
3. EXPECTED LEVELS OF SERVICE

3. EXPECTED LEVELS OF SERVICE

3.1 Scope and Process

A level of service (LOS) analysis gives the Town an opportunity to document the level of service that is currently being provided and compare it to the level of service that is expected. This can be done through a review of current practices and procedures, an examination of trends or issues facing the Town, or through an analysis of performance measures and targets that staff can use to measure performance.

Expected LOS can be impacted by a number of factors, including:

- Legislative requirements;
- Strategic planning goals and objectives;
- Resident expectations;
- Council or Town staff expectations; and
- Financial or resource constraints.

The previous task of determining the state of the Town's local infrastructure establishes the asset inventory and condition, as well as asset management policies and principles to guide the refinement and upkeep of asset infrastructure. The LOS analysis will utilize this information and factors in the impact of asset service level targets. It is important to document an expected LOS that is realistic to the Town. It is common to strive for the highest LOS, however these service levels usually come at a cost. It is also helpful to consider the risk associated with a certain LOS. Therefore, expected LOS should be determined in a way that balances both level of investment and associated risk to the Town.

3.2 Current Levels of Service versus Expected Levels of Service

The Town's current LOS has resulted in the current state of infrastructure discussed in chapter 2. The current LOS also relates to the risk assessment discussed in later report sections. Regarding the cost of LOS, the Town has established an operating and capital budget for the current year that includes the cost of providing this LOS to residents.

Therefore in moving from the current LOS to an expected LOS, consideration has to be made for the associated cost (or impact on the Town's current budget). The table below outlines broad LOS descriptions (both current and expected LOS). This analysis was documented through discussions with Town staff.

**Table 3-1
Level of Service Analysis**

Roads Related

Department	Level of Service Description	
	Current	Expected
Public Works	Meet "Minimum Maintenance Standards" as defined by Ontario Regulation 239/02.	Meet "Minimum Maintenance Standards" as defined by Ontario Regulation 239/02.
Public Works	Proactive Shave & Pave / Maintenance program.	Proactive Shave & Pave / Maintenance program.
Public Works	Streetlight assets maintained as needed using existing asset technology.	Use of more efficient Streetlight Technology (LED) to reduce operating costs
Public Works	Focus capital program on high priority areas.	Focus capital program on high priority areas, attempting to mitigate overall risk to the Town.

Bridges & Culverts

Department	Level of Service Description	
	Current	Expected
Public Works	Maintain adequate condition and load limits.	Maintain adequate condition and load limits.
Public Works	Bridge inspections (i.e. using OSIM reports) required every 2 years.	Bridge Inspections (i.e. using OSIM reports) required every 2 years.

Buildings, Equipment & Vehicles

Department	Level of Service Description	
	Current	Expected
Various	Meet legislative requirement (Building Code, Fire Code, Accessibility, Health & Safety, etc.)	Meet legislative requirement (Building Code, Fire Code, Accessibility, Health & Safety, etc.)
Various	Condition assessments performed when needed.	Planned condition assessments, with results being incorporated into the asset management plan.
Various	Back-up power to some buildings.	Back-up power to key buildings (i.e. Town hall).
Various	Replace & maintain equipment and vehicles when needed.	Replace & maintain equipment and vehicles when needed.

Water & Wastewater

Department	Level of Service Description	
	Current	Expected
Water / Wastewater	Meet all legislative requirements.	Meet all legislative requirements.
Water / Wastewater	Minimize unaccounted for water	Minimize unaccounted for water
Water / Wastewater	Operate with existing Meters	Initiate a Smart Metering Program
Water / Wastewater	Maintain assets when needed.	Proactively maintain assets to extend useful life.

Please refer to Appendix D of this report for a table summarizing the estimated budget impacts associated with implementing the expected LOS over the 20 year forecast period. This impact analysis will be factored into the asset management strategy discussed in chapter 4 of this report.

3.3 Level of Service Performance Measures

As mentioned above, using performance measures in the LOS review can also be helpful in measuring the Town's goals and objectives when it comes to asset management. The Town currently tracks specific performance measures as part of the Municipal Performance Measurement Program (MPMP) which the province has in place as part of the annual Financial Information Return (FIR) submission. The FIR provides the annual financial results of the Town, while the MPMP provides an evaluation of the Town's "performance". The following table provides a summary of the specific MPMPs relating to capital asset effectiveness.

Table 3-2
Performance Measures Analysis

Department	Assets	Performance Measure Description	Historical Performance			Goal
			2011	2012	2013	
Fire	Buildings, Equipment, Vehicles	Residential fire civilian injuries per 1,000 persons	-	0.2800	Not yet available	Minimize
Fire	Buildings, Equipment, Vehicles	Residential fire civilian fatalities per 1,000 persons	-	-	Not yet available	Minimize
Fire	Buildings, Equipment, Vehicles	Number of residential structural fires per 1,000 households	0.6900	2.7860	Not yet available	Minimize
Police	Buildings, Equipment, Vehicles	Total crime rate per 1,000 persons	37.1980	40.4140	Not yet available	Minimize
Transportation	Roads	Percentage of paved lane km where condition is rated as good to very good	78.50%	79.70%	Not yet available	Maximize
Transportation	Bridges & Culverts	Percentage of bridges & culverts where condition is rated as good to very good	100.00%	100.00%	Not yet available	Maximize
Transportation	Roads	Percentage of winter events where response met or exceeded local service levels	100.00%	100.00%	Not yet available	Maximize
Wastewater	Wastewater Mains	Number of wastewater main backups per 100 km of mains	-	0.1500	Not yet available	Minimize
Wastewater	Buildings	Percentage of wastewater estimated to have by-passed treatment	0.00%	0.00%	Not yet available	Minimize
Water	Water mains	Weighted # days when a boil water advisory was issued	0.0007	-	Not yet available	Minimize
Water	Water mains	Number of water main breaks per 100 km of pipe	4.4776	7.4627	Not yet available	Minimize
Solid Waste	Buildings, Vehicles	Number of complaints received concerning garbage & recycling collection	16.2070	4.5280	Not yet available	Minimize

The Town will continue to calculate and monitor these performance measures, both for MPMP and asset management purposes. As the Town's asset management plan evolves over time, new performance measures can be introduced to further measure the LOS being provided in each service area.

4. ASSET MANAGEMENT STRATEGY

4. ASSET MANAGEMENT STRATEGY

4.1 Scope and Process

The asset management strategy provides the recommended course of actions required to maintain (or move towards) a sustainable asset funding position while delivering the expected levels of service discussed in the previous chapter. The course of actions, when combined together, form a long-term operating and capital forecast that includes:

- a) Non-infrastructure solutions: reduce costs and/or extend expected useful life estimates;
- b) Maintenance activities: regularly scheduled activities to maintain existing useful life levels, or repairs needed due to unplanned events;
- c) Renewal/Rehabilitation: significant repairs or maintenance planned to increase the useful life of assets;
- d) Replacement/Disposal: complete disposal and replacement of assets, when renewal or rehabilitation is no longer an option; and
- e) Expansion: given planned growth as outlined in the Town's Development Charge Background Study, other expansion or due to the introduction of new services.

Priority identification becomes a critical process during the asset management strategy development. Priorities have been determined based on assessment of the overall risk of asset failure, which is determined by looking at both the probability of an asset failing, as well as the consequences of failure. The consequences of the Town not meeting desired levels of service must also be considered in determining risk. As discussed in chapter 3, moving to expected levels of service results in both operating and capital budget impacts over the 20 year forecast period. This has to be taken into consideration, with the overall objective of reaching sustainable levels while mitigating risk.

4.2 Risk Assessment

The risk of an asset failing is defined by the following calculation:

$\text{Risk of Asset Failure} = \text{Probability of Failure} \times \text{Consequence of Failure}$

Probability of failure has been linked to the condition assessment for each of the assets, assuming that an asset with a condition rating "A" would have a "rare" probability of failure. The following table outlines the probability factor tied to each condition rating:

**Table 4-1
Probability of Failure Matrix**

Condition Rating	Probability of Failure
A	Rare
B	Rare
C	Unlikely
D	Possible
E	Likely

Consequence of failure has been determined by examining each asset type separately. Consequence refers to the impact on the Town if a particular asset were to fail. Types of impacts include the following:

- **Cost Impacts:** the cost of failure to the Town (i.e. capital replacement, rehabilitation, fines & penalties, damages, etc);
- **Social impacts:** potential injury or death to residents or Town staff;
- **Environmental impacts:** the impact of the asset failure on the environment;
- **Service delivery impacts:** the impact of the asset failure on the Town's ability to provide services at desired levels; and
- **Location impacts:** the varying impact of asset failure based on the asset's location within the Town.

Each type of impact was discussed with Town staff and consequence of failure for each asset type was determined by using the information contained in Table 4-2 as a guide to assess the level of impact. Levels of impact were documented as ranging from "catastrophic" to "insignificant".

With both probability of failure and consequence of failure documented, total risk of asset failure was determined using the matrix contained in Table 4-3. Total risk has been classified under the following categories:

- **Extreme Risk (E):** risk well beyond acceptable levels;
- **High Risk (H):** risk beyond acceptable levels;
- **Medium Risk (M):** risk at acceptable levels, monitoring required to ensure risk does not become high; and
- **Low Risk (L):** risk at or below acceptable levels.

**Table 4-2
Consequence of Failure Matrix for Tax Supported Assets**

Consequence of Failure	Cost	Social	Environmental	Service Delivery
Insignificant	Negligible or Insignificant Cost	No injury	No Impact	No Interruptions
Minor	Small/Minor Cost - within Budget Allocations.	Minor Injury	Short-term/Minor Impact - Fixable	Minor Interruptions
Moderate	Considerable Cost - Requires Revisions to Budget	Moderate Injury	Medium-term Impact - Fixable	Moderate Interruptions
Major	Substantial Cost - Multi-year Budget Impacts	Major Injury	Long-term Impact - Fixable	Significant Interruptions
Catastrophic	Significant Cost - Difficult to Recover	Death, Serious Injury	Long-term Impact - Permanent	Major Interruptions

**Table 4-3
Total Risk of Asset Failure Matrix**

Probability of Failure	Consequence of Failure				
	Insignificant	Minor	Moderate	Major	Catastrophic
Rare	L	L	M	M	H
Unlikely	L	M	M	M	H
Possible	L	M	M	H	H
Likely	M	M	H	H	H
Almost Certain	M	H	H	H	H

Risk levels can be reduced or mitigated through planned maintenance, rehabilitation and/or replacement. An objective of this asset management plan is to reduce risk levels where they are deemed to be too high, as well as ensure assets are maintained in a way that maintains risk at acceptable levels.

Please refer to Appendix A for the detailed risk assessment for each of the Town's capital assets.

4.3 Priority Identification

Through discussions with Town staff and review of the asset risk of failure assessment, the following assets/categories were identified as being priorities of the Town:

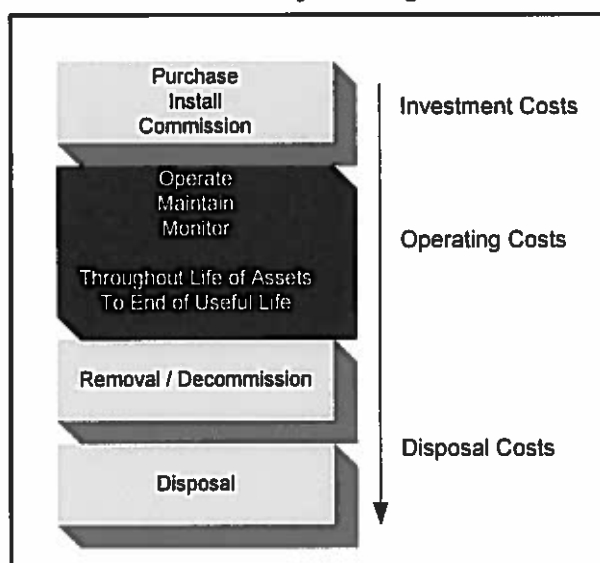
**Table 4-4
Priorities Based on Asset Risk**

Area / Category	Description	Total Risk	Planned Action
Roads, Storm, Water & Sanitary	John Street Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Water Street Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Talbot Street West Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Cedar Street Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Victoria Street North Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Victoria Street South Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Pine Street East Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	South St E Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	Warren St Reconstruction	High	Replacement in short-term capital
Roads, Storm, Water & Sanitary	South St W Reconstruction	High	Replacement in short-term capital
Vehicles (Fire)	Platform #5-55' Aerial Platform Apparatus Replacement	High	Replacement in short-term capital
Parking Lot	601 Main Parking Lot #1 - 55 John St S	High	Replacement in short-term capital
Facilities	Public Works Garage	High	Rehabilitation in short-term capital
Facilities	Town Hall Accessibility Upgrades	High	Rehabilitation in short-term capital
Streetlights & Sports fields	LED Light Conversion	Medium	Replacement in short-term capital

4.4 Long-term Forecast

For many years, lifecycle costing has been used in the field of maintenance Engineering and to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use recently in the management of capital assets. By definition, lifecycle costs are all the costs which are incurred during the lifecycle of a capital asset, from the time it is purchased or constructed, to the time it is taken out of service for disposal. The stages which an asset goes through in its lifecycle are as follows:

**Figure 4-1
Asset Lifecycle Diagram**



In defining the long-term forecast for the Town's asset management strategy, costs incurred through an asset's lifecycle were considered and documented.

Asset Replacement Analysis

In forecasting the Town's asset replacement needs, comparisons were made between the following scenarios:

- *Scenario 1: Replacement forecast based on "PSAB 3150 Asset Data"*
 - Utilizing the PSAB 3150 inventory, year of installation and estimated service life, the replacement of each asset was projected.
- *Scenario 2: Replacement forecast based on "Condition and Risk";*
 - In addition to using the installation date, estimated useful life, the LOS, condition information and staff identified priorities were used, where applicable to better predict the timing of replacement. Results were smoothed over the forecast period.

Scenario 1: Replacement forecast based on "PSAB 3150 Asset Data"

The replacement forecast based on the PSAB 3150 asset data provides a snapshot of assets at or nearing the end of their useful lives from a purely financial accounting perspective.

Figures 4-2 to 4-4 below show the forecasts over a 10 year period, where approximately \$7 million (replacement cost) in tax supported capital assets, \$0 in water capital assets and \$0 in wastewater capital assets are showing as "immediate needs". For this scenario, this simply means that these assets have reached the end of their accounting useful lives. Please refer to Appendix E for charts and graphs depicting the entire 20 year forecast for this scenario.

Figure 4-2
Tax Supported Capital Assets - 10 Year Forecast

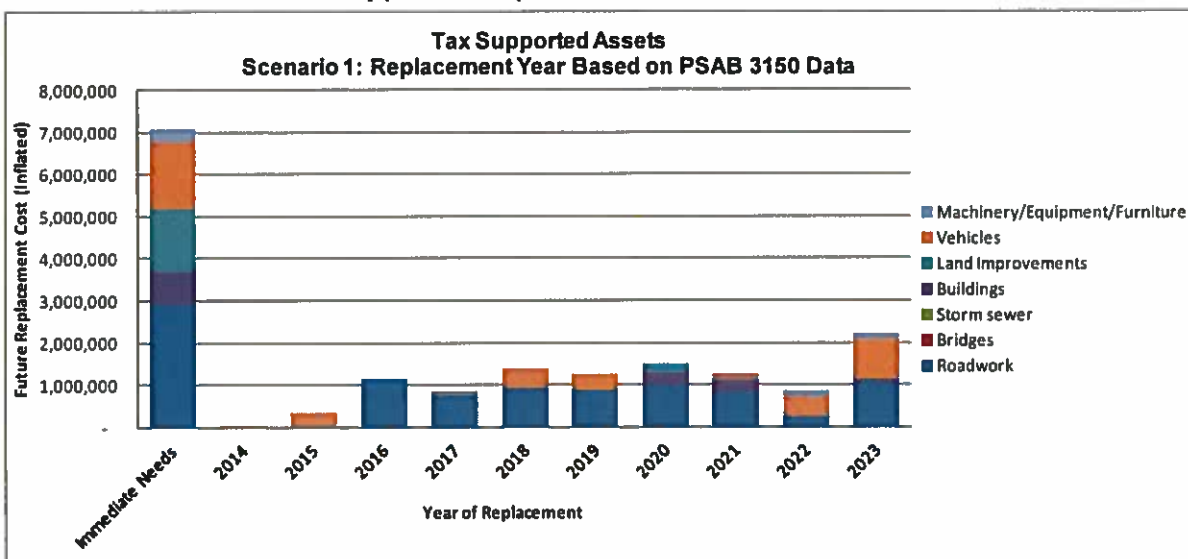


Figure 4-3
Water Capital Assets - 10 Year Forecast

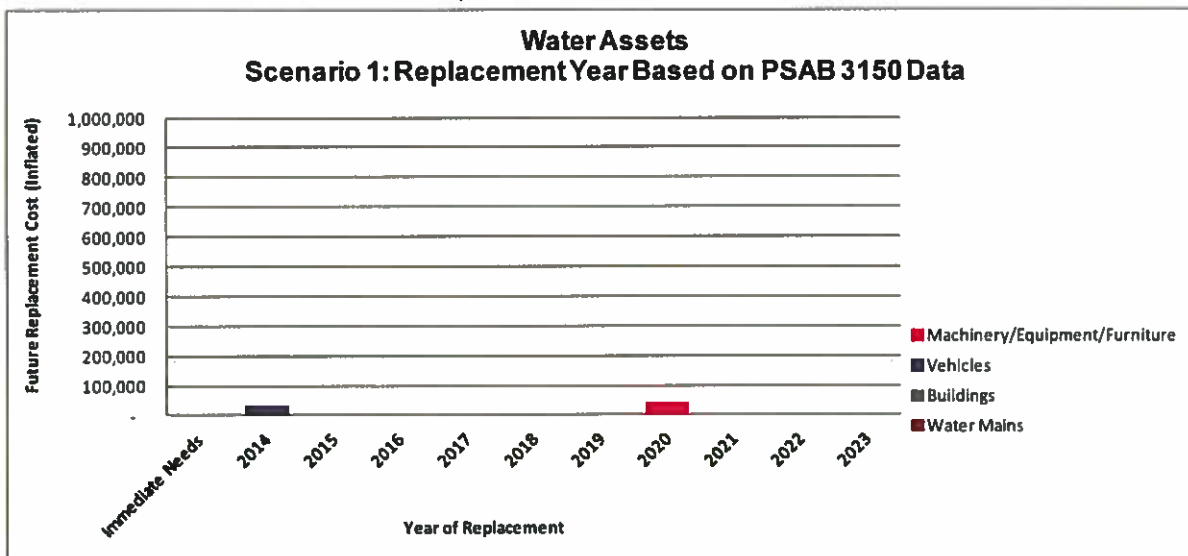
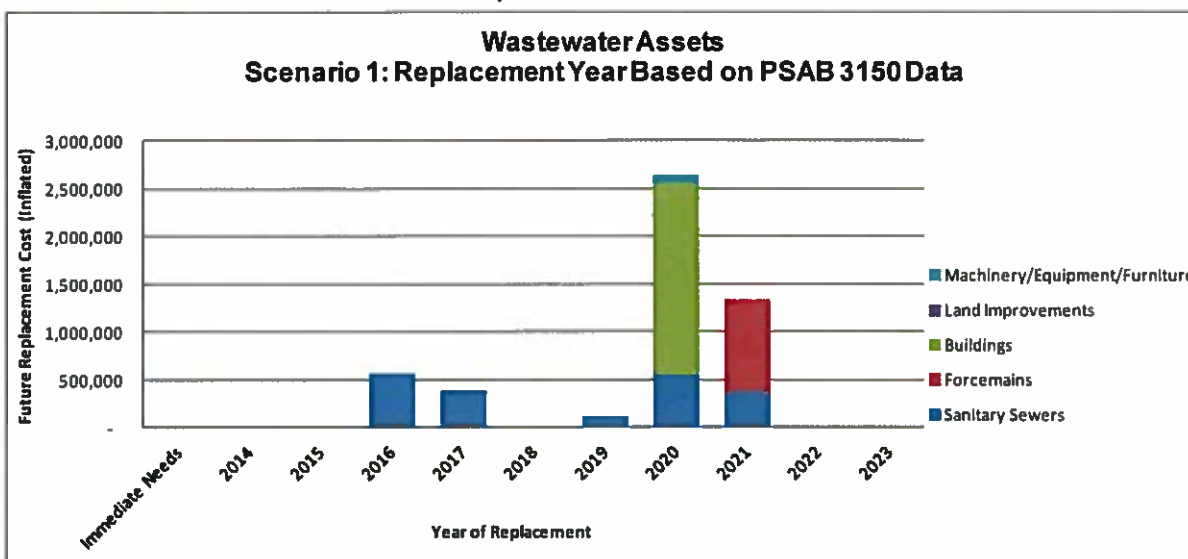


Figure 4-4
Wastewater Capital Assets - 10 Year Forecast



Scenario 2: Replacement forecast based on “Condition and Risk”

Items that had been identified under the previous scenario have been distributed within the forecast period. Based on these adjustments, \$0 of tax supported capital assets, water capital assets and wastewater capital assets are identified as “immediate needs”. Figures 4-5 to 4-7 show the 10 year forecasts under this scenario. This is the recommended scenario for the Town. Please refer to Appendix E for charts and graphs depicting the entire 20 year forecast for this scenario. A total of \$43.2 million in tax supported, \$12.2 million in water capital and \$8.9 million in wastewater capital needs are identified over the 20 year forecast period (\$18.1 million, \$5.1 million and \$3.2 million respectively in the first 10 years).

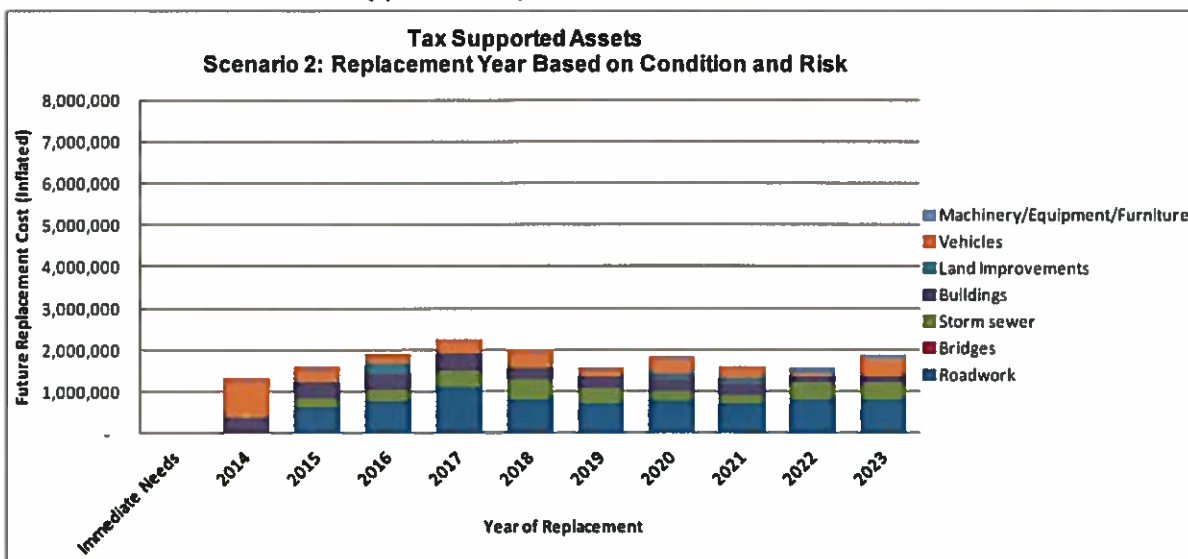
Maintenance, Non-Infrastructure Solutions, Renewal & Rehabilitation

For the recommended scenario to be feasible, the level of service adjustments discussed in Chapter 3 and Appendix D, are required in conjunction with current level of service amounts in order to effectively maintain and rehabilitate the assets as needed. Appendix D provides additional rehabilitation and maintenance requirements over the forecast period in the following areas:

- Roads, Storm, Water, Wastewater, and Land Improvements – based on the Town’s priority needs reports and discussions with Town staff; and
- Facilities – based on the existing condition assessment reports.

The financing strategy discussed in the next Chapter will incorporate the level of service adjustments, outlined in Appendix D, into the recommended financing analysis.

**Figure 4-5
Tax Supported Capital Assets - 10 Year Forecast**



**Figure 4-6
Water Capital Assets - 10 Year Forecast**

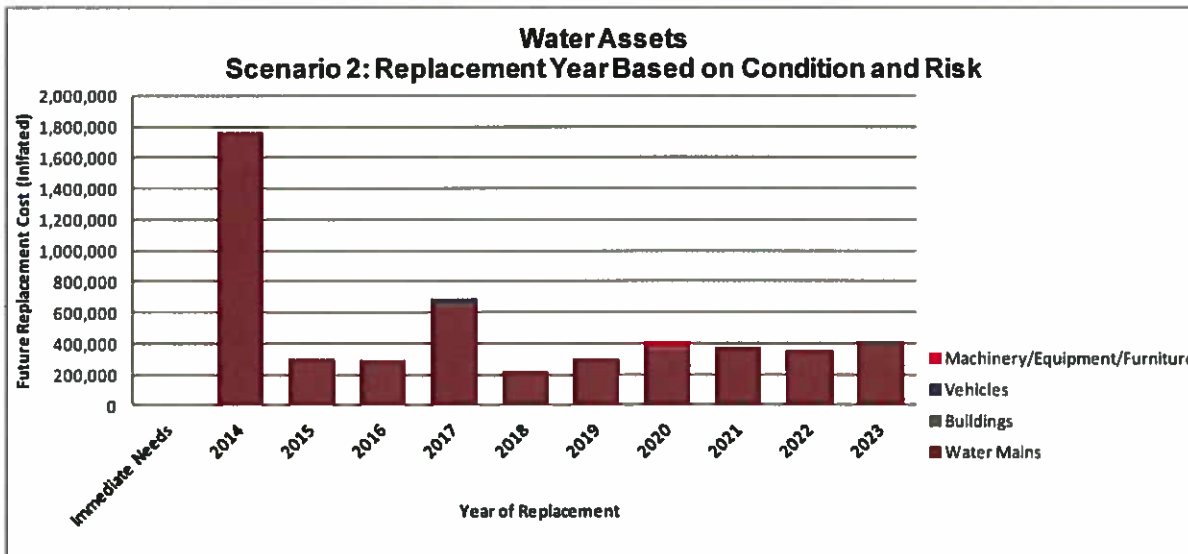
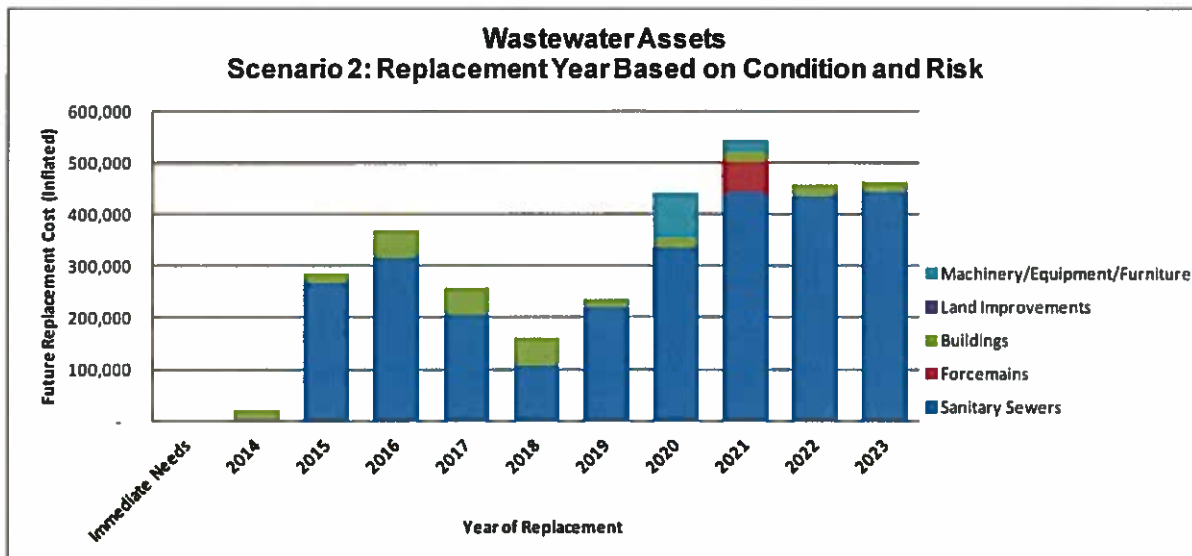


Figure 4-7
Wastewater Capital Assets – 10 Year Forecast



4.5 Procurement Methods

Section 270(1) of the Municipal Act, S.O. 2001, provides that municipalities (and local boards) shall adopt and maintain policies with respect to its procurement of goods and services. Procurement policies are developed to provide a framework to support open, fair, transparent and accountable purchasing processes, and to ensure procurement processes are consistently managed. Moreover, the establishment of a by-law adopting the procurement policy provides a document which has the approval of Council, which allows an opportunity for public debate.

An effective procurement policy assists municipalities in identifying cost-effective options for providing services, while at the same time reducing risk. Innovative project management models, such as public-private partnerships (P3's) or co-operative purchasing, can help bring together expertise, resources and funding opportunities. Where appropriate, bidders can be required to provide lifecycle costing for the products and/or services being tendered. Lifecycle costs can include initial construction/purchase price, plus operating costs for a contracted period of time. Incorporating a lifecycle perspective in the procurement process can encourage effective asset management in the time period following the initial capital investment.

In order to have an effective and efficient procurement program, especially related to the purchase/construction of large capital assets, the procurement policy can include clauses to protect the municipality, as well as assist in receiving competitive responses. Examples include:

- Identification of the criteria used to determine the type of competitive process to be followed (i.e. tender, RFP, RFQ);

- Identification of circumstances when Sole Sourcing, Negotiation, and/or In-House Bids can be used;
- Description of the methods to be used for advertising a competitive process;
- Providing direction for purchasing in cases of emergency;
- Providing direction for purchasing as part of a co-operative purchasing group;
- Outlining any requirements related to bid deposits or other financial security;
- Inclusion of a non-discrimination clause highlighting positions such as having a 'no local preference' policy;
- Notification that any bid can be rejected by the municipality;
- Identification of reasons for terminating a contract with a supplier/contractor (i.e. poor performance, unethical behaviour);
- Identification of restrictions on the types and/or amounts of damages to which bidders may be entitled, arising from their responding to a competitive process; and
- Requirement for bidders to supply proof of insurance and WSIB.

As part of the continuous asset management update process, it is recommended that the Town's procurement policies and procedures be reviewed and compared against procurement best practices to ensure resources are being allocated in an efficient manner.

5. FINANCING STRATEGY

5. FINANCING STRATEGY

5.1 Scope and Process

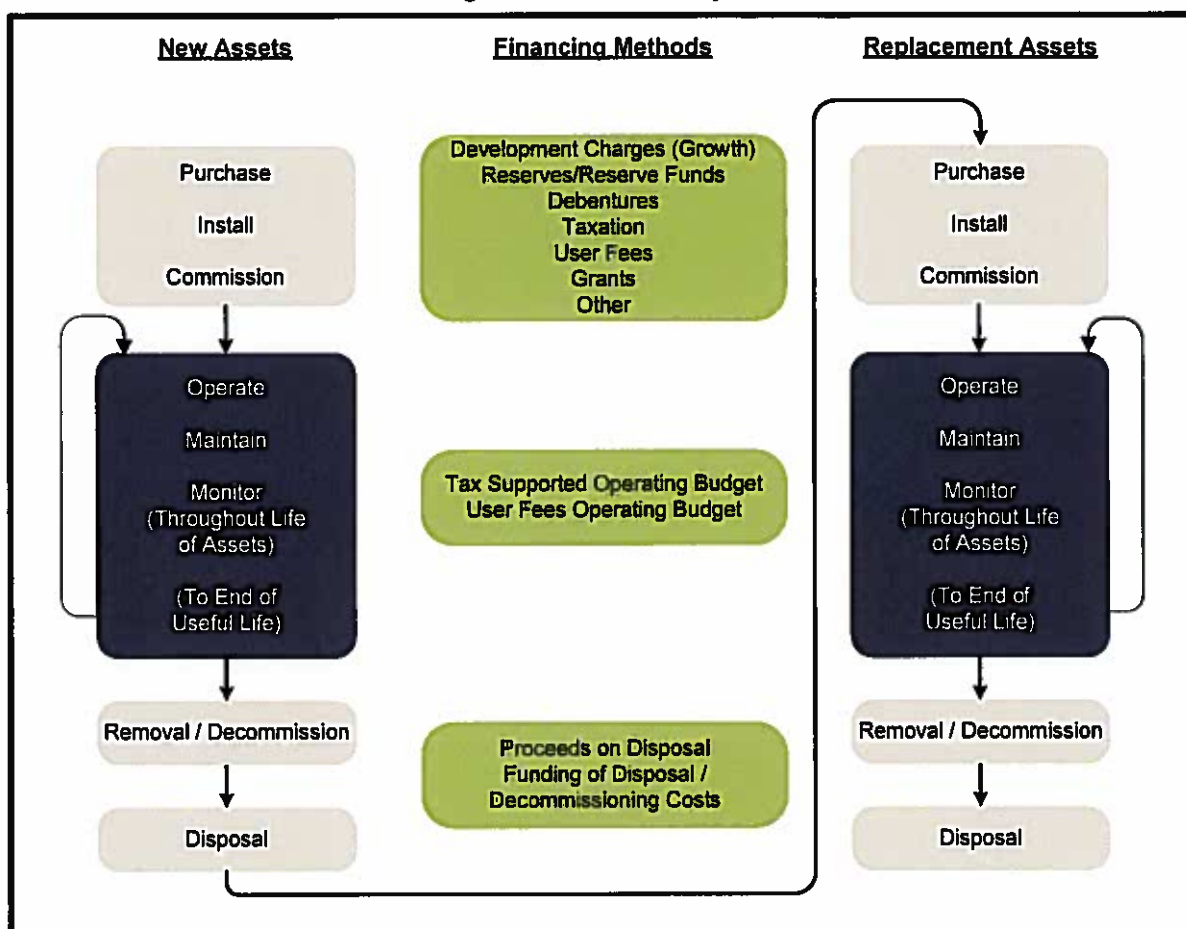
The financing strategy outlines the suggested financial approach to funding the recommended asset management strategy outlined in Chapter 4, while utilizing the Town's existing budget structure. This section of the asset management plan includes:

- Annual expenditure forecasts broken down by:
 - Maintenance/non-infrastructure solutions;
 - Renewal/rehabilitation activities;
 - Replacement/disposal activities; and
 - Expansion activities.
- Actual expenditures in the above named categories for 2011, 2012 and budget expenditures for 2013;
- A breakdown of annual funding/revenue by source;
- Identification of the funding shortfall, including how the impact will be managed; and
- All key assumptions are documented within Appendix B.

The long-term financing strategy forecast (including both expenditure and revenue sources) was prepared, consistent with the Town's departmental budget structure, so that it can be used in conjunction with the annual budget process. Various financing options, including taxation, reserves, reserve funds, debt, user fees and grants were considered and discussed with Town staff during the process. Figure 5-1 provides a visual representation of how various financing methods can be used for both initial asset purchases, as well as asset replacements.

For the recommended asset management strategy scenario, a detailed twenty (20) year plan was generated. The plan identifies specific maintenance & non-infrastructure solutions, renewal & rehabilitation, replacement & disposal, and expansion activities required for the 20 year forecast period as described in Chapter 4.

Figure 5-1
Financing Methods of Lifecycle Costs



5.2 Historical Results

Table 5-1 outlines the historical tax supported maintenance/non-infrastructure costs for 2011 and 2012, as well as 2013 budgeted results. All maintenance for assets was funded through taxation revenue for tax supported assets, water rates for water related assets and wastewater rates for wastewater related assets based on the Town's budget structure.

Table 5-1
Historical Results
Maintenance & Non-Infrastructure Solutions

Tax Supported

Description	Actual 2011	Actual 2012	Budget 2013
Asset Maintenance	721,557	804,577	1,107,797
Taxation Funding	721,557	804,577	1,107,797
Net Unfunded	-	-	-

Water

Description	Actual 2011	Actual 2012	Budget 2013
Asset Maintenance	90,546	73,928	94,200
Water Rate Revenue	90,546	73,928	94,200
Net Unfunded	-	-	-

Wastewater

Description	Actual 2011	Actual 2012	Budget 2013
Asset Maintenance	65,291	155,928	106,400
Sewer Rate Revenue	65,291	155,928	106,400
Net Unfunded	-	-	-

Tables 5-2 to 5-4 outline the historical capital results for 2011, 2012 and budgeted results for 2013 including renewal/rehabilitation, replacement/disposal, and expansion. The capital funding includes the use of grants, development charges for growth (expansion) related costs, debentures, reserve/reserve funds, gas tax, donations, as well as contributions from the operating budget.

Table 5-2
Tax Supported Historical Results
Renewal/Rehabilitation, Replacement/Disposal & Expansion

Description	Actual 2011	Actual 2012	Budget 2013
Capital Expenses			
General Government	44,960	63,307	52,000
Protection Services	135,665	70,000	225,000
Transportation Services	175,838	261,198	421,600
Recreation and Cultural Services	268,890	226,537	237,500
Planning and Development	-	-	322,000
Miscellaneous Property	74,736	-	-
Police Services	52,095	35,780	47,200
EECC	73,949	84,881	56,000
Total Capital Expenditures	826,133	741,704	1,361,300
Capital Financing			
Contribution from Reserve Funds	227,488	251,318	757,000
Contribution from Revenue Fund	287,191	391,214	428,300
MRIF Program Grant	13,349	10,260	-
BCF Grant Program	38,335	(7,340)	-
Donations	185,822	11,371	120,000
Hydro One Grant	-	7,140	-
Contribution from Trust Fund	66,839	77,741	56,000
Loss/Gain on Disposal	7,109	-	-
Total Capital Financing	826,133	741,704	1,361,300
Total Capital Expenses less Capital Financing	-	-	-

Table 5-3
Water Historical Results
Renewal/Rehabilitation, Replacement/Disposal & Expansion

Description	Actual 2011	Actual 2012	Budget 2013
Capital Expenses			
Water Distribution	43,532	8,569	400,000
Total Capital Expenditures	43,532	8,569	400,000
Capital Financing			
Contribution from Reserve Funds	14,779	3,403	400,000
Contribution from Water Revenue	28,753	5,166	-
Total Capital Financing	43,532	8,569	400,000
Total Capital Expenses less Capital Financing	-	-	-

Table 5-4
Wastewater Historical Results
Renewal/Rehabilitation, Replacement/Disposal & Expansion

Description	Actual 2011	Actual 2012	Budget 2013
Capital Expenses			
Sanitary Sewer Collection	47,739	3,403	-
Treatment - Lagoons	418,362	11,193	-
Treatment - Pumping Stations	38,225	5,166	-
Total Capital Expenditures	504,326	19,762	-
Capital Financing			
Contribution from Reserve Funds	28,022	3,403	
Contribution from Sewer Revenue	92,975	16,359	-
Contribution from Revenue Fund	350,000		
ISF Grant	33,330		
Total Capital Financing	504,326	19,762	-
Total Capital Expenses less Capital Financing	-	-	-

5.3 Financing Strategy

Tax Supported

Table 5-5 shows the tax supported expenditure forecast for maintenance, renewal/rehabilitation, replacement/disposal and expansion for the first 10 years of the forecast. While this summary only shows high level cost classifications, further detail (including the full 20 year forecast) can be obtained from Appendix F.

Table 5-5
Tax Supported Expenditure Forecast Summary

Asset Lifecycle Costs	Forecast (Inflated)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Maintenance: Current Service Levels	1,129,953	1,152,552	1,175,603	1,199,115	1,223,097	1,247,559	1,272,511	1,297,961	1,323,920	1,350,398
Maintenance: LOS Adjustment	-	(93,636)	(95,509)	(97,419)	(99,367)	(101,355)	(103,382)	(105,449)	(107,558)	(109,709)
Total Asset Maintenance	1,129,953	1,058,916	1,080,094	1,101,696	1,123,730	1,146,204	1,169,129	1,192,511	1,216,362	1,240,689
Renewal/Rehabilitation	-	-	-	-	-	-	-	-	-	-
Renewal/Rehabilitation - LOS Adjustment	1,121,042	15,914	368,249	354,535	365,171	376,126	387,410	399,033	411,004	423,334
Total Renewal/Rehabilitation	1,121,042	15,914	368,249	354,535	365,171	376,126	387,410	399,033	411,004	423,334
Replacement/Disposal	1,324,689	1,608,829	1,905,361	2,236,331	2,016,558	1,543,355	1,827,368	1,595,003	1,585,824	1,862,587
Replacement/Disposal - LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Replacement/Disposal	1,324,689	1,608,829	1,905,361	2,236,331	2,016,558	1,543,355	1,827,368	1,595,003	1,585,824	1,862,587
Expansion: DC Related	225,000	947,000	140,000	545,000	20,000	120,000	20,000	20,000	-	-
Expansion: LOS Adjustment	700,400	63,654	2,680,000	-	-	-	-	380,031	-	-
Total Expansion	925,400	1,010,654	2,820,000	545,000	20,000	120,000	20,000	400,031	-	-
Total	4,901,064	3,694,313	6,173,795	4,237,562	3,525,457	3,185,685	3,403,907	3,586,579	3,213,189	3,526,610

Items in Table 5-5 labelled as "LOS Adjustment" refer to the level of service analysis discussed in Chapter 2 and Appendix D. Expansion related costs labelled as "DC related" refer to projects identified in the Town's Development Charge Background Study (please refer to Appendix F).

Table 5-6 summarizes the recommended strategy to finance the asset related costs identified in Table 5-5.

Table 5-6
Breakdown of Annual Tax Supported Funding (Revenue) by Source

Funding (Revenue) by Source	Forecast									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Taxation	1,129,953	1,058,916	1,080,094	1,101,898	1,123,730	1,146,204	1,189,129	1,192,511	1,216,362	1,240,889
Grants	159,353	-	-	-	-	-	-	-	-	-
Other Contributions	-	-	-	-	-	-	-	-	-	-
Debentures	900,000	-	3,870,000	1,230,000	800,000	-	-	30,000	-	-
Development Charges Reserve Funds	11,373	435,954	101,667	405,615	6,615	9,287	7,480	26,865	-	-
Gas Tax Reserve Funds	720,109	216,841	216,841	216,841	216,841	216,841	216,841	216,841	216,841	216,841
Capital Reserve Fund	1,580,298	1,982,801	905,102	1,283,410	1,578,272	1,813,353	2,010,457	2,120,361	1,779,986	2,069,080
Total	4,501,084	3,694,313	6,173,705	4,237,562	3,325,457	3,185,685	3,403,907	3,566,578	3,213,189	3,526,810

These lifecycle costs are being recovered through several methods:

- Taxation funding is suggested for all maintenance costs, as well as level of service adjustment related costs related to operations.
- As the Town has recently applied for provincial grant funding, grant funding has been included for this item based on the terms and conditions of the grant application.
- The portion of newly acquired or constructed assets that are "growth (DC) related" are shown as financed by development charges.
- Federal Gas Tax has been shown as a stable and long-term funding source for eligible capital projects.
- Debt financing is shown as required in years where significant capital needs are identified.
- The Town will be dependent upon maintaining healthy capital reserves/reserve funds in order to provide the remainder of the required lifecycle funding over the forecast period. This will require the Town to proactively increase amounts being transferred to these capital reserves during the annual budget process.

While the annual funding requirement may fluctuate, it is important for the Town to implement a consistent, yet increasing annual investment in capital so that the excess annual funds can accrue in capital reserve funds.

In order to fund the recommended asset requirements over the forecast period using the Town's own available funding sources (i.e. using taxation, gas tax funding and debentures), an increase in the Town's taxation levy of 3.3% per year (above inflationary adjustments, currently assumed to be 2.0%) would be required for the first 10 years of the forecast period (dropping to 1.2% thereafter). However, if other funding sources become available (i.e. grant funding) or if

maintenance and rehabilitation practices allow for the deferral of capital works, then the impact on Town taxation would decrease.

Water

Table 5-7 shows the water expenditure forecast for maintenance, renewal/rehabilitation, replacement/disposal and expansion for the first 10 years of the forecast. While this summary only shows high level cost classifications, further detail (including the full 20 year forecast) can be obtained from Appendix G.

**Table 5-7
Water Expenditure Forecast Summary**

Asset Lifecycle Costs	Forecast (inflated)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Maintenance: Current Service Levels	98,084	98,006	99,966	101,965	104,004	106,084	108,206	110,370	112,578	114,829
Maintenance: LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Asset Maintenance	98,084	98,006	99,966	101,965	104,004	106,084	108,206	110,370	112,578	114,829
Renewal/Rehabilitation	-	-	-	-	-	-	-	-	-	-
Renewal/Rehabilitation - LOS Adjustment	-	-	-	112,551	115,927	119,405	122,987	126,677	130,477	134,392
Total Renewal/Rehabilitation	-	-	-	112,551	115,927	119,405	122,987	126,677	130,477	134,392
Replacement/Disposal	1,755,748	294,723	286,510	685,429	214,764	303,205	414,173	379,130	358,705	409,830
Replacement/Disposal - LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Replacement/Disposal	1,755,748	294,723	286,510	685,429	214,764	303,205	414,173	379,130	358,705	409,830
Expansion: DC Related	164,800	160,198	131,674	146,318	121,724	27,463	6,149	6,334	-	-
Expansion: LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Expansion	164,800	160,198	131,674	146,318	121,724	27,463	6,149	6,334	-	-
Total	2,016,630	552,924	518,150	1,048,262	556,419	556,157	651,516	622,511	601,759	659,951

Items in Table 5-7 labelled as "LOS Adjustment" refer to the level of service analysis discussed in Chapter 2 and Appendix D. Expansion related costs labelled as "DC related" refer to projects identified in the Town's Development Charge Background Study (please refer to Appendix G).

Table 5-8 summarizes the recommended strategy to finance the asset related costs identified in Table 5-7.

**Table 5-8
Breakdown of Annual Water Funding (Revenue) by Source**

Funding (Revenue) by Source	Forecast									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Rate Revenue	98,084	98,006	99,966	101,965	104,004	106,084	108,206	110,370	112,578	114,829
Grants	1,578,318	-	-	-	-	-	-	-	-	-
Other Contributions	-	-	-	-	-	-	-	-	-	-
Debentures	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Funds	2,024	3,620	2,262	4,621	38,493	1,083	177	182	-	-
Gas Tax Reserve Funds	-	-	-	-	-	-	-	-	-	-
Capital Reserve Fund	340,205	451,099	415,922	939,675	415,922	449,010	543,133	511,958	489,182	544,222
Total	2,016,630	552,924	518,150	1,048,262	556,419	556,157	651,516	622,511	601,759	659,951

These lifecycle costs are being recovered through several methods:

- Water rate revenue is suggested for all maintenance costs, as well as level of service adjustment related costs related to operations.

- As the Town has recently applied for provincial grant funding, grant funding has been included for this item based on the terms and conditions of the grant application.
- The portion of newly acquired or constructed assets that are “growth (DC) related” are shown as financed by development charges.
- The Town will be dependent upon maintaining healthy capital reserves/reserve funds in order to provide the remainder of the required lifecycle funding over the forecast period. This will require the Town to proactively increase amounts being transferred to these capital reserves during the annual budget process.

While the annual funding requirement may fluctuate, it is important for the Town to implement a consistent, yet increasing annual investment in capital so that the excess annual funds can accrue in capital reserve funds.

In order to fund the recommended asset requirements over the forecast period using the Town's own available funding sources (i.e. using water rate revenue and debentures), increases in rates are required as outlined in the Town's Water Rate Study (i.e. 10.4% in 2014, 4.0% in 2015, 3.9% in 2016 reducing to 2.65% thereafter). These increases reflect capital and operating related needs. However, if other funding sources become available (i.e. grant funding) or if maintenance and rehabilitation practices allow for the deferral of capital works, then the impact on Town water rate revenue would decrease.

Wastewater

Table 5-9 shows the water expenditure forecast for maintenance, renewal/rehabilitation, replacement/disposal and expansion for the first 10 years of the forecast. While this summary only shows high level cost classifications, further detail (including the full 20 year forecast) can be obtained from Appendix H.

**Table 5-9
Wastewater Expenditure Forecast Summary**

Asset Lifecycle Costs	Forecast (Inflated)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Maintenance: Current Service Levels	108,528	110,699	112,913	115,171	117,474	119,824	122,220	124,665	127,158	129,701
Maintenance: LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Asset Maintenance	108,528	110,699	112,913	115,171	117,474	119,824	122,220	124,665	127,158	129,701
Renewal/Rehabilitation	-	-	-	-	-	-	-	-	-	-
Renewal/Rehabilitation - LOS Adjustment	162,347	111,395	114,736	236,357	261,959	119,405	122,987	126,677	130,477	134,392
Total Renewal/Rehabilitation	162,347	111,395	114,736	236,357	261,959	119,405	122,987	126,677	130,477	134,392
Replacement/Disposal	20,394	266,388	368,935	258,392	161,999	236,698	439,958	542,020	456,580	463,721
Replacement/Disposal - LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Replacement/Disposal	20,394	266,388	368,935	258,392	161,999	236,698	439,958	542,020	456,580	463,721
Expansion: DC Related	19,000	-	-	-	-	-	-	-	-	-
Expansion: LOS Adjustment	-	-	-	-	-	-	-	-	-	-
Total Expansion	19,000	-	-	-	-	-	-	-	-	-
Total	310,269	506,482	596,583	609,920	541,432	475,927	685,185	793,361	714,215	727,814

Items in Table 5-9 labelled as “LOS Adjustment” refer to the level of service analysis discussed in Chapter 2 and Appendix D. Expansion related costs labelled as “DC related” refer to projects identified in the Town's Development Charge Background Study (please refer to Appendix H).

Table 5-10 summarizes the recommended strategy to finance the asset related costs identified in Table 5-9.

Table 5-10
Breakdown of Annual Wastewater Funding (Revenue) by Source

Funding (Revenue) by Source	Forecast									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sewer Rate Revenue	108,528	110,899	112,913	115,171	117,474	119,824	122,220	124,685	127,158	129,701
Grants	39,238	-	-	-	-	-	-	-	-	-
Other Contributions	-	-	-	-	-	-	-	-	-	-
Debentures	162,185	397,783	483,670	300,000	150,000	-	200,000	250,000	60,000	-
Development Charges Reserve Funds	318	-	-	-	-	-	-	-	-	-
Gas Tax Reserve Funds	-	-	-	-	-	-	-	-	-	-
Capital Reserve Fund	-	-	-	194,749	273,958	356,103	362,945	418,697	527,057	598,113
Total	310,269	508,682	596,583	609,920	541,432	475,927	685,165	793,361	714,215	727,814

These lifecycle costs are being recovered through several methods:

- Wastewater rate revenue is suggested for all maintenance costs, as well as level of service adjustment related costs related to operations.
- As the Town has recently applied for provincial grant funding, grant funding has been included for this item based on the terms and conditions of the grant application.
- The portion of newly acquired or constructed assets that are “growth (DC) related” are shown as financed by development charges.
- Debt financing is shown as required in years where significant capital needs are identified.
- The Town will be dependent upon maintaining healthy capital reserves/reserve funds in order to provide the remainder of the required lifecycle funding over the forecast period. This will require the Town to proactively increase amounts being transferred to these capital reserves during the annual budget process.

While the annual funding requirement may fluctuate, it is important for the Town to implement a consistent, yet increasing annual investment in capital so that the excess annual funds can accrue in capital reserve funds.

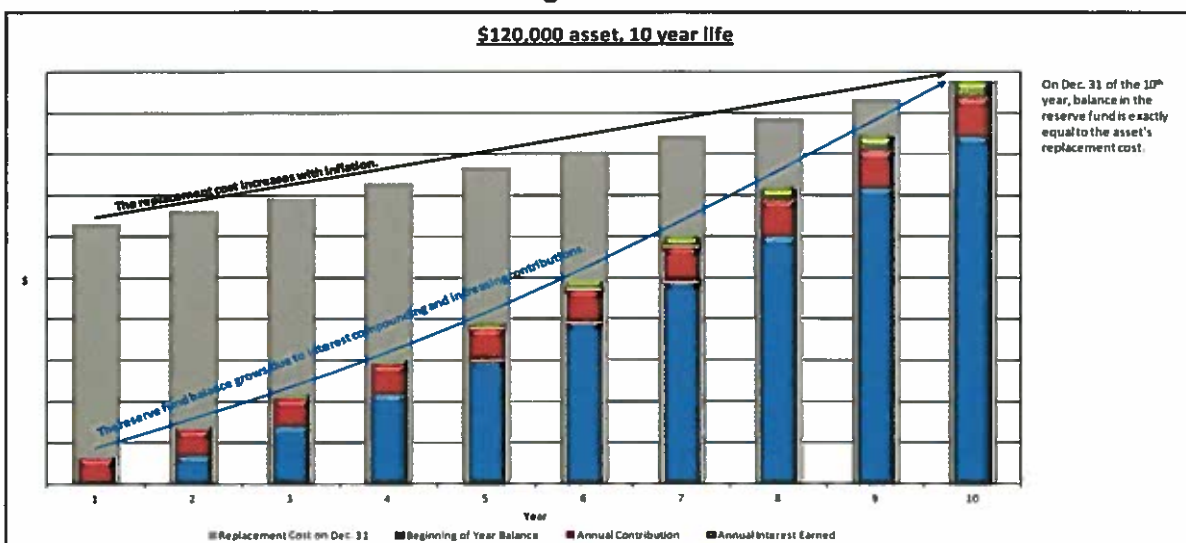
In order to fund the recommended asset requirements over the forecast period using the Town's own available funding sources (i.e. using wastewater rate revenue and debentures), increases in rates are required that are slightly higher than the Town's Wastewater Rate Study (i.e. 12.3% in the first 5 years of the forecast and 7.3% in each year thereafter). These increases reflect capital and operating related needs. However, if other funding sources become available (i.e. grant funding) or if maintenance and rehabilitation practices allow for the deferral of capital works, then the impact on Town water rate revenue would decrease.

5.4 Funding Shortfall

Assuming the Town maintains adequate capital reserve funds, the recommended asset management strategy discussed in Chapter 4 will be fully funded. It is believed this can be accomplished through each annual budget process. However, the recommended asset management strategy does defer significant capital replacements, in comparison to recommendations stated in various Town asset related reports. In the event that certain deferred replacements result in increased risks and/or projected asset failures, further funding may be required to address the costs associated with accelerating replacement timelines. In addition, in the event that the Town is not successful in recent grant applications, additional funding would be required in the short-term.

A fundamental approach to calculating the cost of using a capital asset and for the provision of the revenue required when the time comes to retire and replace it is the "sinking fund method". This method first estimates the future value of the asset at the time of replacement, by inflating the current value of the asset at an assumed annual capital inflation rate. A calculation is then performed to determine annual contributions which, when invested in a reserve fund, will grow with interest to a balance equal to the future replacement cost. The contributions are calculated such that they also increase annually with inflation. Under this approach, an annual capital investment amount is calculated where funds are available for short-term needs while establishing a funding plan for long-term needs. Annual contributions in excess of capital costs in a given year would be transferred to a "capital replacement reserve fund" for future capital replacement needs. This approach provides for a stable funding base, eliminating variances in annual funding requirements, particularly in years when capital replacement needs exceed typical capital levy funding. Please refer to Figure 5-2 for an illustration of this method.

Figure 5-2
Sinking Fund Method



Tax Supported

From a tax supported asset base perspective, the estimated annual sinking fund requirement, based on using the calculations discussed above, is approximately \$2.6 million (in 2013 dollars). Based on the Town's 2013 budget, current annual capital investment is approximately \$1.0 million. This would provide a high level estimate of the Town's annual infrastructure funding deficit at \$1.6 million (in 2013 dollars).

Water

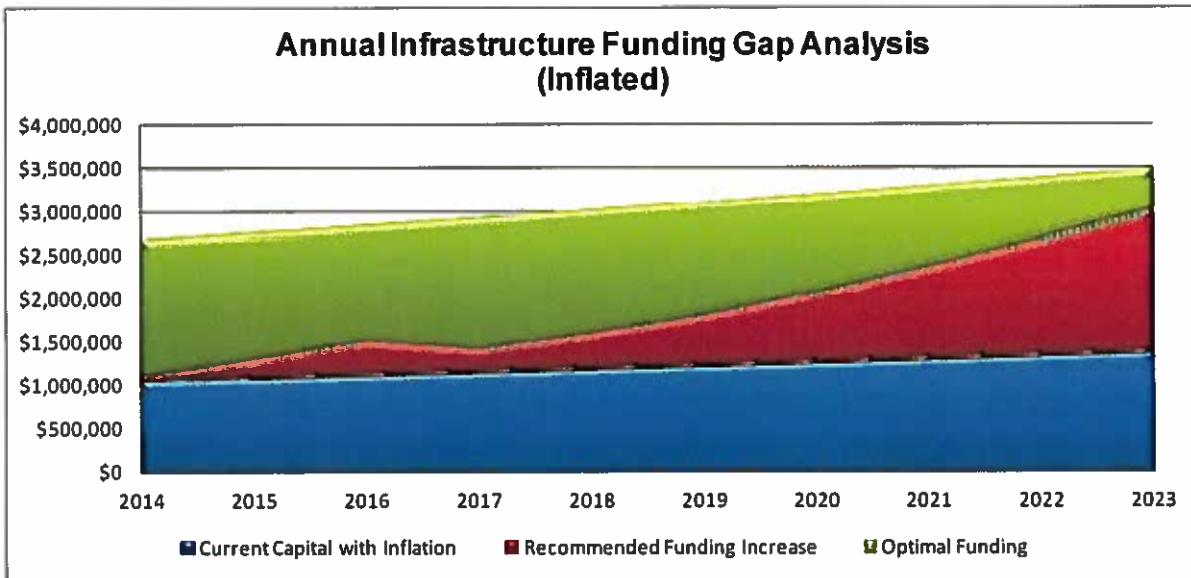
From a water asset base perspective, the estimated annual sinking fund requirement, based on using the calculations discussed above, is approximately \$650,000 (in 2013 dollars). Based on the Town's 2013 budget, current annual capital investment is approximately \$300,000. This would provide a high level estimate of the Town's annual infrastructure funding deficit at \$350,000 (in 2013 dollars).

Wastewater

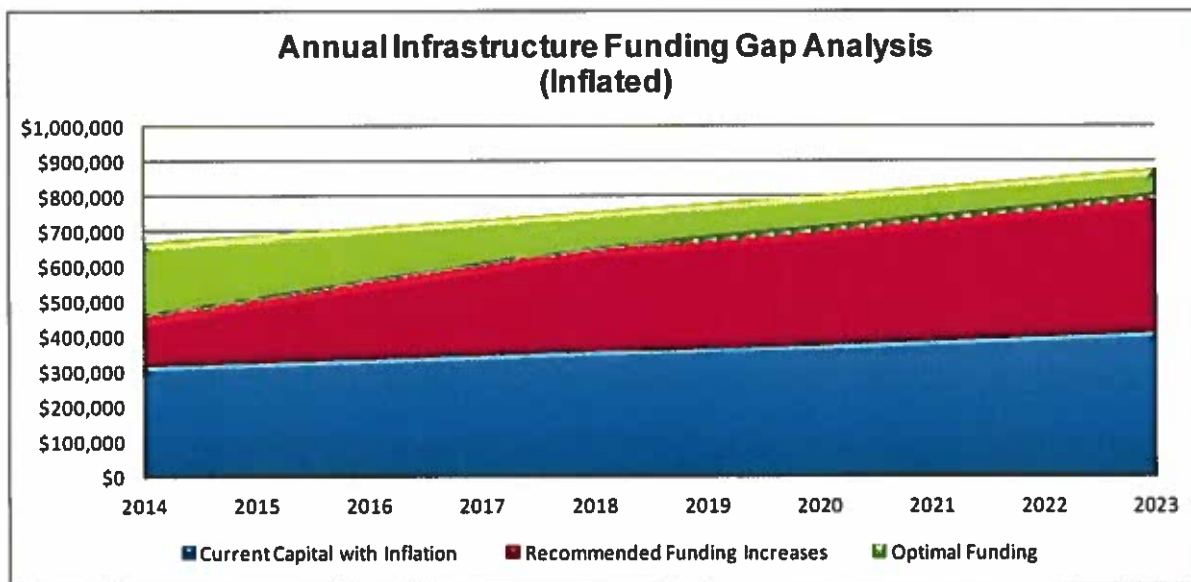
From a wastewater asset base perspective, the estimated annual sinking fund requirement, based on using the calculations discussed above, is approximately \$1.0 million (in 2013 dollars). Based on the Town's 2013 budget, current annual capital investment is approximately \$1,300. This would provide a high level estimate of the Town's annual infrastructure funding deficit at \$998,700 (in 2013 dollars).

Under the recommended financing strategy, the Town would be making proactive attempts to mitigate these funding gaps over the forecast period. Please see Figures 5-3 to 5-5 below for a 10 year forecast of implementing this strategy for tax supported, water and wastewater assets respectively. The blue portion of the graph outlines the current capital investment amounts, increasing at inflation. The red portion indicates the result of implementing recommended increases in available funding sources (resulting in increases in capital investment annually). The green represents optimal annual capital investment amounts (calculated as described above). Please note "optimal" capital investment funding can come from a number of additional sources, such as grants, donations, debt and other contributions. Please refer to Appendices F (tax supported), G (water) and H (wastewater) for 20 year versions of these graphs, indicating that if recommended annual funding levels are achieved, the annual infrastructure funding gap would be eliminated during the forecast period.

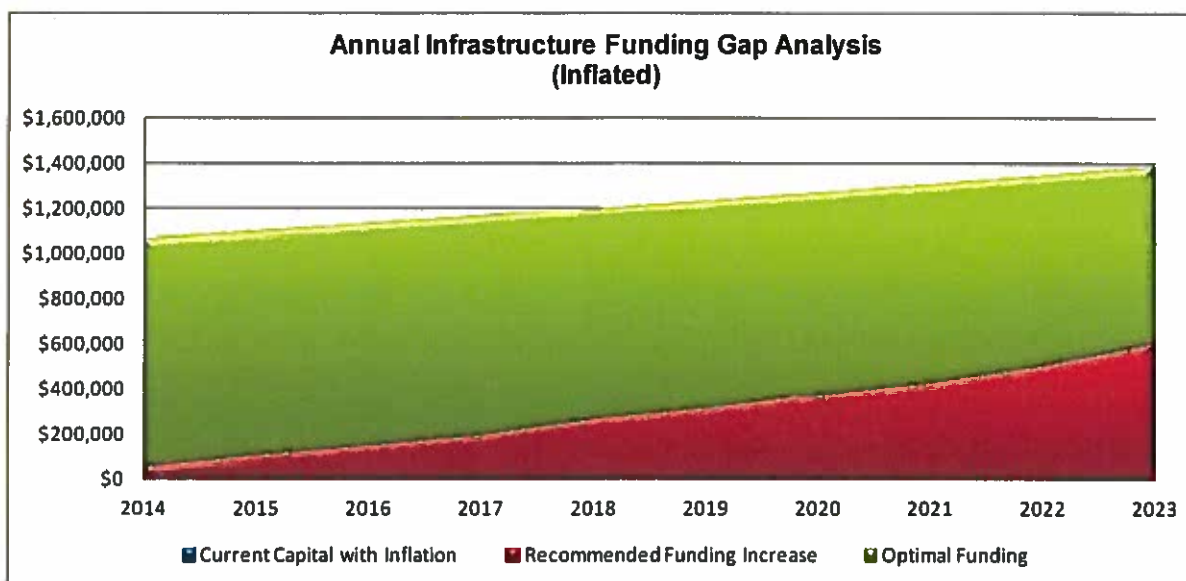
**Figure 5-3
Tax Supported Assets**



**Figure 5-4
Water Assets**



**Figure 5-5
Wastewater Assets**



To further mitigate the potential infrastructure funding deficit, the Town could consider:

- Decreasing expected levels of service to make available capital funding;
- Issuing debt for significant and/or unforeseen capital projects, in addition to the debt recommended within this report, while staying within the Town's debt capacity limits (this would have the impact of spreading out the capital repayment over a defined term);
- Actively seeking out and applying for grants;
- Rate increases, where needed (i.e. taxation, user fees); or
- Implementing operating efficiencies (i.e. reduced operating costs to allow more capital investment).

6. RECOMMENDATIONS

6. RECOMMENDATIONS

The following recommendations have been provided for consideration:

- That the Town of Aylmer Asset Management Plan be received and approved by Council;
- That consideration of this Asset Management Plan be made as part of the annual budgeting process to ensure sufficient capital funds are available to fund capital requirements; and
- That this Asset Management plan be updated as needed over time to reflect the current priorities of the Town.

The current level of funding for asset replacement and renewal at the Town will not sufficiently fund capital needs or close the infrastructure funding gap. As such, it is recommended that the following additional recommendations (developed through discussions with Town staff) be considered during the annual budget process:

- Initiation of “level of service” (LOS) strategies discussed in Chapters 3, 4 and Appendix D.
- Consider an increase in taxation as part of upcoming budget deliberations, dedicated to capital, to be transferred to capital reserve(s).
- Water rate increases consistent with the Town’s Water Rate Study.
- Wastewater rate increases consistent with the calculations provided in this report

Substantial investment in capital needs will be required over the forecast period. Through the recommendations provided above, proactive steps would be taken to increase capital investment, as well as reduce the annual infrastructure funding gap for these assets. Enhanced level of service will assist in maintaining adequate asset conditions, mitigate asset risk, as well as potentially defer capital needs within the forecast period. In addition, the Town should pursue available capital grants wherever possible, to further reduce the infrastructure funding gap.

Through the creation of this plan, Town staff have been provided with a model in which amendments and revisions can be made as needed. It is anticipated that the final plan adopted by Council will be monitored and updated frequently by Town staff as part of the budget process, with refinements and specific recommendations being provided with respect to the priority of each individual project.