653,000	Similar Available Debt Capacity Range: Between \$342,000 and \$619,000
Water Capital Reserve Balance (5-year)	Range: \$100,000 to \$288,000	Same as Alternative No.1
Wastewater Capital Reserve Balance (5-year)	Range: \$100,000 to \$318,000	Range: \$100,000 to \$235,000
Tax Supported Services Capital Reserve Balance (5-year)	Higher Available Balance: Range \$500,000 to \$1,082,000	Maintains Minimum Balance: 500,000 over the next 5 years
Safety	Improves asset condition and therefore safety	Improves asset condition and therefore safety
Municipal Image	Improves image as risks to service delivery are lowered	Improves image as risks to service delivery is lowered
Risk to Public Health & Environment	Lower overall risk	Risks are manageable. Allows flexibility over time to target priority assets based on inspections

5 Financing Strategy

The cost of the Preferred Strategy over the 25-year period and the financing of these costs are presented in Appendix G. The financing strategy includes the following key components:

- Capital Projects would be financed through a combination of reserve funds and debt within the available debt limit. The annual debt limit projections are calculated using 25% of the projected net revenues (as a proxy for “own revenues”). Only approved grant funding is considered in the revenue;
- The annual operating costs including debt repayment and reserve contributions would be financed through non-rate revenues and taxes (for tax supported services) or the water and wastewater rates (for the water and wastewater system costs);
- The financial assumptions noted in Appendix B;
- Making annual contributions to the respective capital reserves over the period to maintain a minimum balance (to the extent possible) of approximately 1% of the asset value. This, along with the available debt capacity, is intended to provide the financial capacity to address any unforeseen asset needs;
- Building reserves to sufficient levels towards the end of the period so that the Township would be in a reasonable position to address the asset needs beyond 2037 (i.e. without overbuilding the reserves). In addition the financing strategy includes increasing the transfers to reserves to equal (to the extent possible) the “annuity” required for asset replacement beyond 2037;
- Aggressively pursuing grant funding opportunities particularly those that may become available through Provincial and Federal funding programs, to reduce the burden on the rate payers; and
- Annually assessing the Township’s financial position and making adjustments when necessary to maintain the objective of having a sustainable asset management plan.

5.1 User Rate Requirements

The water system and wastewater system costs, including any asset related costs, are recovered through user rates. These are flat fees which are set by the Township each year for water and wastewater. The annual revenues required over the 25-year period through these rates are presented in Appendix G. Table 5-1 summarizes the short-term revenue requirements i.e. for the next 5 years for the water system. Table 5-2 shows the short-term wastewater revenue requirements.

Table 5-1: Short-Term Water Rate Revenue Requirements

Water System Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018
Township 5-Year Capital Forecast	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 23,185
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ -	\$ -	\$ -	\$ -	\$ 1,554,876
<i>Total Capital Requirements</i>	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 1,578,062
Debt Financing	\$ -	\$ -	\$ -	\$ -	\$ 1,181,652
Capital Reserve Financing	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 396,410
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Financing</i>	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 1,578,062
Operations & Maintenance	\$ 263,444	\$ 268,712	\$ 274,087	\$ 279,568	\$ 285,160
Transfers to Capital Reserves	\$ 40,036	\$ 49,976	\$ 60,554	\$ 71,804	\$ 83,763
Debt Repayment	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803
Less Non-Rate Revenues	\$ 98,749	\$ 99,331	\$ 99,926	\$ 100,533	\$ 101,151
<i>Revenue Requirements (from Users)</i>	\$ 292,534	\$ 307,160	\$ 322,518	\$ 338,643	\$ 355,575
Annual Increase (\$)	\$ 13,930	\$ 14,626	\$ 15,358	\$ 16,125	\$ 16,932
Annual Increase (%)	5%	5%	5%	5%	5%

Increases in water rate revenue of approximately 5 % per year between 2014 and 2018 are required mainly to finance the replacement of the failing membrane filter required in 2018. It is recommended that the Township pursue available grant funding to partially offset the cost of the replacement and lower the revenue required from the users through the water rates.

Table 5-2: Short-Term Wastewater Rate Revenue Requirements

Waste Water System Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018
Township 5-Year Capital Forecast	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ 380,679	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Requirements</i>	\$ 380,679	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ 352,134	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 28,545	\$ -	\$ -	\$ -	\$ -
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Financing</i>	\$ 380,679	\$ -	\$ -	\$ -	\$ -
Operations & Maintenance	\$ 118,079	\$ 120,441	\$ 122,850	\$ 125,307	\$ 127,813
Transfers to Capital Reserves	\$ 10,284	\$ 8,155	\$ 24,226	\$ 42,101	\$ 50,777
Debt Repayment	\$ 25,671	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245
Less Non-Rate Revenues	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Revenue Requirements (from Users)</i>	\$ 154,034	\$ 184,841	\$ 203,321	\$ 223,653	\$ 234,835
Annual Increase (\$)	\$ 25,672	\$ 30,807	\$ 18,480	\$ 20,332	\$ 11,182
Annual Increase (%)	20%	20%	10%	10%	5%

Significant increases in wastewater rate revenue of approximately 20% in 2014 and 2015 are required mainly to finance the replacement of the failing membrane filter required in 2014. Revenue increases of approximately 10% are required in 2016 and 2017 down to approximately 5% by 2018. It is recommended that the Township pursue available grant funding to partially offset the cost of asset replacement and/ or rehabilitation projects over the period 2021 to 2018.

5.2 Tax Levy Requirements

All services provided by the Township except for water and wastewater system costs, including any asset related costs, are recovered through the annual tax levy. The annual revenues required over the 25-year period through these rates are presented in Appendix G. Table 5-3 summarizes the short-term tax levy requirements i.e. for the next 5 years.

Table 5-3: Short-Term Tax Levy Requirements

Tax Supported Services Financial Projections					
Cost / Revenue Item	2014	2015	2016	2017	2018
Township 5-Year Capital Forecast	\$ 1,699,500	\$ 1,591,350	\$ 273,182	\$ -	\$ -
Asset Rehabilitation	\$ 670,334	\$ 398,776	\$ 410,739	\$ 423,061	\$ 435,753
Asset Replacement	\$ 778,709	\$ 66,071	\$ -	\$ 239,333	\$ 212,974
<i>Total Capital Requirements</i>	<i>\$ 3,148,543</i>	<i>\$ 2,056,197</i>	<i>\$ 683,921</i>	<i>\$ 662,394</i>	<i>\$ 648,727</i>
Debt Financing	\$ 2,307,569	\$ 1,584,015	\$ 248,077	\$ 140,476	\$ 24,627
Capital Reserve Financing	\$ 840,974	\$ 472,182	\$ 435,844	\$ 521,918	\$ 624,100
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Total Capital Financing</i>	<i>\$ 3,148,543</i>	<i>\$ 2,056,197</i>	<i>\$ 683,921</i>	<i>\$ 662,394</i>	<i>\$ 648,727</i>
Operations & Maintenance	\$ 2,363,957	\$ 2,412,769	\$ 2,462,557	\$ 2,513,341	\$ 2,565,140
Transfers to Capital Reserves	\$ 570,041	\$ 464,793	\$ 428,455	\$ 514,528	\$ 616,710
Debt Repayment	\$ 76,637	\$ 276,992	\$ 414,524	\$ 436,063	\$ 448,260
Less Non-Rate Revenues	\$ 220,430	\$ 224,839	\$ 229,336	\$ 233,922	\$ 238,601
<i>Revenue Requirements (from Users)</i>	<i>\$ 2,790,205</i>	<i>\$ 2,929,715</i>	<i>\$ 3,076,200</i>	<i>\$ 3,230,010</i>	<i>\$ 3,391,510</i>
Annual Increase (\$)	\$ 132,867	\$ 139,510	\$ 146,486	\$ 153,809	\$ 161,500
Annual Increase (%)	5%	5%	5%	5%	5%

Increases in the tax levy revenue of 5% are required between 2014 and 2018. These are due mainly to rehabilitation of buildings in poor condition and the increasing the annual road rehabilitation allocation required to keep up with the annual needs. It is also recommended that the Township pursue available grant funding to partially offset the cost of rehabilitating the critical buildings and road sections to lower the revenue required from the tax payers through the general tax levy.

6 Recommendations

The following are the recommendations:

1. That the Asset Management policy statements noted in Section 2.6 be adopted by the Township;
2. That the levels of service targets presented in Section 3 be adopted by the Township;
3. That the preferred Asset Management Strategy presented in Section 4 be adopted by the Township; and
4. That the Financial Strategy presented in Section 5 be adopted by the Township to support the asset management strategy

7 References

1. Building Together: A Guide for Municipal Asset Management Plans
2. Township of Assiginack 2012 and 2013 operating and capital budgets.
3. Township of Assiginack 5-year capital budget forecast.
4. Township of Assiginack 2012 PSAB 3150 TCA information.
5. 2009 Asset Management Study.
6. Township of Assiginack Project Priorities
7. MPMP 2010 report.

APPENDIX A

ASSET CONDITION ASSESSMENT

APPENDIX A: Asset Condition Assessment

Age Based Condition Assessment			
	Poor (less than)	Fair (between)	Good (greater than)
Water Mains	5%	=> 5% and =< %15	15%
Water Valves	5%	=> 5% and =< %15	15%
Water Services	5%	=> 5% and =< %15	15%
Water Hydrants	5%	=> 5% and =< %15	15%
Water Buildings Land	10%	=> 10% and =< %20	20%
Wastewater Mains	5%	=> 5% and =< %15	15%
Wastewater Laterals	5%	=> 5% and =< %15	15%
Wastewater Manholes	5%	=> 5% and =< %15	15%
Wastewater Force Mains	5%	=> 5% and =< %15	15%
Wastewater Buildings and Land	10%	=> 10% and =< %20	20%
Stormwater Mains	5%	=> 5% and =< %15	15%
Stormwater Manholes	5%	=> 5% and =< %15	15%
Stormwater Catch Basins	5%	=> 5% and =< %15	15%
Road Base	5%	=> 5% and =< %15	15%
Road Surface	5%	=> 5% and =< %15	15%
Road Vehicles and Equipment	20%	=> 20% and =< %50	50%
Road Buildings and Land	10%	=> 10% and =< %20	20%

APPENDIX A: Asset Condition Assessment

Condition of Water System Assets

Water System Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
Watermains				
Length (m)	7,014	-	-	7,014
Percent (%)	100%	0%	0%	100%
Replacement Cost	\$ 3,218,859	\$ -	\$ -	\$ 3,218,859
Percent (%)	100%	0%	0%	100%
Water Valves				
No. of Units	24	-	-	24
Percent (%)	100%	0%	0%	100%
Replacement Cost	\$ 74,120	\$ -	\$ -	\$ 74,120
Percent (%)	100%	0%	0%	100%
Service Connections				
No. of Units	235	-	-	235
Percentage (%)	100%	0%	0%	100%
Replacement Cost	\$ 612,761	\$ -	\$ -	\$ 612,761
Percent (%)	100%	0%	0%	100%
Water Hydrants				
No. of Units	46	-	-	46
Percentage (%)	100%	0%	0%	100%
Replacement Cost	\$ 191,912	\$ -	\$ -	\$ 191,912
Percent (%)	100%	0%	0%	100%
Water Facilities				
No. of Facility Components	13	2	-	15
Percentage (%)	87%	4%	0%	91%
Replacement Cost	\$ 8,904,079	\$ 1,341,250	\$ -	\$ 10,245,329
Percent (%)	87%	699%	0%	786%

Condition of Wastewater System Assets

Wastewater System Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
Wastewater Mains				
Length (m)	5,611	-	-	5,611
Percent (%)	100%	0%	0%	100%
Replacement Cost	\$ 2,926,079	\$ -	\$ -	\$ 2,926,079
Percent (%)	100.00%	0.00%	0.00%	100.00%
Service Connections				
Length (m)	199	-	-	199
Percent (%)	100%	0%	0%	100%
Replacement Cost	\$ 622,670	\$ -	\$ -	\$ 622,670
Percent (%)	100.00%	0.00%	0.00%	100.00%
Manholes				
No. of Units	67	-	-	67
Percentage (%)	100%	0%	0%	100%
Replacement Cost	\$ 384,345	\$ -	\$ -	\$ 384,345
Percent (%)	100.00%	0.00%	0.00%	100.00%
Force Mains				
Length (m)	1,701	-	-	1701
Percentage (%)	100%	0%	0%	100%
Replacement Cost	\$ 887,070	\$ -	\$ -	\$ 887,070
Percent (%)	100%	0%	0%	100%
Waste Water Facilities				
No. of Facility Components	4	-	2	6
Percentage (%)	67%	0%	33%	100%
Replacement Cost	\$ 5,134,887	\$ -	\$ 369,591	\$ 5,504,478
Percent (%)	93%	0%	7%	100%

APPENDIX A: Asset Condition Assessment

Condition of Stormwater System Assets

Road Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
Storm Mains				
Length (m)	2,116	-	-	2,116
Percent (%)	100%	0%	0%	100%
Replacement Cost	\$ 1,324,190	\$ -	\$ -	\$ 1,324,190
Percent (%)	100%	0%	0%	100%
Manholes				
No. of Facilities	15	-	-	15
Percentage (%)	100%	0%	0%	100%
Replacement Cost	\$ 86,047	\$ -	\$ -	\$ 86,047
Percent (%)	100%	0%	0%	100%
Catch Basins				
No. of Facilities	32	-	-	32
Percentage (%)	100%	0%	0%	100%
Replacement Cost	\$ 68,638	\$ -	\$ -	\$ 68,638
Percent (%)	100%	0%	0%	100%

Condition of Road Network Assets

Water System Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
Road Base				
Length (km)	95,171	-	2,700	97870.82
Percent (%)	97%	0%	3%	100%
Replacement Cost	\$ 16,179,865	\$ -	\$ 459,023	\$ 16,638,888
Percent (%)	97%	0%	3%	100%
Road Surface				
Length (km)	93,861	2,700	1,310	97870.82
Percent (%)	96%	3%	1%	100%
Replacement Cost	\$ 20,606,458	\$ 684,311	\$ 222,711	\$ 21,513,480
Percent (%)	96%	3%	1%	100%
Vehicles and Equipment				
No. of Units	4	4	9	17
Percentage (%)	24%	24%	53%	100%
Replacement Cost	\$ 155,824	\$ 368,028	\$ 490,365	\$ 1,014,217
Percent (%)	15%	36%	48%	100%
Road Facilities				
No. of Facility Components	1	3	1	5
Percentage (%)	20%	60%	20%	100%
Replacement Cost	\$ 7,033	\$ 304,291	\$ 14,458	\$ 325,782
Percent (%)	2%	93%	4%	100%

Condition of Administration Assets

Administration Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
Administration				
No. of Facility Components	10	3	19	32
Percentage (%)	31%	9%	59%	100%
Replacement Cost	\$ 1,431,801	\$ 67,702	\$ 623,877	\$ 2,123,380
Percent (%)	67%	3%	29%	100%

APPENDIX A: Asset Condition Assessment

Condition of Recreation Assets

Recreation Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
<i>Recreation</i>				
No. of Facility Components	16	2	2	20
Percent (%)	80%	10%	10%	100%
Replacement Cost	\$ 3,303,398	\$ 21,631	\$ 83,436	\$ 3,408,465
Percent (%)	97%	1%	2%	100%

Condition of Fire Protection Assets

Fire Protection Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
<i>Fire Protection</i>				
No. of Facility Components	4	-	1	5
Percent (%)	80%	0%	20%	100%
Replacement Cost	\$ 568,145	\$ -	\$ 85,472	\$ 653,617
Percent (%)	87%	0%	13%	100%

Condition of Solid Waste Assets

Solid Waste Assets	Condition Rating			Total Length (m) or Units
	Good	Fair	Poor	
<i>Solid Waste</i>				
No. of Facility Components	6	-	-	6
Percent (%)	100%	0%	0%	100%
Replacement Cost	\$ 388,065	\$ -	\$ -	\$ 388,065
Percent (%)	100%	0%	0%	100%

APPENDIX B

ASSUMPTIONS

APPENDIX B: Assumptions

ASSUMPTIONS	
MUNICIPALITY	Township of Assiginack
SERVICE	Asset Management Plan
STUDY PERIOD	25
YEAR OF STUDY	2013
FORECAST PERIOD	2014 - 2037
INFLATION RATE	2.0%
CAPITAL INFLATION	3.0%
BORROWING RATE	3.5%
BORROWING TERM	15
INVESTMENT RATE	1.5%

Cost estimates for building components and vehicles based on indexing Historical Costs to 2013 (based on PSAB data).

Cost Estimates for all other assets based on the following tables:

APPENDIX B: Assumptions

Water ***Note unit costs for rehabilitation are heavily case sensitive. The Unit Costs below are cost estimates for a 200mm pipe with reasonable accessibility, low/no connections, no cleaning							
REHAB STRATEGY	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Slip-Lining	2012	\$300.00	2013	\$300.00	50	Cost estimate	Seemed too low. (Les suggests raising to \$300 range)
Relining	2012	\$325.00	2013	\$325.00	75	Acuro Rehabilitation Infrastructure (Quebec)	Trenchless Rehab Investigation
CIPP	2012	\$200.00	2013	\$200.00	50	Liquiforce (Kingsville)	Estimated 1cent per mm diameter.
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Water Main	2008	\$440.00	2013	\$458.92	80	Walker Study	Replacement
Valve							
REPLACEMENT	Year of Information	Unit Cost	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Valve	2012	\$680.00	2013	\$680.00	80	Grimsby Infrastructure Cost Estimate	Cost taken from Valve & Box (Valve and Chamber is in the \$4000 range)
Hydrant							
REPLACEMENT	Year of Information	Unit Cost	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Hydrant	2008	\$4,000.00	2013	\$4,171.99	80	Walker Study	
Water Services- Values from Water Main Rehab							
REHAB STRATEGY	Year of Information	Unit Cost	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Slip-Lining	2012	\$1,704.55	2013	\$1,704.55	50		Service Connection Length estimated at 5.68m (2500/440)
Relining	2012	\$1,846.59	2013	\$1,846.59	75		Service Connection Length estimated at 5.68m (2500/440)
CIPP	2012	\$1,136.36	2013	\$1,136.36	50		Service Connection Length estimated at 5.68m (2500/440)
REPLACEMENT	Year of Information	Unit Cost	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Service Connection	2008	\$2,500.00	2013	\$2,607.50	80	Walker Study	

APPENDIX B: Assumptions

Sewer Main							
REHAB STRATEGY	Source Year of Unit Cost	Average Unit Cost per m	Inflated to Year	Current Unit Cost m	Service Life	Source	Comments
Relining	2012	\$ 325.00	2013	\$325.00	75		
Sliplining	2012	\$300.00	2013	\$300.00	75	Professional Estimate	
CIPP	1998	\$147.50	2013	\$234.88	75	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	
REPLACEMENT							
REPLACEMENT	Source Year of Unit Cost	Average Unit Cost per m	Inflated to Year	Current Unit Cost m	Service Life	Source	Comments
Waste Water Main	2008	\$500.00	2013	\$521.50	80	Walker Study	Replacement
Sanitary Manholes							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Waste Water Manhole	2008	\$5,500.00	2013	\$5,736.49	80	Walker Study	
Force Main *****Copied values from Sewer Main Rehab							
REHAB STRATEGY	Source Year of Unit Cost	Average Unit Cost per m	Inflated to Year	Current Unit Cost m	Service Life	Source	Comments
Relining	2012	300	2013	\$300.00	50		
Sliplining	2012	\$325.00	2013	\$325.00	75	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	Note much higher than slip-lining in Watermain section
CIPP	2012	\$200.00	2013	\$200.00	50	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	
REPLACEMENT							
REPLACEMENT	Source Year of Unit Cost	Average Unit Cost per m	Inflated to Year	Current Unit Cost m	Service Life	Source	Comments
Force Main	2008	\$500.00	2013	\$521.50	80	Walker Study	
Sanitary Services *****Copied values from Sewer Main Rehab							
REHAB STRATEGY	Source Year of Unit Cost	Average Unit Cost	Inflated to Year	Current Unit Cost m	Service Life	Source	Comments
Relining	2012	\$ 1,950.00	2013	\$1,950.00	75		
Sliplining	2012	\$ 1,800.00	2013	\$1,800.00	75	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	Length of 6 m was assumed (3000/500)
CIPP	1998	\$ 885.00	2013	\$1,409.26	75	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	
REPLACEMENT							
REPLACEMENT	Year of Information	Unit Cost	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Sanitary Service	2008	\$3,000.00	2013	\$3,128.99	80	Walker Study	

APPENDIX B: Assumptions

Stormwater Mains ***Copied Values from Sewer Main Rehab							
REHAB STRATEGY	Source Year of Unit Cost	Average Unit Cost per m	Inflated to Year	Current Unit Cost m	Service Life	Source	Comments
Relining	2012	\$ 1,950.00	2013	\$1,950.00	75		
Sliplining	2012	\$1,800.00	2013	\$1,800.00	75	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	Note much higher than slip-lining in Watermain section
CIPP	1998	\$885.00	2013	\$1,409.26	75	Collection Systems O&M Fact Sheet "Trenchless Sewer Rehabilitation"	
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Storm Water Main	2008	\$600.00	2013	\$625.80	80	Walker Study	
Stormwater Manholes							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Storm Water Manhole	2008	\$5,500.00	2013	\$5,736.49	80	Walker Study	
Stormwater Catch Basins							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Catch Basin	2008	\$2,000.00	2013	\$2,144.95	80	Walker Study	

APPENDIX B: Assumptions

Roads							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Gravel	2008	\$163.00	2013	\$170.01	40	Walker Study	
Surface Treatment	2008	\$243.00	2013	\$253.45	40	Walker Study	
Asphalt	2008	\$300.00	2013	\$312.90	40	Walker Study	
Base	2008	\$163.00	2013	\$170.01	80		Values were not calculated. Used Gravel Replacement Costs.
REHAB STRATEGY	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
SST	2010	\$17.98	2013	\$19.11	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format	(single surface treatment)
DST	2007	\$31.77	2013	\$36.18	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format	(double surface treatment)
CM/SST	2007	\$104.00	2013	\$118.42	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(cold mix plus single surface treatment)
R2	2007	\$127.08	2013	\$144.70	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(rural: 50mm full width milling plus 50mm HL8 HS & 40mm HL3 HS asphalt overlay)
R1	2010	\$145.25	2013	\$154.37	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(semi-urban: base repairs plus 40mm asphalt overlay)
SR	2010	\$145.25	2013	\$154.37	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(semi-urban: base repairs plus 40mm asphalt overlay of various lengths)
R1M	2010	\$196.97	2013	\$209.34	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(semi-urban: 50mm full width milling plus 50mm HL8 HS & 40mm HL3 HS asphalt overlay)
R1U	2010	\$190.62	2013	\$202.59	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(c/g urban: base repairs plus 40mm asphalt overlay)
R1UM	2010	\$251.04	2013	\$266.81	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(c/g urban, 50mm full width milling plus 50mm HL8 HS & 40mm HL3 HS asphalt overlay)
RNS	2007	\$775.55	2013	\$883.12	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(reconstruction utilizing existing storm sewers to full urban standards)
RSS	2007	\$1,080.54	2013	\$1,230.40	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(reconstruction including new storm sewers to full urban standards)
Vehicles and Equipment							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Vehicle					5		Service Life PSAB
Equipment					10		Service Life PSAB
Buildings							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Structure					50		Values assumed
Roof					20		Values assumed
Mechanical Electrical					25		Values assumed
Membrane Filter					11		Values assumed
Fence					10		PSAB
Lighting					10		PSAB
Communications					5		PSAB

APPENDIX B: Assumptions

Road Buildings							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Storage Shed	2008	60000	2013	\$62,579.88	50		Values assumed
Garage	2008	440,000.00	2013	\$458,919.12	50		Values assumed
Butler Building	2008	360000	2013	\$375,479.28	50		Values assumed
Road Vehicles and Equipment							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Heavy Vehicle/Equip					20		Service Life PSAB
Light Vehicle/Equip					15		Service Life PSAB
Road Base							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Granular 'B'	2008	\$209.00	2013	\$217.99	80		Values were not calculated. Used Gravel Replacement Costs.
Dirt	2012	\$5.00	2013	\$5.00	80		
Road Surface							
REHAB STRATEGY	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
SST	2010	\$17.98	2013	\$19.11	6	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format	(single surface treatment)
G/ST Rehab	2012	\$114.00	2013	\$114.00	25	Granular B replacement cost of \$218/m divided by 2 for rehabilitation	For gravel and surface treated road rehabilitation
DST	2007	\$31.77	2013	\$36.18	6	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format	(double surface treatment)
CM/SST	2007	\$79.42	2013	\$90.44	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(cold mix plus single surface treatment)
R2	2007	\$127.08	2013	\$144.70	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(rural: 50mm full width milling plus 50mm HL8 HS & 40mm HL3 HS asphalt overlay)
R1	2010	\$145.25	2013	\$154.37	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(semi-urban: base repairs plus 40mm asphalt overlay)
SR	2010	\$145.25	2013	\$154.37	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(semi-urban: base repairs plus 40mm asphalt overlay of various lengths)
R1M	2010	\$196.97	2013	\$209.34	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(semi-urban: 50mm full width milling plus 50mm HL8 HS & 40mm HL3 HS asphalt overlay)
R1U	2010	\$190.62	2013	\$202.59	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(c/g urban: base repairs plus 40mm asphalt overlay)
R1UM	2010	\$251.04	2013	\$266.81	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(c/g urban, 50mm full width milling plus 50mm HL8 HS & 40mm HL3 HS asphalt overlay)
RNS	2007	\$775.55	2013	\$883.12	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(reconstruction utilizing existing storm sewers to full urban standards)
RSS	2007	\$1,080.54	2013	\$1,230.40	20	Grimsby Unit Costs were Multiplied by a width of 6.35m to match Walker Study format- Service Life is a professional estimate	(reconstruction including new storm sewers to full urban standards)
Road Surface							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Gravel	2008	\$163.00	2013	\$170.01	40	Walker Study	
Sur Treat	2008	\$243.00	2013	\$253.45	40	Walker Study	
Asphalt	2008	\$300.00	2013	\$312.90	40	Walker Study	
Granular 'B'	2008	\$209.00	2013	\$217.99	80		Values were not calculated. Used Gravel Replacement Costs.
Dirt	2012	\$5.00	2013	\$5.00	80		
Road Culverts							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Culverts	2012	\$10,000	2013	\$10,000.00	50	Estimated as the cost per Culvert	
Road Bridges							
REPLACEMENT	Year of Information	Unit Cost m	Inflated to Year	Current Unit Cost	Service Life	Source	Comments
Bridge	2012	\$600,000	2013	\$600,000	50	Estimated as the cost per bridge (discussion with Township)	

APPENDIX C

REPORT CARD

APPENDIX C: REPORT CARD

2013 ASSET REPORT CARD					
Asset Type	CONDITION			Investment Needed	
	GOOD	FAIR	POOR	25 years	After 2037
WATER SYSTEM	Watermains Service Connections Valves Hydrants Water Facilities	Membrane Filters		\$3,948,328	\$10,394,653
VALUE Percentage (%)	\$13,001,731 91%	\$1,341,250 9%	\$0 0%		
WASTEWATER SYSTEM	Sewer Mains Service Laterals Forcemains Manholes Water Facilities		Pump Station Roof & Electrical & Mechanical	\$4,413,012	\$5,911,629
VALUE Percentage (%)	\$9,955,050 96%	\$0 0%	\$369,591 4%		
STORM WATER SYSTEM	Storm Water Mains Manholes Catch Basins			\$0	\$1,478,876
VALUE Percentage (%)	\$1,478,876 100%	\$0 0%	\$0 0%		
ROAD NETWORK	Road Base (95 km) Road Surface (94 km) Vehicles & Equipment (4) Road Facilities (1)	Road Surface (2.7 km) Vehicles & Equipment (4) Road Facilities (3)	Road Base (2.7 km) Road Surface (1.3 km) Vehicles & Equipment (9) Road Facilities (1)	\$16,435,939	\$23,056,429
VALUE Percentage (%)	\$36,949,180 94%	\$1,356,630 3%	\$1,186,558 3%		
ADMINISTRATION	Municipal Office Medical Clinic Building Post Office Building	Information Booth	Blacksmith Building Museum Pioneer Building School House	\$1,220,599	\$902,781
VALUE Percentage (%)	\$1,431,801 67%	\$67,702 3%	\$623,877 29%		
RECREATION	Arena Pavilion Docks Marina	Some Structural at Arena	Arena Roof Pavilion Roof	\$2,177,381	\$1,231,084
VALUE Percentage (%)	\$3,303,398 97%	\$21,631 1%	\$83,436 2%		
FIRE PROTECTION				\$653,617	\$0
VALUE Percentage (%)	\$568,145 87%	\$0 0%	\$85,472 13%		
SOLID WASTE				\$19,412	\$368,653
VALUE Percentage (%)	\$388,065 100%	\$0 0%	\$0 0%		
TOTAL VALUE	\$67,076,246	\$2,787,213	\$2,348,934	\$28,868,288	\$43,344,105
Percentage (%)	93%	4%	3%		

APPENDIX D

LEVELS OF SERVICE

APPENDIX D - LEVELS OF SERVICE

2010 MPMP Comparison with Other Municipalities of similar size				Target Level of Service Standard for Asset Management Plan					
Service	MPMP Standard (2010P)	Range	Median	Desired AMP Standard	Indicator	Target Value	Current Performance	Target Met or Exceeded	Comment
Water Treatment & Distribution	Weighted number of days when a Boil Water Advisory issued by the Medical Officer of Health, applicable to a municipal water	0.0000 to 3.0000	0	Meet Regulatory Requirements	Weighted number of days when a Boil Water Advisory issued by the Medical Officer of Health, applicable to a municipal water supply, was in effect	0	0	Yes	Target is the MPMP Median value for the group of Municipalities in which the Township is included
	Number of breaks in water mains per 100 kilometres of water distribution pipe in a year	0 to 50	0	Minimize Service Interruptions	Number of breaks in water mains per 100 km of water distribution pipe in a year	0	TO BE DETERMINED (TBD)	App	Target is the MPMP Median value for the group of Municipalities in which the Township is included
					Percentage of Water Mains where Condition is rated Good	80%	100%	Yes	Assumed Target
					Percentage of Facility components where Condition is rated Good	100%	87%	No	
Wastewater Collection & Treatment	Percentage of wastewater estimated to have bypassed treatment	0.00 to 16.874 %	0.00%	Meet regulatory requirements	Percentage of wastewater estimated to have bypassed treatment	0%	0.01%	Yes	Target is the MPMP Median value for the group of Municipalities in which the Township is included
	Number of wastewater main backups per 100 kilometres of wastewater main in a year	0 to 14.3	0	Minimize Service Interruptions	Number of wastewater main backups per 100 km of wastewater main in a year	0	0	Yes	Target is the MPMP Median value for the group of Municipalities in which the Township is included
					Percentage of Wastewater Mains where Condition is rated Good	80%	100%	Yes	Assumed Target
					Percentage of Facility components where Condition is rated Good	100%	67%	No	
Storm Water	No MPMP data relevant to asset condition is available			Maintain Adequate Service	Percentage of Storm Water Mains where Condition is rated Good	80%	100%	Yes	Assumed Target
					Percentage of Storm Water Catch Basins where Condition is rated Good	80%	TBD	TBD	Assumed Target
					Percentage of Storm Water Manholes where Condition is rated Good	80%	TBD	TBD	Assumed Target
Roads	Percentage of Paved-Lane Kilometres where Condition is rated Good to Very Good	10% to 100%	89%	Maintain Adequate Road Condition	Percentage of Lane Kilometres (Paved & Unpaved) where Condition is rated Good	89%	96%	Yes	Target is the MPMP Median value for the group of Municipalities in which the Township is included
				Meeting Minimum Road Maintenance Standards	Indicators are those identified in the Township's Road Maintenance Policy & Procedures (By-Law 04-42) for the respective road class	Meeting the minimum maintenance standards 100% of the time	All minimum maintenance standards are being met 100% of the time	Yes	Township has a Road Maintenance Policy adopted by Council under By-Law 04-42
Recreation /Heritage	No MPMP data relevant to asset condition is available			Minimize Service Interruptions	Number of Facilities unable to be used due to failure of one or more asset components	0	0	Yes	Assumed Target
				Maintain Adequate Service	Percentage of Facilities where accessibility standards are met	100%	TBD	TBD	Assumed Target
				Maintain Adequate Service	Percentage of Facility components where Condition is rated Good	100%	80%	No	Assumed Target
Library Services	No MPMP data relevant to asset condition is available			Minimize Service Interruptions	Number of Days Facility unable to be used due to failure of one or more asset components	0	0	Yes	Assumed Target
Fire Protection	No MPMP data relevant to asset condition is available			Maintain Adequate Service	Percentage of Fire Trucks where Condition is rated Good	100%	80%	No	Assumed Target

APPENDIX D - LEVELS OF SERVICE

Service	MPMP Standard (2010P)	Range	Median	Desired AMP Standard	Indicator	Target Value	Current Performance	Target Met or Exceeded	Comment
Administration	No MPMP data relevant to asset condition is available			Minimize Service Interruptions	Number of Days Facilities unable to be used due to failure of one or more asset components	0	0	Yes	Assumed Target
				Maintain Adequate Service	Percentage of Facilities where accessibility standards are met	100%	TBD	TBD	Assumed Target
				Maintain Adequate Service	Percentage of Facility components where Condition is rated Good	100%	31%	No	Assumed Target
Solid Waste	Number of complaints received in a year concerning the collection of garbage and recycled materials per 1,000 households	0 to 38	0	Maintain Adequate Service	Number of complaints received in a year concerning the collection of garbage and recycled materials per 1,000 households	0	TBD	TBD	Target is the MPMP Median value for the group of Municipalities in which the Township is included
				Maintain Adequate Service	Percentage of Facilities where Condition is rated Good	100%	100%	Yes	Assumed Target
				Meet Regulatory Requirements	Number of Leachate Breakouts per year	0	TBD	TBD	Assumed Target

APPENDIX E

ALTERNATIVE ASSET MANAGEMENT STRATEGIES

APPENDIX E: Alternative Strategies

Strategy No.1	Strategy No.2
Water System	
Replace watermains as their expected lives expire	Continue regular watermain maintenance as they are in relatively good condition and non-critical.
Replace service connections as their expected lives expire	Continue regular service connection maintenance as they are in relatively good condition and non-critical.
Replace valves & hydrants as they fail	Continue regular hydrant and valve maintenance as they are in relatively good condition
Replace membrane filters as this is critical to the water supply and not in good condition based on operational experience	Replace membrane filters as this is critical to the water supply and not in good condition based on operational experience
Replace structural mechanical / electrical equipment as their expected lives expire	Inspect, maintain & rehabilitate structural mechanical / electrical equipment as needed
Continue system maintenance to meet DWQMS requirements	Continue system maintenance to meet DWQMS requirements
Wastewater System	
Replace sewer mains as their expected lives expire	Continue regular watermain maintenance as they are in relatively good condition and non-critical.
Replace laterals as their expected lives expire	Continue regular service lateral maintenance as they are in relatively good condition and non-critical.
Replace manholes as needed	Implement manhole inspection and repair program. Replace only as needed (annual allowance)
Implement CCTV inspection program	Implement CCTV inspection program in focused areas of concern (annual allowance)
Replace structural mechanical / electrical equipment as their expected lives expire	Inspect, maintain & rehabilitate structural mechanical / electrical equipment as needed
Storm Water System	
Replace components as their expected lives expire	Ensure maintenance and replace components as needed
Road Network	
Replace road base sections as they expire	Repair and reconstruct road base sections only as needed based on inspections
Replace road surface sections through an annual program over the 25-year period	Continue annual road resurfacing program and rehabilitate road surface based though an annual rehabilitation program over the 25 year period
Continue to comply with minimum road maintenance standards	Continue to comply with minimum road maintenance standards
Replace vehicles as needed	Replace vehicles as needed
Replace building components as their expected lives expire	Undertake inspections to assess need and rehabilitate building components (Structural, Electrical, Mechanical) as necessary
Administration Buildings	
Replace building components as their expected lives expire	Undertake inspections to assess need and rehabilitate building components (Structural, Electrical, Mechanical) as necessary
Recreation Facilities	
Replace building components as their expected lives expire	Undertake inspections to assess need and rehabilitate building components (Structural, Electrical, Mechanical) as necessary
Fire Protection Equipment	
Replace components as their expected lives expire	Replace components as their expected lives expire
Solid Waste System	
Expand landfill capacity and replace existing facility components as they expire	Expand landfill capacity; inspect and maintain existing facilities
Financial	
Defer reserve contributions for work beyond 2037 to the end of the 25 year period	Defer reserve contributions for work beyond 2037 to the end of the 25 year period
Water System Requirement in 25 year Period = \$3,948,328	Water System Requirement in 25 year Period = \$3,948,328
Water System Requirement Beyond 2037 = \$10,394,643	Water System Requirement Beyond 2037 = \$10,394,653
Wastewater System Requirement in 25 year Period = \$4,413,012	Wastewater System Requirement in 25 year Period = \$2,391,302
Wastewater System Requirement Beyond 2037 = \$5,911,629	Wastewater System Requirement Beyond 2037 = \$9,955,050
Tax Supported Requirement in 25-year Period = \$20,506,948	Tax Supported Requirement in 25-year Period = \$16,403,279
Tax Supported Requirement Beyond 2037 = \$27,037,823	Tax Supported Requirement Beyond 2037 = \$31,125,146 (deferred cost)
Funding to be from a combination of taxes (or user fees as the case may be) and debt and avoid exceeding debt limit. Seek available Federal and Provincial Funding to reduce impact to rate/ tax payer	Funding to be from a combination of taxes (or user fees as the case may be) and debt and avoid exceeding debt limit. Seek available Federal and Provincial Funding to reduce impact to rate/ tax payer
Policies	
Joint procurement with others on a case by case basis	Joint procurement with others on a case by case basis
Continue to combine activities to reduce costs	Continue to combine activities to reduce costs
Continue to outsource W&WW operations	Continue to outsource W&WW operations

APPENDIX F

ALTERNATIVE STRATEGY NO.1 25-YEAR FINANCIAL PROJECTIONS

APPENDIX F: ALTERNATIVE STRATEGY NO.1 (25-YEAR FINANCIAL PROJECTIONS)

WATER SYSTEM ASSET REQUIREMENTS

Description	Forecast																							
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Capital Budget																								
Fire Hydrant Replacement	10,300	10,609	10,927	11,255	11,593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water System Valve Replacement	10,300	10,609	10,927	11,255	11,593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rehabilitation Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Valves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Hydrants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Buildings Land	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Replacement Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Valves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Hydrants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Buildings Land	-	-	-	-	1,554,876	-	-	-	-	-	-	-	-	775,074	-	-	-	-	3,234,677	451,477	-	-	-	-
Total Capital Requirements	20,600	21,218	21,855	22,510	1,578,062	-	-	-	-	-	-	-	-	775,074	-	-	-	-	3,234,677	451,477	-	-	-	-

Water System Financial Projections

Cost / Revenue Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Township 5-Year Capital Forecast	\$ -	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 23,185	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,554,876	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 775,074	\$ -	\$ -	\$ -	\$ -	\$ 3,234,677	\$ 451,477	\$ -	\$ -	\$ -	\$ -
Total Capital Requirements	\$ -	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 1,578,062	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 775,074	\$ -	\$ -	\$ -	\$ -	\$ 3,234,677	\$ 451,477	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,181,652	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 60,950	\$ -	\$ -	\$ -	\$ -	\$ 2,101,718	\$ 342,620	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ -	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 396,410	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 714,124	\$ -	\$ -	\$ -	\$ -	\$ 1,132,959	\$ 108,857	\$ -	\$ -	\$ -	\$ -
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ -	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 1,578,062	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 775,074	\$ -	\$ -	\$ -	\$ -	\$ 3,234,677	\$ 451,477	\$ -	\$ -	\$ -	\$ -
Operations & Maintenance	\$ 258,278	\$ 263,444	\$ 268,712	\$ 274,087	\$ 279,568	\$ 285,160	\$ 290,863	\$ 296,680	\$ 302,614	\$ 308,666	\$ 314,839	\$ 321,136	\$ 327,559	\$ 334,110	\$ 340,792	\$ 347,608	\$ 354,560	\$ 361,652	\$ 368,885	\$ 376,262	\$ 383,788	\$ 391,463	\$ 399,293	\$ 407,278	\$ 415,424
Transfers to Capital Reserves	\$ 30,700	\$ 40,036	\$ 49,976	\$ 60,554	\$ 71,804	\$ 83,763	\$ 11,651	\$ 26,034	\$ 41,290	\$ 57,468	\$ 74,616	\$ 92,787	\$ 112,035	\$ 132,415	\$ 153,990	\$ 171,530	\$ 195,685	\$ 221,234	\$ 248,249	\$ 276,807	\$ 311,094	\$ 247,455	\$ 281,148	\$ 316,734	\$ 354,313
Debt Repayment	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803	\$ 87,803	\$ 190,400	\$ 190,400	\$ 190,400	\$ 190,400	\$ 190,400	\$ 190,400	\$ 190,400	\$ 190,400	\$ 190,400	\$ 195,692	\$ 195,692	\$ 195,692	\$ 195,692	\$ 195,692	\$ 321,990	\$ 217,522	\$ 217,522	\$ 217,522	\$ 217,522
Less Non-Rate Revenues	\$ 98,177	\$ 98,749	\$ 99,331	\$ 99,926	\$ 100,533	\$ 101,151	\$ 101,782	\$ 102,426	\$ 103,082	\$ 103,752	\$ 104,435	\$ 105,132	\$ 105,843	\$ 106,567	\$ 107,307	\$ 108,061	\$ 108,830	\$ 109,615	\$ 110,415	\$ 111,231	\$ 42,464	\$ 43,313	\$ 44,179	\$ 45,063	\$ 45,964
Revenue Requirements (from Users)	\$ 278,604	\$ 292,534	\$ 307,160	\$ 322,518	\$ 338,643	\$ 355,575	\$ 391,132	\$ 410,688	\$ 431,222	\$ 452,782	\$ 475,421	\$ 499,192	\$ 524,151	\$ 550,358	\$ 577,875	\$ 606,769	\$ 637,107	\$ 668,963	\$ 702,410	\$ 737,530	\$ 774,407	\$ 813,127	\$ 853,783	\$ 896,471	\$ 941,295
Annual Increase (\$)	\$ -	\$ 13,930	\$ 14,626	\$ 15,358	\$ 16,125	\$ 16,932	\$ 35,557	\$ 19,556	\$ 20,534	\$ 21,560	\$ 22,639	\$ 23,771	\$ 24,959	\$ 26,207	\$ 27,518	\$ 28,894	\$ 30,338	\$ 31,855	\$ 33,448	\$ 35,120	\$ 36,877	\$ 38,720	\$ 40,656	\$ 42,689	\$ 44,823
Annual Increase (%)	0%	5%	5%	5%	5%	5%	10%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

APPENDIX F: ALTERNATIVE STRATEGY NO.1 (25-YEAR FINANCIAL PROJECTIONS)

Water System Capital Reserve Schedule

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Opening Balance	\$ 235,641	\$ 267,799	\$ 288,955	\$ 319,839	\$ 361,223	\$ 413,928	\$ 100,000	\$ 110,469	\$ 135,635	\$ 176,607	\$ 234,553	\$ 310,714	\$ 406,399	\$ 522,992	\$ 661,956	\$ 100,000	\$ 272,187	\$ 471,407	\$ 699,476	\$ 958,316	\$ 100,000	\$ 100,000	\$ 348,821	\$ 635,496	\$ 962,511
Transfer from Operating	\$ 28,200	\$ 37,486	\$ 47,375	\$ 57,901	\$ 69,098	\$ 81,003	\$ 8,836	\$ 23,162	\$ 38,361	\$ 54,480	\$ 71,569	\$ 89,679	\$ 108,864	\$ 129,181	\$ 150,691	\$ 168,165	\$ 192,253	\$ 217,733	\$ 244,678	\$ 273,165	\$ 107,379	\$ 243,666	\$ 277,283	\$ 312,792	\$ 350,292
Transfer to Capital	\$ -	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 396,410	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 714,124	\$ -	\$ -	\$ -	\$ -	\$ 1,132,959	\$ 108,857	\$ -	\$ -	\$ -	\$ -
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 263,841	\$ 284,685	\$ 315,112	\$ 355,885	\$ 407,811	\$ 98,522	\$ 108,836	\$ 133,631	\$ 173,997	\$ 231,087	\$ 306,122	\$ 400,393	\$ 515,263	\$ 652,173	\$ 98,522	\$ 268,165	\$ 464,440	\$ 689,139	\$ 944,154	\$ 98,522	\$ 98,522	\$ 343,666	\$ 626,104	\$ 948,287	\$ 1,312,803
Interest	\$ 3,958	\$ 4,270	\$ 4,727	\$ 5,338	\$ 6,117	\$ 1,478	\$ 1,633	\$ 2,004	\$ 2,610	\$ 3,466	\$ 4,592	\$ 6,006	\$ 7,729	\$ 9,783	\$ 1,478	\$ 4,022	\$ 6,967	\$ 10,337	\$ 14,162	\$ 1,478	\$ 1,478	\$ 5,155	\$ 9,392	\$ 14,224	\$ 19,692
Target Min. Balance (1% of Asset Value)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ (0)	\$ -	\$ -	\$ -	\$ -

WASTEWATER SYSTEM ASSET REQUIREMENTS

Description	Forecast																								
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	
Capital Budget																									
WW Forcemain Project	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rehabilitation Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Laterals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Manholes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Force Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Buildings and Land	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Replacement Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Laterals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Manholes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Force Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wastewater Buildings and Land	380,679	-	-	-	-	-	-	-	-	-	-	-	5,937,900	-	-	-	-	-	-	-	-	-	-	-	
Total Capital Requirements	380,679	-	-	-	-	-	-	-	-	-	-	-	5,937,900	-	-	-	-	-	-	-	-	-	-	-	

APPENDIX F: ALTERNATIVE STRATEGY NO.1 (25-YEAR FINANCIAL PROJECTIONS)

Waste Water System Financial Projections

Cost / Revenue Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Township 5-Year Capital Forecast	\$ 886,996	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ -	\$ 380,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,937,900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Requirements	\$ 886,996	\$ 380,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,937,900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ 295,665	\$ 345,716	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,803,689	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ -	\$ 34,963	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,134,211	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Financing (Grants, third party, etc.)	\$ 591,331	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 886,996	\$ 380,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,937,900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operations & Maintenance	\$ 110,862	\$ 118,079	\$ 120,441	\$ 122,850	\$ 125,307	\$ 127,813	\$ 130,369	\$ 132,976	\$ 135,636	\$ 138,349	\$ 141,116	\$ 143,938	\$ 146,817	\$ 149,753	\$ 152,748	\$ 155,803	\$ 158,919	\$ 162,097	\$ 165,339	\$ 168,646	\$ 172,019	\$ 175,460	\$ 178,969	\$ 182,548	\$ 186,199
Transfers to Capital Reserves	\$ 17,500	\$ 16,702	\$ 16,414	\$ 42,886	\$ 62,571	\$ 84,421	\$ 108,656	\$ 135,519	\$ 165,277	\$ 198,224	\$ 234,683	\$ 275,009	\$ 319,593	\$ 368,866	\$ 35,615	\$ 32,560	\$ 55,115	\$ 81,953	\$ 78,711	\$ 75,404	\$ 72,031	\$ 68,590	\$ 65,080	\$ 32,785	\$ 1,854
Debt Repayment	\$ -	\$ 25,671	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 55,688	\$ 385,944	\$ 385,944	\$ 360,272	\$ 330,256	\$ 330,256	\$ 330,256	\$ 330,256	\$ 330,256	\$ 330,256	\$ 330,256	\$ 330,256
Less Non-Rate Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Revenue Requirements (from Users)	\$ 128,362	\$ 160,452	\$ 192,543	\$ 221,424	\$ 243,566	\$ 267,922	\$ 294,713	\$ 324,183	\$ 356,601	\$ 392,261	\$ 431,487	\$ 474,635	\$ 522,098	\$ 574,307	\$ 574,307	\$ 574,307	\$ 574,306	\$ 574,306	\$ 574,306	\$ 574,306	\$ 574,306	\$ 574,305	\$ 574,304	\$ 545,589	\$ 518,309
Annual Increase (\$)	\$ -	\$ 32,090	\$ 32,090	\$ 28,881	\$ 22,142	\$ 24,356	\$ 26,791	\$ 29,470	\$ 32,418	\$ 35,660	\$ 39,226	\$ 43,148	\$ 47,463	\$ 52,209	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (1)	\$ (1)	\$ (28,716)	\$ (27,280)
Annual Increase (%)	0%	25%	20%	15%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-5%	-5%

Waste Water System Capital Reserve Schedule

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Opening Balance	\$ 97,557	\$ 116,783	\$ 100,000	\$ 118,160	\$ 163,462	\$ 229,423	\$ 318,553	\$ 433,616	\$ 577,672	\$ 754,093	\$ 966,603	\$1,219,304	\$1,516,729	\$ 1,863,867	\$ 100,000	\$ 137,648	\$ 172,761	\$ 231,294	\$ 317,946	\$ 402,606	\$ 485,180	\$ 565,570	\$ 643,672	\$ 719,383	\$ 763,451
Transfer from Operating	\$ 17,500	\$ 16,702	\$ 16,414	\$ 42,886	\$ 62,571	\$ 84,421	\$ 108,656	\$ 135,519	\$ 165,277	\$ 198,224	\$ 234,683	\$ 275,009	\$ 319,593	\$ 368,866	\$ 35,615	\$ 32,560	\$ 55,115	\$ 81,953	\$ 78,711	\$ 75,404	\$ 72,031	\$ 68,590	\$ 65,080	\$ 32,785	\$ 1,854
Transfer to Capital	\$ -	\$ 34,963	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,134,211	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 115,057	\$ 98,522	\$ 116,414	\$ 161,046	\$ 226,033	\$ 313,845	\$ 427,208	\$ 569,135	\$ 742,949	\$ 952,318	\$1,201,285	\$1,494,314	\$1,836,322	\$ 98,522	\$ 135,614	\$ 170,208	\$ 227,876	\$ 313,247	\$ 396,656	\$ 478,010	\$ 557,212	\$ 634,160	\$ 708,752	\$ 752,168	\$ 765,304
Interest	\$ 1,726	\$ 1,478	\$ 1,746	\$ 2,416	\$ 3,390	\$ 4,708	\$ 6,408	\$ 8,537	\$ 11,144	\$ 14,285	\$ 18,019	\$ 22,415	\$ 27,545	\$ 1,478	\$ 2,034	\$ 2,553	\$ 3,418	\$ 4,699	\$ 5,950	\$ 7,170	\$ 8,358	\$ 9,512	\$ 10,631	\$ 11,283	\$ 11,480
Target Min. Balance (1% of Asset Value)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
Amount Below Min. Balance	\$ -	\$ (0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

APPENDIX F: ALTERNATIVE STRATEGY NO.1 (25-YEAR FINANCIAL PROJECTIONS)

TAX SUPPORTED SERVICES ASSET REQUIREMENTS

Description	Forecast																							
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Capital Budget																								
Landfill Site Expansion	154,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cardwell Street Reconstruction	1,545,000	1,591,350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatment Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tandem Plow Truck (7 year lease)	-	-	273,182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Library Expansion (Under Consideration)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rehabilitation Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Manholes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Catch Basins	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Base	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Vehicles and Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Buildings and Land	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Street Lights and Signs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Recreation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fire Protection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solid Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Replacement Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Manholes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Catch Basins	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Base	-	486,978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Surface	499,418	514,400	529,832	545,727	562,099	578,962	596,331	614,221	632,647	651,627	671,176	691,311	712,050	733,412	755,414	778,076	801,419	825,461	850,225	875,732	902,004	929,064	956,936	985,644
Road Vehicles and Equipment	505,076	51,728	-	209,566	212,974	108,344	-	-	18,850	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Buildings and Land	14,892	-	-	-	-	-	374,240	-	-	-	-	-	-	-	-	11,286	-	-	-	-	-	-	-	-
Street Lights and Signs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	651,111	14,342	-	29,766	-	-	40,567	-	-	-	-	-	-	-	-	42,173	-	-	-	860,244	-	-	-	26,272
Recreation	85,939	-	-	-	-	-	29,741	-	41,427	-	-	2,237,881	-	-	-	7,502	89,480	73,351	-	22,925	493,979	-	174,226	-
Fire Protection	88,036	-	-	-	-	300,016	44,139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	554,572	-
Solid Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,193	20,262	5,608	-	-	-	-	-	-
Total Capital Requirements	3,543,972	2,658,799	803,014	785,060	775,073	987,322	1,085,017	614,221	692,924	651,627	671,176	2,929,192	712,050	733,412	755,414	845,230	911,161	904,420	850,225	1,758,900	1,395,983	929,064	1,685,734	1,011,916

APPENDIX F: ALTERNATIVE STRATEGY NO.1 (25-YEAR FINANCIAL PROJECTIONS)

Tax Supported Services Financial Projections

Cost / Revenue Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Township 5-Year Capital Forecast	\$ 737,160	\$ 1,699,500	\$1,591,350	\$ 273,182	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ -	\$ 1,844,472	\$1,067,449	\$ 529,832	\$ 785,060	\$ 775,073	\$ 987,322	\$1,085,017	\$ 614,221	\$ 692,924	\$ 651,627	\$ 671,176	\$2,929,192	\$ 712,050	\$ 733,412	\$ 755,414	\$ 845,230	\$ 911,161	\$ 904,420	\$ 850,225	\$1,758,900	\$ 1,395,983	\$ 929,064	\$ 1,685,734	\$1,011,916
Total Capital Requirements	\$ 737,160	\$ 3,543,972	\$2,658,799	\$ 803,014	\$ 785,060	\$ 775,073	\$ 987,322	\$1,085,017	\$ 614,221	\$ 692,924	\$ 651,627	\$ 671,176	\$2,929,192	\$ 712,050	\$ 733,412	\$ 755,414	\$ 845,230	\$ 911,161	\$ 904,420	\$ 850,225	\$1,758,900	\$ 1,395,983	\$ 929,064	\$ 1,685,734	\$1,011,916
Debt Financing	\$ -	\$ 2,570,131	\$1,923,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 560,707	\$ 973,841	\$ 735,049	\$ 803,014	\$ 785,060	\$ 775,073	\$ 987,322	\$1,085,017	\$ 614,221	\$ 692,924	\$ 651,627	\$ 671,176	\$2,929,192	\$ 712,050	\$ 733,412	\$ 755,414	\$ 845,230	\$ 911,161	\$ 904,420	\$ 850,225	\$1,758,900	\$ 1,395,983	\$ 929,064	\$ 1,685,734	\$1,011,916
Other Financing (Grants, third party, etc.)	\$ 176,453	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 737,160	\$ 3,543,972	\$2,658,799	\$ 803,014	\$ 785,060	\$ 775,073	\$ 987,322	\$1,085,017	\$ 614,221	\$ 692,924	\$ 651,627	\$ 671,176	\$2,929,192	\$ 712,050	\$ 733,412	\$ 755,414	\$ 845,230	\$ 911,161	\$ 904,420	\$ 850,225	\$1,758,900	\$ 1,395,983	\$ 929,064	\$ 1,685,734	\$1,011,916
Operations & Maintenance	\$ 2,316,099	\$ 2,363,957	\$2,412,769	\$2,462,557	\$2,513,341	\$ 2,565,140	\$2,660,105	\$2,713,997	\$2,768,967	\$2,825,036	\$2,882,227	\$2,940,562	\$3,000,063	\$ 3,060,755	\$3,122,660	\$ 3,185,804	\$3,250,210	\$3,315,904	\$3,382,912	\$3,451,261	\$3,520,976	\$ 3,592,086	\$3,690,132	\$ 3,773,108	\$3,848,571
Transfers to Capital Reserves	\$ 480,707	\$ 702,908	\$ 727,660	\$ 836,876	\$ 967,524	\$ 1,106,090	\$1,252,998	\$1,203,973	\$1,153,967	\$1,102,961	\$1,050,935	\$ 997,869	\$ 943,741	\$ 888,531	\$ 832,216	\$ 774,775	\$ 716,185	\$ 879,575	\$ 985,648	\$1,332,914	\$1,494,687	\$ 1,429,999	\$1,364,018	\$ 1,296,717	\$1,464,522
Debt Repayment	\$ 76,640	\$ 76,637	\$ 299,789	\$ 466,818	\$ 466,818	\$ 466,818	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 424,690	\$ 201,538	\$ 34,508	\$ 34,508	\$ 34,508	\$ 34,508	\$ 8,994	\$ -	\$ -
Less Non-Rate Revenues	\$ 216,108	\$ 220,430	\$ 224,839	\$ 229,336	\$ 233,922	\$ 238,601	\$ 243,373	\$ 248,240	\$ 253,205	\$ 258,269	\$ 263,434	\$ 268,703	\$ 274,077	\$ 279,559	\$ 285,150	\$ 290,853	\$ 296,670	\$ 302,603	\$ 308,655	\$ 314,829	\$ 321,125	\$ 327,548	\$ 334,099	\$ 340,781	\$ 347,596
Revenue Requirements (from Users)	\$ 2,657,338	\$ 2,923,072	\$3,215,379	\$3,536,916	\$3,713,761	\$ 3,899,448	\$4,094,420	\$4,094,419	\$4,094,419	\$4,094,418	\$4,094,418	\$4,094,418	\$4,094,417	\$ 4,094,417	\$4,094,416	\$ 4,094,415	\$4,094,414	\$4,094,414	\$4,094,413	\$4,503,854	\$4,729,046	\$ 4,729,045	\$4,729,045	\$ 4,729,045	\$4,965,496
Annual Increase (\$)	\$ -	\$ 265,734	\$ 292,307	\$ 321,537	\$ 176,845	\$ 185,687	\$ 194,972	\$ (0)	\$ (1)	\$ (1)	\$ (0)	\$ 0	\$ (1)	\$ (0)	\$ (1)	\$ (1)	\$ (1)	\$ (1)	\$ (1)	\$ 409,441	\$ 225,192	\$ (1)	\$ (0)	\$ (0)	\$ 236,452
Annual Increase (%)	0%	10%	10%	10%	5%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	5%	0%	0%	0%	5%

Tax Supported Services Capital Reserve Schedule (all reserves combined)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Opening Balance	\$ 832,260	\$ 763,544	\$ 500,000	\$ 500,000	\$ 541,870	\$ 735,199	\$1,082,209	\$1,368,103	\$1,509,365	\$2,079,848	\$2,527,233	\$2,970,439	\$3,346,589	\$ 1,381,555	\$1,581,407	\$ 1,705,414	\$1,750,647	\$1,645,926	\$1,638,555	\$1,745,580	\$2,261,693	\$ 2,027,442	\$2,092,380	\$ 2,565,244	\$2,208,870
Transfer from Operating	\$ 480,707	\$ 702,908	\$ 727,660	\$ 836,876	\$ 967,524	\$ 1,106,090	\$1,252,998	\$1,203,973	\$1,153,967	\$1,102,961	\$1,050,935	\$ 997,869	\$ 943,741	\$ 888,531	\$ 832,216	\$ 774,775	\$ 716,185	\$ 879,575	\$ 985,648	\$1,332,914	\$1,494,687	\$ 1,429,999	\$1,364,018	\$ 1,296,717	\$1,464,522
Transfer to Capital	\$ 560,707	\$ 973,841	\$ 735,049	\$ 803,014	\$ 785,060	\$ 775,073	\$ 987,322	\$1,085,017	\$ 614,221	\$ 692,924	\$ 651,627	\$ 671,176	\$2,929,192	\$ 712,050	\$ 733,412	\$ 755,414	\$ 845,230	\$ 911,161	\$ 904,420	\$ 850,225	\$1,758,900	\$ 1,395,983	\$ 929,064	\$ 1,685,734	\$1,011,916
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 752,260	\$ 492,611	\$ 492,611	\$ 533,862	\$ 724,334	\$ 1,066,216	\$1,347,885	\$1,487,059	\$2,049,111	\$2,489,885	\$2,926,541	\$3,297,132	\$1,361,138	\$ 1,558,036	\$1,680,211	\$ 1,724,775	\$1,621,602	\$1,614,340	\$1,719,783	\$2,228,269	\$1,997,480	\$ 2,061,458	\$2,527,334	\$ 2,176,227	\$2,661,476
Interest	\$ 11,284	\$ 7,389	\$ 7,389	\$ 8,008	\$ 10,865	\$ 15,993	\$ 20,218	\$ 22,306	\$ 30,737	\$ 37,348	\$ 43,898	\$ 49,457	\$ 20,417	\$ 23,371	\$ 25,203	\$ 25,872	\$ 24,324	\$ 24,215	\$ 25,797	\$ 33,424	\$ 29,962	\$ 30,922	\$ 37,910	\$ 32,643	\$ 39,922
Target Min. Balance (1% of Asset Value)	\$ 763,544	\$ 500,000	\$ 500,000	\$ 541,870	\$ 735,199	\$ 1,082,209	\$1,368,103	\$1,509,365	\$2,079,848	\$2,527,233	\$2,970,439	\$3,346,589	\$1,381,555	\$ 1,581,407	\$1,705,414	\$ 1,750,647	\$1,645,926	\$1,638,555	\$1,745,580	\$2,261,693	\$2,027,442	\$ 2,092,380	\$2,565,244	\$ 2,208,870	\$2,701,398
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Total Debt Capacity

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Total Debt Limit	\$ 766,076	\$ 844,015	\$ 928,770	\$1,020,214	\$1,073,992	\$ 1,130,736	\$1,195,066	\$1,207,323	\$1,220,560	\$1,234,865	\$1,250,331	\$1,267,061	\$1,285,166	\$ 1,304,770	\$1,311,649	\$ 1,318,873	\$1,326,457	\$1,334,421	\$1,342,782	\$1,453,923	\$1,519,440	\$ 1,529,119	\$1,539,283	\$ 1,542,776	\$1,606,275
Less Curent Debt Repayment	\$ 164,443	\$ 190,111	\$ 443,280	\$ 610,310	\$ 610,310	\$ 610,310	\$ 670,778	\$ 670,778	\$ 670,778	\$ 670,778	\$ 670,778	\$ 670,778	\$ 670,778	\$ 670,778	\$1,001,033	\$ 1,006,325	\$ 980,654	\$ 727,486	\$ 560,456	\$ 560,456	\$ 686,754	\$ 582,286	\$ 556,771	\$ 547,777	\$ 547,777
Available Debt Capacity	\$ 601,633	\$ 653,903	\$ 485,491	\$ 409,905	\$ 463,683	\$ 520,427	\$ 524,288	\$ 536,545	\$ 549,782	\$ 564,087	\$ 579,553	\$ 596,283	\$ 614,389	\$ 633,993	\$ 310,616	\$ 312,547	\$ 345,803	\$ 606,935	\$ 782,326	\$ 893,467	\$ 832,686	\$ 946,834	\$ 982,512	\$ 994,999	\$1,058,498

APPENDIX G

ALTERNATIVE STRATEGY NO.2 25-YEAR FINANCIAL PROJECTIONS

APPENDIX G: ALTERNATIVE STRATEGY NO.2 (25-YEAR FINANCIAL PROJECTIONS)

WATER SYSTEM ASSET REQUIREMENTS

Description	Forecast																								
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	
Capital Budget																									
Fire Hydrant Replacement	10,300	10,609	10,927	11,255	11,593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water System Valve Replacement	10,300	10,609	10,927	11,255	11,593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rehabilitation Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Valves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Hydrants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Buildings Land	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Replacement Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Valves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Hydrants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Buildings Land	-	-	-	-	1,554,876	-	-	-	-	-	-	-	-	775,074	-	-	-	-	-	3,234,677	451,477	-	-	-	-
Total Capital Requirements	20,600	21,218	21,855	22,510	1,578,062	-	-	-	-	-	-	-	-	775,074	-	-	-	-	3,234,677	451,477	-	-	-	-	-

Water System Financial Projections

[illegible]

APPENDIX G: ALTERNATIVE STRATEGY NO.2 (25-YEAR FINANCIAL PROJECTIONS)

Water System Capital Reserve Schedule

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Opening Balance	\$ 267,799	\$ 288,955	\$ 319,839	\$ 361,223	\$ 413,928	\$ 100,000	\$ 110,469	\$ 135,635	\$ 176,607	\$ 234,553	\$ 310,714	\$ 406,399	\$ 522,992	\$ 661,956	\$ 100,000	\$ 272,187	\$ 471,407	\$ 699,476	\$ 958,316	\$ 100,000	\$ 100,000	\$ 348,819	\$ 635,492	\$ 962,505
Transfer from Operating	\$ 37,486	\$ 47,375	\$ 57,901	\$ 69,098	\$ 81,003	\$ 8,836	\$ 23,162	\$ 38,361	\$ 54,480	\$ 71,569	\$ 89,679	\$ 108,864	\$ 129,181	\$ 150,691	\$ 168,165	\$ 192,253	\$ 217,733	\$ 244,678	\$ 273,165	\$ 107,377	\$ 243,664	\$ 277,281	\$ 312,790	\$ 350,290
Transfer to Capital	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	\$ 396,410	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 714,124	\$ -	\$ -	\$ -	\$ -	\$ 1,132,959	\$ 108,855	\$ -	\$ -	\$ -	\$ -
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 284,685	\$ 315,112	\$ 355,885	\$ 407,811	\$ 98,522	\$ 108,836	\$ 133,631	\$ 173,997	\$ 231,087	\$ 306,122	\$ 400,393	\$ 515,263	\$ 652,173	\$ 98,522	\$ 268,165	\$ 464,440	\$ 689,139	\$ 944,154	\$ 98,522	\$ 98,522	\$ 343,664	\$ 626,100	\$ 948,281	\$ 1,312,795
Interest	\$ 4,270	\$ 4,727	\$ 5,338	\$ 6,117	\$ 1,478	\$ 1,633	\$ 2,004	\$ 2,610	\$ 3,466	\$ 4,592	\$ 6,006	\$ 7,729	\$ 9,783	\$ 1,478	\$ 4,022	\$ 6,967	\$ 10,337	\$ 14,162	\$ 1,478	\$ 1,478	\$ 5,155	\$ 9,392	\$ 14,224	\$ 19,692
Target Min. Balance (1% of Asset Value)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ -	\$ -	\$ -	\$ -	\$ (0)	\$ (0)	\$ -	\$ -	\$ -	\$ -

WASTEWATER SYSTEM ASSET REQUIREMENTS

[illegible]

APPENDIX G: ALTERNATIVE STRATEGY NO.2 (25-YEAR FINANCIAL PROJECTIONS)

Waste Water System Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Township 5-Year Capital Forecast	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,968,950	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ 380,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Requirements	\$ 380,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,968,950	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Financing	\$ 352,134	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,986,043	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 28,545	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 982,907	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 380,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,968,950	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operations & Maintenance	\$ 118,079	\$ 120,441	\$ 122,850	\$ 125,307	\$ 127,813	\$ 130,369	\$ 132,976	\$ 135,636	\$ 138,349	\$ 141,116	\$ 143,938	\$ 146,817	\$ 149,753	\$ 152,748	\$ 155,803	\$ 158,919	\$ 162,097	\$ 165,339	\$ 168,646	\$ 172,019	\$ 175,460	\$ 178,969	\$ 182,548	\$ 186,199
Transfers to Capital Reserves	\$ 10,284	\$ 8,155	\$ 24,226	\$ 42,101	\$ 50,777	\$ 59,962	\$ 69,684	\$ 79,970	\$ 90,850	\$ 102,355	\$ 114,519	\$ 127,376	\$ 140,961	\$ 223	\$ 16,250	\$ 58,841	\$ 107,275	\$ 126,123	\$ 146,011	\$ 166,992	\$ 189,124	\$ 239,317	\$ 294,810	\$ 356,138
Debt Repayment	\$ 25,671	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 56,245	\$ 228,684	\$ 228,684	\$ 203,012	\$ 172,438	\$ 172,438	\$ 172,438	\$ 172,438	\$ 172,438	\$ 172,438	\$ 172,438	\$ 172,438
Less Non-Rate Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Revenue Requirements (from Users)	\$ 154,034	\$ 184,841	\$ 203,321	\$ 223,653	\$ 234,835	\$ 246,576	\$ 258,906	\$ 271,851	\$ 285,444	\$ 299,716	\$ 314,702	\$ 330,438	\$ 346,959	\$ 381,655	\$ 400,737	\$ 420,772	\$ 441,811	\$ 463,901	\$ 487,096	\$ 511,449	\$ 537,022	\$ 590,724	\$ 649,796	\$ 714,775
Annual Increase (\$)	\$ 25,672	\$ 30,807	\$ 18,480	\$ 20,332	\$ 11,182	\$ 11,741	\$ 12,329	\$ 12,946	\$ 13,593	\$ 14,272	\$ 14,986	\$ 15,736	\$ 16,521	\$ 34,695	\$ 19,082	\$ 20,036	\$ 21,038	\$ 22,090	\$ 23,195	\$ 24,354	\$ 25,572	\$ 53,702	\$ 59,072	\$ 64,979
Annual Increase (%)	20%	20%	10%	10%	5%	5%	5%	5%	5%	5%	5%	5%	5%	10%	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%

Waste Water System Capital Reserve Schedule

[illegible]

APPENDIX G: ALTERNATIVE STRATEGY NO.2 (25-YEAR FINANCIAL PROJECTIONS)

TAX SUPPORTED SERVICES ASSET REQUIREMENTS

Description	Forecast																								
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	
Capital Budget																									
Landfill Site Expansion	154,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cardwell Street Reconstruction	1,545,000	1,591,350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Surface Treatment Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tandem Plow Truck (7 year lease)	-	-	273,182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Library Expansion (Under Consideration)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rehabilitation Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stormwater Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stormwater Manholes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stormwater Catch Basins	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Road Base	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Road Surface	387,161	398,776	410,739	423,061	435,753	448,826	462,291	476,159	490,444	505,157	520,312	535,921	551,999	568,559	585,616	603,184	621,280	639,918	659,116	678,889	-	-	-	-	
Road Vehicles and Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Road Buildings and Land	-	-	-	-	-	-	168,919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Street Lights and Signs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Administration	283,173	-	-	-	-	-	20,284	-	-	-	-	-	-	-	-	-	-	-	-	430,122	-	-	-	-	
Recreation	-	-	-	-	-	-	13,302	-	-	-	-	1,118,941	-	-	-	-	-	-	-	-	-	-	-	-	
Fire Protection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Solid Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Replacement Budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stormwater Mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stormwater Manholes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stormwater Catch Basins	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Road Base	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Road Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900,899	927,926	955,764	984,437	
Road Vehicles and Equipment	505,076	51,728	-	209,566	212,974	108,344	-	-	18,850	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Road Buildings and Land	14,892	-	-	-	-	-	36,401	-	-	-	-	-	-	-	-	11,286	-	-	-	-	-	-	-	-	
Street Lights and Signs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Administration	84,766	14,342	-	29,766	-	-	-	-	-	-	-	-	-	-	-	42,173	-	-	-	-	-	-	-	26,272	
Recreation	85,939	-	-	-	-	-	3,137	-	41,427	-	-	-	-	-	-	7,502	89,480	73,351	-	22,925	493,979	-	174,226	-	
Fire Protection	88,036	-	-	-	-	300,016	44,139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	554,572	-	
Solid Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,193	20,262	5,608	-	-	-	-	-	-	
Total Capital Requirements	3,148,543	2,056,197	683,921	662,394	648,727	857,186	748,472	476,159	550,721	505,157	520,312	1,654,862	3,520,949	568,559	585,616	670,338	731,022	718,877	659,116	1,131,936	1,394,878	927,926	1,684,562	1,010,709	

APPENDIX G: ALTERNATIVE STRATEGY NO.2 (25-YEAR FINANCIAL PROJECTIONS)

Tax Supported Services Financial Projections

Cost / Revenue Item	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Township 5-Year Capital Forecast	\$ 1,699,500	\$ 1,591,350	\$ 273,182	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Asset Rehabilitation	\$ 670,334	\$ 398,776	\$ 410,739	\$ 423,061	\$ 435,753	\$ 448,826	\$ 664,795	\$ 476,159	\$ 490,444	\$ 505,157	\$ 520,312	\$ 1,654,862	\$ 3,520,949	\$ 568,559	\$ 585,616	\$ 603,184	\$ 621,280	\$ 639,918	\$ 659,116	\$ 1,109,011	\$ -	\$ -	\$ -	\$ -
Asset Replacement	\$ 778,709	\$ 66,071	\$ -	\$ 239,333	\$ 212,974	\$ 408,360	\$ 83,677	\$ -	\$ 60,277	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67,154	\$ 109,742	\$ 78,959	\$ -	\$ 22,925	\$ 1,394,878	\$ 927,926	\$ 1,684,562	\$ 1,010,709
Total Capital Requirements	\$ 3,148,543	\$ 2,056,197	\$ 683,921	\$ 662,394	\$ 648,727	\$ 857,186	\$ 748,472	\$ 476,159	\$ 550,721	\$ 505,157	\$ 520,312	\$ 1,654,862	\$ 3,520,949	\$ 568,559	\$ 585,616	\$ 670,338	\$ 731,022	\$ 718,877	\$ 659,116	\$ 1,131,936	\$ 1,394,878	\$ 927,926	\$ 1,684,562	\$ 1,010,709
Debt Financing	\$ 2,307,569	\$ 1,584,015	\$ 248,077	\$ 140,476	\$ 24,627	\$ 113,714	\$ 63,898	\$ -	\$ -	\$ -	\$ -	\$ 1,071,928	\$ 3,072,383	\$ 256,111	\$ 156,541	\$ 107,325	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Reserve Financing	\$ 840,974	\$ 472,182	\$ 435,844	\$ 521,918	\$ 624,100	\$ 743,472	\$ 684,574	\$ 476,159	\$ 550,721	\$ 505,157	\$ 520,312	\$ 582,934	\$ 448,566	\$ 312,448	\$ 429,075	\$ 563,013	\$ 731,022	\$ 718,877	\$ 659,116	\$ 1,131,936	\$ 1,394,878	\$ 927,926	\$ 1,684,562	\$ 1,010,709
Other Financing (Grants, third party, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Financing	\$ 3,148,543	\$ 2,056,197	\$ 683,921	\$ 662,394	\$ 648,727	\$ 857,186	\$ 748,472	\$ 476,159	\$ 550,721	\$ 505,157	\$ 520,312	\$ 1,654,862	\$ 3,520,949	\$ 568,559	\$ 585,616	\$ 670,338	\$ 731,022	\$ 718,877	\$ 659,116	\$ 1,131,936	\$ 1,394,878	\$ 927,926	\$ 1,684,562	\$ 1,010,709
Operations & Maintenance	\$ 2,363,957	\$ 2,412,769	\$ 2,462,557	\$ 2,513,341	\$ 2,565,140	\$ 2,660,105	\$ 2,713,997	\$ 2,768,967	\$ 2,825,036	\$ 2,882,227	\$ 2,940,562	\$ 3,000,063	\$ 3,060,755	\$ 3,122,660	\$ 3,185,804	\$ 3,250,210	\$ 3,315,904	\$ 3,382,912	\$ 3,451,261	\$ 3,520,976	\$ 3,592,086	\$ 3,690,132	\$ 3,773,108	\$ 3,848,571
Transfers to Capital Reserves	\$ 570,041	\$ 464,793	\$ 428,455	\$ 514,528	\$ 616,710	\$ 736,083	\$ 677,185	\$ 621,631	\$ 570,625	\$ 518,599	\$ 465,532	\$ 411,404	\$ 441,177	\$ 305,059	\$ 421,686	\$ 555,624	\$ 903,325	\$ 1,207,147	\$ 1,405,120	\$ 1,353,898	\$ 1,291,349	\$ 1,235,241	\$ 1,424,028	\$ 1,355,381
Debt Repayment	\$ 76,637	\$ 276,992	\$ 414,524	\$ 436,063	\$ 448,260	\$ 408,270	\$ 418,143	\$ 423,691	\$ 423,691	\$ 423,691	\$ 423,691	\$ 423,691	\$ 516,761	\$ 783,521	\$ 805,758	\$ 819,349	\$ 628,313	\$ 490,781	\$ 469,242	\$ 457,045	\$ 454,906	\$ 419,519	\$ 404,977	\$ 404,977
Less Non-Rate Revenues	\$ 220,430	\$ 224,839	\$ 229,336	\$ 233,922	\$ 238,601	\$ 243,373	\$ 248,240	\$ 253,205	\$ 258,269	\$ 263,434	\$ 268,703	\$ 274,077	\$ 279,559	\$ 285,150	\$ 290,853	\$ 296,670	\$ 302,603	\$ 308,655	\$ 314,829	\$ 321,125	\$ 327,548	\$ 334,099	\$ 340,781	\$ 347,596
Revenue Requirements (from Users)	\$ 2,790,205	\$ 2,929,715	\$ 3,076,200	\$ 3,230,010	\$ 3,391,510	\$ 3,561,084	\$ 3,561,084	\$ 3,561,084	\$ 3,561,083	\$ 3,561,083	\$ 3,561,082	\$ 3,561,081	\$ 3,739,134	\$ 3,926,090	\$ 4,122,394	\$ 4,328,513	\$ 4,544,939	\$ 4,772,185	\$ 5,010,794	\$ 5,010,794	\$ 5,010,794	\$ 5,010,793	\$ 5,261,333	\$ 5,261,333
Annual Increase (\$)	\$ 132,867	\$ 139,510	\$ 146,486	\$ 153,809	\$ 161,500	\$ 169,575	\$ 0	\$ (1)	\$ (1)	\$ (0)	\$ (1)	\$ (1)	\$ 178,053	\$ 186,956	\$ 196,304	\$ 206,119	\$ 216,426	\$ 227,246	\$ 238,609	\$ (0)	\$ (0)	\$ (0)	\$ 250,540	\$ (0)
Annual Increase (%)	5%	5%	5%	5%	5%	5%	0%	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%	5%	0%	0%	0%	5%	0%

Tax Supported Services Capital Reserve Schedule (all reserves combined)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Opening Balance	\$ 763,544	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 655,154	\$ 685,185	\$ 709,106	\$ 664,141	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 682,388	\$ 1,188,218	\$ 1,963,235	\$ 2,217,975	\$ 2,146,163	\$ 2,490,280	\$ 2,263,192
Transfer from Operating	\$ 570,041	\$ 464,793	\$ 428,455	\$ 514,528	\$ 616,710	\$ 736,083	\$ 677,185	\$ 621,631	\$ 570,625	\$ 518,599	\$ 465,532	\$ 411,404	\$ 441,177	\$ 305,059	\$ 421,686	\$ 555,624	\$ 903,325	\$ 1,207,147	\$ 1,405,120	\$ 1,353,898	\$ 1,291,349	\$ 1,235,241	\$ 1,424,028	\$ 1,355,381
Transfer to Capital	\$ 840,974	\$ 472,182	\$ 435,844	\$ 521,918	\$ 624,100	\$ 743,472	\$ 684,574	\$ 476,159	\$ 550,721	\$ 505,157	\$ 520,312	\$ 582,934	\$ 448,566	\$ 312,448	\$ 429,075	\$ 563,013	\$ 731,022	\$ 718,877	\$ 659,116	\$ 1,131,936	\$ 1,394,878	\$ 927,926	\$ 1,684,562	\$ 1,010,709
Transfer to Operating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ 492,611	\$ 492,611	\$ 492,611	\$ 492,611	\$ 492,611	\$ 492,611	\$ 492,611	\$ 645,472	\$ 675,059	\$ 698,627	\$ 654,326	\$ 492,611	\$ 492,611	\$ 492,611	\$ 492,611	\$ 492,611	\$ 672,303	\$ 1,170,658	\$ 1,934,222	\$ 2,185,197	\$ 2,114,446	\$ 2,453,478	\$ 2,229,746	\$ 2,607,864
Interest	\$ 7,389	\$ 7,389	\$ 7,389	\$ 7,389	\$ 7,389	\$ 7,389	\$ 7,389	\$ 9,682	\$ 10,126	\$ 10,479	\$ 9,815	\$ 7,389	\$ 7,389	\$ 7,389	\$ 7,389	\$ 7,389	\$ 10,085	\$ 17,560	\$ 29,013	\$ 32,778	\$ 31,717	\$ 36,802	\$ 33,446	\$ 39,118
Target Min. Balance (1% of Asset Value)	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000
Amount Below Min. Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Total Debt Capacity

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Total Debt Limit	\$ 809,193	\$ 855,429	\$ 900,510	\$ 948,076	\$ 995,480	\$ 1,049,698	\$ 1,057,670	\$ 1,066,039	\$ 1,074,827	\$ 1,084,055	\$ 1,093,744	\$ 1,103,918	\$ 1,159,113	\$ 1,221,405	\$ 1,282,475	\$ 1,346,598	\$ 1,413,928	\$ 1,484,624	\$ 1,558,855	\$ 1,574,162	\$ 1,590,235	\$ 1,613,825	\$ 1,701,900	\$ 1,729,350
Less Curent Debt Repayment	\$ 190,111	\$ 421,040	\$ 558,572	\$ 580,112	\$ 592,308	\$ 654,915	\$ 664,788	\$ 670,336	\$ 670,336	\$ 670,336	\$ 670,336	\$ 670,336	\$ 763,406	\$ 1,202,605	\$ 1,230,133	\$ 1,218,054	\$ 996,444	\$ 858,911	\$ 837,372	\$ 951,473	\$ 844,867	\$ 809,479	\$ 794,937	\$ 794,937
Available Debt Capacity	\$ 619,082	\$ 434,389	\$ 341,937	\$ 367,965	\$ 403,171	\$ 394,783	\$ 392,881	\$ 395,703	\$ 404,491	\$ 413,719	\$ 423,408	\$ 433,581	\$ 395,706	\$ 18,800	\$ 52,342	\$ 128,544	\$ 417,485	\$ 625,713	\$ 721,483	\$ 622,689	\$ 745,368	\$ 804,345	\$ 906,962	\$ 934,413

APPENDIX H

RISK ASSESSMENT

APPENDIX H: RISK ASSESSMENT

Likelihood and Consequence (Risk Level) Chart

Likelihood	Consequence		
	Minor	Moderate	Major
Likely	Medium	Medium	High
Somewhat Likely	Low	Medium	High
Unlikely	Low	Medium	High

Risk Assessment

Risks	Likelihood	Consequence	Level of Risk	Priority	Strategy No.1	Strategy No.2	Assessment	Preferred Strategy
Water System								
Frequent main breaks affecting supply to localized areas	Unlikely	Minor	Medium	Low	Replace watermain as their expected lives expire	Continue regular watermain maintenance as they are in relatively good condition and non-critical.	Mains in relatively good condition. Continuation of regular maintenance offers acceptable risk	Strategy No.2
Service connection failure affecting customers	Unlikely	Minor	Medium	Low	Replace service connections as their expected lives expire	Continue regular service connection maintenance as they are in relatively good condition and non-critical.	Pipes in relatively good condition. Continuation of regular maintenance offers acceptable risk	Strategy No.2
Water valve and hydrant failure affecting ability to isolate system and fire fighting capability	Unlikely	Major	Medium	Low	Replace hydrants and valves as they fail	Continue regular hydrant and valve maintenance as they are in relatively good condition	No major issues. Regular maintenance would address risks	Strategy No.2
Potential loss of treatment capability due to failing membrane filter. Would affect ability to supply water; Impact to public health and image; significant costs	Likely	Major	High	High	Replace membrane filters at both WTPs as this is critical to the water supply and not in good condition based on operational information	Replace membrane filters at both WTPs as this is critical to the water supply and not in good condition based on operational information	Membrane condition is a major risk if goes unattended. Replacement offers best risk reduction. Rehabilitation may offer acceptable risk but may be relatively expensive and not as reliable as replacement	Both offer same risk reduction
Potential loss of treatment capability due to deterioration of structure. Would affect ability to supply water; Impact to public health and image; significant costs	Unlikely	Moderate	Medium	Low	Replace structural components as their expected lives expire	Inspect & rehabilitate structural components as needed	Structure is in relatively good condition. No issues identified. Periodic inspections and rehabilitation offer acceptable risk	Strategy No.2

APPENDIX H: RISK ASSESSMENT

Risks	Likelihood	Consequence	Level of Risk	Priority	Strategy No.1	Strategy No.2	Assessment	Preferred Strategy
Potential loss of treatment capability due to failing electrical and mechanical components. Would affect ability to supply water; Impact to public health and image; significant costs	Unlikely	Moderate	Medium	Low	Replace mechanical / electrical equipment as their expected lives expire	Inspect, maintain & replace or rehabilitate mechanical / electrical equipment as needed	Most electrical/ mechanical components are in relatively good condition. Periodic inspections and rehabilitation or replacement as needed offer acceptable risk	Strategy No.2
Wastewater System								
Frequent main blockages or breaks affecting causing back-up and possible discharge to the environment	Unlikely	Minor	Medium	Low	Replace watermain as their expected lives expire	Continue regular watermain maintenance as they are in relatively good condition and non-critical.	Mains in relatively good condition. Continuation of regular maintenance offers acceptable risk	Strategy No.2
Lateral connection blockage or failure affecting customers	Unlikely	Minor	Medium	Low	Replace service connections as their expected lives expire	Continue regular service connection maintenance as they are in relatively good condition and non-critical.	Pipes in relatively good condition. Continuation of regular maintenance offers acceptable risk	Strategy No.2
Water valve and hydrant failure affecting ability to isolate system and fire fighting capability	Unlikely	Major	Medium	Low	Replace hydrants and valves as they fail	Continue regular hydrant and valve maintenance as they are in relatively good condition	No major issues. Regular maintenance would address risks	Strategy No.2
Potential loss of treatment capability due to failing mechanical or electrical components. Would affect ability to transmit and treat wastewater; Impact to public health, environment and image; potential significant costs	Likely	Moderate	Medium	Medium	Replace mechanical and electrical components as their expected lives expire	Replace mechanical and electrical components as their expected lives expire	Mechanical Electrical components at one pumping station almost at their respective life expectancies and could be a risk. Replacement or rehabilitation based on inspection would reduce the risk.	Both offer same risk reduction
Potential loss of treatment capability due to deterioration of structure. Would affect ability to supply water; Impact to public health and image; significant costs	Unlikely	Moderate	Medium	Low	Replace structural components as their expected lives expire	Inspect & rehabilitate structural components as needed	Structures are in relatively good condition except for roof at one facility which is at its life expectancy and may be in need of repair. Periodic inspections and rehabilitation offer acceptable risk	Strategy No.2
Stormwater System								

APPENDIX H: RISK ASSESSMENT

Risks	Likelihood	Consequence	Level of Risk	Priority	Strategy No.1	Strategy No.2	Assessment	Preferred Strategy
Poor pipe condition potentially resulting in drainage problems, public safety issues and environmental impacts; Public image affected	Unlikely	Minor	Low	Low	Replace stormwater pipes as their expected lives expire	Undertake inspections in main areas to assess need and rehabilitate or replace as necessary.	Strategy No.2 offers reasonable risk reduction and management.	Strategy No.2
Administration Buildings								
Poor building condition potentially resulting in loss of use and public safety issues; Public image affected; significant costs	Likely	Moderate	Medium	High	Replace building components as their expected lives expire	Undertake inspections to assess need and rehabilitate as necessary.	Many building structures and roof have attained their respective life expectancy and are due for work. Strategy No.2 offers reasonable risk reduction and management	Strategy No.2
Fire Protection Equipment								
Reduced capacity to respond to fire call outs due to equipment in poor condition	Unlikely	Major	High	Low	Replace vehicles as needed	Continue regular maintenance and replace vehicles as needed	No major issues. Strategy No. 2 includes continuing regular maintenance and replacing or rehabilitating the unit in poor condition. This offers acceptable risk management.	Strategy No.2
Recreation Facilities								
Fair to poor condition of structure resulting in temporary loss of use; public image impact; public safety issues	Somewhat Likely	Moderate	Medium	Medium	Replace building components as their expected lives expire	Undertake inspections to assess need and rehabilitate as necessary.	Strategy No.2 offers reasonable risk reduction and management	Strategy No.2
Fair to poor asset condition mechanical and electrical components resulting in temporary loss of use; public image impact; public safety issues	Unlikely	Minor	Low	Low	Replace equipment as needed	Replace equipment as needed	No major issues identified.	Both offer same risk reduction
Solid Waste System								
Reduced capacity to respond to deliver service due to buildings in poor condition	Unlikely	Minor	Low	Low	Replace building components as their expected lives expire	Undertake inspections to assess need and rehabilitate as necessary. Facility is relatively good condition. Not critical.	Assets in good condition. Strategy No.2 offers acceptable risk management	Strategy No.2
Road Network								

APPENDIX H: RISK ASSESSMENT

Risks	Likelihood	Consequence	Level of Risk	Priority	Strategy No.1	Strategy No.2	Assessment	Preferred Strategy
Poor road base condition potentially affecting public safety; significant costs	Unlikely	Minor	Low	Low	Replace road base sections as they expire	Repair and reconstruct road base sections only as needed based on inspections. In relatively good condition. Non critical.	Road Base is in good condition. Strategy No.2 offers acceptable risk management	Strategy No.2
Poor road surface condition potentially affecting public safety; significant costs	Likely	Major	High	High	Approximately 4 km of surface in fair to poor condition. Replace backlog of road surface sections in poor condition over 25 years	Approximately 4 km of surface in fair to poor condition. Continue annual road resurfacing (rehabilitation) program and replace road surface based on inspections and prioritized need over the 25 year period.	Strategy No.1 offers faster road resurfacing. Strategy No.2 lowers risk of further surface deterioration by having ongoing resurfacing and addresses backlog over time.	Strategy No.2
Fair to poor vehicle condition affecting ability to carry out operations and respond to situations; Public image impact; reduced level of service	Likely	Minor	Medium	High	13 vehicles/ equipment are in fair to poor condition. Replace vehicles as needed	13 vehicles/ equipment are in fair to poor condition. Replace vehicles as needed	Replacement offers best risk reduction	Both offer same risk reduction
Fair to poor facility electrical/ mechanical condition affecting ability to carry out operations and respond to situations; worker safety issues; Public image impact; reduced level of service	Somewhat Likely	Moderate	Medium	Medium	Public Works Garage / Firehall is at life expectancy. Replace building components as their expected lives expire	Public Works Garage / Firehall is at life expectancy. Undertake inspections to assess need and rehabilitate as necessary	Strategy No.2 offers reasonable risk reduction	Strategy No.2