

2014



Township of
Leeds and the
Thousand Islands

Asset Management Plan

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Executive Summary

The Township's asset management plan has been developed based on the guidance provided by the Province in *Building Together – Guide for Municipal Asset Management Plans* other factors included in the development of this plan are:

- Accepted industry best practices in the areas of condition assessments, life cycle requirements and estimated costs.
- The asset management plan was compared to the requirements under Federal grant programs to ensure compliance.
- The asset management plan was compared to the requirements under the Provincial Municipal Infrastructure Investment Initiative to ensure compliance.

The following summarizes the findings of the Township of Leeds and the Thousand Islands Asset Management Plan. The Plan applies to infrastructure assets related to: roads, bridges, water and wastewater infrastructure. Other assets such as facilities, rolling stock, parkland and major equipment will need to be intergraded into this plan as a future initiative to ensure all infrastructure that is required to provide services to the ratepayers is accounted for and planned for in the future. Other assets which are owned and operated by others (i.e. The County of Leeds and Grenville) but physically located within the Townships boundaries such as County roads and facilities are not incorporated into this asset plan.

The Plan follows the format set out in the recent *Building Together: Guide for Municipal Asset Management Plans* document released by the Ontario Ministry of Infrastructure.

A. STATE OF THE LOCAL INFRASTRUCTURE

- The Township's infrastructure has a replacement value of \$64 million. The largest component relates to road assets, which are valued at \$35.5 million;
- Although the road network is extensive, the majority of roads, about 58% or \$18.9 million, are in good standing condition;

- Overall, about 65% of Township assets (\$41.6 million) have a remaining useful life greater than 10 years. The remaining 35% or \$22.4 million of assets require repair or replacement within the next ten years.
- The majority of assets where the remaining useful life is less than ten years are related to roads infrastructure. The Township, through its annual capital budgeting process, has been addressing assets in need of repair or replacement. The magnitude of the funding will be required to be adjusted upward to main these assets in a good state of repair.

DESIRED LEVELS OF SERVICE

- Current service levels in the Township have been developed based on a combination of internal asset management practices, community expectations, statutory requirements, and industry operation and safety standards;
- The Township has in the past been responsive to infrastructure repair needs to address immediate environmental or health risks and to infrastructure needs resulting from statutory requirements.

ASSET MANAGEMENT STRATEGY

- The 10-year repair and replacement program equals about \$22.40 million. Roads and related services are the largest component, representing \$17.0 million, or 76.0% of all repair and replacement costs through to 2024;
- Approximately \$7.5 million of Townships assets are considered "overdue" for replacement. Almost all of this relates to roads and related infrastructure. Again, through annual capital budgeting processes the Township has been addressing critical issues and assets in need for repair and replacement.
- The Town has historically made regular contributions to reserves for the repair and replacement of water and wastewater related infrastructure. The level of these contributions is in-line with the investment required.

- In the long-term, contributions to reserves services would have to be in the order of \$1.7 million per year, mostly relating to roads and related infrastructure. This level of expenditure is approximately 1.5 times traditional expenditure levels.

FINANCING STRATEGY

- The current infrastructure deficit is calculated to be about \$7.5 million. This represents the difference between the reserves the Township would have if they followed a full cost recovery plan and the current total reserve amounts.
- It is unrealistic in the current fiscal context to expect the Township to fully address the infrastructure deficit in the short-term.
- Various strategies are discussed to reduce this funding gap.
 - Strategy 1 - Increase Tax Supported Infrastructure Levy
 - Strategy 2 – Capture Reallocation Opportunities
 - Strategy 3 – Use Debt Financing Strategically
 - Strategy 4 – Utilize Tax Room
- Continue to pursue grant programs provided by senior (Provincial and Federal) levels of government.

KEY FINDINGS AND RECOMMENDATIONS

Overall, the Township will need to continue to increase spending to address current and future infrastructure requirements in an effort to move forward with sustainable asset management planning:

1. Key Findings

- The Township's asset base is extensive, valued at \$64.0 million, in relation to the total permanent population of about 9,700 persons. The responsibility to maintain existing infrastructure is challenging and the Township will need to continue to increase spending and transfers to reserve to address current and future infrastructure requirements.
- Overall, about 65% of Township assets (\$41.6 million) have a remaining useful life greater than 10 years. The remaining, 35% or \$22.4 million requires repair or replacement within the next ten years.
- The Township, through its annual capital budgeting process, has been addressing critical issues and identifying assets in need for repair or replacement.

- The Township has less than optimal reserves available to fund roads. The funding model for in relation to water/wastewater capital projects is adequate to fund estimated needs.
- The Township will continue to require funding from the federal and provincial government to undertake capital related works. It is important the Township continue to seek financial assistance, where possible, from upper tier government sources.
- To ensure long-term sustainability the Township must lessen its dependence on the use of the Casino Hosting Fee.

2. Continue to Improve Capital Development Planning Process

- The Township should adopt multi-year capital budgets and forecasts for all services based on a minimum 10 year forecast horizon.
- Capital budgets and forecasts should identify and evaluate each capital project in terms of the following, including but not limited to:
 - gross and net project costs;
 - timing and phasing;
 - funding sources;
 - growth-related components;
 - potential financing and debt servicing costs;
 - long-term costs, including operations, maintenance, and asset rehabilitation costs;
 - capacity to deliver; and
 - alternative service delivery and procurement options.
- A range of quantifiable service level targets that incorporate the quantity and quality of capital assets should be established for all services. Targets should be measured, reported on, and adjusted annually.
- Road repair and replacement capital works should be prioritized based on asset condition ratings with assets overdue for replacement and/or identified as "Poor" or "Very Poor" recognized for immediate attention and remediation.
- Road assets which have been provided a "fair" condition rating should be targeted for maintenance to ensure they continue to perform at the expected level and prolong full reconstruction.

3. Ensure Asset Inventories are Updated Regularly

- Sound asset management decisions are only possible if information in the asset registry is accurate. The Township needs to build and regularly update the registry to account for asset purchases, upgrades, and replacements, as well as asset condition ratings and information on useful life; and
- The Township should update this Asset Management Plan at a minimum every 5 years and fine tune annually as part of the annual budget process.

4. Optimize the Use of Existing Assets

- The Township should implement a range of engineering and non-engineering approaches to extend the useful life of current assets. A number of municipalities in Ontario have had success in this regard by, for example:
 - Undertaking regular assessment reviews.
 - Increasing preventive road maintenance thus deferring more costly road repair or reconstruction.
 - Substituting retrofitting and rehabilitation work for (more costly) full replacement of an asset.

5. Act on the Financing Strategies as outlined in this report.

Introduction

Well managed infrastructure is vital to the quality of life and well being of our community. Given the wide range and scope of services provided, the Township has a responsibility to ensure the infrastructure is well planned, built, and maintained in a cost effective and sustainable way. Proactive asset management practices are a cornerstone to ensure these goals are achievable.

Building on the requirements set by the Provincial Government this plan follows the concepts and format set out in the recent report *Building Together: Guide for Municipal Asset Management Plans* released by the Ontario Ministry of Infrastructure. This first version of the plan only addresses the mandatory asset classifications set out in the Provincial planning document, namely: roads, bridges, water and wastewater infrastructure. Future updates to this document should incorporate other asset classifications such as: sidewalks, vehicles, machinery and equipment, buildings and other land improvements (i.e. parkland and open space).

Asset Management involves the planning, design, construction, operation and maintenance of infrastructure that is used to provide services. These actions are taken to ensure infrastructure needs are identified and addressed in a timely manner. Asset management is an essential part of the local government, as it coordinates infrastructure upgrades and repairs, allowing for informed and cost effective decisions. The main objective of this asset management plan is to maximize benefits, manage risk and provide adequate levels of service to the public in a sustainable manner.

Asset management is not a new concept in the Township of Leeds and the Thousand Islands. Council and staff apply sound financial, planning and asset management processes in the ongoing maintenance of our infrastructure and the annual capital budget review and approval processes.

This plan builds on our past successes. The asset management plan outlines the Township's planned approach for the acquisition and maintenance of its infrastructure, which then allows the Township to meet its stated mission by supporting the delivery of services to its residents. In achieving this objective, the asset management plan:

- Provides elected officials, Township staff, funding agencies, community stakeholders and residents with an indication of the Township's investment in infrastructure and its current condition;
- Outlines the total financial requirement associated with the management of this infrastructure investment, based on recommended asset management practices that encompass the total life cycle of the assets, which is currently based on a calculation of replacement cost over useful life;
- Prioritizes the Township's infrastructure needs, recognizing that the scope of the financial requirement is beyond the capabilities of the Township and that some form of prioritization is required; and
- Presents a financial strategy that outlines how the Township intends to meet its infrastructure requirements.

Ultimately the Plan provides Council with a roadmap with information to guide sustainable infrastructure investment decisions. The plan is a roadmap that should be adjusted as new information becomes available and fine-tuned during the annual capital budgeting process within the Township.

Levels of service are statements of service performance delivery. These statements are established based on Council direction, the needs of the community as well as legislative and regulatory requirements.

This report includes operating performance indicators for current levels of service. Through the continuing process of asset management levels of service will be further defined. A reduction or increase in the level of service in any area, be it in the Township, the Customer or the Township's assets, will effect not just the one but all areas just defined, as well as the budget.



Mission Statement & Goals

Mission Statement

The purpose of this Asset Management Plan is to ensure the well-being and safety for residents within the Township of Leeds and Thousand Islands by strategically managing the township's assets in an effective, efficient, and sustainable manner.

Goals:

1. To provide adequate service levels that meet the needs of the community
2. To provide an Asset Management process that is both achievable, and efficient
3. To enable the collection, coordination, sharing and communication of information
4. To develop operating, maintenance and capital financial plans that support the defined levels of service.
5. To manage the assets in a sustainable manner.

State of Current Infrastructure

This section summarizes the state of the Township's infrastructure, including:

- Inventory of all assets
- Value of assets
- Condition of assets

The information and data consolidated in this report has been obtained from numerous sources. We have utilized data that is of a historical nature, mainly the data that was compiled for the Townships Tangible Capital Asset Valuation, prior needs studies and other assessment reports. Replacement costs have been established based on industry standards, unit costs from recent tenders and other information sources.

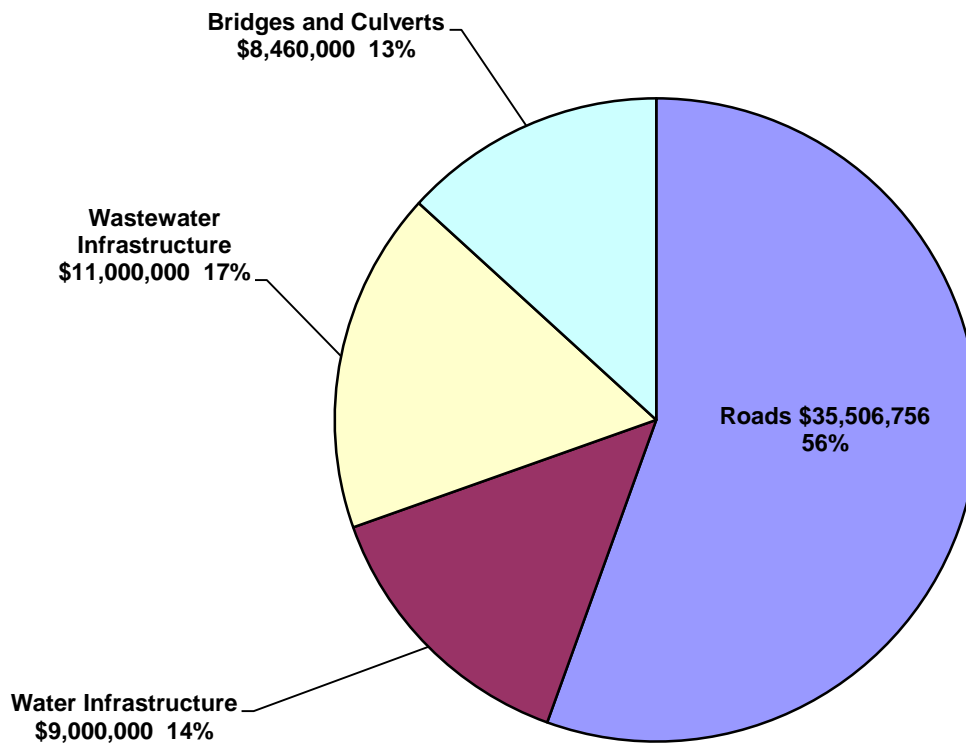
The Township's capital inventory is currently not adequately documented in a single municipal asset registry. The Township should undertake a consolidation of its various asset depositories to consolidate its information to ensure it is updated regularly, and captures information such as the acquisition of the assets, assets expansions and upgrades.

Asset Inventory - \$63,966,756

Asset Class	Type of Assets Included	Inventory	Replacement Value
Roads	Surface treated roads	Approximately 110 roads, 142.8 kilometres in length (excludes gravel roads)	\$35,506,756
Bridges and Culverts	Bridges and Major Culverts	11 bridges, 4 stream culverts	\$8,460,000
Water Infrastructure	Well & building, valve chamber, distribution system	Well & building 1&2, standpipe and valve chamber, distribution system	\$9,000,000
Wastewater Infrastructure	Lagoon retention cells, pumping station, collection system	Retention cells, diversion structures, irrigation equipment, pumping station, collection system	\$11,000,000

Total Replacement Value - \$63,966,756

(Roads, Bridges, Water and Wastewater)



Condition of Assets

Understanding the condition of the Township's assets plays a vital role within the management plan. The majority of the information gathered is based on assessment activities that provide first-hand knowledge of the condition of the infrastructure. All information on bridges, roads, culverts, water, and wastewater infrastructure is first-hand knowledge acquired from inspection and assessment of these assets.

The following table details how the condition assessment information for all these assets were converted to a condition score for the purpose of analysis performed in this report.

Asset Class	Method of Evaluation
Bridges and Culverts	Bridge Condition Index
Water Infrastructure	Condition Assessment Rating
Wastewater Infrastructure	Condition Assessment Rating
Roads	Surface Ride Quality

Bridges and Culverts: Bridge Condition Index is used to evaluate the current condition of all the bridges and culverts in the township. The BCI ranges from 0-100, with zero being poor and 100 being excellent. The average BCI rating for bridges and culverts in the township is 74, with the highest rating being 93.5 and the lowest being 64.2.

Water and Wastewater Infrastructure: Condition Assessment Ratings were used to evaluate the condition of the Water and Wastewater infrastructure. These Ratings were produced through thorough inspections of all facilities. This scale ranges from 1-5, one being only routine maintenance needed to maintain the integrity of the asset, and five being complete asset replacement needed and taking place within one year. The average of all water and wastewater infrastructure asset condition ratings is 2.16, with the highest rating being a four, and the lowest and most frequent rating being one.

Roads: Surface Ride Quality is used to assess the condition of roads within the township. SRQ is a scale from 1-10, one being very poor and ten being very good, which is used to provide an overall assessment of the surface condition, riding comfort and structural adequacy. Currently the average Service Ride Quality Rating for all roads in the township is 6.6.

The condition assessment of the Township's road network was rated by an external consultant in late 2009. This study was updated by staff in 2013 with the assistance of an external resource. The condition assessment follows standard industry practices in terms of defining the engineered road surface and components in terms of overall ride comfort and road safety. The road segments are categorized on industry condition assessments such as "Good/Very Good", "Fair", "Poor" or "Very Poor".

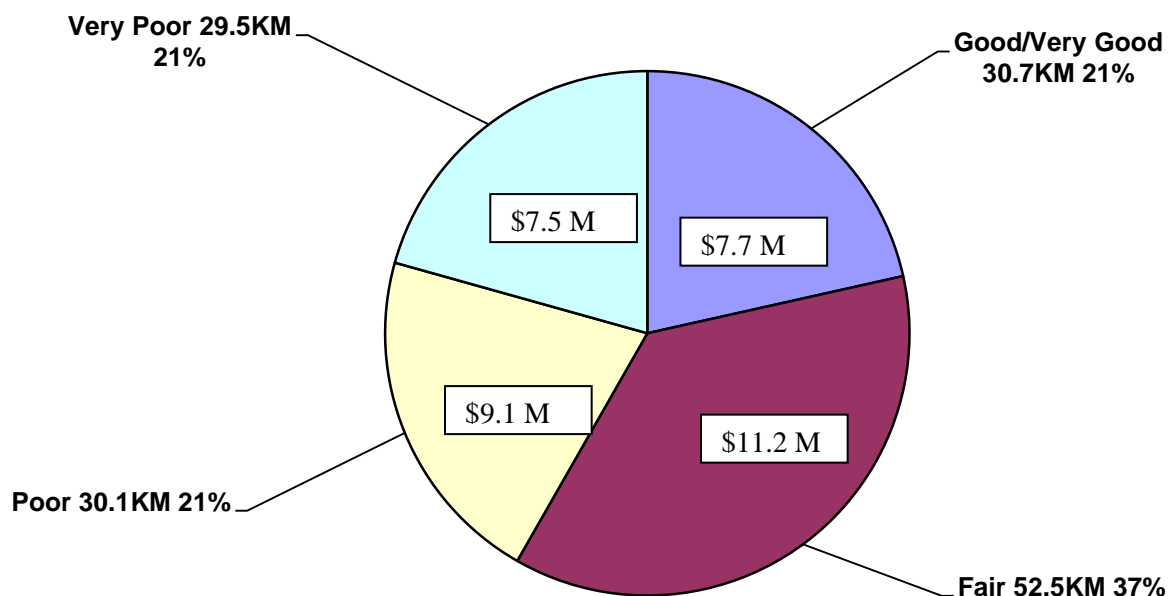
In addition to surface treated roads the Township has an extensive network of gravel roads. Currently this type of road has been excluded from the asset management plan since the majority of the renewal costs are funded from the Township's Operating Budget. A separate review should be undertaken to ensure the Operating Budget funding envelope is sufficient to ensure adequate life cycle funding for this roads type classification.

Roads

Roads within the township vary regarding their current condition and maintenance needs. Although some roads within the township are in excellent condition (about 21%), and the majority of roads fall within the fair-good range of condition (about 37%), it cannot be ignored that almost 42% of the Township's roads are in either poor or very poor condition. Of the 142.8 kilometres of road surface in the Township 83.2 kilometres are in excellent to fair condition, leaving the remaining 59.6 kilometres in need of maintenance to maintain adequate levels of safety and service.

To assess the current conditions of the roads in the township each road is given a Surface Ride Quality (SRQ) rating on a scale from 1-10, one being very poor and ten being very good, which is used to provide an overall assessment of the Surface Condition, Riding Comfort and Structural Adequacy. For this report this scale is restated as "Good/Very Good", "Fair" "Poor" or "Very Poor".

Road Network – KM's with Condition Rating Replacement Costs \$35,506,756

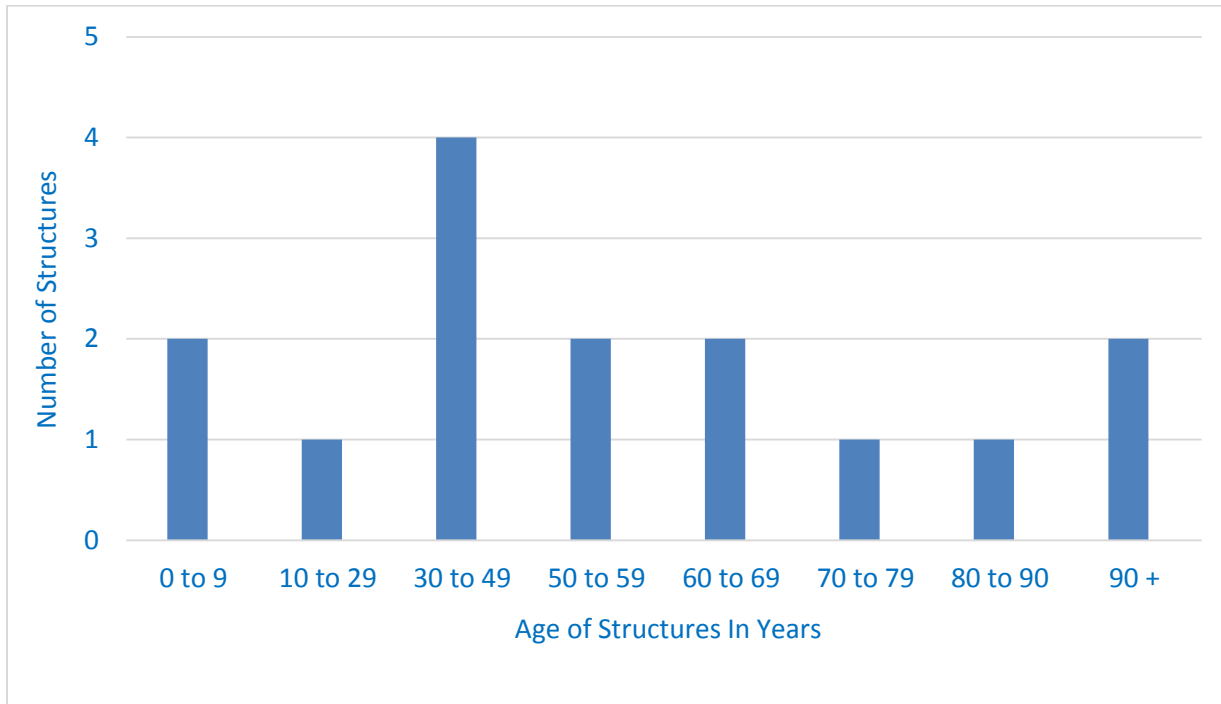


Bridges and Major Culverts

The bridges and major culverts within the township range in age from five to an estimated 113 years old and represent 1,397 square metres of equivalent deck surface area. The asset value on a replacement cost basis is of the order of \$8.5 million dollars. The estimated cost to replace only the Township of Leeds and the Thousand Islands four culverts is \$1.2M, with bridges accounting for the balance of \$7.3M.

In this report bridges and major culverts are considered bridges for statistical purposes. The Bridge Age Histogram graphically depicts that the 15 Township structures are reasonably well distributed in age. Those structures 60 years of age or older, 6 in total, are approaching the end of their design service life and will require replacement or major rehabilitation in the next two decades. The average age of the structures is 51.4 years.

Bridge Age Histogram – 15 Structures in Total

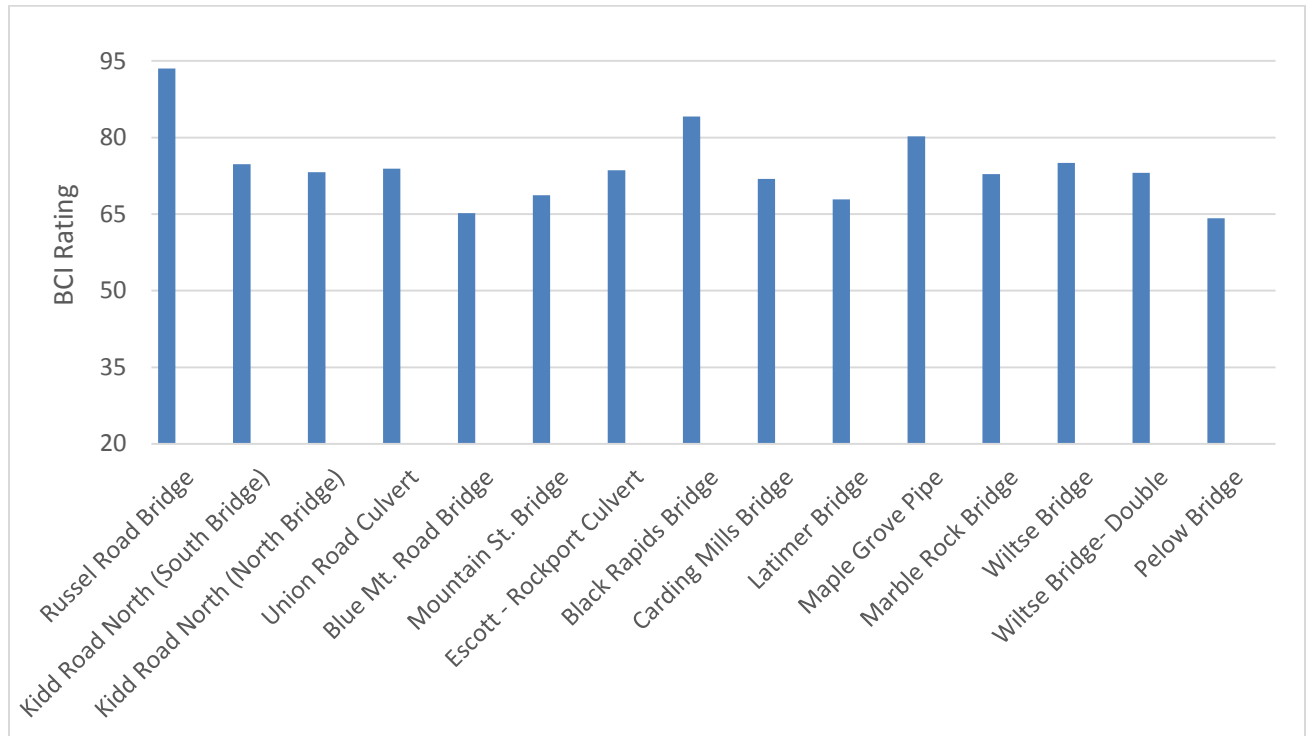


The Township undertakes bridge inspections as required by Provincial regulation, these inspections are carried out by an externally licensed professional engineer. A significant number of structural elements (up to 55) are consolidated into this index.

In addition to the overall BCI the external report provides a capital needs forecast, detailed asset assessments and detailed maintenance plans to ensure these assets meet or exceed all legislative requirements. Overall the structures are in fair to excellent condition with no structures receiving a BCI index rating below 60. Those structures, 4 in total, with a BCI rating between 60 and 70 have been identified for capital investments within this document. The balance of the 11 structures have a BCI rating of 70 or over and require only regular maintenance at this time.

The chart below details the Bridge Condition Index (BCI) for all 15 structures.

Bridge Condition Index Rating



Water and Wastewater

The estimated monetary capital value (i.e., estimated infrastructure replacement cost) of the Township's existing water and wastewater infrastructure is approximately \$20 million. Approximately \$9 million, or 45% is attributed to the water infrastructure and approximately \$11 million, or 55% is attributed to the wastewater (sewage) infrastructure. The largest monetary value (estimated replacement cost) associated with the water infrastructure is the Lansdowne Standpipe and Valve Chamber (\$4.5 Million). While the largest monetary value (estimated replacement cost) associated with the wastewater infrastructure is the Lansdowne Seasonal Retention Lagoons (\$5.2 Million).

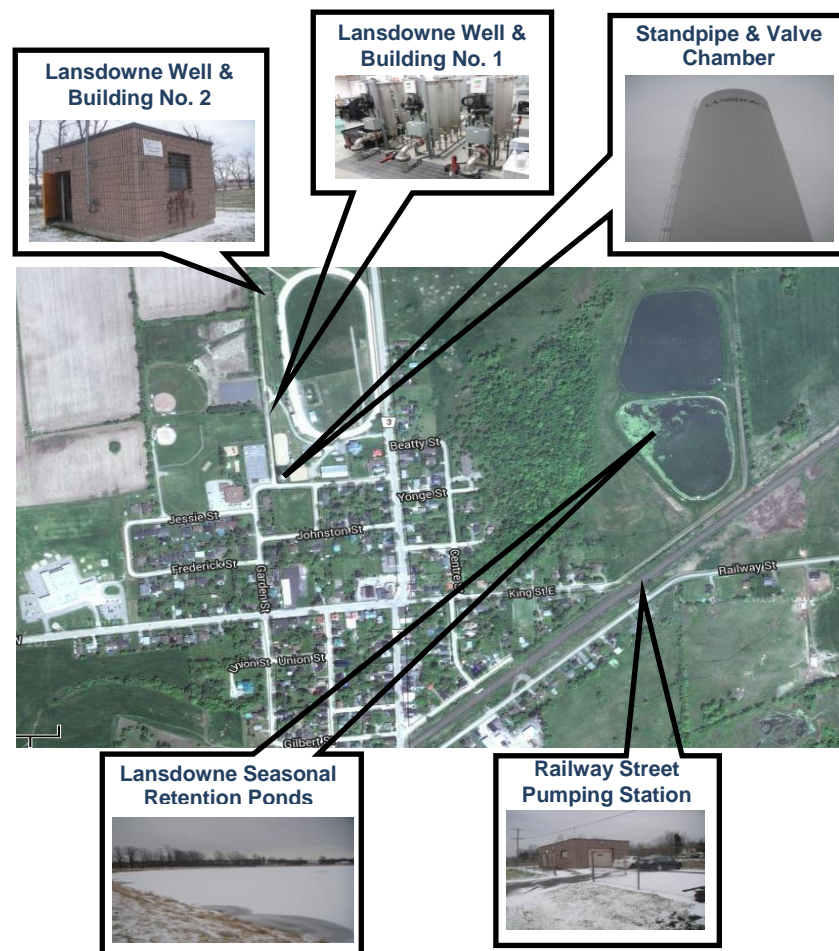
Overall the Township's water and wastewater assets have been well maintained and are in a good state of repair, with a number of upgrades and rehabilitation projects which have been completed or are scheduled for completion within the next 2 years. There are however a number of water and wastewater facilities which have been recommended to be strategically upgraded in order to maintain the high quality and level of service for which the residents of Lansdowne have been accustomed, as well as to accommodate future growth within the Township.

The following table summarizes all water and wastewater assets, their condition, value, and the ten year capital investment required for maintenance.

Infrastructure Description	Condition Assessment Rating	Estimated Monetary Capital Valuation	10-Year Estimated Capital Investment Required
Water Infrastructure			
Lansdowne Well & Building No. 1	1 (preventative and routine maintenance required)	\$1,200,000	\$133,000
Lansdowne Well & Building No. 2	1 (preventative and routine maintenance required)	\$700,000	\$69,300
Lansdowne Standpipe and Valve Chamber	4 (major rehabilitative work required on some components)	\$4,500,000	\$567,500
Lansdowne Water Distribution System	1 (preventative and routine maintenance required) ⁽¹⁾	\$2,600,000	\$98,500
Sub-Total – Water Infrastructure		\$9,000,000	\$868,300
Wastewater (Sewage) Infrastructure			
Lagoon Retention Cells, Diversion Structures and Irrigation Equipment	2 (additional levels of preventative maintenance required)	\$5,200,000	\$371,500
Railway Street Pumping Station	2 (additional levels of preventative maintenance required) ⁽²⁾	\$2,100,000	\$134,500
Lansdowne Sanitary Collection System	2 (additional levels of preventative maintenance required) ⁽³⁾	\$3,700,000	\$239,000
Sub-Total – Wastewater Infrastructure		\$11,000,000	\$745,000
Total		\$20,000,000	\$1,613,300

A visual condition assessment was completed as part of the asset management strategy in order to assess the state of the Township's water and wastewater infrastructure, which includes the following Township owned facilities, which are visually shown below

- Water Infrastructure
 - Lansdowne Standpipe
 - Lansdowne Valve Chamber and associated chlorine contact pipe
 - Lansdowne Well Nos. 1 & 2, as well as the Well houses Nos. 1 & 2.
- Wastewater (Sewage) Infrastructure
 - Lansdowne Sewage Retention Lagoon Cell Nos. 1, 2, Diversion Chamber, Equalization Chamber, Irrigation Pumping Station.
 - Railway Street Pumping Station and Forcemain.



Desired Levels of Service

Asset management decisions must be made with reference to the level of service planned for by the Township. Current service levels in the Township have been developed based on a combination of internal asset management practices, community expectations, statutory requirements, industry and safety standards and budget availability. The Township has been proactive in recent years in identifying infrastructure in need of repair, although some asset classes such as roads have assets that are below desired service standards. Although undocumented, the current capital planning processes incorporate a risk-based approach to infrastructure investment decisions. Currently the Township does not have any specific targets with respect to the renewal of an asset according to their condition assessment.

A “level of service” is a term that is used to describe *how much* of a service is provided or *the quality* of a service that is being provided. It is the responsibility of Council and management to establish targets for the desired levels of services and reporting out on them. This should be developed in a systematic way and include:

- Deciding on the appropriate level to provide a service
- Tracking the current service level
- Preparing a strategy to achieve the level of service if not being achieved
- Developing a model that provides costing to move to a desired level of service and its impact on user rates or taxation.

The Township is annually required to report various performance indicators to numerous external sources. For instance the following performance measures are required annually as part of the *Financial Information Return* filing requirements of the Ministry of Municipal Affairs:

- Percentage of winter events where the response met or exceeded locally determined municipal services levels for road maintenance
- Percentage of paved roads with a surface condition rated as good or very good
- Percentage of bridges and major culverts rated as good or very good
- Number of wastewater main backups
- Percentage of wastewater that by-passed treatment

- Percentage of days where a boil water advisory was issued
- Number of watermain breaks per 100 kilometres of distribution

The Township of Leeds and the Thousand Islands has not experienced any reported watermain breaks historically. The Township has also routinely been in compliance with all provincial regulations with respect to the supply and delivery of potable water to its residents. To this end, the Township would like to continue that high level of quality service.

The following descriptors describe the Township's expected level of service to its municipal water and wastewater serviced area of Lansdowne with respect to its water assets:

- Minimal to zero watermain breaks per year
- Providing safe potable water and exceeding all regulatory requirements including Ontario Regulation 170/03, and adequately chlorinating the water supply for distribution in accordance with the Procedure of Disinfection of Drinking Water in Ontario, including the following:
 - Over 200 independent annual microbiological samples of the raw groundwater. The reported values are compiled, examined and documented to ensure the existing groundwater supply is of a high quality and treatable with the existing equipment present at Well Building No. 1.
 - Over 150 independent annual microbiological samples of the treated groundwater, to ensure a zero bacteria count post-treatment.
 - Over 370 independent annual microbiological samples throughout the distribution system to ensure a high quality and safe supply of drinking water (i.e., zero bacteria count) within the Lansdowne distribution system.
 - Over 8,700 samples to measure and monitor chlorine concentrations post-treatment for residual maintenance. Minimum and maximum values are reported to the MOE for compliance purposes.
 - On-line turbidity monitoring to ensure a high quality of treated groundwater conveyed to the distribution system. Minimum and maximum values are reported to the MOE for compliance purposes.

- Annual sampling for over 60 organic contaminants to ensure a clean and safe groundwater source. The reported values are compared against strict MOE regulated water quality parameters for compliance.
- Annual samples of 14 inorganic contaminants to ensure a clean and safe groundwater source. The reported values are compared against strict MOE regulated water quality parameters for compliance.
- On-line SCADA system which continuously monitors and records treatment performance, which is reviewed by an experienced operator daily.
- Resident concerns / complaints are to be addressed within 24 hours.

The Township of Leeds and the Thousand Islands have only experienced one sewage overflow event which occurred in 2011 at the Railway Street Pumping Station as a result of a significant storm event in which the incoming flows exceeded the capacity of the station. The Township has since taken measures to help mitigate against extreme weather events which included the upgrades and expansion of that pumping station.

The Township has routinely been in full compliance with respect to its effluent discharges from the lagoon cells. To this end, the Township would like to continue that high level of quality service.

The following descriptors describe the Township's expected level of service to its tax paying residents with respect to its wastewater assets:

- Full compliance with the existing amended Certificate of Approval No. 3992-9ALPHV, as well as the Provincial Water Quality Objectives for seasonal effluent discharges from the lagoon cells.
- Zero overflow events within the sanitary drainage network, at the Railway Street Pumping Station and at the Seasonal Retention Lagoons.
- Zero basement flooding events within the serviced areas of Lansdowne.
- Minimal to zero lateral back-ups and mainline blockages. Any lateral or mainline blockages are to be addressed within 24 hours.

Asset Management Strategy

The asset management strategy component of this plan represents numerous planned activities to ensure that the state of the infrastructure achieves the level of service goals. The strategy is generally related to optimizing decisions with respect to:

- The replacement or rehabilitation of a asset
- The optimal level of preventative maintenance
- Ensuring the asset mix is optimal and efficient for service delivery
- Disposing of assets that are not required to meet service levels

An asset management strategy can take on many forms, such as formalized Needs Studies or less formal activities such as coordination meetings between departments. The following bullets summarize the current practices that are utilized by staff:

- The strategy for roads is supported by a formal needs and condition assessment, this study was last completed in 2009. This study underpins the framework for the preparation for the annual budget process. Staff also fine tune the annual needs based on annual and routine inspections and data collection that is required to ensure compliance with Provincial regulations.
- The strategy for the bridge assets is supported by regular inspections that are mandated by the Province. The inspections are performed on all bridges and any culvert with a span greater than three metres. The inspections are completed by external personnel who develop recommendations with respect to the optimal renewal strategy, including minor repairs, rehabilitation or replacement of the asset. This information is incorporated into the annual budget process.
- The strategy for the Townships water and wastewater assets is aligned to ensure we meet all requirements under Federal and Provincial legislation and regulations. In late 2013 a major update to the water/wastewater asset management strategy was completed. These assets are operated by the Ontario Clean Water Agency (OCWA) on behalf of the Township. OCWA annually reviews the current and long-term asset expenditure plan with Township staff and these discussions are incorporated into the annual budget process.

- Full lifecycle costs related to assets are employed. The analysis in this report utilizes this method to calculate required future funding levels represented by annual contributions to reserves/capital budget. It should be noted that 2014 replacement costs and future years have not be indexed to reflect the impact of inflation or unanticipated costs changes.

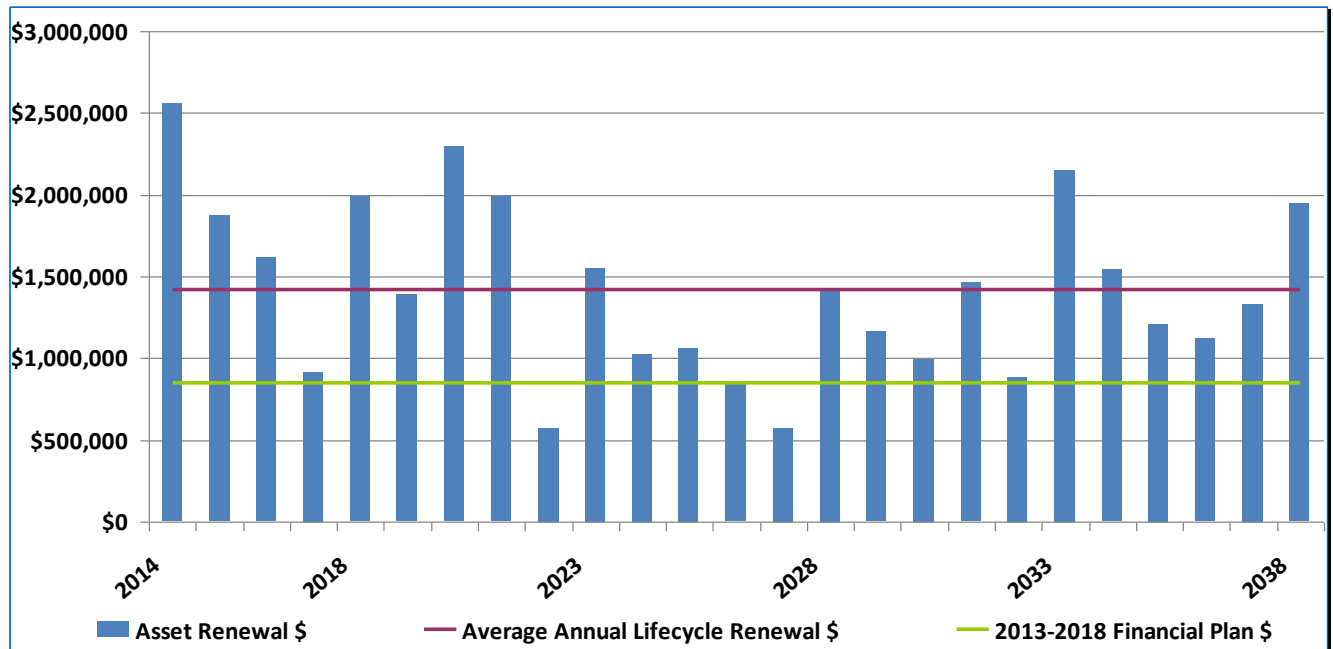
Roads – Asset Management Strategy

An assessment of all paved roads was undertaken to model the full lifecycle for these assets. A detailed model with numerous attributes has been developed to assist staff in the required modelling. This model should serve as a framework and annual fine tuning should be taken into consideration for numerous reasons such as:

- Asset has reached its modelled life expectation however is performing adequately
- Asset is not performing as expected, early replacement maybe required
- Maintenance costs are excessive

Based on the above principles the asset management strategy related to the Township roads has been modelled using full lifecycle principles. The results for the period 2014 to 2038 are presented on the next page.

Annual Roads Funding Requirements 2014- 2038



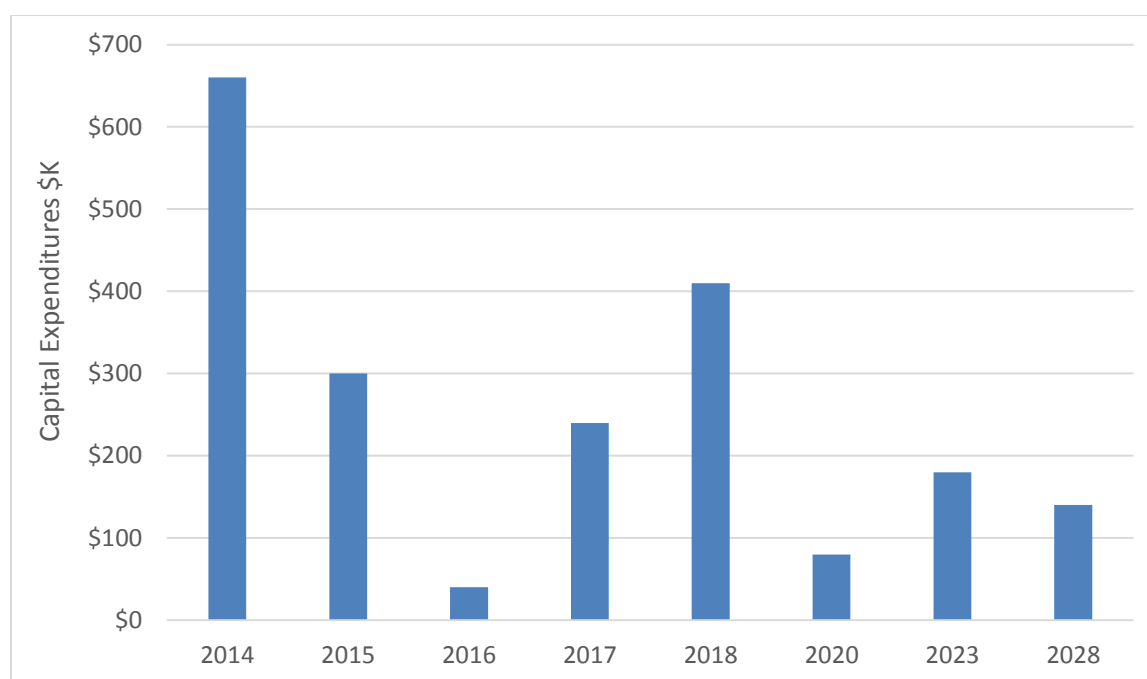
The following observations can be made:

- The average required investments in roads is \$1,420,000 annually
- The current investment in roads is \$850,000 annually
- Additional funding, approximately \$570,000 is required annually
- The level and condition assessment of the road system will not improve without additional funding
- In the short term, next 10 years, the annual requirements are significantly above the current funding. Further reductions in service levels will occur without a greater investment in the infrastructure.

Bridge and Culvert – Asset Management Strategy

The strategy for the bridge assets are supported by the regular inspections that are mandated by the Province. The inspections are performed on all bridges and any culvert with a span greater than three metres. Approximately \$2.05 million will be required to continue to maintain the bridge and culvert inventory in a good state of repair over the next 15 year period. The timing for these investments is detailed in the graph below.

Bridge & Culvert Funding Needs – 2014 to 2028



Given the inventory, age of existing structures and relatively long life spans (60-75 years), the annual expenditure requirements are not consistent. Currently the Township does not provide any annual reserve contribution dedicated to bridge replacement. In the years where a major bridge retrofit or replacement is required significant financial pressure will be placed on the capital funding and affordability in that year. This was the case in 2014 where the Latimer Bridge replacement represented approximately 60% of the Township's "normal" annual capital expenditures. Similar pressures will occur in 2014, 2015 and 2018. In order to smooth the financial impact it is recommended that dedicated annual reserve contributions be established.

Water and Wastewater – Asset Management Strategy

The asset management strategy takes a multi-prong approach to preserving water and wastewater infrastructure in such a manner to maintain the high quality desired level of service which the Township's residents have been accustomed to, while managing risk at the lowest possible life cycle cost.

As the Township is largely a rural municipal entity, with much of its population residing outside its single serviced area, many of its residents are serviced with local wells and septic systems. The only serviced area within the Township is the Village of Lansdowne, whose current population has been estimated by Township staff at approximately 600 equivalent persons, with an additional estimated equivalent population of 330 persons, attributed to the local elementary school.

The majority of the infrastructure, commissioned in 1977, was designed to service an ultimate build-out population of approximately 790 equivalent persons, plus an allowance for industrial, commercial and institutional development. Throughout the development of this asset management plan, each water and wastewater infrastructure component has been preliminarily examined and assessed to determine its estimated serviceable capacity. The as-built information was compared to the newer 2008 Ministry of Environment design guidelines, which have been significantly enhanced since the original design was based on guidelines prepared and utilized throughout the 1970s as part of the preliminary serviceable capacity assessment. Details related to this assessment are detailed in a separate report.

In addition to capacity utilization and planned expansion to accommodate potential future growth, the following activities have been analyzed and accounted for as part of the asset management strategy over 10 years beginning in 2014 and ending in 2023:

- Major maintenance activities which can be completed through cost effective endeavours by either Township staff or operations personnel, currently the Ontario Clean Water Agency.
- Renewal and rehabilitation activities required to extend the life of assets, the most prominent one being the recoating and painting of the existing Standpipe and current Railway Street Pumping Station upgrades project.

- Disposal and replacement activities which are anticipated to occur over the 10 year planning horizon once a particular asset has reached the end of its design life.

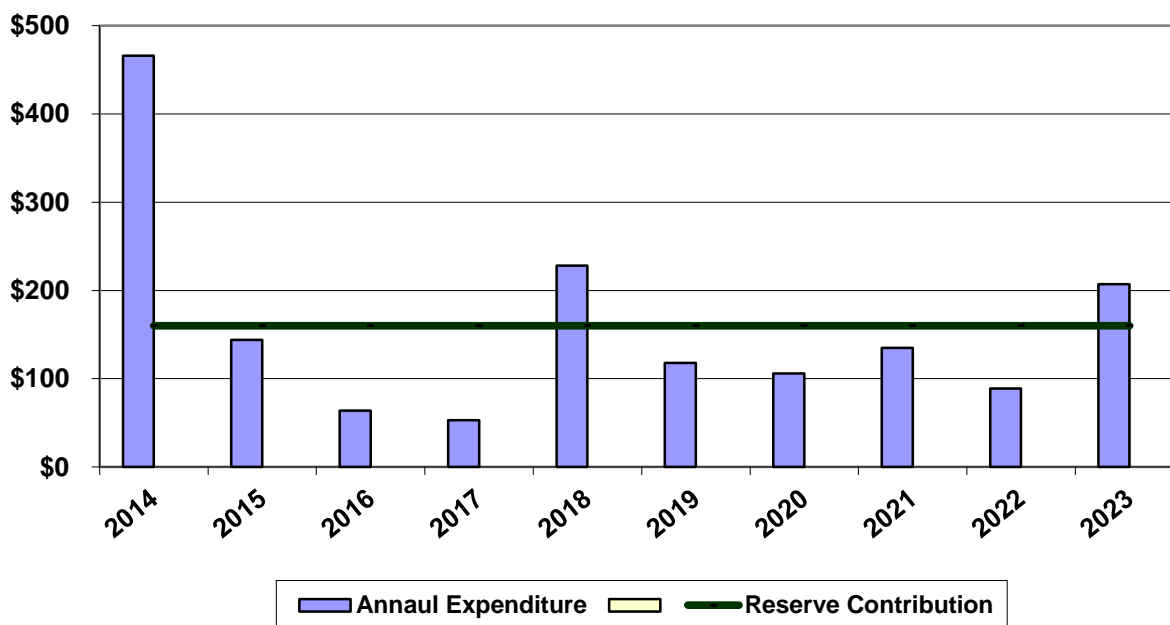
The condition of the water assets owned by the Township are overall in a good state of repair with major upgrades recently completed on the Lansdowne Well Buildings and rehabilitation work planned for the Standpipe.

The condition of the wastewater assets owned by the Township are overall in a good state of repair with major upgrades currently underway at the Railway Street Pumping Station. The planned and recommended upgrades to the wastewater infrastructure for the 10-year planning horizon will ensure the residents of the community of Lansdowne will continue to receive a high level of service, as well as remain in full compliance with the effluent discharge regulations.

The water and wastewater systems have been operating on a full cost recoverable basis for numerous years. Generally user rates are established on a four to five year horizon and take into consideration all operating and future capital funding requirements. The annual budget does have an allowance to fund reserves for capital purposes so that excessive rate increases are not required in any given year. The chart below details the capital expenditure requirements for the next 10 years. The average annual contribution of \$161,000 is very manageable since the annual reserve contribution from the user rates is in the same range of magnitude. The annual reserve contribution is represented by the solid straight line on the graph below.

Water and Wastewater (\$ Thousands)

Annual Expenditure and Reserve Contribution Forecast 2014 - 2023



The required annual expenditure beyond the 10 year period on average do not vary greatly from the first 10 years. The next update to this plan will incorporate any significant variances. In addition the rate setting model which will be updated later in 2014 for the next five years will incorporate any major new information.

Asset Management Strategies to Reduce Costs and Other Implementation Issues

The Township has committed to advancing asset management practices within the municipality. The rate of progress will be constrained due to inadequate capacity in terms of planning and evaluation resources and inadequate business systems to monitor and report. The infrastructure investments needed (presented previously) are based on the assumption that the Township will replace the existing infrastructure with similar assets. However, it may be feasible to replace infrastructure at a lower cost by using alternative procurement methods, or by taking advantage of other technological advancements or new replacement techniques or processes. The following strategies should be further explored by the Township to reduce future costs:

- Review the use of multi-year contracts for infrastructure renewal to take advantage of lower unit costs.
- Greater use of coordinated tendering and other procurement methods used by other municipal units.
- Employ more evaluation and reviews of rehabilitation vs full replacement.
- Apply more advanced techniques to risk assessments to better assess the probability of failure.
- Consider consolidation or eliminating redundant infrastructure.
- Intensive use of some assets and/or share assets with neighbouring municipal units.

The following are some activities that would enhance the Asset Management Practices of the Township. Some of these suggestions are general and can apply to all assets, while others may be specific to a specific asset type or class. The estimated costs of these activities is also provided for information.

- The Township should move forward on the development of a GIS data layer(s) for its numerous asset class or types. Assets that are linear (water distribution, wastewater collection, roads) are prime candidates to benefit from this technology (\$30,000 per year).
- Continue with the Bi-Annual Bridge Inspection Program (\$10,000 - \$15,000 every two years).
- Maintain and update the Asset Condition Assessments (Cost Variable)
- Update the Asset Management Plan on a routine basis, at least every 5 years (\$25,000 per update)
- Expand the Asset Management Plan to capture all asset types and classes (\$25,000 - \$50,000)
- Prepare a long-term capital investment plan (staff time)
- Review preventative maintenance practices and processes to target activities that will defer major asset rehabilitation or replacement (Annual Costs Need to be Reviewed).

Financing Strategy

This section of the Plan is intended to provide a framework for the Township to integrate asset management with annual budgeting and long-term financial planning. The Township has traditionally followed a “pay-as-you-go” approach to financing infrastructure, whereby capital expenditures are prioritized and approved with reference to the availability of funds. Although, in recent years, Council and staff have adopted several strategies to address the potential loss of “Casino” revenues and have introduced 1% Tax Levy which is dedicated to future capital expenditure needs. That said, the Township has historically not set aside funds to maintain most of its capital assets (with the exception of water and wastewater assets) in a state of good repair and has been solely dependent on the “Casino” revenues to undertake capital renewal.

A. AVAILABLE FUNDING TOOLS

The following section discusses, at a high level, the range of tools available to the municipality for funding capital expenditures.

Federal and Provincial Grants

Historically, the Township has had some success in securing grant funding from higher orders of government to assist in funding capital projects. The Township will continue to seek financial assistance from upper levels of government (where available) to fund non-development related capital works.

At the time of preparing this document, the Township has not secured any government funds to assist in funding capital works. Given the recent changes to the *Ontario Municipal Partnership Program* in terms of the introduction of assessment and income comparisons across rural Ontario staff is projecting that the Township will likely be receiving less grants for capital purposes than in previous years.

With the extension of the Federal Gas Tax Program the Township will continue to receive on an ongoing basis approximately \$270,000 yearly – these funds are currently applied to Township renewal of its road network.

Development Charges

Development charges may be imposed to pay for increased capital costs required because of increased needs for services arising from development. Historically, the Township has used development charges to the extent possible to fund “development-related” capital costs. Development charge rates are currently being reviewed. It is noted that capital costs of new

infrastructure that benefit existing municipal residents cannot be funded from development charges. Furthermore, 10% of all development-related capital costs for certain services must be funded from non-development charge sources (typically property taxes).

Water and Wastewater User Rates

The Township has been establishing user rates for water and wastewater to achieve full cost recovery. The Township on an annual basis updates the user rates to reflect in-year operating and capital expenditures while continuing to put aside funds for the ultimate repair and replacement of water and wastewater related infrastructure. The Township will be updating the Water and Wastewater User Rate Study during 2014 to establish rates for the next few years. It is not anticipated that significant rate increases will be required.

Property Taxes

Property taxes represent approximately 55% of the Township operating budget revenues in 2014. The use of property taxes to fund municipal services is the most secure source of funding for the Township. As such, the Township will be required to increase property tax revenue to fund additional capital expenditures.

The Township introduced in 2013 a dedicated infrastructure levy for the purpose of capital asset repair and replacement. Each 1% increase in the dedicated infrastructure levy will generate about \$60,000 annually. In addition this levy has been supplemented by using overall "Tax Room" created due to favourable assessment shifts with the County. This has resulted in reduced financial contributions by the Township to the Provincial Government for education purposes and to the County of Leeds and Grenville for their needs. Overall the dedicated infrastructure levy now stands at approximately \$693,000 annually and is contributed to the Tax Rate Stabilization Reserve.

User Fees

User fees (excluding water and wastewater revenues) represent under 10% of Townships total revenues. To the extent that user fees are being collected to fund repair and replacement of capital infrastructure, user fees should be allocated to capital reserves.

Local Improvement Charges

Municipalities, through local improvement charges, have the ability to recover the costs of capital improvements made on public or privately owned land from property owners who will benefit from improvement. The Township could use the local improvement process to undertake a capital project and recover all or part of the cost of the project by imposing local improvement charges on properties that benefit from the work.

Developer Contributions

Municipalities obtain a wide-range of assets through developer contributions; these contributions can be “in kind” direct provision of assets or funded, partially or fully, through agreement. The contributions are typically facilitated through condition of a subdivision or site plan agreement, under the *Planning Act*. An important consideration in determining the level and extent of developer contributions is the municipality’s “local service definitions” which, under the *Development Charges Act* and *Planning Act*, are used to establish which type, and shares, of capital expenses are considered eligible for direct development contribution or funding. It is recommended that the Township review the local service definitions as part of the ongoing Development Charges Background Study.

B. FINANCING AND FINANCIAL MANAGEMENT PRACTICES

This section discusses, at a high level, the means by which capital revenue can be raised or secured.

Debt (as a financing tool)

Debt financing is a viable tool available to fund infrastructure projects. Planned debt is a responsible way to spread the costs of a project over the life of an asset to ensure the ratepayers who benefit from the asset share the cost. Therefore, the burden of capital is distributed equally between the current taxpayer and future rate payers. The Township has not often exercised the ability to fund capital works through the issuance of debt. The amount of debt a Township can carry is set by provincial regulations to ensure municipalities continue to operate in a fiscally sound environment. The Township currently operates well below the debt threshold identified by the Ontario Ministry of Municipal Affairs and Housing. The Town’s total net debt charges of \$98,000 equates to approximately 5% (out of 100%) of the total allowable annual repayment limit.

As a safe practice, any potential debt should not be financed for a period longer than the average useful life of the asset. This will ensure the Township is not paying for an asset outside the design life beyond the assets expected use.

Reserves and Reserve Funds

Reserves are to be used to cope with high capital investment periods by saving during low capital investment periods. This practice will smooth annual expenditures and ensure the Township can complete the required annual capital works. In addition to contributions during low investment periods many municipalities use annual surpluses, should one arise, to increase reserves. This has been the practice of the Township and it is recommended that this practice be continued.

Special Agreement – Casino Hosting Fee

There are occasions where a special agreement may be established between a municipal unit and a third party. The "Casino Hosting Fee" provided by the Ontario Lottery Corporation is an example of such agreement. The Township annually receives approximately \$1.6 million under this agreement. Council has established a policy on the allocation of these funds. Approximately 85% or \$1,360,000 is allocated to various capital and infrastructure reserves on an annual basis. These reserve funds are then drawn down to fund approved capital expenditures as part of the annual budget process. Council has recognized that total reliance of these funds to fund our infrastructure needs, excluding water and wastewater projects, may not be sustainable and the revenue flows have risks attached to them. It is prudent financial planning to diversify this risk. As noted above the Township currently has approximately \$693,000 being funded from the tax as a dedicated contribution to fund infrastructure needs, these monies are contributed annually to the Township's Tax Rate Stabilization Reserve.

C. CURRENT INFRASTRUCTURE DEFICIT AND FUTURE FUNDING GAPS

To implement sustainable asset management practices the Township needs to have an understanding of the current "infrastructure deficit" as well as the funding gaps that would arise should the required annual contributions to reserves be delayed. The following sections discuss these issues and financial implications.

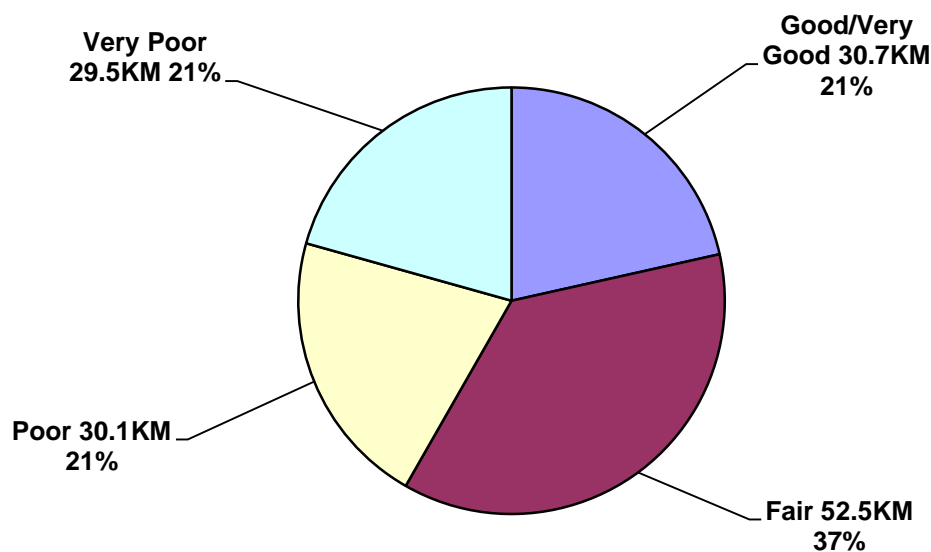
A. Water and Wastewater Infrastructure

The Township has been very proactive in ensuring that the user rates to fund the annual water and wastewater operating costs and forecasted capital costs are being funded within the user rates. As noted earlier the average annual infrastructure investment needed is approximately \$161,000. A similar annual contribution to the waster/wastewater reserves is also being made. The long-term forecast may require the use of debt financing to ensure projects are not deferred do to cash flow reasons. Otherwise the funding model is accounting for the long-term required infrastructure investments. The planned 2014 Rate Study Update should be undertaken to confirm these assumptions and adjusts the user rates for inflation or unaccounted for financial pressures.

B. Roads, Bridges, Culverts

The Township has been investing in its road infrastructure on an annual basis. However, the percentage of roads in the chart below which are in Very Poor condition represent 21% of the total paved road inventory. The replacement renewal costs to move these roads into a higher road condition rating would be approximately \$7.5 million.

Road Condition Rating



The Asset Management Strategy section of this report noted that the average annual investment in the road network required was \$1,420,000 per year. It was also noted that funding of \$850,000 was being applied annually. If the current level of investment was to be continued the Township could expect its infrastructure deficit to increase by \$570,000 per year. The same analysis was undertaken on the Townships Bridge and Major Culvert inventory. This analysis concluded that the Bridge and Culvert Network to be predominately in a good state of repair and therefore no infrastructure deficit currently exists in this asset class. However an annual contribution to reserves in the amount of \$100,000 was recommended to fund future investments forecasted. Overall the Township needs to increase its infrastructure investment by \$670,000 per year or expect an increase in the future infrastructure deficit which will be reflected in an increase in the peerage of the road network being rated as Poor or Very Poor.

Council must also remember that the bulk of the existing roads monies being invested are being funded from the Hosting Fee Revenues generated by the Casino Agreement. Council has already recognized the risks with sole reliance on one funding source and has taken steps to reduce the risks to the ratepayers following a prudent long-term financial strategy.

Overall the recommended financing strategy moving forward must take into account four issues, namely:

1. The need to address the existing infrastructure deficit of \$7.5 million;
2. The need to increase the current investment by \$670,000 annually;
3. The need to balance the impact on our ratepayers and overall condition of our infrastructure;
4. The need to diversify the funding sources to support infrastructure renewal and replacement (reduce reliance on Casino Funds).

It must be remembered that this report only considers the impact of the roads, bridges, culverts, water and wastewater asset classes. There will be incremental funding required to support other asset classes such as Rolling Stock (Fire Trucks, Graders, Plows, and Vehicles), Buildings, Parkland Development, etc. Traditionally investment in these areas has been \$200,000 to \$300,000 per year. These estimate will be confirmed in the Phase II reporting of the Asset Management Plan.

The recommended strategies to address these four pressures are set out in the next section of this report.

It is unrealistic in the current fiscal context to expect the Township to fully fund and address its infrastructure funding shortfall immediately in the short-term. Accordingly, a long-term funding strategy that identifies options for addressing current and future asset expenditure requirements, including the recalculated infrastructure deficit is detailed below.

It must also be remembered that the Townships Infrastructure Investment decision and financing strategies must be balanced against the overall financial and service level pressures the Township will experience.

To be clear the infrastructure investment decision must be made in the context of Operating Budget Pressures. For example the following pressures that will be potentially impacting the tax rate over the next few years:

- The reduction of Provincial Grants under the Ontario Municipal Partnership Fund (Revenue loss of \$90,000 to \$140,000 in 2015).
- Continued wage pressures due to OPP salary and benefit settlements (8.55% increase in 2014, above inflation in normal years).
- The potential implementation of a revised OPP Billing Model (\$200,000 per year, if phased-in).

Notwithstanding the potential Operating Budget Pressures the following strategies should be perused to address the inadequate level of infrastructure investment. Anyone of these strategies could be implemented independent of each other or in any combination.

Strategy 1 - Increase Tax Supported Infrastructure Levy

Annually staff bring forward as part of the Operating Budget Deliberations a recommendation to approve the equivalent of a 1% increase (\$60,000) in the tax rate to fund the Townships infrastructure requirements. Although this assistance in the funding envelope does not increase the ``real` dollars available since inflation is forecasted to be in the 2.0% range over the next few years. Consideration should be given to ensure these contributions are increased to match or exceed the forecasted rate of inflation. The incremental impact of this strategy would significantly increase the funding available for infrastructure investments over a short period of time, as identified in the table below.

	Continued 1% Contribution		2% Contributions	
	Annual \$ Contribution	Cumulative \$ Available	Annual \$ Contribution	Cumulative \$ Available
Year 2015	\$60,000	\$60,000	\$120,000	\$120,000
Year 2016	\$60,000	\$120,000	\$120,000	\$240,000
Year 2017	\$60,000	\$180,000	\$120,000	\$360,000
Year 2018	\$60,000	\$240,000	\$120,000	\$480,000

This strategy can be modified to address any significant operating budget pressures in any particular year.

Strategy 2 – Capture Reallocation Opportunities

- a) The Township in its Operating Budget is totally funding (\$300,000 per year) its expected future costs of closing our landfill sites. A policy change was approved by Council in 2013 which resulted in large materials and other items no longer being accepted at the landfill sites. This measure should extend the life of the landfill sites and free up funds since the Township will potentially have numerous more years to fund the future costs. Staff have commissioned an independent study to determine the updated life expectation for each landfill. It is recommended that the potential reallocation be incorporated into the budget plan of the Township.
- b) The Township has outstanding debt which will need be refinanced in 2015. Staff should review potential retirement of this debt, internal financing or other options. If the debt was retired approximately \$100,000 within the current operating budget could be reallocate to infrastructure investment without any tax rate impact. It is recommended that staff explore these opportunities further.

Strategy 3 – Use Debt Financing Strategically

Debt financing is a viable tool available to fund infrastructure projects. Planned debt is a responsible way to spread the costs of a project over the life of an asset to ensure the ratepayers who benefit from the asset share the cost. Therefore, the burden of capital is distributed equally between the current taxpayer and future rate payers. The Township has not often exercised the ability to fund capital works through the issuance of debt and its current debt outstanding is minimal compared to the overall asset valuation.

Asset classes that have a very long lifecycle are ideal candidates for debt financing. For example, bridges and culverts typically have a service life in excess of 50 years. Other examples would be major operational equipment.

At a borrowing rate of 5% over 15 years the Township could borrow in excess of \$20.0 million and still be within allowable Provincial Limits. It is recommended that staff identify specific projects in the infrastructure investment horizon that would be candidates for debt financing.

Strategy 4 – Utilize Tax Room

During 2013 and 2014 the Township was able to capture ``tax room`` resulting from assessment changes within the County. In addition the increase in assessment within the Township was lower than the province wide increase which benefited our ratepayers. These favourable impacts will continue for the duration of the current assessment cycle; i.e. 2015 and 2016.

These actions of Council allowed for significant increases in infrastructure funding in 2013 and 2014 with respective overall tax burden impact of 0.8% in 2013 and 1.9% in 2014. It is recommended that staff continue to balance the overall tax burden increase (Township, County and Education) to prudently plan for the financial pressures and increased infrastructure funding the Township must proceed with to maintain its assets in a good state of repair.

Conclusions and Recommendations

The Township of Leeds and the Thousand Islands is in a fair position regarding its infrastructure, but as with all things improvement is needed to continue to deliver adequate levels of service. The Township's water and wastewater assets are for the most part in good working order, with only one major repair needed. Roads represent the biggest concern for the Township as a significant portion of these assets are in Poor or Very Poor condition. Bridges and culverts are all in good working order with repairs and maintenance taking up little financial burden relative to the other asset classes.

With all things taken into consideration the Township of Leeds and the Thousand Islands can continue to deliver exceptional levels of service for the foreseeable future using this plan as a guideline for its asset needs. The implementation of the Financial Strategies identified in this report would greatly assist the Township in achieving these goals. Overall, the Township will need to continue to increase spending to address current and future infrastructure requirements in an effort to move forward with sustainable asset management planning.

In summary:

1. Key Findings

- The Township's asset base is extensive, valued at \$64.0 million, in relation to the total permanent population of about 9,700 persons. The responsibility to maintain existing infrastructure is challenging and the Township will need to continue to increase spending and transfers to reserves to address current and future infrastructure requirements.
- Overall, about 65% of Township assets (\$41.6 million) have a remaining useful life greater than 10 years. The remaining, 35% or \$22.4 million requires repair or replacement within the next ten years.
- The Township, through its annual capital budgeting process, has been addressing critical issues and identifying assets in need for repair or replacement.
- The Township has less than optimal reserves available to fund roads. The funding model for water/wastewater capital projects is adequate to fund estimated needs.

- The Township will continue to require funding from the federal and provincial government to undertake capital related works. It is important the Township continue to seek financial assistance, where possible, from upper tier government sources.
- To ensure long-term sustainability the Township must lessen its dependence on the use of the Casino Hosting Fee.

2. Continue to Improve Capital Development Planning Process

- The Township should adopt multi-year capital budgets and forecasts for all services based on a minimum 10 year forecast horizon.
- Capital budgets and forecasts should identify and evaluate each capital project in terms of the following, including but not limited to:
 - gross and net project costs;
 - timing and phasing;
 - funding sources;
 - growth-related components;
 - potential financing and debt servicing costs;
 - long-term costs, including operations, maintenance, and asset rehabilitation costs;
 - capacity to deliver; and
 - alternative service delivery and procurement options.
- A range of quantifiable service level targets that incorporate the quantity and quality of capital assets should be established for all services. Targets should be measured, reported on, and adjusted annually.
- Road repair and replacement capital works should be prioritized based on asset condition ratings with assets overdue for replacement and/or identified as "Poor" or "Very Poor" recognized for immediate attention and remediation.
- Road assets which have been provided a "fair" condition rating should be targeted for maintenance to ensure they continue to perform at the expected level and prolong full reconstruction.

3. Ensure Asset Inventories are Updated Regularly

- Sound asset management decisions are only possible if information in the asset registry is accurate. The Township needs to build and regularly update the registry to account for asset purchases, upgrades, and replacements, as well as asset condition ratings and information on useful life; and
- The Township should update this Asset Management Plan at a minimum every 5 years and fine tune annually as part of the annual budget process.

4. Optimize the Use of Existing Assets

- The Township should implement a range of engineering and non-engineering approaches to extend the useful life of current assets. A number of municipalities in Ontario have had success in this regard by, for example:
 - Undertaking regular assessment reviews.
 - Increasing preventive road maintenance thus deferring more costly road repair or reconstruction.
 - Substituting retrofitting and rehabilitation work for (more costly) full replacement of an asset.

5. Act on the Financing Strategies as outlined in this report.