

ASSET MANAGEMENT PLAN



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September 2017

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EXECUTIVE SUMMARY

The following summarizes the findings of the Township of North Kawartha Asset Management Plan (2017 Plan). The results of the 2012 Road Needs Study, as it relates to the Township's roads, have been incorporated into the State of the Local Infrastructure and Financing Strategy summary pages to provide a complete overview. Infrastructure in North Kawartha for which the County of Peterborough is responsible for is not included. All figures are in current 2017\$ and should be adjusted annually to account for the effects of inflation.

The 2017 Plan follows the format set out in the *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 total replacement value of \$58.5 million.
 - Buildings represent \$25.9 million (45%) and roads represent \$25 million (43%); and
 - The remaining tax supported assets represent \$7.6 million.
- Overall, a high proportion (about 65% or \$38.3 million) of Township assets are considered to be in "Good" to "Very Good" condition. At the same time, approximately 20% (\$11.8 million) of infrastructure is considered to be in "Poor" to "Very Poor" condition.

B. LEVEL OF SERVICE

- Current service levels in North Kawartha 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
- The Township measures the level of services it provides using a number of key performance indicators. Service levels have remained relatively constant.

C. ASSET MANAGEMENT STRATEGY

- The Township employs several actions to maintain assets in a state of good repair and to ensure that assets continue to be in service for their full life cycle, and in many cases, beyond the expected design life.
- The Township of North Kawartha currently has a corporate by-law for procurement. The Procurement By-Law ensures openness, accountability and transparency of Township purchasing while protecting the financial best interest of the Township of North Kawartha.

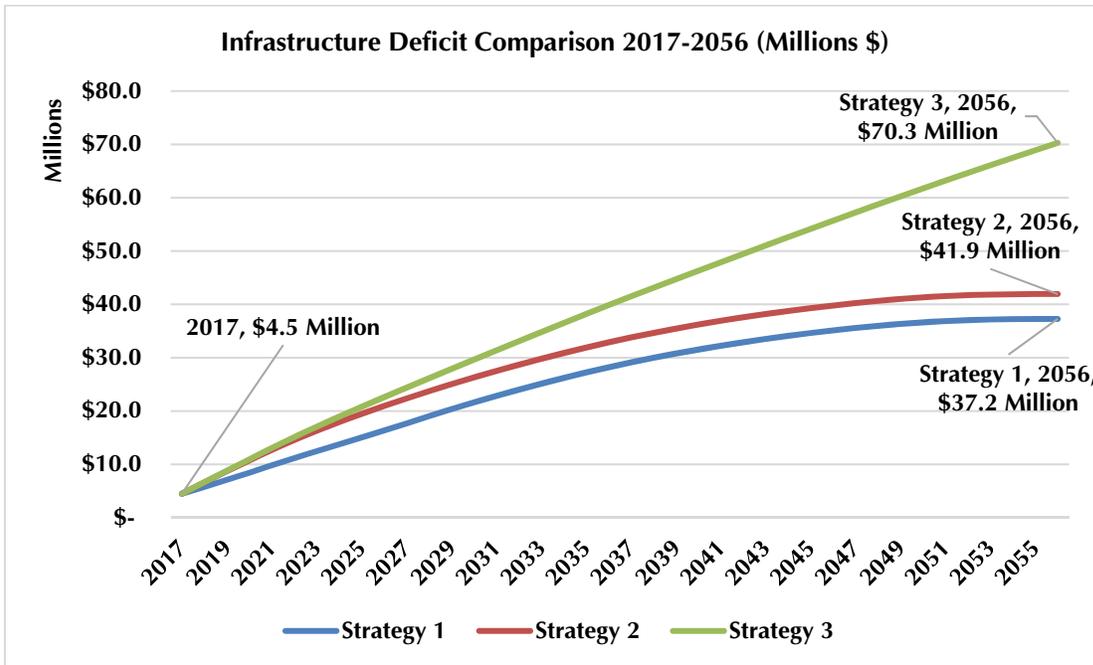
D. FINANCING STRATEGY

- The current 2017 infrastructure deficit for all tax supported assets is calculated to be about \$4.5 million. This represents the difference between the required in-year contributions to capital and the current contributions to capital for both the assets in this 2017 Plan and the needs identified for roads in the 2012 Road Needs Study.
- It is unrealistic in the current fiscal context to expect the Township to fully address the infrastructure deficit in the short-medium term;
- Three financing strategies were developed to determine what capital contributions would be required to meet asset replacement needs (Note: in any given year, actual capital expenditures may be greater or less than the noted capital contributions as reserves are assumed to accommodate variances between the contributions and actual expenditures);

Summary of Financing Strategies	
Financing Strategy	Strategy Parameters
Strategy 1 Close in-year Funding Gap by 2056 (Includes Grants)	<ul style="list-style-type: none"> • Increase annual capital contributions by approximately \$39,000 per year. • For 2018, the increase would be in addition to the 2017 \$112,000 tax supported capital funding. • The yearly revenue requirement is equivalent to 0.75% of the Township's 2017 tax levy revenue.
Strategy 2 Close in-year Funding Gap by 2056 (No Grants)	<ul style="list-style-type: none"> • Increase in annual capital contributions amount to approximately \$39,000 per year. • For 2018, the increase would be in addition to the 2017 \$112,000 tax supported capital funding. • The yearly revenue requirement is equivalent to 0.75% of the Township's 2017 tax levy revenue.

Summary of Financing Strategies	
Financing Strategy	Strategy Parameters
Strategy 3 Maintain Status Quo (No Grants)	<ul style="list-style-type: none"> • Tax supported capital funding is increased at a rate of 2% each year • No significant changes in annual capital funding.

- Of the three financing strategies identified, strategy 3 poses the greatest risk to the organization as the infrastructure deficit continues to grow to 2056, and beyond. Strategies 1 and 2 demonstrate the infrastructure deficit being controlled over the planning period. Detailed tables of each strategy are provided in Appendix A.



E. KEY FINDINGS AND RECOMMENDATIONS

The key report findings and asset management recommendations the Township should consider moving forward are identified below:

1. Key Findings

- The Township’s asset base is extensive, valued at \$58.5 million, in relation to the census population of about 2,479 persons.
- Overall, a high proportion (about 65% or \$38.3 million) of Township assets are considered to be in "Good" to "Very Good" condition. At the same time,

approximately 20% (\$11.8 million) of infrastructure is considered to be in "Poor" to "Very Poor" condition.

- Nearly 90% of the “Poor” to “Very Poor” condition assets are related to the Township’s roads.
- The Township of North Kawartha has made some effort in recent years to address the infrastructure gap and improve the condition of assets:
 - Upper level government grant money received has typically been allocated to capital asset repair and replacement activities;
 - The Township has created an asset management plan reserve, however, contributions to this reserve is contingent on the level of upper level government support and in-year capital asset requirements;
 - Through its annual capital budgeting process, the Township addresses critical issues and assets in need for repair or replacement.
- The responsibility to maintain existing infrastructure is challenging, however, in addition to current capital funding, the Township should increase annual capital contributions to address current and future infrastructure requirements;
 - Property taxes are the most secure form of revenue and the Township should consider increasing tax base revenues, above current practices, to fund capital works;
 - Ensure user fees are being utilized to the full extent as allowed under provincial legislation. This will help alleviate funding pressures from the tax base and allow for greater flexibility to fund capital asset repair and replacement activities; and
 - Explore alternative arrangements to provide services – public private partnerships or shared services.
- The Township is considered to be in good fiscal standing with strong budgetary performance and no external debt - the Township currently operates well below the annual repayment limit of \$1.4 million in total net debt charges. This debt capacity could allow the Township to use debt to carry out emergency asset replacements, improvements, or other strategic projects which typically provide a return on investment such as a reduction in operating costs.
- The Township should continue to seek funding from the federal and provincial government (when available) to undertake capital related works.

2. Continue to Improve Capital Development Planning Process

- The Township employs a multi-year capital budget and forecasts for all services based on a 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;
 - 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.
- Repair and replacement capital works should be prioritized based on asset condition ratings. For example, assets identified as “Very Poor” and “Poor” can be considered for immediate attention.
 - Advanced capital prioritization processes include the use of a risk matrix to assist in determining annual capital spending.
- Infrastructure assets which have been provided a “Fair” condition rating should be targeted for maintenance to ensure they continue to perform at the expected level.
- The Township should, where possible, coordinate the construction of new infrastructure with infrastructure repairs and replacement to achieve cost efficiencies.

3. Ensure Asset Inventories are Updated Regularly

- The Township should establish an asset management internal network including department heads from the Office of the CAO, Finance, Building & Planning, Emergency Services, Parks & Recreation/Waste Management and Roads. The internal network can be lead by an asset management “champion.”
- Sound asset management decisions are only possible if information in the asset registry is accurate. The Township’s designated asset management champion

should regularly update the registry to account for asset purchases, upgrades and replacements, as well as asset condition ratings and information on useful life;

- The Township should continue to update and refine the condition assessments for all assets considered under this 2017 Plan;
- The Township should update this Asset Management Plan at a minimum every 3-5 years.

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:
 - Regular and ongoing maintenance work;
 - Daily vehicle and equipment inspections; and
 - Substituting retrofitting and rehabilitation work for (more costly) full replacement of an asset.
- The Township should explore opportunities to dispose under utilized infrastructure/facilities which may not warrant repair/replacement. For example, underutilized buildings, or surplus land/parks, could be disposed and sold; and
- Coordinate assets into specific hubs to create operating and capital repair/maintenance efficiencies where possible.

I INTRODUCTION

The Township of North Kawartha 2017 Asset Management Plan (2017 Plan) provides the Township with a tool to guide capital financing decisions. The Plan covers all Township assets, these include: buildings, land improvements, vehicles, equipment, computers & software, and other engineering assets which include the Township's bridge, sidewalks, streetlights and other minor engineering related assets. The Plan builds on the analysis of the Township's roads from the 2012 Road Needs Study. The 2017 Plan follows the format set out by the Ministry of Infrastructure through the *Building Together: Guide for Municipal Asset Management Plans*. All figures reported in this 2017 Plan are in constant 2017 dollars and therefore should be adjusted annually to account for the effects of inflation.

A. ASSET MANAGEMENT OVERVIEW

Well-managed public infrastructure is vital to the prosperity and quality of life of communities. Given the range and scope of services provided, Ontario municipalities have a special responsibility in ensuring that infrastructure is planned, built, and maintained in a sustainable way. A detailed asset management plan is essential to carry out this responsibility. Asset management has several benefits, including:

- Can make informed and traceable decisions;
- Risks are managed where necessary and in advance so the Township has the opportunity to coordinate accordingly;
- Higher customer satisfaction;
- Documents funding plan and strategy to manage infrastructure; and
- Demonstrates compliance with regulations and legislation.

Asset management is an ongoing practice in the Township of North Kawartha. Council and staff have applied sound asset management principles to maintain records on tangible capital assets, monitor asset performance, and plan for infrastructure acquisition, repair, rehabilitation, and replacement over the long-term.

The purpose of the 2017 Plan is to build on existing practices by identifying how best to manage Township infrastructure over the planning period to 2056. A strategy for maintaining infrastructure so that desired service levels are achieved is an important element. In this respect, the 2017 Plan has been prepared with reference to the Township's 2017 Strategic Plan, more specifically, to Strategic Pillar 1: Investments in Municipal Infrastructure. Ultimately, the Asset Management Plan will provide

Council with information that can guide sustainable infrastructure investment decisions.

B. ASSETS INCLUDED IN THIS PLAN

The 2017 Plan addresses all assets the Township owns including: buildings, land improvements, vehicles, equipment, computers & software, and other engineering assets which include the Township's bridge, sidewalks, streetlights and other minor engineering related assets. The analysis of Township roads has been derived from the 2012 Road Needs Study. It should be noted that:

- Section II: State of the Local Infrastructure of this 2017 Plan summarizes the total value of all Township assets covered in this 2017 Plan and all roads as identified in the 2012 Road Needs Study. The analysis of roads, does not include an age profile by remaining useful life analysis, as the recommended works in the 2012 Road Needs Study are assumed for the forecast.
- Section V: Financing Strategy of this 2017 Plan analyzes the funding requirements from a Township-wide perspective, and therefore includes all tax-supported capital requirements identified in the 2012 Road Needs Study.
- This Asset Management Plan focuses on the Township's existing assets. The Township does not expect significant growth in the future, therefore, no capital requirements associated with new growth related infrastructure are assumed.

The assets included in this 2017 Plan are consistent with the asset categories included in Schedule 51 of the Township's Financial Information Return. Inclusion of all assets in this Plan therefore meet the asset management plan requirements in the Township's Gas Tax Funding Agreement. Table 1 summarizes the assets included in this Plan.

Table 1	
Assets Included in the 2017 Asset Management Plan	
2012 Road Needs Study	2017 Plan
• Roads	• Buildings
	• Land Improvements
	• Vehicles
	• Equipment
	• Computers & Software
	• Other Engineering Assets**
Total Value: \$25.0 Million*	Total Value: \$33.5 Million

Note:* Replacement values identified in the 2012 Road Needs Study were inflated to current \$2017 at 2%.

*Note**:* Other engineering assets include: the Township bridge, streetlights and sidewalks.

C. NET BOOK VALUE VS. REPLACEMENT VALUE

As specified in the Ministry Guide, the value of the Township's assets is presented in two different formats: 'Net Book Value' and 'Replacement Value'. These are described below.

Net Book Value (NBV) is consistent with the financial accounting practices defined by the Public Sector Accounting Board and is reported in the Township's financial statements. The Township of North Kawartha reported Net Book Value covers the full scope of the Township's Tangible Capital Assets, including land. It is noted that the same scope of assets are considered under this Plan.

The Net Book Value is the original acquisition cost less accumulated depreciation, depletion or amortization. It is reported annually in accordance with reporting standards established by the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants. As shown on Table 2 below, the Township's 2015 Consolidated Financial Statement reported the Net Book Value of the Township's Tangible Capital Assets as of December 31, 2015 at \$27.3 million, inclusive of land. Under the financial accounting approach many assets may be fully depreciated yet remain in use across the Township. Therefore, Net Book Value is not the appropriate methodology to be employed for infrastructure renewal planning.

Asset Category	2015 Closing NBV
Land	\$ 1,723,706
Land Improvements (parks, fencing, tennis court, etc.)	\$ 158,955
Buildings	\$ 14,897,780
Machinery and Equipment	\$ 1,222,174
Vehicles	\$ 0
Linear Assets (roads, bridge, etc.)	\$ 9,201,322
Other (computer equipment & software)	\$ 10,369
Construction-In-Progress	\$ 102,634
Total	\$ 27,316,940

Note: Categories/information derived from the 2015 Financial Information Return.

Vehicles are likely included in the Machinery & Equipment category.

Replacement Values are used to estimate the cost of replacing an asset when it reaches the end of its engineered design life. The total replacement cost of all assets is estimated at \$58.5 million.

Replacement Cost Valuation

The three basic methods to estimate replacement costs needed for infrastructure renewal planning are outlined:

- Local price indices: This is the most accurate method. The Township has collected some recent acquisition data demonstrating similar replacement activities.
- Published price indices: Where local indices are not available, the Township uses published indices (e.g. Non-residential Building Construction Price Index) from similar municipalities.
- Accounting estimates: When assets cannot be estimated against either index, the Township uses historic cost, estimated useful life and inflationary effects to determine replacement value.

D. ASSET MANAGEMENT INTERNAL NETWORK

In order to operationalize a plan, it starts with involving the necessary Township staff in the asset management process. In order to address asset management, an internal network (Asset Management Committee) should be created and comprised of department heads from Township departments such as: Office of the CAO, Finance, Building & Planning, Emergency Services, Parks & Recreation/Waste Management and Roads. Furthermore, to facilitate execution of any asset management strategy, the Township can appoint an individual to be the asset management “champion”. The champion is intended to be the person who maintains and regulates the quality of the asset register and is fully informed on all asset management matters.

The asset management champion should not be alone in the process. It is important that all other departments contribute to the process to ensure that reliable data is available. For example, as new assets are acquired for Parks & Recreation services, it is required that Parks & Recreation staff provide the information to the champion to update the asset register. This ensures that the register is up to date and that there is no data loss. These updates can be communicated as needed, but an annual review of assets for all departments can be done once a year.

To ensure buy-in and co-operation from all departments, the Committee representatives and the champion should meet frequently to identify and address any

gaps or challenges that may arise throughout the process. This strengthens the internal network, and in turn, facilitates communication between departments. For example, regular senior management meetings can be used as a platform to initiate regular asset management discussions.

E. PLAN MONITORING

The Township should look to monitor the effectiveness of the Plan. This ensures that the Plan is utilized to its full extent and any gaps are identified. The Township should look to review these six compliance mechanisms:

1. Compliance with legislative requirements – Is the Township meeting all legislated mandates?
2. Service delivery – 100% compliance with service targets or targets exceeded.
3. Capital project delivery outputs delivered to schedule (or better) and on budget (or better).
4. Operational and maintenance budgets met (or better).
5. Risk Management—No events occurring outside the risk profile. How have projects with high risk been handled?
6. Benchmarking with comparable jurisdiction — Maintain performance.

F. TIMEFRAMES FOR REVIEW AND UPDATES

This Asset Management Plan should be reviewed and updated on a regular basis. Recognizing that a full Asset Management Plan and related policies should only be updated at key intervals, it is important that other asset management components such as capital budgeting exercises, risk assessments and updates to the asset register should be integrated into staff's regular routine. Table 3 below outlines the key timelines for updates and reviews.

Asset Management Framework	Timeframe
Asset Management Policy	3-5 Years
Asset Management Plan	3-5 Years
Capital Budget	Annually
Asset Register and Data	Semi-Annually or Annually
Risk assessment (capital prioritization)	Semi-Annually or Annually

G. ASSET MANAGEMENT PLAN STRUCTURE

The Asset Management Plan is structured as follows:

Section II summarizes the state of the Township's infrastructure with reference to infrastructure quantity and quality.

Section III current service levels and service level targets are described.

Section IV sets out several strategies that will assist the Township in maintaining assets so that desired service levels are achieved.

Section V establishes how asset management can be delivered in a financially sustainable way.

Section VI provides recommendations based on the analysis undertaken.

II STATE OF THE LOCAL INFRASTRUCTURE

This section provides a summary of the Township's assets with reference to asset quantity and quality. Some assets have condition assessments based on staff visual inspection and input, while the balance of assets considered are based on the useful life of the asset relative to its age. Useful life assumptions for the assets considered under this Plan were acquired from the Township's tangible capital database and are summarized in Table 4 below.

Asset Category	Useful Life Assumptions (Years)	Replacement Cost Valuation Assumptions
Buildings	10-50	<ul style="list-style-type: none"> • Local Price Indices • Recent Acquisition Costs • Accounting Estimates
Land Improvements	10-30	<ul style="list-style-type: none"> • Local Price Indices • Recent Acquisition Costs • Accounting Estimates
Vehicles	5-25	<ul style="list-style-type: none"> • Local Price Indices • Recent Acquisition Costs • Accounting Estimates
Equipment	5-40	<ul style="list-style-type: none"> • Local Price Indices • Accounting Estimates
Computers & Software	5	<ul style="list-style-type: none"> • Local Price Indices • Accounting Estimates
Other Engineering Assets	15-50	<ul style="list-style-type: none"> • Local Price Indices • Accounting Estimates

A. CONDITION ASSESSMENTS AND UPDATES

The Township's asset inventory is documented in a municipal asset registry which contains detailed information about the asset acquisition cost, year of emplacement, expansions and upgrades (if applicable), useful life, asset descriptions and year of asset replacement.

Consistent with the Canadian National Infrastructure Report Card, as well as other major organization and institution reporting formats, a five-point rating scale was used to assign a condition to all assets. The percentage of remaining useful life was used for assets where condition data based on inspection was not available. Table 5 summarizes the assumed parameters.

Condition Assessment	Percentage of Useful Life Range	Definition
Very Good	80% - 100%	Well maintained, good condition, new or recently rehabilitated asset.
Good	60% - 80%	Good condition, few elements exhibit existing deficiencies.
Fair	40% - 60%	Some elements exhibit significant deficiencies. Asset requires attention.
Poor	20% - 40%	A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.
Very Poor	0% - 20%	Widespread signs of deterioration, some assets may be unusable. Service is affected.

Asset conditions based on staff assumptions and inspections took priority over accounting based remaining useful life. The inspection based condition assessments were consolidated into the 5-tier condition system as shown in Table 5 above. If an asset had a staff condition assumption, then the remaining useful life of the asset was set to a defined percentage of total useful life. In general, this resulted in assets having several more years of remaining useful life than what the accounting method suggested. Table 6 provides the parameters used in this calculation.

Condition Assessment	Percentage of Useful Life Remaining
Very Good	80%
Good	60%
Fair	40%
Poor	20%
Very Poor	10%

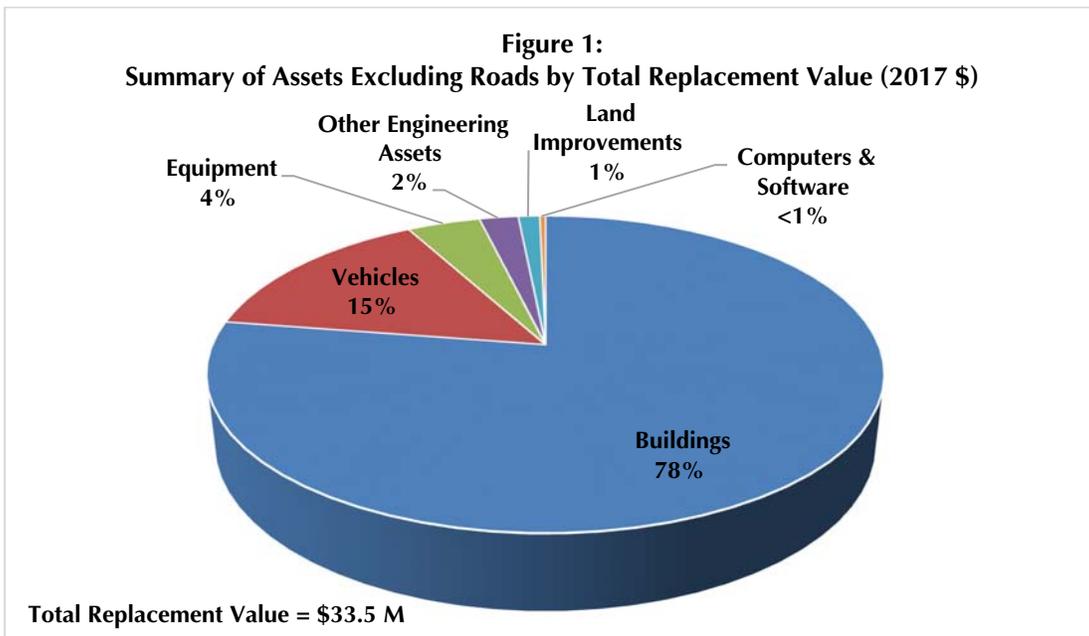
Moving forward, updating and identifying asset conditions should be part of regular inventory updates. There are several methods to identify asset conditions. The ideal methods are outlined as follows:

1. Condition rating systems based on engineered metrics and professional standards. For example, Facility Condition Index for buildings or professional mechanic inspections for vehicles. These metrics can then be translated into a 5-tier rating system.
2. Estimates based on expert staff opinion. This approach is important where there is low confidence that age and useful life represents a particular asset.

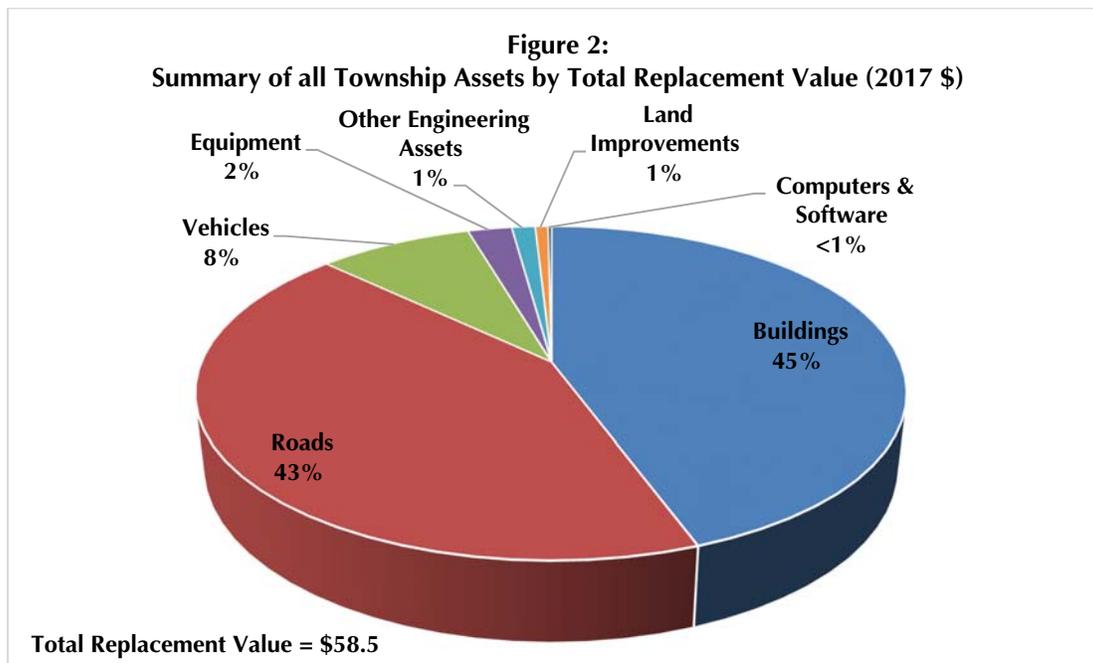
3. Estimates based on age and the remaining useful life of the asset. This has been used for all assets which the Township was not able to provide a condition assessment based on existing knowledge or site inspection. It is the intention that the Township move towards a condition assessment methodology using approach 1 and 2.

B. STATE OF LOCAL INFRASTRUCTURE

Excluding roads, the replacement cost of all Township assets considered in the 2017 Plan is estimated at \$33.5 million (represented in constant 2017 dollars). The largest share is related to buildings and accounts for about \$25.9 million (78%) of the total replacement cost. The next highest share is attributed to vehicles at \$4.9 million (15%). This is followed by equipment at \$1.4 million (4%), other engineering assets at \$741,000 (2%), land improvements at \$409,000 (1%), and finally computer & software at \$113,000 (less than 1%). Figure 1 below illustrates the value of assets by category.

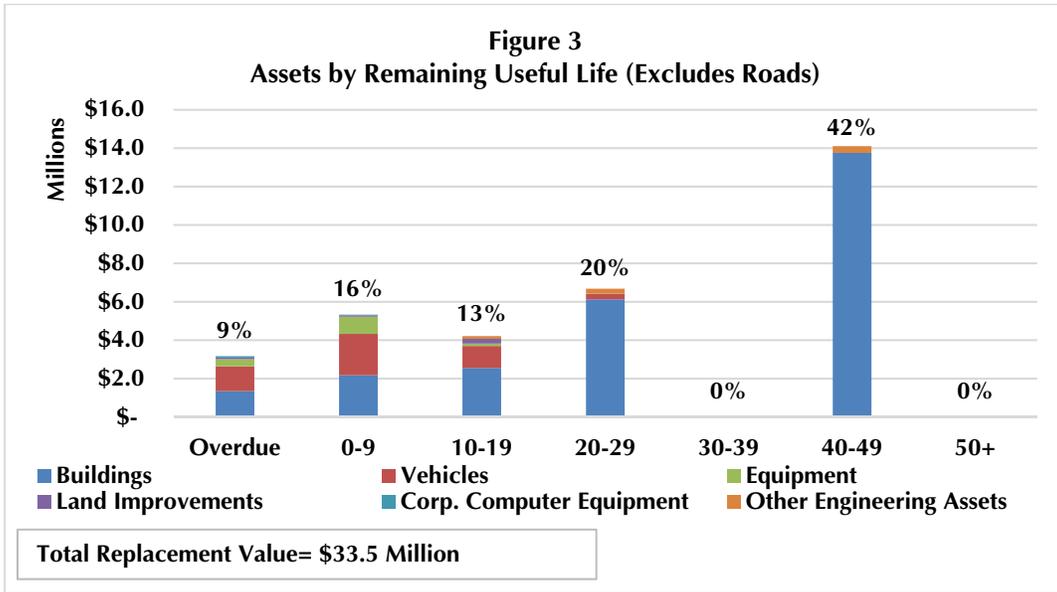


It should be noted that when roads are included, the total replacement value of all infrastructure owned by the Township is estimated at \$58.5 million. Of that amount, the Township’s roads infrastructure represents \$25.0 million (43%). Figure 2 illustrates the value of all assets by category, including roads.

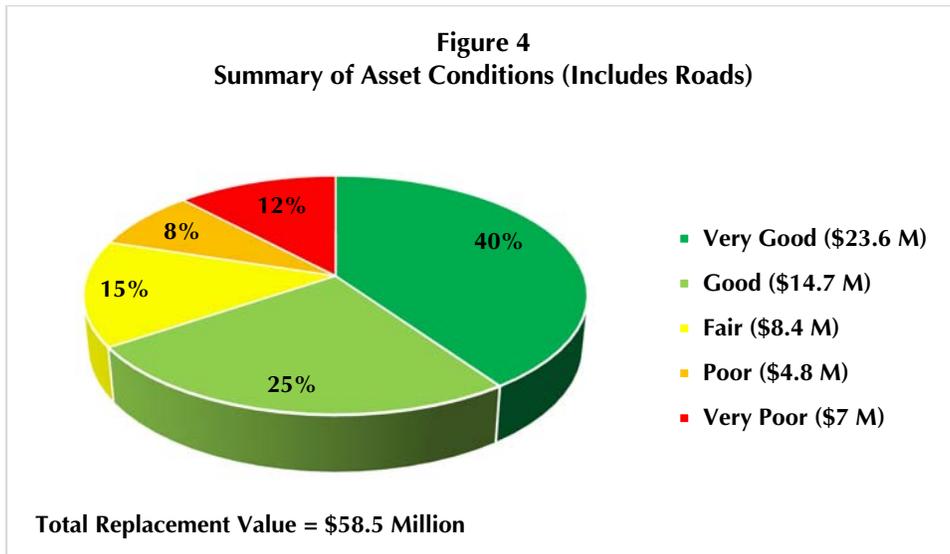


The majority of the assets, \$19.4 million (58%), considered in this 2017 Plan (excluding roads) have less than 30 years remaining useful life. Approximately \$3.2 million (9%) of the assets are considered overdue for replacement and an additional \$5.3 million (16%) are near the end of their useful life with less than 10 years remaining. Finally, it is noted that \$14.1 million (42%) of the assets have over 40 years of useful life remaining.

The “Assets by Remaining Useful Life” analysis identified in the figures below is based entirely on the Township’s existing tangible capital asset database, while the asset condition assessments have been used to inform the schedule of asset replacement. The remaining useful life analysis is shown to illustrate an age profile analysis as required by the *Building Together Guide* and the condition analysis is considered to be the more reliable data source to qualify the state and condition of the Township’s assets. Figure 3 below summarizes the assets by remaining useful life and by category.

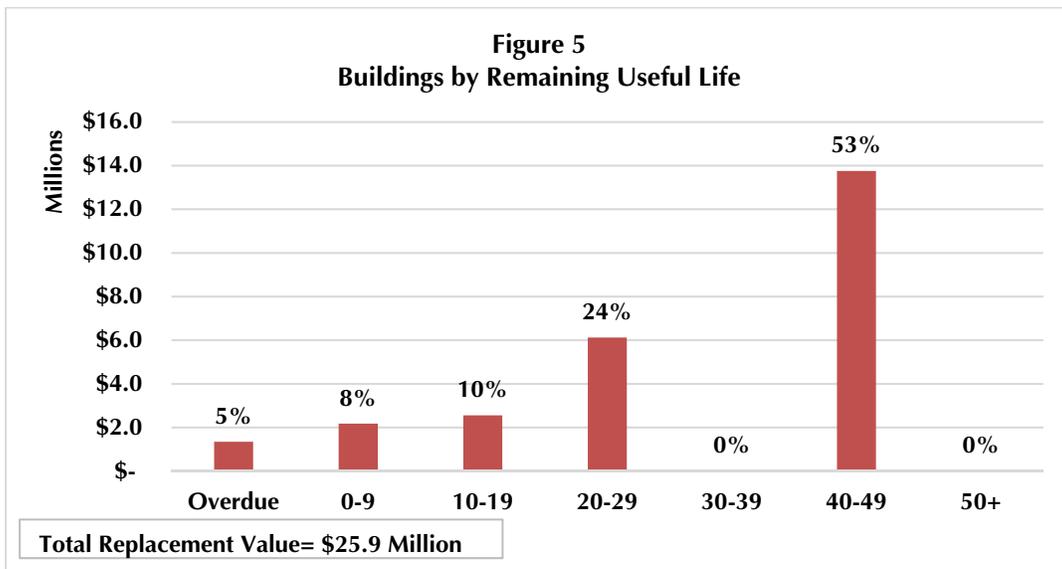


In total, the Township maintains about \$38.3 million (65%) of its assets (including roads) in Good to Very Good condition. Approximately \$8.4 million (15%) are considered to be in Fair condition. The balance of the asset base, \$11.8 million (20%), are considered to be in Poor to Very Poor condition and may require immediate repair/replacement. Many of the assets in the Very Poor to Poor condition category are attributed to the Township’s roads. As the Township moves to further refine and assess the assets based on engineered analyses and staff inspections, it can be expected that asset conditions will be adjusted. The asset replacement cost by condition rating is summarized in Figure 4. Appendix B contains a full listing of all assets in Very Poor condition.

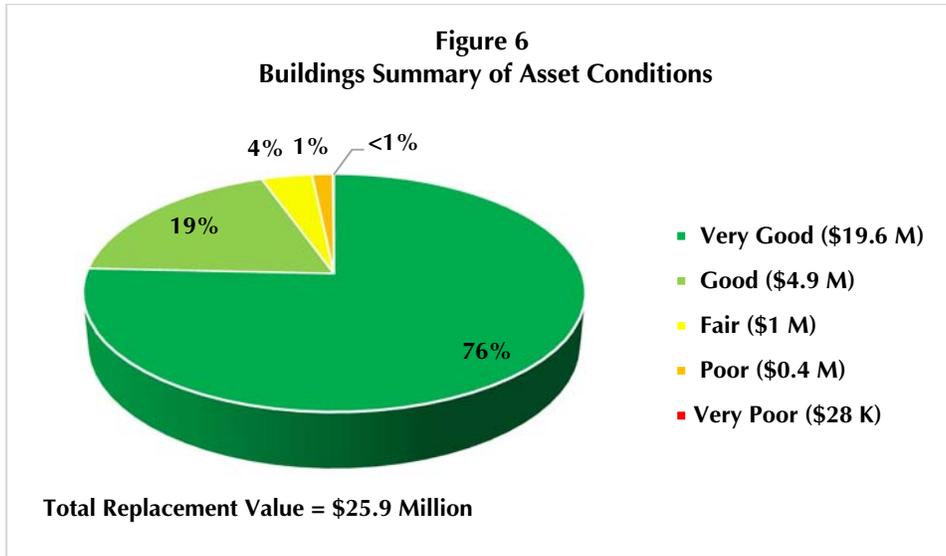


1. Buildings

The Township maintains over 15 major buildings (community centres, libraries, fire stations, etc.) with several other small building structures valued at \$25.9 million. Of this total inventory, \$1.3 million (5%) of the building assets are considered overdue for replacement with an additional \$2.2 million (8%) near the end of their useful life with less than ten years remaining. However, the largest share of \$13.8 million (53%), have 40-49 years of remaining useful life. Figure 5 summarizes the remaining useful life for buildings.

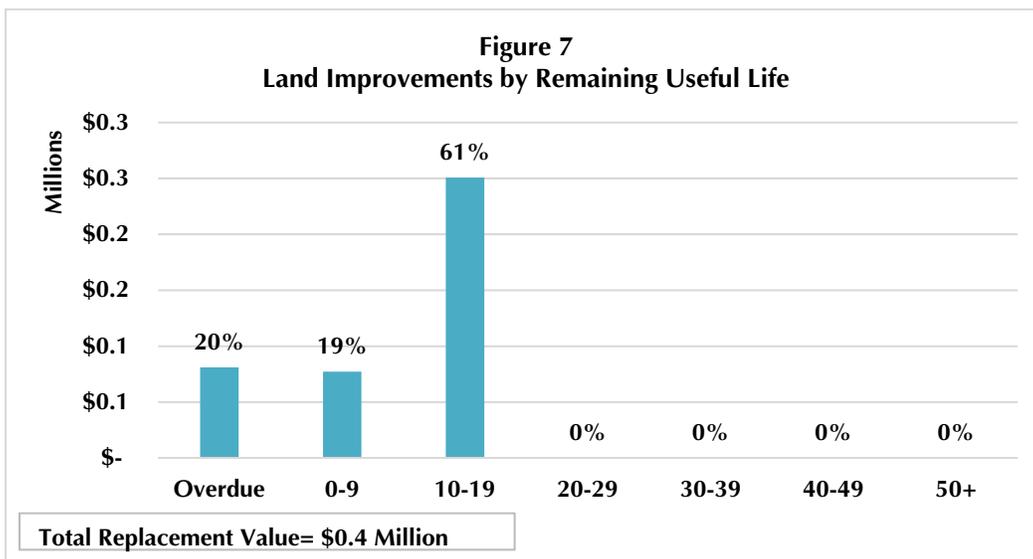


The Township maintains \$24.5 million (95%) of the buildings in Good to Very Good condition. About 986,000 (4%) are in Fair condition. Roughly 400,000 (about 1%) are in Poor condition and only \$28,000 are in Very Poor condition. The buildings in Poor to Very Poor conditions mostly relate to components of the Glen Alda Community Centre (\$240,000) and components of the Old Municipal Building (\$160,000). Despite some buildings in need of attention, the vast majority of the Township’s buildings are new or in Good to Very Good condition. Figure 6 summarizes the condition of the building assets.

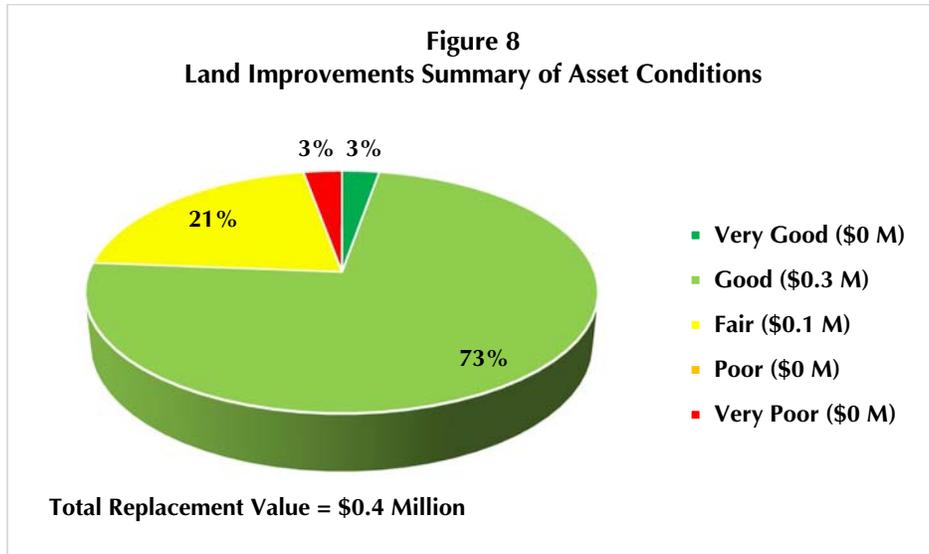


2. Land Improvements

The Township owns several land improvement assets valued at roughly \$409,000. All of the land improvement related assets have less than 20 years remaining useful life. About \$81,000 (20%), of land improvement assets are considered overdue for replacement and an additional \$77,000 (19%) of the assets are near the end of their useful life with less than 10 years remaining. A large portion of the land improvement assets, \$251,000 (61%), have a remaining useful life between 10-19 years. Figure 7 summarizes the age and value of the land improvement inventory.

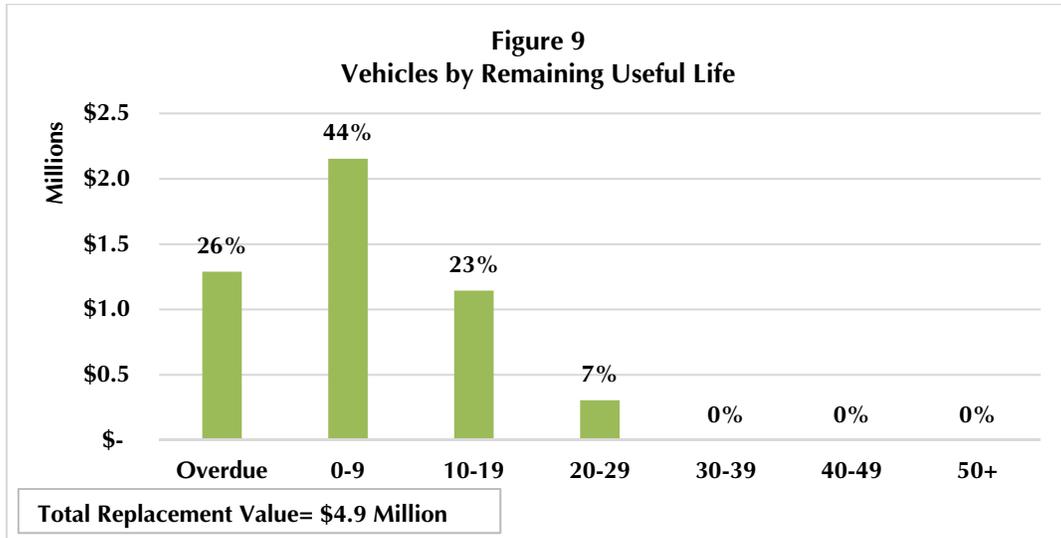


In total, the Township maintains about \$312,000 (76%) of the land improvements in Good to Very Good condition. About \$86,000 (21%) are considered to be in Fair condition. However, the remaining \$12,000 (3%), related to park lighting assets, are in Very Poor condition and may require immediate repair/replacement. Figure 8 summarizes the condition and value of the land improvement inventory.



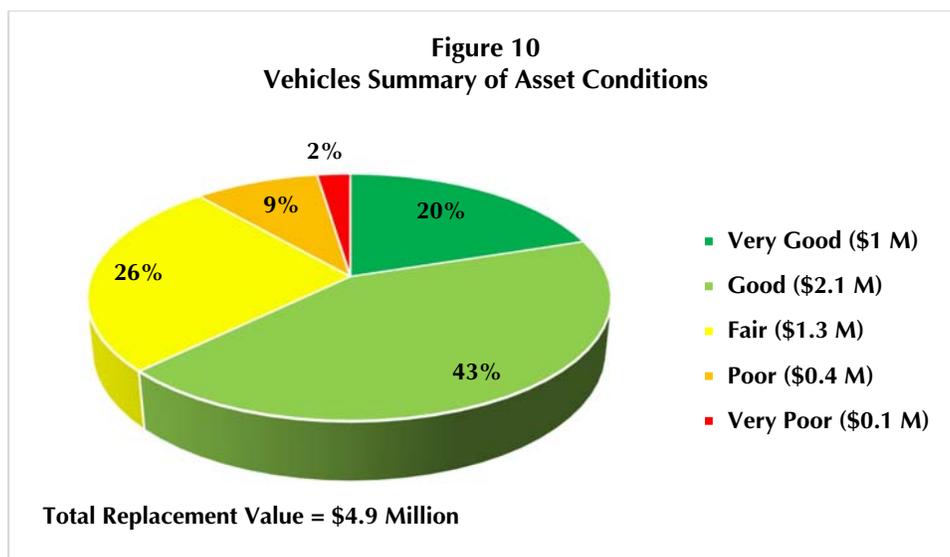
3. Vehicles

The Township maintains nearly 50 vehicles valued at \$4.9 million. Of this total inventory, approximately \$1.3 million (26%) are considered overdue for replacement based on remaining engineered useful life. A significant portion of \$2.2 million (44%) are near the end of their useful life with less than ten years remaining. Approximately \$1.1 million (23%) are due for replacement in the medium term with 10-19 years of remaining useful life. The remaining \$306,000 (7%) are expected to be due for replacement in 20-29 years. Figure 9 summarizes the remaining useful life for all vehicles.



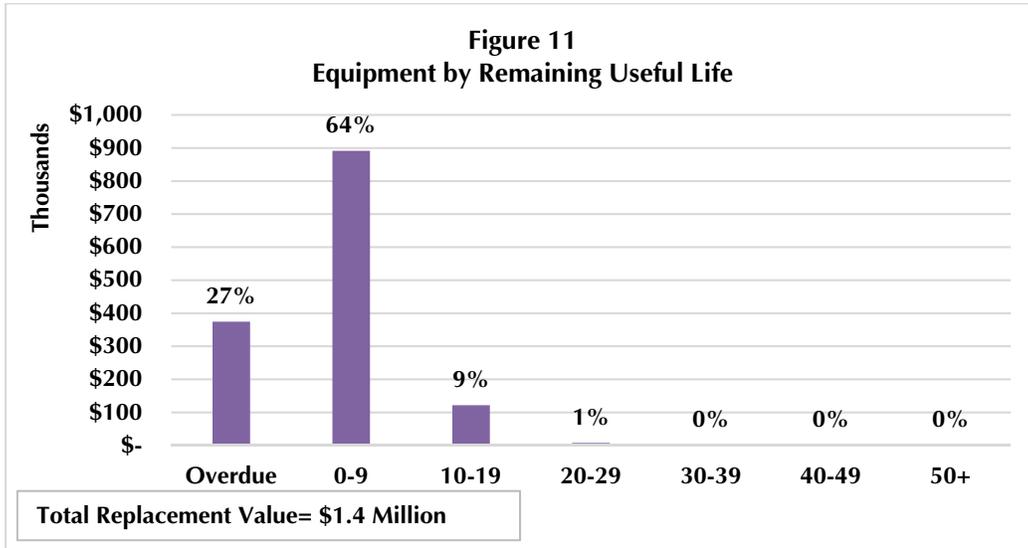
The Township maintains \$3.1 million (63%) of its vehicles in Good to Very Good condition. About \$558,000 (11%), of the vehicles are considered to be in Poor to Very Poor condition. The balance of the inventory, \$1.3 million (26%) is in Fair condition. Figure 10 summarizes the condition and value of the vehicles.

A portion of Township vehicles are currently in Poor condition and may require repair and replacement in the short-term. As the vehicles continue to be used, the Township should be prepared to provide enhanced maintenance activities to continue to extend the life of some vehicles. Attention to vehicles in the Fair category is also necessary as these vehicles may enter the Poor to Very Poor categories in the short term.

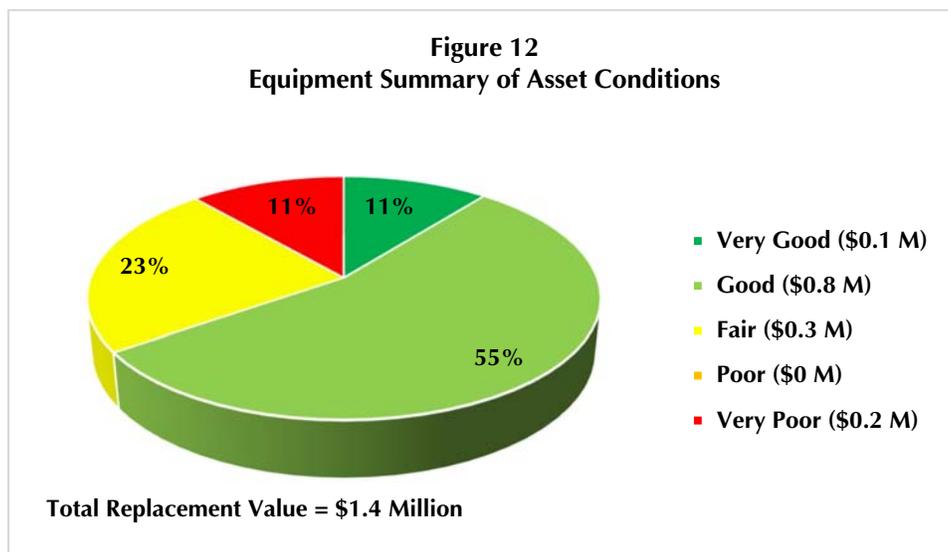


4. Equipment

The Township’s equipment is valued at \$1.4 million. About \$374,000 (27%) of these assets are considered overdue for replacement and a further \$891,000 (64%) have less than 10 years of useful life remaining. Roughly \$129,000 (10%) have between 10 and 29 years of useful life remaining. Figure 11 summarizes the age and value of these assets.

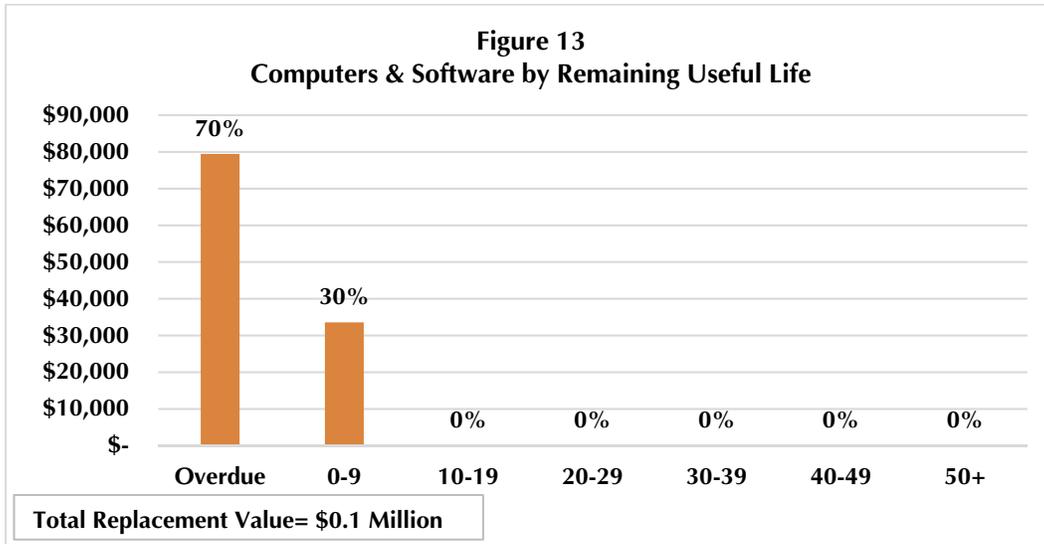


The Township maintains \$911,000 (66%) of its equipment in Good to Very Good condition. Roughly \$159,000 (11%), of the assets are considered to be in Very Poor condition. The remaining \$324,000 (23%) are in Fair condition. Equipment in the Very Poor condition category includes a bulldozer (\$118,000) and a holder (\$41,000). Figure 12 summarizes the condition and value of the assets.

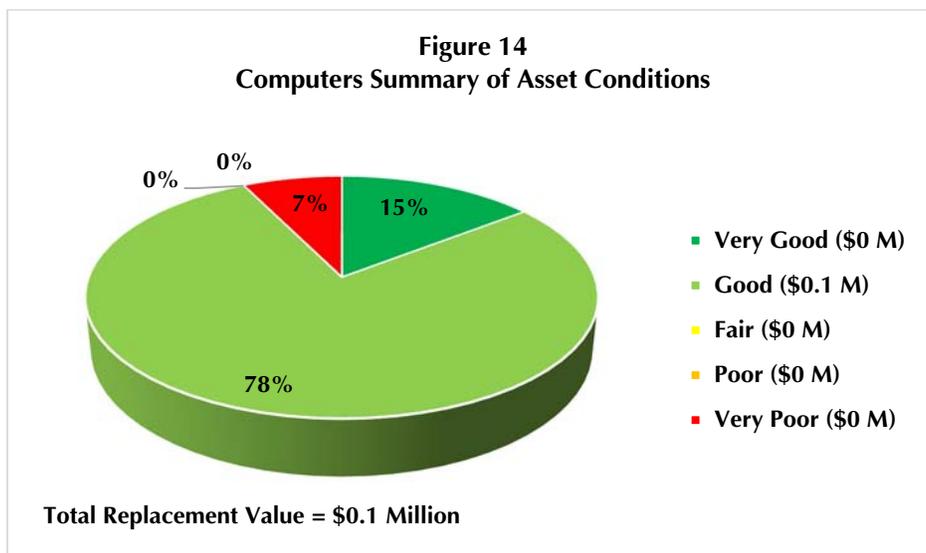


5. Computers & Software

The Township’s computers and software is valued at roughly \$113,000. A significant majority of these assets, \$79,000 (70%) are overdue for replacement. However, many of these assets are maintained in Good condition. The remaining \$34,000 (30%) have a remaining useful life of less than 10 years. Figure 13 summarizes the remaining useful life of these assets.

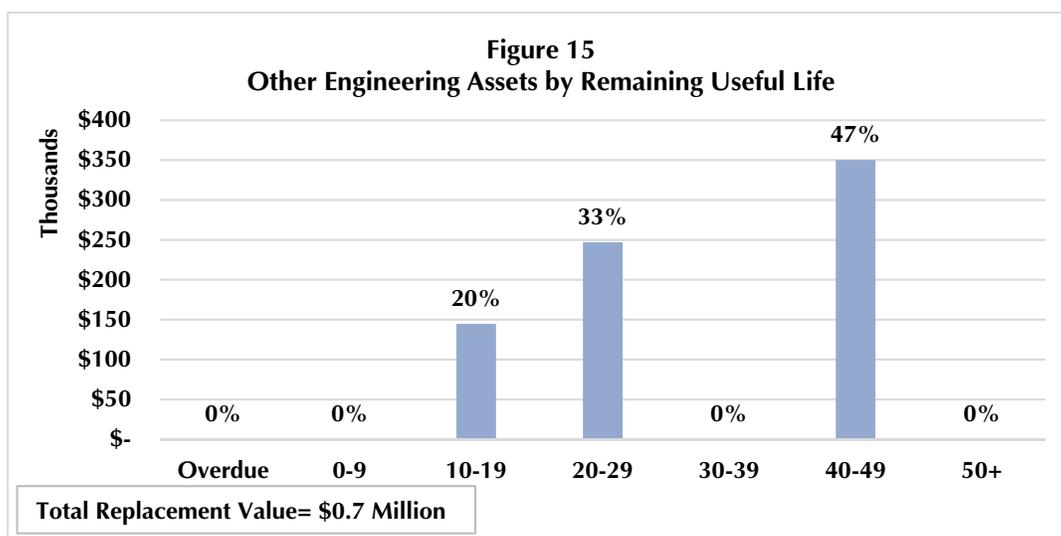


The majority of the Township’s computer and software assets, \$105,000 (93%), are maintained in Good to Very Good condition. Only \$8,000 (7%) are in Very Poor condition and are attributed to a server at the Apsley Library. Figure 14 summarizes the condition and the value of the Township’s computer equipment.

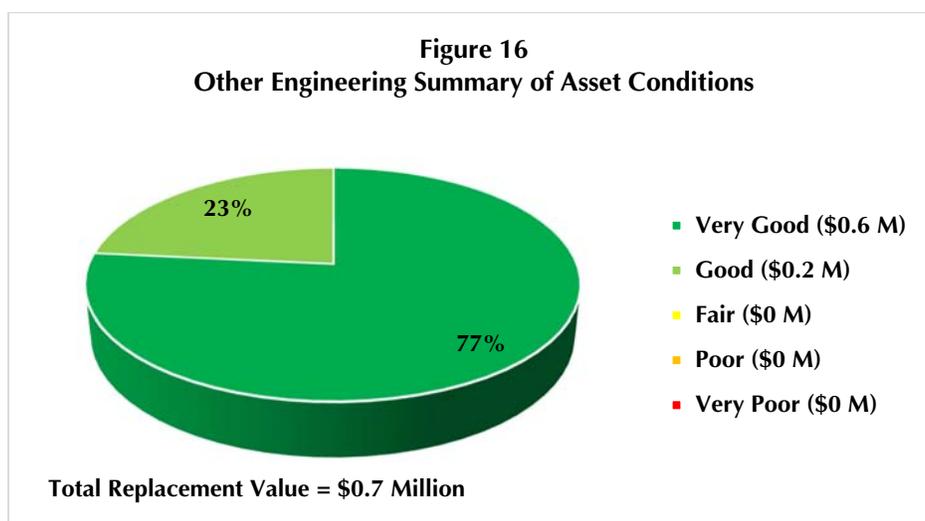


6. Other Engineering Assets

This category includes the Eel’s Lake Bridge, a guard rail at the Mill Lake Road Bridge, the Mt. Julian Wharf, streetlights and sidewalks valued at \$741,000. All of these assets have over 10 years in remaining useful life. Roughly \$145,000 (20%) are expected to be due for repair or replacement in 10-19 years, \$247,000 (33%) have 20-29 years of remaining useful life, and the remaining \$350,000 (47%) have a remaining useful life of over 40 years. Figure 15 summarizes the assets by remaining useful life.

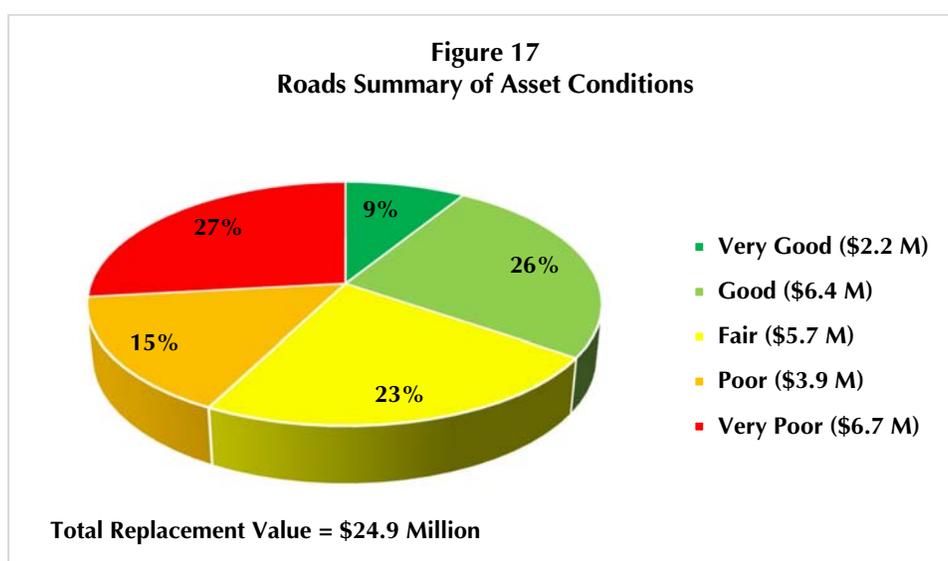


As shown in Figure 16, all of these assets are considered to be in Good to Very Good condition with a significant majority of \$600,000 (77%) falling within the Very Good category. It is important to note that the streetlights and sidewalks are new and the Eel’s Lake Bridge was recently replaced.



7. Roads

The Township's roads infrastructure is valued at roughly \$25.0 million. Of this amount, approximately \$8.8 million (35%) is considered to be in Good or Very Good condition. Roughly \$5.7 million (23%) is in Fair condition and \$3.9 million (15%) is in Poor condition. A significant proportion, \$6.7 million (27%), is considered to be in Very Poor condition and will likely require repair or replacement in the near term. The condition ratings in the 2012 Road Needs Study were consolidated into the 5-tier rating system based on the 100 point rating system used. Appendix B contains a list of priority road projects. Figure 17 summarizes the condition of Township roads.



C. TOWNSHIP OWNED LAND

The Township also accounts for land assets in the tangible capital asset registry. According to the Township's 2015 Financial Information Return, the total value of Township owned lands is estimated at approximately \$1.7 million. This category has been excluded from the analysis as land is generally an "appreciating" asset, which does not necessarily require renewal or replacement requirements.

III LEVEL OF SERVICE

A. LEVEL OF SERVICE OVERVIEW

Asset management decisions must be made with reference to the level of service planned for by the Township. Current service levels in North Kawartha have been developed based on a combination of internal asset management practices, community expectations, statutory requirements, and industry operation and safety standards. Typically, the level of asset investment made by the Township in any one year has been determined by funding availability. That said, the Township has in the past been responsive to repair needs to address immediate environmental or health risks.

In our experience, the community expects that services be delivered in a cost effective and efficient way. Generally, community expectations revolve around the Township's accessibility of "soft" services (e.g. recreation facilities; libraries; fire stations) within neighbourhoods.

Developing levels of service and tracking over time is essential to measuring the success of service delivery and the asset management strategy overall. This section outlines historical levels of service and performance of Township services.

B. CORPORATE GOALS AND LEVEL OF SERVICE MEASURES

The Township completed the 2017 Strategic Plan in an effort to establish a future direction for the community. The Strategic Plan identifies four Strategic Pillars to support the future direction of the Township. More specifically, Strategic Pillar 1 identifies the importance of investment in municipal infrastructure to the Township. These considerations, among others identified in this Plan, consider asset management and infrastructure renewal to be at the forefront of future decision making. Table 7 provides key goals the Township has set as part of Strategic Pillar 1.

Table 7	
Strategic Pillar 1: Investment in Municipal Infrastructure	
Strategic Goals	Strategic Actions
1.1 Ensure that existing infrastructure is sustained prior to expanding and/or investing in new infrastructure.	<ul style="list-style-type: none"> • Maintain a ten-year capital forecast to be reviewed annually. • Complete asset management plans for all departments. • Be prepared for future infrastructure funding. • Create a Long Term Financial Plan. • 2017 Approved Actions <ul style="list-style-type: none"> ○ Complete a roads tour. ○ Identify three top priority projects ○ Update the Roads Needs Study in 2018.
1.2 Plan infrastructure development with Demographic Needs.	<ul style="list-style-type: none"> • Continue to pursue opportunities to widen County and Municipal Roads to support safe usage. • Investigate partnership and funding opportunities with both the private and public sector to assist with infrastructure maintenance and expansion. • 2017 Approved Actions <ul style="list-style-type: none"> ○ Review demographic information and trends.
1.3 Explore complete communities / street scaping.	<ul style="list-style-type: none"> • 2017 Approved Actions <ul style="list-style-type: none"> ○ Receive staff report.

Source: Township of North Kawartha 2017 Strategic Plan.

In order to measure if corporate goals are being met, levels of service need to be established and performance indicators need to be measured. Level of service measures vary widely across services and municipalities. Table 8 on the following page provides a range of service levels and associated performance measures which the Township should look to utilize. Moving forward, the Township should look to incorporate and track, at a minimum, these performance measures so these indicators can be incorporated into future iterations of the Township's Asset Management Plan.

Key performance indicators for which the Township tracks relative to a target level is illustrated in Table 9. At this time, target levels of service have been developed in keeping with existing trends and through discussions with Township staff. Moving forward, as the Township continues to build and refine the level of service database, targeted levels of service should be developed in consultation with Council and the Public. The current service levels provided have been derived from the Township's Financial Information Return.

**Table 8
Suggested Service Level Descriptions and Associated Level of Service Measures**

Asset Specific Levels of Service		
Asset Category	Level of Service	Level of Service Performance Indicator
Buildings	<ul style="list-style-type: none"> • Facilities should comply with the Accessibility for Ontarians with Disabilities Act • All facilities should be maintained in state of good repair 	<ul style="list-style-type: none"> • Number of facilities that do not comply with the Act • Percentage of facilities in good to very good condition • Number of outstanding repair/rehabilitation activities for all facilities.
Indoor Recreation (Buildings)	<ul style="list-style-type: none"> • Provide a variety of indoor recreation facility space for residents • Provide sufficient recreation facility space for residents • Facilities should comply with the Accessibility for Ontarians with Disabilities Act • All indoor recreation facilities should be maintained in state of good repair 	<ul style="list-style-type: none"> • Square metres of indoor recreation facilities • Square metres of indoor recreation facilities per 1,000 persons • Number of facilities that do not comply with the Act • Number of days program space is closed due to mechanical issues or facility repairs
Land Improvements	<ul style="list-style-type: none"> • All land improvements should be maintained in state of good repair 	<ul style="list-style-type: none"> • Percentage of land improvement assets in good to very good condition
Outdoor Recreation (Land Improvements)	<ul style="list-style-type: none"> • Provide a variety of parks and open spaces residents • Provide sufficient parks and open spaces for residents • Provide an extensive trail network • Provide sufficient trails for residents 	<ul style="list-style-type: none"> • Number of parks of each size/type • Square metres of park space per 1,000 persons • Total kilometres of trails. • Total kilometres of trails per 1,000 persons
Vehicles	<ul style="list-style-type: none"> • All vehicles should be maintained in state of good repair • Maintain minimum fleet availability • Perform preventative maintenance and repairs to meet industry standards of safety and operation 	<ul style="list-style-type: none"> • Percentage of vehicles in good to very good condition • Percentage of vehicles available for duty • Number of vehicle units inspected (weekly, monthly, etc) • Percentage of preventative maintenance inspections completed per year
Equipment	<ul style="list-style-type: none"> • All equipment should be maintained in state of good repair • Perform preventative maintenance and repairs to meet industry standards of safety and operation 	<ul style="list-style-type: none"> • Percentage of equipment in good to very good condition • Number of equipment units inspected (weekly, monthly, etc) • Percentage of preventative maintenance inspections completed per year
Computer Equipment & Software	<ul style="list-style-type: none"> • All computer equipment should be maintained in state of good repair 	<ul style="list-style-type: none"> • Percentage of computer equipment in good to very good condition

Table 9
Key Performance Indicators

Demographics	2011	2012	2013	2014	2015	Target
Population	2,065	2,103	2,126	2,126	2,126	
Recreation						
Indoor recreation facility space : Square metres of indoor recreation facilities (municipally owned)	5,793	5,793	5,793	5,793	5,793	5,793
Square metres of indoor recreation facilities per 1,000 persons (municipally owned)	2,805	2,755	2,725	2,725	2,725	2,725
Outdoor recreation facility space : Square metres of outdoor recreation facility space (municipally owned)	-	-	-	-	55,037	55,037
Square metres of outdoor recreation facility space per 1,000 persons (municipally owned)	-	-	-	-	25,888	25,888

Source: Recreation data from 2011-2015 Financial Information Return.

Note: 2011-2014 outdoor recreation space not available in FIR.

The table shows that by these numbers, service levels have remained relatively constant.

C. GAS TAX PROJECT OUTCOMES

Moving forward it is expected that municipalities will report on various performance metrics to meet the federal gas tax funding requirements. These “project outcomes” are to be reported for projects completed between April 1st 2014 and December 31st 2016. Municipalities are required to report on at least one outcome per asset category to demonstrate positive benefits to communities and to show the benefits of gas tax funds as a predictable funding source. Best practice is for the Township to begin tracking these project outcomes for all assets. Table 10 shows project outcomes relevant to the assets included in the 2017 Plan.

Table 10 Relevant Project Outcomes Required for Gas Tax Funding	
Category	Outcomes
Local Roads and Bridges Subcategory: Roads	<ul style="list-style-type: none"> • Total lane km of paved roads rated as good and above • Total lane km of unpaved roads rated as good and above • Commute time during peak hours • Volume of traffic/level of congestion • Number of residents with access to new/repared/rehabilitated/ replaced roads • Number of businesses with improved access to highways or neighboring municipalities • Number of residents with improved access to highways or neighboring municipalities • Storage capacity of sand/salt

Category	Outcomes
Local Roads and Bridges Subcategory: Bridges	<ul style="list-style-type: none"> • Number of bridges where the condition of the primary component is rated as good and above • Number of culverts rated as good and above • Number of residents with access to new/repaired/improved/replaced bridges and culverts • Volume of traffic/level of congestion
Local Roads and Bridges Subcategory: Active Transportation	<ul style="list-style-type: none"> • Percentage of total streets with sidewalks • Number of residents with access to new/ repaired/improved/replaced bike lanes, sidewalks, hiking and walking trails
Sport Infrastructure	<ul style="list-style-type: none"> • Number of visitors (sports tourism) to the community • Available ice/field time per year (hours) • Number of registered users per year • Sporting events held per year
Recreational Infrastructure	<ul style="list-style-type: none"> • Number of registered users per year • Number of residents who will benefit from the new or upgraded recreational infrastructure
Cultural Infrastructure	<ul style="list-style-type: none"> • Number of residents benefitted from the investment • Number of cultural events held per year • Number of people participating in cultural activities in the community
Tourism Infrastructure	<ul style="list-style-type: none"> • Number of businesses positively affected by the investment • Number of visitors • Number of online or in-person inquiries at visitor information centre(s) • Number of room-nights sold in a year
Disaster Mitigation Infrastructure	<ul style="list-style-type: none"> • Area of properties projected to be less at-risk due to the investment • Emergency response costs

Source: AMO.

For 2017, it is expected that the Township report on the assets included in this Asset Management Plan as a percentage of total assets. It is expected that this 2017 Plan in conjunction with the 2012 Road Needs Study will update this value to 100% of total assets included for 2017, meeting the asset management plan gas tax funding requirement.

IV ASSET MANAGEMENT STRATEGY

This section sets out an action plan that will assist the Township in maintaining assets so that desired service levels are achieved. The asset management strategy relates to a set of actions that, taken together, has the lowest total cost to maintain assets in a state of good repair as defined in the *Building Together: Guide for Municipal Asset Management Plans*.

The asset management strategy includes current practices and potential future practices related to non-infrastructure solutions, maintenance activities, renewal/rehabilitation, disposal and expansion activities. The final component of this section includes a risk matrix which can be used to assist Township staff and Council measure and manage risks to achieve desired levels of service.

A. SET OF PLANNED ACTIONS

The Township employs various practices to achieve desired levels of service. This set of existing actions involve activities to maintain assets in a state of good repair and to ensure that assets continue to be in service for their full life cycle, and in many cases, beyond the expected design life. The set of existing actions and planned activities are summarized for each of the asset categories in the 2017 Plan (Tables 11-17).

Buildings

There are a variety of buildings in the Township that are utilized for various purposes. Usually, customized maintenance plans are required for each facility depending on their purpose. Table 11 summarizes general actions that can be employed to ensure that Township buildings are maintained in a state of good repair.

Table 11 Planned Actions: Buildings	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Operating budgets should be informed by condition assessments and regular inspections as needed. • Business cases, special studies and consultation with stakeholders should be done when constructing a new facility or modifying an existing facility.

Table 11 Planned Actions: Buildings	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Review of the design and layout of buildings and properties, to take into account the minimization of maintenance costs. • Adjust service levels if necessary.
Maintenance Activities	<ul style="list-style-type: none"> • Buildings and facilities inspected regularly in accordance with occupational health and safety regulations. • HVAC and heating systems inspected regularly. • Plumbing inspected regularly. • Maintain electrical systems to Electrical Safety Authority standards. • Fire alarms, fire extinguishers and emergency lights inspected regularly.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> • Component replacement based on inspections.
Disposal	<ul style="list-style-type: none"> • Selling or demolishing buildings that are no longer in use. • Re-use or sell land not in use.
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Assumptions on required facility space through development agreements if necessary. • Service improvements made where possible (accessibility, etc.).

Land Improvements

Land improvement assets in the Township include a tennis court, a ball diamond, park lighting and fencing. Table 12 summarizes general actions that are taken to ensure that Township land improvement related assets are maintained in a state of good repair.

Table 12	
Planned Actions: Land Improvements	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Operating budgets should be informed by condition assessments and regular inspections as needed. • Business cases, special studies and/or consultation with stakeholders should be done when constructing a new park or playground. • Adjust service levels if necessary. • Annually provide the necessary departments with related information when new and additional land improvement assets are acquired.
Maintenance Activities	<ul style="list-style-type: none"> • Playground equipment inspected on a regular basis. • All Parks department equipment inspected on a regular basis. • Regularly scheduled grass cutting, trimming and field observations of Township parks.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Regular component repairs based on inspections. • Dragging of the baseball diamond completed regularly during active season. • Implementing enhanced tree trimming and inspection programs to address damage due to storms before they occur. • Regular tree cutting/planting to curb Emerald Ash Borer infestation.
Replacement	<ul style="list-style-type: none"> • Component replacement based on inspections.
Disposal	<ul style="list-style-type: none"> • Dispose or sell assets that are no longer in use or are in poor condition. • Re-use or sell land not in use.

Table 12	
Planned Actions: Land Improvements	
Areas	Planned Actions
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Assumptions on required park space and assets through development agreements if necessary. • Service improvements made where possible (new technologies, environmental impacts, etc.).

Vehicles

Vehicles are considered for all service areas including Fire, Roads and other general government vehicles. Actions related to maintaining vehicles are unique to each type of vehicle. Table 13 summarizes general actions that can be taken to ensure that Township vehicles are maintained in a state of good repair.

Table 13 Planned Actions: Vehicles	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Regularly scheduling of repair work orders. • Operating budgets should be informed by regular inspections as needed. • Adjust service levels if necessary. • Annually provide the necessary departments with related information when new and additional equipment is acquired.
Maintenance Activities	<ul style="list-style-type: none"> • Preventative maintenance program for all Township vehicles. • Regular inspection of all Township vehicles. Emergency vehicles should be inspected in accordance with industry and regulatory guidelines. • Annual inspection, service and certification performed on all applicable vehicles in accordance with MTO requirements.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> • Vehicle replacement based on inspections. • Vehicle replacement forecast reviewed annually.
Disposal	<ul style="list-style-type: none"> • Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

Equipment

Equipment assets are encompassed in all Township services. These assets include various types of equipment including heavy machine equipment, fire and emergency equipment and library materials. This asset class requires specific types of maintenance unique to each type of asset. Table 14 summarizes general actions that can be taken to ensure that Township machinery and equipment is maintained in a state of good repair.

Table 14	
Planned Actions: Equipment	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Operating budgets should be informed by regular inspections as needed. • Adjust service levels if necessary. • Regularly scheduling of repair work orders. • Annually provide the necessary departments with related information when new and additional equipment is acquired.
Maintenance Activities	<ul style="list-style-type: none"> • Preventative maintenance program for all Township equipment. • Regular inspection of all Township equipment. • Certification of applicable equipment to meet regulatory requirements.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> • Equipment replacement based on inspections. • Equipment replacement forecast reviewed annually.
Disposal	<ul style="list-style-type: none"> • Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

Computer Equipment & Software

Computer equipment & software is related mainly to computer related hardware, servers and software. Routine maintenance and best practices for computer equipment & software is recommended. Table 15 summarizes general actions that can be taken to ensure that Township computer equipment is maintained in a state of good repair.

Table 15	
Planned Actions: Computer Equipment & Software	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Operating budgets should be informed by regular inspections as needed. • Adjust service levels if necessary. • Regularly scheduling of repair work orders. • Annually provide the necessary departments with related information when new and additional equipment is acquired.
Maintenance Activities	<ul style="list-style-type: none"> • Computer equipment concerns captured on a reactive basis based on user reported issues and concerns. • Regular software upgrades and maintenance to ensure proper operation.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> • Computer equipment and software replacement based on needs.
Disposal	<ul style="list-style-type: none"> • Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Service improvements made where possible (new technologies, etc.).

Other Engineering Assets

The other engineering asset category, includes the Township's bridge, streetlights, sidewalks and other minor assets. Regular maintenance and inspections are required to maintain these assets in a state of good repair. Table 16 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 16	
Planned Actions: Other Engineering Assets	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Operating budgets should be informed by regular inspections as needed. • Adjust service levels if necessary. • Regularly scheduling of repair work orders. • Annually provide the necessary departments with related information when new and additional equipment is acquired.
Maintenance Activities	<ul style="list-style-type: none"> • Eels Lake Road Bridge: 2016 OSIM inspection includes several recommendations: <ul style="list-style-type: none"> ○ Continue required OSIM inspections. ○ Regular maintenance schedule (sweep and clean debris from bridge deck twice a year). ○ Embankments inspected and monitored yearly. • Regular inspections and repair of streetlights and sidewalks.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> • Component replacement based on needs.
Disposal	<ul style="list-style-type: none"> • Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

Roads

The Roads category, includes all Township roads identified through the 2012 Road Needs Study. Regular maintenance and inspections are required to maintain safety and operational standards for roads. Table 17 summarizes general actions that can be taken to ensure that roads are maintained in a state of good repair.

Table 17 Planned Actions: Roads	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> • Operating budgets should be informed by regular inspections as needed. • Adjust service levels if necessary. • Regularly scheduling of repair work orders. • Annually provide the necessary departments with related information when new and additional equipment is acquired.
Maintenance Activities	<ul style="list-style-type: none"> • Recommendations in 2012 Road Needs Study include: <ul style="list-style-type: none"> ○ Regular maintenance including roadside ditch cleanout and clearing. ○ Regular clearing of vegetation.
Renewal/Rehabilitation	<ul style="list-style-type: none"> • Recommendations in 2012 Road Needs Study include: <ul style="list-style-type: none"> ○ Resurfacing of poor conditioned paved roads. ○ Regular grading and application of gravel for gravel roads. • Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> • Component replacement based on needs.
Disposal	<ul style="list-style-type: none"> • Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> • Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

B. COST REDUCTION STRATEGIES

The *Guide for Municipal Asset Management Plans (Guide)* states that ‘to ensure the most efficient allocation of resources, best practice is for a number of delivery mechanisms to be considered — such as working with other municipalities to pool projects and resources, or considering an AFP (Alternate Financing and Procurement) model.’ The design-build-finance-maintain AFP model takes a lifecycle perspective and builds effective asset management directly into a contract. The *Guide* also states that municipalities should have procurement by-laws in place to serve as the basis for considering various delivery mechanisms.

1. Procurement Policy

The Township of North Kawartha currently has a corporate by-law for procurement. Table 18 outlines the goals of the purchasing policy as per by-law 2014-120:

Table 18 Goals of the Purchasing Policy
<ul style="list-style-type: none"> • This policy sets out guidelines for the municipality to ensure that all purchases of goods and services provide the best value for the Township ratepayers. All things being equal, and having regard for the guidance of this policy, "best value" may be described as receiving the required quality and service at the lowest cost. • This policy shall provide guidance for an open and honest procurement program, with transparency as a cornerstone of the decision making process. • This policy shall provide a purchasing environment that is fair, impartial and transparent. • This policy shall promote and maintain the integrity of the purchasing process and protect Council, vendors and staff involved in the process by providing clear direction and accountabilities. • A competitive bidding process is the preferred method of purchasing and as such Department Managers are encouraged to seek out new sources of supply, readily provide purchasing information to vendors in a cooperative manner and ensure that all mechanisms for purchasing contain clear and full disclosure of requirements. • To maintain integrity and protect the interests of our taxpayers, any elected or appointed official participating in a procurement process that have a private interest that are in conflict with their duties as elected or appointed officials, shall declare said conflict as required under the provisions of the Municipal Conflict of Interest Act, R.S.O. 1990, c.M.50. • All applicable legislation, including the Municipal Freedom of Information and Protection of Privacy Act, the Municipal Act, the Interprovincial Trade Agreement, and the Integrated Accessibility Standards Regulation will be considered prior and during the procurement process.

Source: Township of North Kawartha By-law 2014-120 Procurement Policy.

The By-law encompasses market fairness and equitability to ensure the Township can repair, maintain and acquire assets at a minimized cost.

2. Alternative Service Delivery Options – Shared Services

Alternative service delivery options should also be assessed for feasibility. Shared services for example, allow the Township to share the costs of acquiring and maintaining assets through joint agreements. Such agreements are typically done with neighbouring municipalities or as private public partnerships in an effort to share risk and minimize costs. The Township of North Kawartha shares or contracts the delivery of certain services. These cost savings can help offset and/or reduce future repair and replacement requirements. A few examples include:

- Dog control and pound services in the Township of North Kawartha ensures the community is safe and healthy for animals and residents. The Township currently has an agreement with the Peterborough Humane Society to provide dog control and pound services.
- The Township has a Mutual Aid Fire Agreement with the municipalities in Peterborough County and the City of Peterborough. The agreement ensures that municipalities can share expertise and equipment in times of need.

Moving forward, the Township could explore alternative shared service agreements to provide other services in collaboration with neighbouring municipalities. In many cost-sharing agreements, the objective of the provider is to reduce the cost while maintaining services and increasing the number of users. These agreements can help maximize benefits to a wide range of users while minimizing costs.

C. RISK MANAGEMENT

It is important to assess the risk associated with each asset and the likelihood of asset failure. Asset failure can occur as the asset reaches its limits and can jeopardize public/environmental safety. In addition, certain assets have a greater consequence of failure than others.

A risk matrix can help prioritize which assets should be repaired/replaced, even those which the Township has already identified to be in “Very Poor” or “Poor” condition. The evaluation rating is then linked to the condition assessment parameter discussed in Section II. Assigning probability of failure parameters to each asset would require

an appropriate condition assessment and rating of the asset. The Township should look to implement a risk matrix approach for all assets in the next iteration of the Asset Management Plan. Table 19 illustrates a typical risk matrix.

Table 19 - The Risk Assessment Matrix

Evaluation Rating		Probability of Failure				
		1	2	3	4	5
Consequence of Failure	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Risk Matrix Example: Probability of Failure level 5 (Very Poor Asset) multiplied by Consequence of Failure level 5 (Severe Consequence of Failure) = Risk Score of 25. This would illustrate that the particular asset assessed should be prioritized for replacement immediately as it would have the highest risk.

V FINANCING STRATEGY

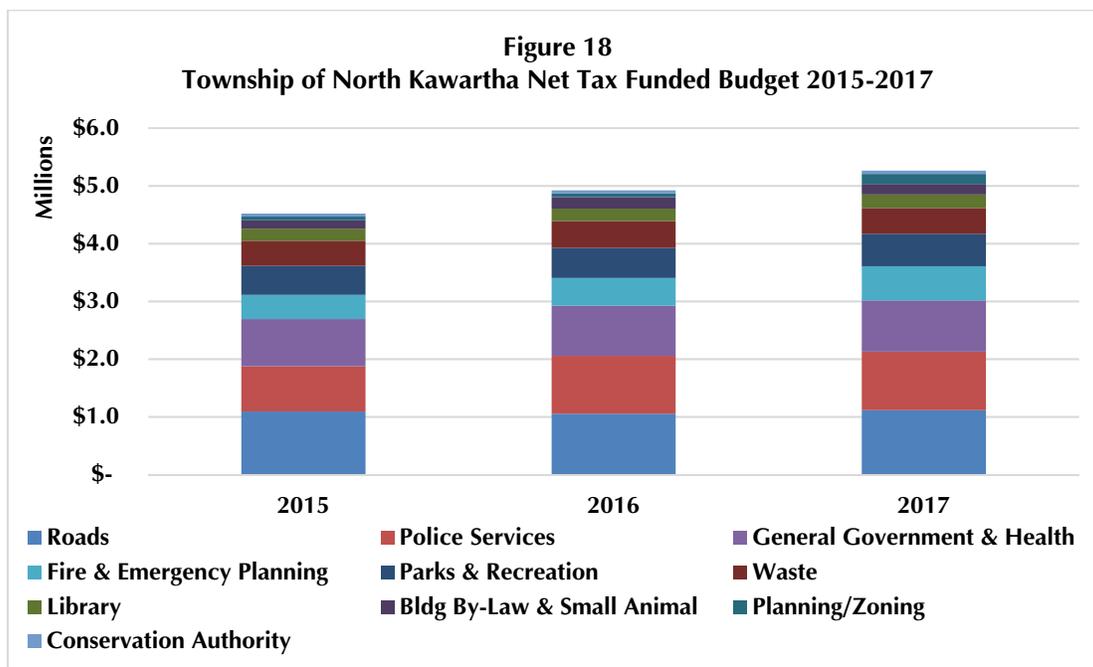
This section of the 2017 Plan is intended to provide a framework for the Township to integrate asset management with annual budgeting and long-term financial planning. The Township has traditionally followed a “pay-as-you-go” approach to financing infrastructure, whereby capital expenditures are prioritized and approved with reference to the availability of funds. In recent years, Council and staff have adopted some strategies to address the infrastructure gap and have been successful in undertaking a series of capital projects to improve the Township’s position. Additionally, the Township maintains some funding in reserves which further enhances Council’s commitment to its strategic objective to ensure infrastructure sustainability.

A. OPERATING BUDGET EXPENDITURES

The Township has historically set aside funds to maintain its capital assets in a state of good repair. This has meant that sufficient funds have typically been available to deal with immediate and critical asset repair and rehabilitation needs. Overall, the Township’s budget has risen year-over-year in part related to increased capital repair and operating needs.

Figure 18 illustrates total net tax funded expenditures by major category based on the Township’s annual municipal budget. Total net expenditures were \$4.5 million in 2015 and increased to \$4.9 million in 2016 and to \$5.3 million in 2017. The largest share of expenditures, which includes regular maintenance of assets, has consistently been on Roads. Roads net expenditures account for 21% of the tax-supported budget for 2017, at approximately \$1.1 million.

It is anticipated that the Township’s operating expenditures will be adjusted annually, at minimum, to account for the effects of inflation. Although, if additional asset management strategies are adopted by the Township, annual costs could exceed regular inflationary adjustments.



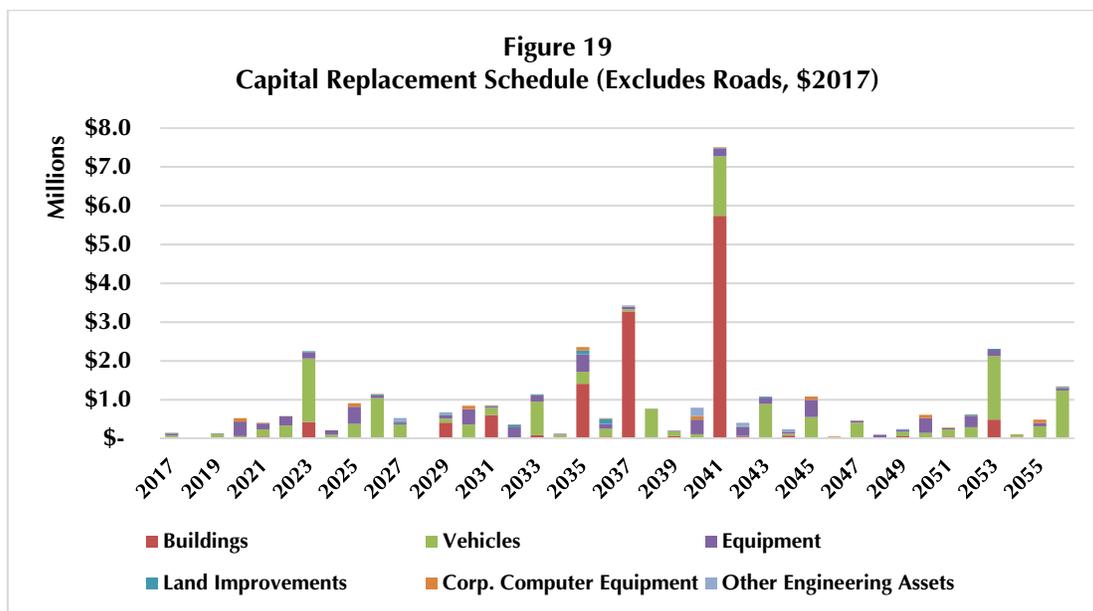
Source: Township of North Kawartha annual budget reports.

B. REPAIR AND REPLACEMENT SCHEDULE

Figure 19 sets out the schedule of repair and replacement of assets, excluding roads, required to meet service level targets for the assets considered in the 2017 Plan. Over the 40-year period, to 2056, the tax supported repair and replacement program totals about \$35.4 million. The average yearly replacement costs of these assets amount to approximately \$885,000.

In 2017, some expenditures have been identified that are required to repair or replace poor conditioned assets amounting to a total of just over \$141,000. Of this amount, vehicle assets represent 37%, or \$52,000, and equipment assets represent 29%, or \$41,000. Buildings also represent a significant portion of 20% or \$28,000.

Despite the immediate replacement requirements being manageable, over the long term there are some notable building requirements identified for replacement in the forecast. In 2037, significant repairs to the Apsley Fire Station are anticipated, totalling roughly \$3.1 million. The largest investments are expected to be required in 2041, when components of several buildings are expected to reach the end of their lifecycle, resulting in approximately \$5.7 million in building repairs and replacements. These buildings include the Woodview Fire Station, Apsley Library, and the new municipal building, among others.



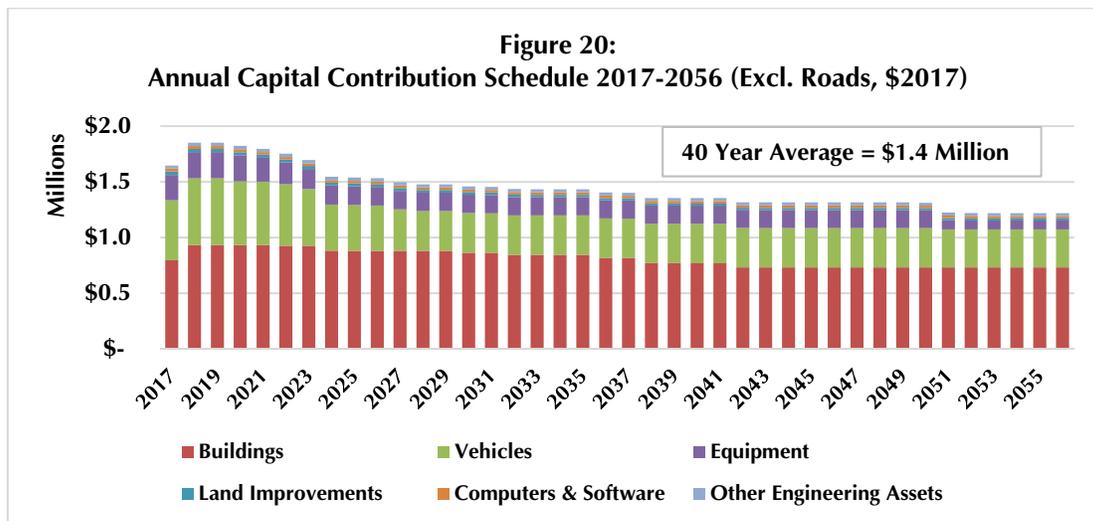
C. CAPITAL PROVISION SCHEDULE

A key component of the financing strategy is to identify the level of expenditure required on an annual basis to pay for asset management. Costs to maintain and eventually repair or replace Township assets need to be understood and contributions to reserves and reserve funds need to be quantified. In this section, provisions for repair and replacement are calculated for each asset based on its remaining useful life and the anticipated cost of replacement in current 2017 dollars. The aggregate of all individual provisions form an annual contribution to reserves for the purpose of asset repair and replacement.

Figure 20 shows the funds that would have to be contributed annually to reserves to meet service level targets for all non-road assets included in this 2017 Asset Management Plan to 2056.

Figure 20 demonstrates that:

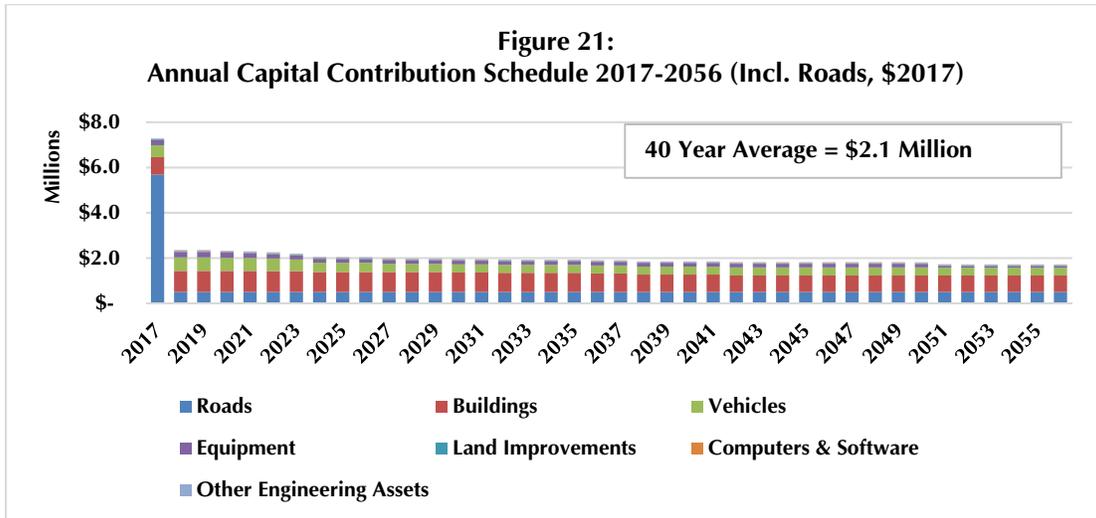
- The Township has limited reserves on hand so a higher level of capital contributions is required over the long term in order to meet service level requirements.
- Excluding roads infrastructure, average annual contributions over the 40-year period would have to be in the order of \$1.4 million per year (net of existing reserve funds), mostly related to buildings.



In addition to the assets included above, the findings outlined in the 2012 Road Needs Study have been incorporated into the capital provision schedule shown in Figure 21. Total recommended work for roads is assumed to be defined by the roads identified to be in Very Poor condition (see Section II) and are considered the backlog of road work required. This amounts to \$5.7 million net of existing reserves. The total depreciation of all road assets amounts to approximately \$498,800 per year which is based on a 50 year useful life. In addition, general road maintenance activities as identified in the 2012 Road Needs Study would still likely be required to ensure the roads continue to provide services. All values from the 2012 Road Needs Study have been adjusted to current dollars to account for the effects of inflation at a rate of 2%. A summary of the results including the 2017 Plan requirement are as follows:

- Average annual contributions over the 40-year period would have to be in the order of \$2.1 million per year (net of existing reserve funds), with road and building repair and replacements as the most significant portions.
- Higher capital contributions would be required in the short-term for significant infrastructure expenditures identified in 2017, which amount to \$7.3 million (including transfers to reserves). However, there will likely be measures the Township could take to mitigate this financial pressure in 2017 (and future years). These measures are more fully discussed in Part E and G of this section.
- The Township will spend nearly \$2.8 million (including gas tax, reserves and grant funding) in 2017 for repair/replacement of assets. The \$2.8 million in capital spending is comprised of:
 - \$112,000 in tax levy capital funding;
 - \$59,000 from the Township's existing reserves;

- \$2.5 million in grant funding; and
- \$87,000 in gas tax funding.
- Investment in Township assets would need to increase by over \$4.5 million to achieve the \$7.3 million average requirement (including roads) in 2017. It should be noted that of the 2017 capital funding sources, tax supported revenues are the most secure form of recurring revenue for the Township.



D. CURRENT INFRASTRUCTURE DEFICIT

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 capital, identified in Part C: Capital Provision Schedule, be delayed.

The current infrastructure deficit shown in Table 20 represents the difference between the required in-year contributions to capital and the current contributions to capital for both the assets in this 2017 Plan and the assets included in the 2012 Road Needs Study. The total 2017 capital provision required is \$7.3 million (including infrastructure backlog) and current capital spending is \$2.8 million (includes grants and reserve funding). The current in-year infrastructure deficit is therefore \$4.5 million, which represents about 8% of the total replacement value. The infrastructure deficit would continue to grow should the required annual contributions to capital, identified in Part C, be delayed.

Table 20		
Infrastructure Deficit for Base Year 2017		
Legend	Calculation of Current Infrastructure Deficit	
A	Projected 2017 Capital Provision (2017 AMP)	\$ 1,598,792
B	Projected 2017 Capital Provision (Road Needs Study)	\$ 5,684,128
C	Total 2017 Capital Provision = (A+B)	\$ 7,282,920
D	Total 2017 Capital Spending (Budget)	\$ 2,786,167
E	Funding Gap = (C-D)	\$ 4,496,753
F	Cumulative Infrastructure Deficit = (sum of E)	\$ 4,496,753
	Cumulative Infrastructure Deficit as a Percentage of Total Replacement Value	8%
<i>Note: Total 2017 capital funding (D) is derived from 2017 capital budget and includes in year-funding for capital from: tax levy, reserves, grants and gas tax.</i>		

E. FINANCING STRATEGY

It is unrealistic to expect the Township to address the total infrastructure deficit in the short-term. Therefore, a long-term funding strategy that identifies options for addressing current and future asset expenditures is required. This analysis recognizes that the Township has not kept pace with the required contributions to perform the work set out in the calculated asset repair and replacement schedule in Part B: Repair and Replacement Schedule.

If the Township were to implement a funding strategy to eliminate the infrastructure deficit by 2056, the Township would be required to increase capital contributions on an annual basis by an average of about \$93,000 for 40 years. For 2018, the increase would be in addition to the \$112,000 tax supported capital funding and \$73,000 in Gas Tax funds. The yearly revenue requirement is equivalent to 1.8% of the Township's 2017 tax levy revenues of about \$5.3 million. A detailed table of this strategy can be found in Appendix A – Table 1.

Eliminating the infrastructure deficit by 2056 is an aggressive objective and is an initiative the Township is unlikely to explore at this time; a few reasons include:

- The required capital contributions (to eliminate the deficit) will necessitate an increase to property taxes beyond a reasonable measure;

- The Township may need to decrease or limit funding of other key Township services or initiatives in lieu for capital repair and replacement activity;
- Assets can remain in use past their engineered design life and are capable of performing to meet the Township’s desired level of service under these circumstances. Therefore, in such instances, the asset does not necessarily need to be replaced by virtue of exceeding their design life; and
- Prudent asset management strategies which are currently employed by the Township (Section IV: Asset Management Strategies) can often extend the requirement of major repair or replacement of capital assets and may prolong the life of the asset.

Further to the above noted comments, three financing strategies were developed to illustrate a rational capital contribution level to meet asset replacement needs for tax supported assets (shown in Table 22). The financing strategies illustrate the “smoothed options” to the capital repair and replacement requirements identified in Part B. Assumptions for each of the three funding strategies is shown in Table 21 and each financing strategy is shown in Table 22.

Table 21 Financing Strategy Key Assumptions	
Known Funding Source	Assumptions
Tax Levy Support	<ul style="list-style-type: none"> • Existing 2017 tax supported capital funding of \$112,000 is assumed to be the starting point and base case for increasing annual capital contributions.
Reserves	<ul style="list-style-type: none"> • Existing reserves are used to fund capital in 2017 and amount to \$59,100.
Gas Tax Reserve Fund	<ul style="list-style-type: none"> • Gas tax funding for 2017 is \$87,000. In 2018 and onwards gas tax funding is assumed to remain constant at \$73,000 per year.
OMPF & Other Grants	<ul style="list-style-type: none"> • OMPF & other grant funding for 2017 is assumed: <ul style="list-style-type: none"> ○ Approximately \$1 million in OMPF funding. ○ Approximately \$1.5 million in grant funding for the Reid's Mt. Julian-Viamede Construction project. • Financing Strategy 1: OMPF funding is assumed to be phased out over a 10-year period. • Financing Strategy 2: No OMPF funding is assumed in 2018 and onwards. • Financing Strategy 3: No OMPF funding is assumed in 2018 and onwards.

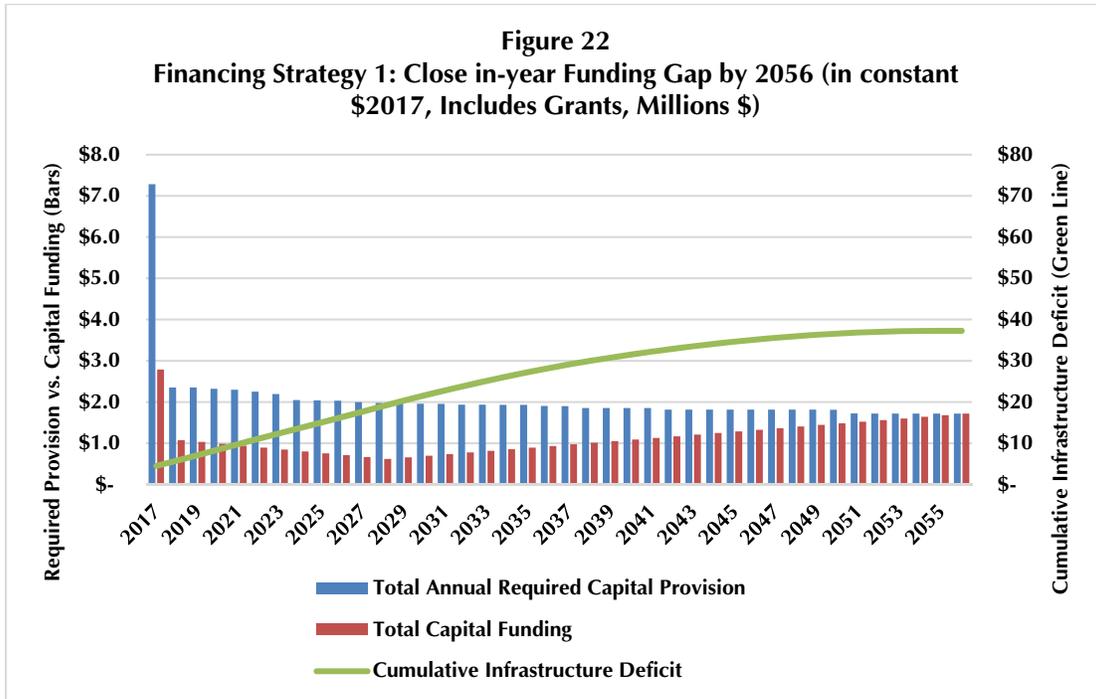
Table 22 Summary of Financing Strategies	
Financing Strategy	Strategy Parameters
Strategy 1 Close in-year Funding Gap by 2056 (Includes Grants)	<ul style="list-style-type: none"> • Increase annual capital contributions by approximately \$39,000 per year. • For 2018, the increase would be in addition to the 2017 \$112,000 tax supported capital funding. • The yearly revenue requirement is equivalent to 0.75% of the Township's 2017 tax levy revenue.
Strategy 2 Close in-year Funding Gap by 2056 (No Grants)	<ul style="list-style-type: none"> • Increase in annual capital contributions amount to approximately \$39,000 per year. • For 2018, the increase would be in addition to the 2017 \$112,000 tax supported capital funding. • The yearly revenue requirement is equivalent to 0.75% of the Township's 2017 tax levy revenue.
Strategy 3 Maintain Status Quo (No Grants)	<ul style="list-style-type: none"> • Tax supported capital funding is increased at a rate of 2% each year • No significant changes in annual capital funding.

Note: Key assumptions noted in Table 21 are maintained for all three financing strategies.

1. Financing Strategy 1 – Close in-year Funding Gap by 2056 (Includes Grants)

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach \$37.2 million before the Township begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2056 (Figure 22). The infrastructure deficit will increase by the annual funding gap and decrease once the annual contributions are greater than the annual provision. This strategy represents an annual increase in capital contributions (including transfers to reserves) of about \$39,000 per year. This represents 0.75% of the Township's 2017 net tax levy budget of about \$5.3 million. A detailed table of Strategy 1 can be found in Appendix A – Table 2.

It is important to note that even though the in-year funding gap has been addressed by 2056, the infrastructure deficit poses risk to the Township. The cumulative deficit in 2056 of \$37.2 million is indicative of overdue assets that have fully depreciated and may be in very poor condition. These assets would need to be addressed in a longer time frame and are at risk for asset failure. In addition, this strategy maintains the assumption that the Township will continue to receive OMPF funding for another 10-years, although this funding is assumed to be phased out during the period.

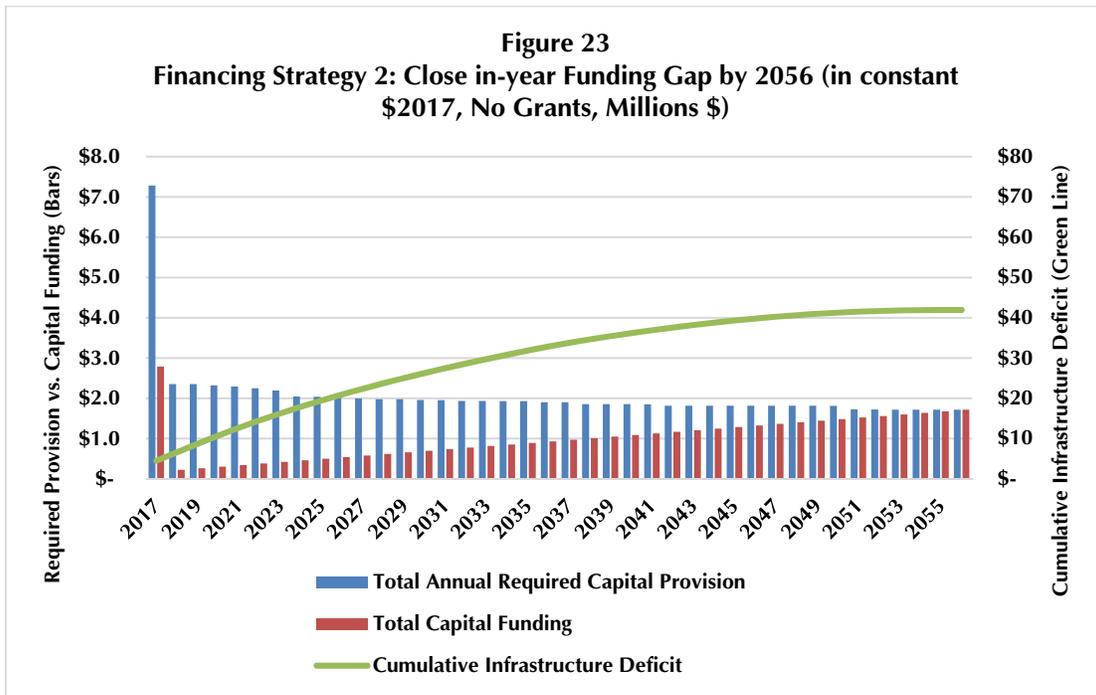


Note: The projected capital provision represents the annual requirement to repair and replace existing Township assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated) and includes the asset requirements identified in the both the 2012 Road Needs Study and this 2017 Plan.

2. Financing Strategy 2 – Close in-year Funding Gap by 2056 (No Grants)

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach \$41.9 million before the Township begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2056 (Figure 23). The infrastructure deficit will increase by the annual funding gap and decrease once the annual contributions are greater than the annual provision. Similar to Financing Strategy 1, this strategy represents an annual increase in capital contributions (including transfers to reserves) of about \$39,000 per year, representing 0.75% of the Township’s 2017 net budget of \$5.3 million. A detailed table of Strategy 1 can be found in Appendix A – Table 3.

It is important to note that even though the in-year funding gap has been addressed by 2056, the infrastructure deficit poses risk to the Township. The cumulative deficit in 2056 of \$41.9 million, is indicative of overdue assets that have fully depreciated and may be in very poor condition. These assets would need to be addressed in a longer time frame and are at risk for asset failure. This strategy represents the Township’s long term sustainability option as no future grant funding is assumed.

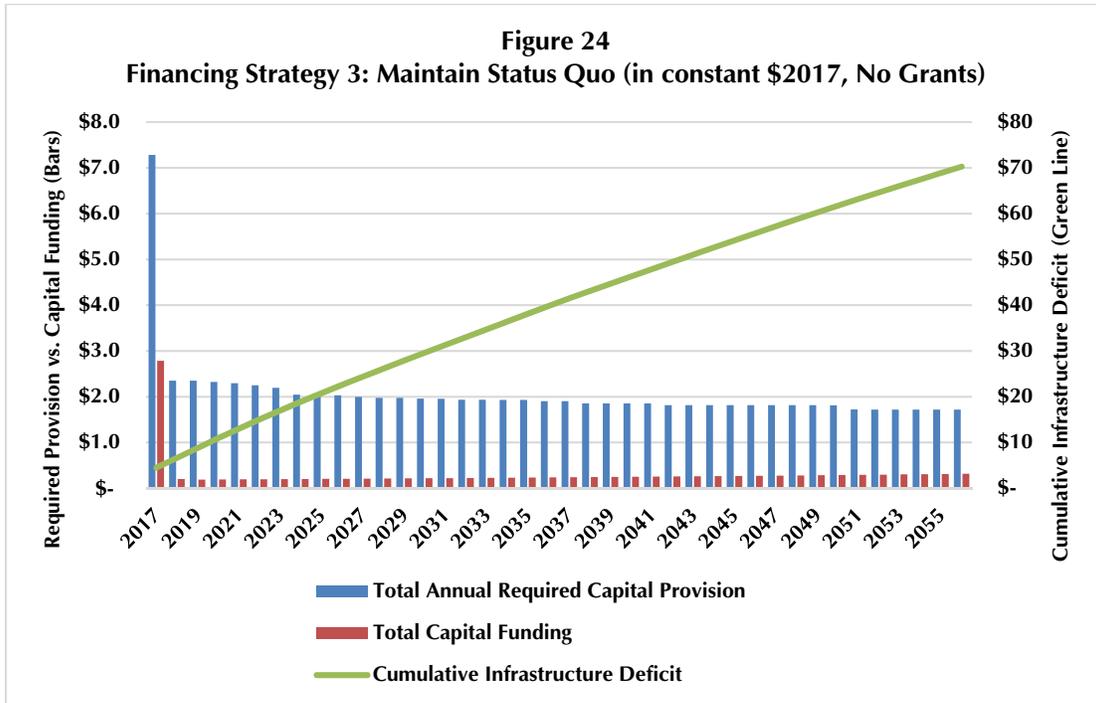


Note: The projected capital provision represents the annual requirement to repair and replace existing Township assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated) and includes the asset requirements identified in the both the 2012 Road Needs Study and this 2017 Plan.

3. Financing Strategy 3 – Maintain Status Quo (No Grants)

The third strategy assumes capital contributions are moderately increased at a rate of 2% per annum. Figure 24 illustrates the analysis of Strategy 3. A detailed table of Strategy 3 can be found in Appendix A – Table 4.

This analysis indicates that the Township would not close the in-year funding gap by 2056. The cumulative infrastructure deficit will reach \$70.3 million by 2056 and will continue to grow beyond the planning period. Strategy 3 represents the scenario with the greatest risk. The growing infrastructure deficit represents an increasing number of assets that have fully depreciated and may be in very poor condition.



Note: The projected capital provision represents the annual requirement to repair and replace existing Township assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated) and includes the asset requirements identified in the both the 2012 Road Needs Study and this 2017 Plan.

F. AVAILABLE FUNDING TOOLS

The following section discusses, at a high level, the range of tools available to the Township 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-growth related capital works.

The Township of North Kawartha has indicated that it expects to continue receiving Gas Tax funds – these funds have been incorporated into the financing strategies at current levels.

Development Charges

Development charges may be imposed to pay for increased capital costs required because of increased needs for services arising from development. The Township of North Kawartha currently does not levy development charges and therefore development in the Township is subject only to those charges levied by the County of Peterborough.

Property Taxes

According to the 2017 budget, property taxes represent about \$5.3 million in revenues. The use of property taxes to fund municipal services is the most secure source of funding for the Township. As such, the Township would likely be required to increase property tax revenue to fund additional capital expenditures.

User Fees

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. The Township should look to review and ensure user fees are being utilized to the full extent as allowed under provincial legislation. This will help alleviate funding pressures from the tax base and allow for greater flexibility to fund capital asset repair and replacement activities. Most commonly, municipalities undertake detailed user fee reviews of their building, planning and engineering fees in order to recover the full cost of providing

services – the full cost recovery user fee rates generally incorporate a component for building capital replacement.

Public Private Partnerships

Public Private Partnerships (P3s) are a common tool for delivering infrastructure services throughout communities across Canada to build roads, hospitals, light rail transit, water and wastewater treatment facilities and other infrastructure. P3s can offer more effective project and lifecycle cost control and risk management than traditional procurement methods. The Township could explore P3s as a tool to carry out capital related activities.

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.

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.

Assets funded, or provided, under developer contributions are typically “first round” assets but can, in certain circumstances, include replacement of existing assets and funding of non-DC recoverable shares. An example of replacement of an existing asset is when an existing road requires improvements or upgrades as a result of a specific development; the municipality could endeavour to require the developer to undertake, or fund, the road improvements as a condition of the subdivision agreement. The municipality benefits from the funding of the improved road, but is also an effective deferral of a capital renewal expense as the existing, and therefore depreciated asset, is also replaced or renewed.

G. 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 capital projects. Planned debt is a responsible way to spread the costs of a project over the life of an asset to ensure the tax payers who benefit from the asset share the cost. Therefore, the burden of capital is distributed equally between the current tax payer and future tax payers.

The amount of debt a municipality can carry is set by provincial regulations to ensure municipalities continue to operate in a fiscally sound environment. The Township is currently not carrying any debt, although an annual repayment limit of nearly \$1.4 million in total net debt charges was identified in the Township's 2015 Financial Information Return. 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 asset's 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. There is no prescribed amount of reserves for a Township to have at any given time, but they should be sufficient to cover emergency work (if required).

As of January 1st 2017, the Township had a total capital reserve balance of \$1.8 million. The reserve balances consider only the money the Township has on hand to carry out capital projects related to the services to which this asset management plan applies and excludes operating and rate stabilization reserves. The entire balance of capital reserves has been considered in the calculation in the 2017 infrastructure deficit.

H. FUTURE DEMAND

The 2017 Plan reflects the assets that the Township currently owns and operates. The Township's 2016 census population is estimated at 2,479 persons as per Statistics Canada. The Township does not expect any significant growth to occur in the near future, therefore growth-related capital additions to the Township's asset portfolio are not expected. The Township should recognize that although new growth related infrastructure is not required to be built in the near future, maintaining control of the current infrastructure deficit should be prioritized in the coming years.

VI CONCLUSIONS AND RECOMMENDATIONS

The objective of this Asset Management Plan is to provide the Township of North Kawartha with the information it needs to make decisions on how best to manage capital assets in a sustainable way to 2056. In this section, recommendations based on the analysis undertaken as part of the 2017 Plan are made.

A. SUMMARY OF KEY FINDINGS

- The Township’s asset base is extensive, valued at \$58.5 million, in relation to the census permanent population of about 2,479 persons.
- Overall, a high proportion (about 65% or \$38.3 million) of Township assets are considered to be in “Good” to “Very Good” condition. At the same time, approximately 20% (\$11.8 million) of infrastructure is considered to be in “Poor” to “Very Poor” condition.
- The Township of North Kawartha has made some effort in recent years to address the infrastructure gap and improve the condition of assets:
 - Upper level government grant money received has typically been allocated to capital asset repair and replacement activities;
 - The Township has created an asset management plan reserve, however, contributions to this reserve is contingent on the level of upper level government support and in-year capital asset requirements;
 - Through its annual capital budgeting process, the Township addresses critical issues and assets in need for repair or replacement.
- The responsibility to maintain existing infrastructure is challenging, however, in addition to current capital funding, the Township should increase annual capital contributions to address current and future infrastructure requirements;
 - Property taxes are the most secure form of revenue and the Township should consider increasing tax base revenues, above current practices, to fund capital works;
 - Ensure user fees are being utilized to the full extent as allowed under provincial legislation. This will help alleviate funding pressures from the tax base and allow for greater flexibility to fund capital asset repair and replacement activities.

- Explore alternative arrangements to provide services – public private partnerships or shared services.
- The Township is considered to be in good fiscal standing with strong budgetary performance and no external debt - the Township currently operates well below the annual repayment limit of \$1.4 million in total net debt charges. This debt capacity could allow the Township to use debt to carry out emergency asset replacements, improvements, or other strategic projects which typically provide a return on investment such as a reduction in operating costs.
- The Township should continue to seek funding from the federal and provincial government (when available) to undertake capital related works.

B. SUMMARY OF RECOMMENDATIONS

Based on the research and analysis undertaken for this 2017 Plan the following conclusions can be reached:

1. Continue to Improve Capital Development Planning Process

- The Township employs a multi-year capital budget and forecasts for all services based on a 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;
 - 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 continue to be expanded on and established for all services. Targets should be measured, reported on, and adjusted annually.
- Repair and replacement capital works should be prioritized based on asset condition ratings. For example, assets identified as “Very Poor” and “Poor” can be considered for immediate attention.
 - Advanced capital prioritization processes include the use of a risk matrix to assist in determining annual capital spending.

- Infrastructure assets which have been provided a “Fair” condition rating should be targeted for maintenance to ensure they continue to perform at the expected level.
- The Township should, where possible, coordinate the construction of new infrastructure with infrastructure repairs and replacement to achieve cost efficiencies.

2. Ensure Asset Inventories are Updated Regularly

- The Township should establish an asset management internal network including department heads from the Office of the CAO, Finance, Building & Planning, Emergency Services, Parks & Recreation/Waste Management and Roads. The internal network can be lead by an asset management “champion.”
- Sound asset management decisions are only possible if information in the asset registry is accurate. The Township designated data champion should regularly update the registry to account for asset purchases, upgrades, and replacements, as well as asset condition ratings and information on useful life.
- The Township should continue to refine the condition assessments for all assets considered under this 2017 Plan; and
- The Township should update this Asset Management Plan at a minimum every 3-5 years.

3. 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:
 - Regular and ongoing maintenance work;
 - Daily vehicle and equipment inspections;
 - Substituting retrofitting and rehabilitation work for (more costly) full replacement of an asset; and
 - Land improvement assets may be best suited for repair and maintenance rather than full capital replacement.
- The Township should explore opportunities to dispose under utilized infrastructure/facilities which may not warrant repair/replacement. For example, underutilized buildings, or surplus land/parks, could be disposed and sold; and

- Coordinate assets into specific hubs to create operating and capital repair/maintenance efficiencies where possible.

APPENDIX A

FINANCING STRATEGY DETAILED TABLES

HEMSON

Appendix A - Table 1
Township of North Kawartha
Asset Management Plan
Eliminate Cumulative Infrastructure Deficit by 2056

Legend	A	B	C	D	E	F	G	H	I	J	K	L
Year	Projected Annual Capital Provision (2017 AMP Assets)	Projected Annual Capital Provision (Roads)	Total Annual Required Capital Provision	Annual Capital Tax Levy Support	\$ Annual Increase in Capital Contributions	% Annual Increase in Capital Contributions	Existing Reserves	Gas Tax	OMPF & Other Grants	Total Capital Funding	Annual Funding Gap = (C-J)	Cumulative Infrastructure Deficit
			A + B = C							D+G+H+I=J	C - J = K	SUM OF K
2017	\$ 1,598,792	\$ 5,684,128	\$ 7,282,920	\$ 112,000			\$ 59,100	\$ 87,000	\$ 2,528,067	\$ 2,786,167	\$ 4,496,753	\$ 4,496,753
2018	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 205,054	\$ 93,054	83.1%		\$ 72,906	\$ -	\$ 277,960	\$ 2,072,229	\$ 6,568,982
2019	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 298,109	\$ 93,054	45.4%		\$ 72,906	\$ -	\$ 371,015	\$ 1,979,175	\$ 8,548,156
2020	\$ 1,822,078	\$ 498,836	\$ 2,320,914	\$ 391,163	\$ 93,054	31.2%		\$ 72,906	\$ -	\$ 464,069	\$ 1,856,845	\$ 10,405,001
2021	\$ 1,795,691	\$ 498,836	\$ 2,294,527	\$ 484,218	\$ 93,054	23.8%		\$ 72,906	\$ -	\$ 557,124	\$ 1,737,403	\$ 12,142,404
2022	\$ 1,751,916	\$ 498,836	\$ 2,250,752	\$ 577,272	\$ 93,054	19.2%		\$ 72,906	\$ -	\$ 650,178	\$ 1,600,573	\$ 13,742,977
2023	\$ 1,694,362	\$ 498,836	\$ 2,193,198	\$ 670,327	\$ 93,054	16.1%		\$ 72,906	\$ -	\$ 743,233	\$ 1,449,965	\$ 15,192,942
2024	\$ 1,545,414	\$ 498,836	\$ 2,044,250	\$ 763,381	\$ 93,054	13.9%		\$ 72,906	\$ -	\$ 836,287	\$ 1,207,963	\$ 16,400,905
2025	\$ 1,537,829	\$ 498,836	\$ 2,036,665	\$ 856,436	\$ 93,054	12.2%		\$ 72,906	\$ -	\$ 929,342	\$ 1,107,323	\$ 17,508,227
2026	\$ 1,532,244	\$ 498,836	\$ 2,031,080	\$ 949,490	\$ 93,054	10.9%		\$ 72,906	\$ -	\$ 1,022,396	\$ 1,008,684	\$ 18,516,911
2027	\$ 1,495,731	\$ 498,836	\$ 1,994,567	\$ 1,042,545	\$ 93,054	9.8%		\$ 72,906	\$ -	\$ 1,115,451	\$ 879,116	\$ 19,396,027
2028	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 1,135,599	\$ 93,054	8.9%		\$ 72,906	\$ -	\$ 1,208,505	\$ 767,021	\$ 20,163,048
2029	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 1,228,654	\$ 93,054	8.2%		\$ 72,906	\$ -	\$ 1,301,560	\$ 673,966	\$ 20,837,014
2030	\$ 1,457,268	\$ 498,836	\$ 1,956,104	\$ 1,321,708	\$ 93,054	7.6%		\$ 72,906	\$ -	\$ 1,394,614	\$ 561,490	\$ 21,398,504
2031	\$ 1,453,799	\$ 498,836	\$ 1,952,635	\$ 1,414,763	\$ 93,054	7.0%		\$ 72,906	\$ -	\$ 1,487,669	\$ 464,966	\$ 21,863,470
2032	\$ 1,434,922	\$ 498,836	\$ 1,933,758	\$ 1,507,817	\$ 93,054	6.6%		\$ 72,906	\$ -	\$ 1,580,723	\$ 353,035	\$ 22,216,505
2033	\$ 1,432,774	\$ 498,836	\$ 1,931,610	\$ 1,600,872	\$ 93,054	6.2%		\$ 72,906	\$ -	\$ 1,673,778	\$ 257,832	\$ 22,474,337
2034	\$ 1,432,234	\$ 498,836	\$ 1,931,070	\$ 1,693,926	\$ 93,054	5.8%		\$ 72,906	\$ -	\$ 1,766,832	\$ 164,237	\$ 22,638,575
2035	\$ 1,432,149	\$ 498,836	\$ 1,930,985	\$ 1,786,981	\$ 93,054	5.5%		\$ 72,906	\$ -	\$ 1,859,887	\$ 71,098	\$ 22,709,672
2036	\$ 1,403,490	\$ 498,836	\$ 1,902,326	\$ 1,880,035	\$ 93,054	5.2%		\$ 72,906	\$ -	\$ 1,952,941	\$ (50,615)	\$ 22,659,057
2037	\$ 1,401,398	\$ 498,836	\$ 1,900,234	\$ 1,973,090	\$ 93,054	4.9%		\$ 72,906	\$ -	\$ 2,045,996	\$ (145,762)	\$ 22,513,295
2038	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 2,066,144	\$ 93,054	4.7%		\$ 72,906	\$ -	\$ 2,139,050	\$ (285,924)	\$ 22,227,371
2039	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 2,159,199	\$ 93,054	4.5%		\$ 72,906	\$ -	\$ 2,232,105	\$ (378,979)	\$ 21,848,392
2040	\$ 1,353,631	\$ 498,836	\$ 1,852,467	\$ 2,252,253	\$ 93,054	4.3%		\$ 72,906	\$ -	\$ 2,325,159	\$ (472,692)	\$ 21,375,700
2041	\$ 1,353,249	\$ 498,836	\$ 1,852,085	\$ 2,345,308	\$ 93,054	4.1%		\$ 72,906	\$ -	\$ 2,418,214	\$ (566,129)	\$ 20,809,571
2042	\$ 1,315,309	\$ 498,836	\$ 1,814,145	\$ 2,438,362	\$ 93,054	4.0%		\$ 72,906	\$ -	\$ 2,511,268	\$ (697,123)	\$ 20,112,448
2043	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 2,531,417	\$ 93,054	3.8%		\$ 72,906	\$ -	\$ 2,604,323	\$ (790,458)	\$ 19,321,991
2044	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 2,624,471	\$ 93,054	3.7%		\$ 72,906	\$ -	\$ 2,697,377	\$ (883,512)	\$ 18,438,479
2045	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 2,717,526	\$ 93,054	3.5%		\$ 72,906	\$ -	\$ 2,790,432	\$ (976,677)	\$ 17,461,801
2046	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 2,810,580	\$ 93,054	3.4%		\$ 72,906	\$ -	\$ 2,883,486	\$ (1,069,732)	\$ 16,392,069
2047	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 2,903,635	\$ 93,054	3.3%		\$ 72,906	\$ -	\$ 2,976,541	\$ (1,162,786)	\$ 15,229,283
2048	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 2,996,689	\$ 93,054	3.2%		\$ 72,906	\$ -	\$ 3,069,595	\$ (1,255,841)	\$ 13,973,442
2049	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 3,089,744	\$ 93,054	3.1%		\$ 72,906	\$ -	\$ 3,162,650	\$ (1,348,895)	\$ 12,624,547
2050	\$ 1,311,439	\$ 498,836	\$ 1,810,275	\$ 3,182,798	\$ 93,054	3.0%		\$ 72,906	\$ -	\$ 3,255,704	\$ (1,445,430)	\$ 11,179,117
2051	\$ 1,223,539	\$ 498,836	\$ 1,722,375	\$ 3,275,853	\$ 93,054	2.9%		\$ 72,906	\$ -	\$ 3,348,759	\$ (1,626,384)	\$ 9,552,734
2052	\$ 1,219,868	\$ 498,836	\$ 1,718,704	\$ 3,368,907	\$ 93,054	2.8%		\$ 72,906	\$ -	\$ 3,441,813	\$ (1,723,109)	\$ 7,829,625
2053	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 3,461,962	\$ 93,054	2.8%		\$ 72,906	\$ -	\$ 3,534,868	\$ (1,817,824)	\$ 6,011,800
2054	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 3,555,016	\$ 93,054	2.7%		\$ 72,906	\$ -	\$ 3,627,922	\$ (1,910,879)	\$ 4,100,921
2055	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 3,648,071	\$ 93,054	2.6%		\$ 72,906	\$ -	\$ 3,720,977	\$ (2,003,933)	\$ 2,096,988
2056	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 3,741,125	\$ 93,054	2.6%		\$ 72,906	\$ -	\$ 3,814,031	\$ (2,096,988)	\$ 0
40-Year Infrastructure Deficit											\$ 0	0

Appendix A - Table 2
Township of North Kawartha
Asset Management Plan
Financing Strategy 1: Close in-year Funding Gap by 2056 (in constant \$2017, Includes Grants)

Legend	A	B	C	D	E	F	G	H	I	J	K	L
Year	Projected Annual Capital Provision (2017 AMP Assets)	Projected Annual Capital Provision (Roads)	Total Annual Required Capital Provision	Annual Capital Tax Levy Support	\$ Annual Increase in Capital Contributions	% Annual Increase in Capital Contributions	Existing Reserves	Gas Tax	OMPF & Other Grants	Total Capital Funding	Annual Funding Gap = (C-J)	Cumulative Infrastructure Deficit
			A + B = C							D+G+H+I=J	C - J = K	SUM OF K
2017	\$ 1,598,792	\$ 5,684,128	\$ 7,282,920	\$ 112,000			\$ 59,100	\$ 87,000	\$ 2,528,067	\$ 2,786,167	\$ 4,496,753	\$ 4,496,753
2018	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 151,286	\$ 39,286	35.1%		\$ 72,906	\$ 850,000	\$ 1,074,192	\$ 1,275,998	\$ 5,772,751
2019	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 190,571	\$ 39,286	26.0%		\$ 72,906	\$ 765,000	\$ 1,028,477	\$ 1,321,712	\$ 7,094,463
2020	\$ 1,822,078	\$ 498,836	\$ 2,320,914	\$ 229,857	\$ 39,286	20.6%		\$ 72,906	\$ 680,000	\$ 982,763	\$ 1,338,151	\$ 8,432,614
2021	\$ 1,795,691	\$ 498,836	\$ 2,294,527	\$ 269,142	\$ 39,286	17.1%		\$ 72,906	\$ 595,000	\$ 937,048	\$ 1,357,479	\$ 9,790,093
2022	\$ 1,751,916	\$ 498,836	\$ 2,250,752	\$ 308,428	\$ 39,286	14.6%		\$ 72,906	\$ 510,000	\$ 891,334	\$ 1,359,418	\$ 11,149,511
2023	\$ 1,694,362	\$ 498,836	\$ 2,193,198	\$ 347,713	\$ 39,286	12.7%		\$ 72,906	\$ 425,000	\$ 845,619	\$ 1,347,578	\$ 12,497,089
2024	\$ 1,545,414	\$ 498,836	\$ 2,044,250	\$ 386,999	\$ 39,286	11.3%		\$ 72,906	\$ 340,000	\$ 799,905	\$ 1,244,345	\$ 13,741,434
2025	\$ 1,537,829	\$ 498,836	\$ 2,036,665	\$ 426,285	\$ 39,286	10.2%		\$ 72,906	\$ 255,000	\$ 754,191	\$ 1,282,474	\$ 15,023,908
2026	\$ 1,532,244	\$ 498,836	\$ 2,031,080	\$ 465,570	\$ 39,286	9.2%		\$ 72,906	\$ 170,000	\$ 708,476	\$ 1,342,604	\$ 16,346,512
2027	\$ 1,495,731	\$ 498,836	\$ 1,994,567	\$ 504,856	\$ 39,286	8.4%		\$ 72,906	\$ 85,000	\$ 662,762	\$ 1,331,806	\$ 17,678,318
2028	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 544,141	\$ 39,286	7.8%		\$ 72,906	\$ -	\$ 617,047	\$ 1,358,479	\$ 19,036,797
2029	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 583,427	\$ 39,286	7.2%		\$ 72,906	\$ -	\$ 656,333	\$ 1,319,193	\$ 20,355,990
2030	\$ 1,457,268	\$ 498,836	\$ 1,956,104	\$ 622,712	\$ 39,286	6.7%		\$ 72,906	\$ -	\$ 695,618	\$ 1,260,486	\$ 21,616,476
2031	\$ 1,453,799	\$ 498,836	\$ 1,952,635	\$ 661,998	\$ 39,286	6.3%		\$ 72,906	\$ -	\$ 734,904	\$ 1,217,731	\$ 22,834,207
2032	\$ 1,434,922	\$ 498,836	\$ 1,933,758	\$ 701,284	\$ 39,286	5.9%		\$ 72,906	\$ -	\$ 774,190	\$ 1,159,569	\$ 23,993,775
2033	\$ 1,432,774	\$ 498,836	\$ 1,931,610	\$ 740,569	\$ 39,286	5.6%		\$ 72,906	\$ -	\$ 813,475	\$ 1,118,135	\$ 25,111,910
2034	\$ 1,432,234	\$ 498,836	\$ 1,931,070	\$ 779,855	\$ 39,286	5.3%		\$ 72,906	\$ -	\$ 852,761	\$ 1,078,309	\$ 26,190,219
2035	\$ 1,432,149	\$ 498,836	\$ 1,930,985	\$ 819,140	\$ 39,286	5.0%		\$ 72,906	\$ -	\$ 892,046	\$ 1,038,938	\$ 27,229,158
2036	\$ 1,403,490	\$ 498,836	\$ 1,902,326	\$ 858,426	\$ 39,286	4.8%		\$ 72,906	\$ -	\$ 931,332	\$ 970,994	\$ 28,200,152
2037	\$ 1,401,398	\$ 498,836	\$ 1,900,234	\$ 897,711	\$ 39,286	4.6%		\$ 72,906	\$ -	\$ 970,617	\$ 929,616	\$ 29,129,768
2038	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 936,997	\$ 39,286	4.4%		\$ 72,906	\$ -	\$ 1,009,903	\$ 843,223	\$ 29,972,991
2039	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 976,283	\$ 39,286	4.2%		\$ 72,906	\$ -	\$ 1,049,189	\$ 803,937	\$ 30,776,929
2040	\$ 1,353,631	\$ 498,836	\$ 1,852,467	\$ 1,015,568	\$ 39,286	4.0%		\$ 72,906	\$ -	\$ 1,088,474	\$ 763,993	\$ 31,540,922
2041	\$ 1,353,249	\$ 498,836	\$ 1,852,085	\$ 1,054,854	\$ 39,286	3.9%		\$ 72,906	\$ -	\$ 1,127,760	\$ 724,325	\$ 32,265,247
2042	\$ 1,315,309	\$ 498,836	\$ 1,814,145	\$ 1,094,139	\$ 39,286	3.7%		\$ 72,906	\$ -	\$ 1,167,045	\$ 647,100	\$ 32,912,347
2043	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 1,133,425	\$ 39,286	3.6%		\$ 72,906	\$ -	\$ 1,206,331	\$ 607,534	\$ 33,519,882
2044	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 1,172,710	\$ 39,286	3.5%		\$ 72,906	\$ -	\$ 1,245,616	\$ 568,249	\$ 34,088,131
2045	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,211,996	\$ 39,286	3.3%		\$ 72,906	\$ -	\$ 1,284,902	\$ 528,852	\$ 34,616,983
2046	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,251,282	\$ 39,286	3.2%		\$ 72,906	\$ -	\$ 1,324,188	\$ 489,567	\$ 35,106,550
2047	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,290,567	\$ 39,286	3.1%		\$ 72,906	\$ -	\$ 1,363,473	\$ 450,281	\$ 35,556,831
2048	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,329,853	\$ 39,286	3.0%		\$ 72,906	\$ -	\$ 1,402,759	\$ 410,996	\$ 35,967,827
2049	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,369,138	\$ 39,286	3.0%		\$ 72,906	\$ -	\$ 1,442,044	\$ 371,710	\$ 36,339,537
2050	\$ 1,311,439	\$ 498,836	\$ 1,810,275	\$ 1,408,424	\$ 39,286	2.9%		\$ 72,906	\$ -	\$ 1,481,330	\$ 328,945	\$ 36,668,482
2051	\$ 1,223,539	\$ 498,836	\$ 1,722,375	\$ 1,447,709	\$ 39,286	2.8%		\$ 72,906	\$ -	\$ 1,520,615	\$ 201,760	\$ 36,870,242
2052	\$ 1,219,868	\$ 498,836	\$ 1,718,704	\$ 1,486,995	\$ 39,286	2.7%		\$ 72,906	\$ -	\$ 1,559,901	\$ 158,803	\$ 37,029,045
2053	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,526,281	\$ 39,286	2.6%		\$ 72,906	\$ -	\$ 1,599,187	\$ 117,857	\$ 37,146,901
2054	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,565,566	\$ 39,286	2.6%		\$ 72,906	\$ -	\$ 1,638,472	\$ 78,571	\$ 37,225,473
2055	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,604,852	\$ 39,286	2.5%		\$ 72,906	\$ -	\$ 1,677,758	\$ 39,286	\$ 37,264,758
2056	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,644,137	\$ 39,286	2.4%		\$ 72,906	\$ -	\$ 1,717,043	\$ -	\$ 37,264,758
40-Year Infrastructure Deficit											\$ 37,264,758	

Appendix A - Table 3
Township of North Kawartha
Asset Management Plan
Financing Strategy 2: Close in-year Funding Gap by 2056 (in constant \$2017, No Grants)

Legend	A	B	C	D	E	F	G	H	I	J	K	L
Year	Projected Annual Capital Provision (2017 AMP Assets)	Projected Annual Capital Provision (Roads)	Total Annual Required Capital Provision	Annual Capital Tax Levy Support	\$ Annual Increase in Capital Contributions	% Annual Increase in Capital Contributions	Existing Reserves	Gas Tax	OMPF & Other Grants	Total Capital Funding	Annual Funding Gap = (C-J)	Cumulative Infrastructure Deficit
			A + B = C							D+G+H+I=J	C - J = K	SUM OF K
2017	\$ 1,598,792	\$ 5,684,128	\$ 7,282,920	\$ 112,000			\$ 59,100	\$ 87,000	\$ 2,528,067	\$ 2,786,167	\$ 4,496,753	\$ 4,496,753
2018	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 151,286	\$ 39,286	35.1%		\$ 72,906	\$ -	\$ 224,192	\$ 2,125,998	\$ 6,622,751
2019	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 190,571	\$ 39,286	26.0%		\$ 72,906	\$ -	\$ 263,477	\$ 2,086,712	\$ 8,709,463
2020	\$ 1,822,078	\$ 498,836	\$ 2,320,914	\$ 229,857	\$ 39,286	20.6%		\$ 72,906	\$ -	\$ 302,763	\$ 2,018,151	\$ 10,727,614
2021	\$ 1,795,691	\$ 498,836	\$ 2,294,527	\$ 269,142	\$ 39,286	17.1%		\$ 72,906	\$ -	\$ 342,048	\$ 1,952,479	\$ 12,680,093
2022	\$ 1,751,916	\$ 498,836	\$ 2,250,752	\$ 308,428	\$ 39,286	14.6%		\$ 72,906	\$ -	\$ 381,334	\$ 1,869,418	\$ 14,549,511
2023	\$ 1,694,362	\$ 498,836	\$ 2,193,198	\$ 347,713	\$ 39,286	12.7%		\$ 72,906	\$ -	\$ 420,619	\$ 1,772,578	\$ 16,322,089
2024	\$ 1,545,414	\$ 498,836	\$ 2,044,250	\$ 386,999	\$ 39,286	11.3%		\$ 72,906	\$ -	\$ 459,905	\$ 1,584,345	\$ 17,906,434
2025	\$ 1,537,829	\$ 498,836	\$ 2,036,665	\$ 426,285	\$ 39,286	10.2%		\$ 72,906	\$ -	\$ 499,191	\$ 1,537,474	\$ 19,443,908
2026	\$ 1,532,244	\$ 498,836	\$ 2,031,080	\$ 465,570	\$ 39,286	9.2%		\$ 72,906	\$ -	\$ 538,476	\$ 1,492,604	\$ 20,936,512
2027	\$ 1,495,731	\$ 498,836	\$ 1,994,567	\$ 504,856	\$ 39,286	8.4%		\$ 72,906	\$ -	\$ 577,762	\$ 1,416,806	\$ 22,353,318
2028	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 544,141	\$ 39,286	7.8%		\$ 72,906	\$ -	\$ 617,047	\$ 1,358,479	\$ 23,711,797
2029	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 583,427	\$ 39,286	7.2%		\$ 72,906	\$ -	\$ 656,333	\$ 1,319,193	\$ 25,030,990
2030	\$ 1,457,268	\$ 498,836	\$ 1,956,104	\$ 622,712	\$ 39,286	6.7%		\$ 72,906	\$ -	\$ 695,618	\$ 1,260,486	\$ 26,291,476
2031	\$ 1,453,799	\$ 498,836	\$ 1,952,635	\$ 661,998	\$ 39,286	6.3%		\$ 72,906	\$ -	\$ 734,904	\$ 1,217,731	\$ 27,509,207
2032	\$ 1,434,922	\$ 498,836	\$ 1,933,758	\$ 701,284	\$ 39,286	5.9%		\$ 72,906	\$ -	\$ 774,190	\$ 1,159,569	\$ 28,668,775
2033	\$ 1,432,774	\$ 498,836	\$ 1,931,610	\$ 740,569	\$ 39,286	5.6%		\$ 72,906	\$ -	\$ 813,475	\$ 1,118,135	\$ 29,786,910
2034	\$ 1,432,234	\$ 498,836	\$ 1,931,070	\$ 779,855	\$ 39,286	5.3%		\$ 72,906	\$ -	\$ 852,761	\$ 1,078,309	\$ 30,865,219
2035	\$ 1,432,149	\$ 498,836	\$ 1,930,985	\$ 819,140	\$ 39,286	5.0%		\$ 72,906	\$ -	\$ 892,046	\$ 1,038,938	\$ 31,904,158
2036	\$ 1,403,490	\$ 498,836	\$ 1,902,326	\$ 858,426	\$ 39,286	4.8%		\$ 72,906	\$ -	\$ 931,332	\$ 970,994	\$ 32,875,152
2037	\$ 1,401,398	\$ 498,836	\$ 1,900,234	\$ 897,711	\$ 39,286	4.6%		\$ 72,906	\$ -	\$ 970,617	\$ 929,616	\$ 33,804,768
2038	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 936,997	\$ 39,286	4.4%		\$ 72,906	\$ -	\$ 1,009,903	\$ 843,223	\$ 34,647,991
2039	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 976,283	\$ 39,286	4.2%		\$ 72,906	\$ -	\$ 1,049,189	\$ 803,937	\$ 35,451,929
2040	\$ 1,353,631	\$ 498,836	\$ 1,852,467	\$ 1,015,568	\$ 39,286	4.0%		\$ 72,906	\$ -	\$ 1,088,474	\$ 763,993	\$ 36,215,922
2041	\$ 1,353,249	\$ 498,836	\$ 1,852,085	\$ 1,054,854	\$ 39,286	3.9%		\$ 72,906	\$ -	\$ 1,127,760	\$ 724,325	\$ 36,940,247
2042	\$ 1,315,309	\$ 498,836	\$ 1,814,145	\$ 1,094,139	\$ 39,286	3.7%		\$ 72,906	\$ -	\$ 1,167,045	\$ 647,100	\$ 37,587,347
2043	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 1,133,425	\$ 39,286	3.6%		\$ 72,906	\$ -	\$ 1,206,331	\$ 607,534	\$ 38,194,882
2044	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 1,172,710	\$ 39,286	3.5%		\$ 72,906	\$ -	\$ 1,245,616	\$ 568,249	\$ 38,763,131
2045	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,211,996	\$ 39,286	3.3%		\$ 72,906	\$ -	\$ 1,284,902	\$ 528,852	\$ 39,291,983
2046	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,251,282	\$ 39,286	3.2%		\$ 72,906	\$ -	\$ 1,324,188	\$ 489,567	\$ 39,781,550
2047	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,290,567	\$ 39,286	3.1%		\$ 72,906	\$ -	\$ 1,363,473	\$ 450,281	\$ 40,231,831
2048	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,329,853	\$ 39,286	3.0%		\$ 72,906	\$ -	\$ 1,402,759	\$ 410,996	\$ 40,642,827
2049	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 1,369,138	\$ 39,286	3.0%		\$ 72,906	\$ -	\$ 1,442,044	\$ 371,710	\$ 41,014,537
2050	\$ 1,311,439	\$ 498,836	\$ 1,810,275	\$ 1,408,424	\$ 39,286	2.9%		\$ 72,906	\$ -	\$ 1,481,330	\$ 328,945	\$ 41,343,482
2051	\$ 1,223,539	\$ 498,836	\$ 1,722,375	\$ 1,447,709	\$ 39,286	2.8%		\$ 72,906	\$ -	\$ 1,520,615	\$ 201,760	\$ 41,545,242
2052	\$ 1,219,868	\$ 498,836	\$ 1,718,704	\$ 1,486,995	\$ 39,286	2.7%		\$ 72,906	\$ -	\$ 1,559,901	\$ 158,803	\$ 41,704,045
2053	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,526,281	\$ 39,286	2.6%		\$ 72,906	\$ -	\$ 1,599,187	\$ 117,857	\$ 41,821,901
2054	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,565,566	\$ 39,286	2.6%		\$ 72,906	\$ -	\$ 1,638,472	\$ 78,571	\$ 41,900,473
2055	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,604,852	\$ 39,286	2.5%		\$ 72,906	\$ -	\$ 1,677,758	\$ 39,286	\$ 41,939,758
2056	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 1,644,137	\$ 39,286	2.4%		\$ 72,906	\$ -	\$ 1,717,043	\$ -	\$ 41,939,758
40-Year Infrastructure Deficit											\$ 41,939,758	

Appendix A - Table 4
Township of North Kawartha
Asset Management Plan
Financing Strategy 3: Maintain Status Quo (in constant \$2017, No Grants)

Legend	A	B	C	D	E	F	G	H	I	J	K	L
Year	Projected Annual Capital Provision (2017 AMP Assets)	Projected Annual Capital Provision (Roads)	Total Annual Required Capital Provision	Annual Capital Tax Levy Support	\$ Annual Increase in Capital Contributions	% Annual Increase in Capital Contributions	Existing Reserves	Gas Tax	OMPF & Other Grants	Total Capital Funding	Annual Funding Gap = (C-J)	Cumulative Infrastructure Deficit
			A + B = C							D+G+H+I=J	C - J = K	SUM OF K
2017	\$ 1,598,792	\$ 5,684,128	\$ 7,282,920	\$ 112,000			\$ 59,100	\$ 87,000	\$ 2,528,067	\$ 2,786,167	\$ 4,496,753	\$ 4,496,753
2018	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 114,240	\$ 2,240	2.0%	\$ -	\$ 87,000	\$ -	\$ 201,240	\$ 2,148,950	\$ 6,645,702
2019	\$ 1,851,353	\$ 498,836	\$ 2,350,190	\$ 116,525	\$ 2,285	2.0%	\$ -	\$ 72,906	\$ -	\$ 189,431	\$ 2,160,759	\$ 8,806,461
2020	\$ 1,822,078	\$ 498,836	\$ 2,320,914	\$ 118,855	\$ 2,330	2.0%	\$ -	\$ 72,906	\$ -	\$ 191,761	\$ 2,129,153	\$ 10,935,614
2021	\$ 1,795,691	\$ 498,836	\$ 2,294,527	\$ 121,232	\$ 2,377	2.0%	\$ -	\$ 72,906	\$ -	\$ 194,138	\$ 2,100,388	\$ 13,036,002
2022	\$ 1,751,916	\$ 498,836	\$ 2,250,752	\$ 123,657	\$ 2,425	2.0%	\$ -	\$ 72,906	\$ -	\$ 196,563	\$ 2,054,189	\$ 15,090,191
2023	\$ 1,694,362	\$ 498,836	\$ 2,193,198	\$ 126,130	\$ 2,473	2.0%	\$ -	\$ 72,906	\$ -	\$ 199,036	\$ 1,994,161	\$ 17,084,352
2024	\$ 1,545,414	\$ 498,836	\$ 2,044,250	\$ 128,653	\$ 2,523	2.0%	\$ -	\$ 72,906	\$ -	\$ 201,559	\$ 1,842,692	\$ 18,927,044
2025	\$ 1,537,829	\$ 498,836	\$ 2,036,665	\$ 131,226	\$ 2,573	2.0%	\$ -	\$ 72,906	\$ -	\$ 204,132	\$ 1,832,533	\$ 20,759,577
2026	\$ 1,532,244	\$ 498,836	\$ 2,031,080	\$ 133,850	\$ 2,625	2.0%	\$ -	\$ 72,906	\$ -	\$ 206,756	\$ 1,824,324	\$ 22,583,900
2027	\$ 1,495,731	\$ 498,836	\$ 1,994,567	\$ 136,527	\$ 2,677	2.0%	\$ -	\$ 72,906	\$ -	\$ 209,433	\$ 1,785,134	\$ 24,369,034
2028	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 139,258	\$ 2,731	2.0%	\$ -	\$ 72,906	\$ -	\$ 212,164	\$ 1,763,362	\$ 26,132,396
2029	\$ 1,476,690	\$ 498,836	\$ 1,975,526	\$ 142,043	\$ 2,785	2.0%	\$ -	\$ 72,906	\$ -	\$ 214,949	\$ 1,760,577	\$ 27,892,973
2030	\$ 1,457,268	\$ 498,836	\$ 1,956,104	\$ 144,884	\$ 2,841	2.0%	\$ -	\$ 72,906	\$ -	\$ 217,790	\$ 1,738,314	\$ 29,631,288
2031	\$ 1,453,799	\$ 498,836	\$ 1,952,635	\$ 147,782	\$ 2,898	2.0%	\$ -	\$ 72,906	\$ -	\$ 220,688	\$ 1,731,947	\$ 31,363,235
2032	\$ 1,434,922	\$ 498,836	\$ 1,933,758	\$ 150,737	\$ 2,956	2.0%	\$ -	\$ 72,906	\$ -	\$ 223,643	\$ 1,710,115	\$ 33,073,350
2033	\$ 1,432,774	\$ 498,836	\$ 1,931,610	\$ 153,752	\$ 3,015	2.0%	\$ -	\$ 72,906	\$ -	\$ 226,658	\$ 1,704,952	\$ 34,778,302
2034	\$ 1,432,234	\$ 498,836	\$ 1,931,070	\$ 156,827	\$ 3,075	2.0%	\$ -	\$ 72,906	\$ -	\$ 229,733	\$ 1,701,337	\$ 36,479,639
2035	\$ 1,432,149	\$ 498,836	\$ 1,930,985	\$ 159,964	\$ 3,137	2.0%	\$ -	\$ 72,906	\$ -	\$ 232,870	\$ 1,698,115	\$ 38,177,754
2036	\$ 1,403,490	\$ 498,836	\$ 1,902,326	\$ 163,163	\$ 3,199	2.0%	\$ -	\$ 72,906	\$ -	\$ 236,069	\$ 1,666,257	\$ 39,844,011
2037	\$ 1,401,398	\$ 498,836	\$ 1,900,234	\$ 166,426	\$ 3,263	2.0%	\$ -	\$ 72,906	\$ -	\$ 239,332	\$ 1,660,902	\$ 41,504,913
2038	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 169,755	\$ 3,329	2.0%	\$ -	\$ 72,906	\$ -	\$ 242,661	\$ 1,610,465	\$ 43,115,378
2039	\$ 1,354,290	\$ 498,836	\$ 1,853,126	\$ 173,150	\$ 3,395	2.0%	\$ -	\$ 72,906	\$ -	\$ 246,056	\$ 1,607,070	\$ 44,722,448
2040	\$ 1,353,631	\$ 498,836	\$ 1,852,467	\$ 176,613	\$ 3,463	2.0%	\$ -	\$ 72,906	\$ -	\$ 249,519	\$ 1,602,948	\$ 46,325,397
2041	\$ 1,353,249	\$ 498,836	\$ 1,852,085	\$ 180,145	\$ 3,532	2.0%	\$ -	\$ 72,906	\$ -	\$ 253,051	\$ 1,599,034	\$ 47,924,431
2042	\$ 1,315,309	\$ 498,836	\$ 1,814,145	\$ 183,748	\$ 3,603	2.0%	\$ -	\$ 72,906	\$ -	\$ 256,654	\$ 1,557,491	\$ 49,481,923
2043	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 187,423	\$ 3,675	2.0%	\$ -	\$ 72,906	\$ -	\$ 260,329	\$ 1,553,536	\$ 51,035,459
2044	\$ 1,315,029	\$ 498,836	\$ 1,813,865	\$ 191,171	\$ 3,748	2.0%	\$ -	\$ 72,906	\$ -	\$ 264,077	\$ 1,549,788	\$ 52,585,247
2045	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 194,995	\$ 3,823	2.0%	\$ -	\$ 72,906	\$ -	\$ 267,901	\$ 1,545,854	\$ 54,131,101
2046	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 198,895	\$ 3,900	2.0%	\$ -	\$ 72,906	\$ -	\$ 271,801	\$ 1,541,954	\$ 55,673,054
2047	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 202,872	\$ 3,978	2.0%	\$ -	\$ 72,906	\$ -	\$ 275,778	\$ 1,537,976	\$ 57,211,030
2048	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 206,930	\$ 4,057	2.0%	\$ -	\$ 72,906	\$ -	\$ 279,836	\$ 1,533,918	\$ 58,744,949
2049	\$ 1,314,918	\$ 498,836	\$ 1,813,754	\$ 211,069	\$ 4,139	2.0%	\$ -	\$ 72,906	\$ -	\$ 283,975	\$ 1,529,780	\$ 60,274,729
2050	\$ 1,311,439	\$ 498,836	\$ 1,810,275	\$ 215,290	\$ 4,221	2.0%	\$ -	\$ 72,906	\$ -	\$ 288,196	\$ 1,522,079	\$ 61,796,807
2051	\$ 1,223,539	\$ 498,836	\$ 1,722,375	\$ 219,596	\$ 4,306	2.0%	\$ -	\$ 72,906	\$ -	\$ 292,502	\$ 1,429,873	\$ 63,226,681
2052	\$ 1,219,868	\$ 498,836	\$ 1,718,704	\$ 223,988	\$ 4,392	2.0%	\$ -	\$ 72,906	\$ -	\$ 296,894	\$ 1,421,811	\$ 64,648,491
2053	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 228,467	\$ 4,480	2.0%	\$ -	\$ 72,906	\$ -	\$ 301,373	\$ 1,415,670	\$ 66,064,161
2054	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 233,037	\$ 4,569	2.0%	\$ -	\$ 72,906	\$ -	\$ 305,943	\$ 1,411,101	\$ 67,475,262
2055	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 237,697	\$ 4,661	2.0%	\$ -	\$ 72,906	\$ -	\$ 310,603	\$ 1,406,440	\$ 68,881,701
2056	\$ 1,218,207	\$ 498,836	\$ 1,717,043	\$ 242,451	\$ 4,754	2.0%	\$ -	\$ 72,906	\$ -	\$ 315,357	\$ 1,401,686	\$ 70,283,387
40-Year Infrastructure Deficit											\$ 70,283,387	

APPENDIX B

HIGH PRIORITY CAPITAL WORKS

HEMSON

APPENDIX B - HIGH PRIORITY CAPITAL WORKS

Although some of the Township's infrastructure is not due to be replaced for some time by virtue of the assets engineered design life, some Township assets have been considered for priority repair or rehabilitation. In consultation with Township staff and Council, Table 1 below outlines a list of six key road related projects which have been identified as high strategic priority. It is intended that these projects are to be completed in the short term (within 5 years).

Appendix B - Table 1 High Priority Capital Projects - Roads*	
Priority #	Road Description
1.	Mt. Julian Viamede/Reid's Road
2.	Antelope Trail/Gazelle Trail/Sable Court
3.	McFadden Road & Side Roads/Lean Drive
4.	Renwick Road
5.	Hull's Road
6.	Cheboutequion Drive/Napier Crescent

**Note: Road projects have been identified by Council and staff as priority. Cost of road repair/replacements are subject to future tender costs once they are identified.*

The six road projects identified above have been prioritized through Council directive. It should be noted, the priority road works identified are subject to the annual capital budgeting process and may be reprioritized as needed. Completing the high priority works will help the Township reduce the existing infrastructure backlog and address critical infrastructure requirements.

In addition to the six priority road projects identified above, the 2017 Asset Management Plan identifies assets that are considered to be in very poor condition. Table 2 outlines several non-engineered assets which include some building components, vehicles, equipment, park lighting and computer equipment considered to be on very poor condition. The total 2017 replacement cost of these assets amounts to \$324,000. Furthermore, a number of road assets are considered to be in very poor condition. The 2017 replacement cost of these roads amounts to approximately \$6.7 million as shown in Table 3. The Township intends to prioritize the additional assets identified to be in very poor condition once the six high priority road projects are completed.

The capital repair and replacement works identified may necessitate the Township to seek funding from a variety of sources, in addition to property tax revenues, to fund all or part of these works. The Township has always used internal control measures to prioritize capital related repair and replacement activities to align with available funds/resources to meet current levels of service. The Township will continue to utilize such measures to ensure capital works are carried out in a fiscally responsible manner.

Appendix B - Table 2
Township of North Kawartha
Asset Management Plan
Very Poor Assets - Non-Engineered

Asset Category	Description	Extended Description	Replacement Cost (2017)
Buildings	SUBS-MLT-NONE-1976-0M0006	Woodview Library	\$ 4,811
	SHEL-MLT-NONE-1955-0W0003	GARAGE PREVIOUSLY FIRE	\$ 22,848
		Buildings Total	\$ 27,659
Vehicles	TRCK-RED-METL-2005-003210	Pickup Truck	\$ 52,279
	TRCK-RED-METL-2009-0A0015	TRUCK	\$ 42,761
	TNKR-RED-METL-2004-0000T1	Tanker	\$ 21,991
	Vehicles Total	\$ 117,032	
Equipment	DOZR-YLW-METL-1996-003213	Dozer	\$ 118,067
	HLDR-MLT-METL-2007-000000	Holder	\$ 41,348
		Equipment Total	\$ 159,415
Land Improvements	OTLT-NON-METL-1984-000000	Park Lighting	\$ 11,533
		Land Improvements Total	\$ 11,533
Computers	SRVR-GRY-METL-2011-000000	Library Computer Server	\$ 8,305
		Computers Total	\$ 8,305
Total Non-Engineered			\$ 323,944

**Appendix B - Table 3
Township of North Kawartha
Asset Management Plan
Very Poor Assets - Roads**

Asset Category	Description	Extended Description	Replacement Cost (2017)	
Roads	KNOX POINT RD	From: Tanner's Bay Ln To: Lois Ln	\$ 59,740	
	BEAVER LA	From: Renwick Rd To: Daniels La	\$ 67,776	
	CHANDOS-WOLLASTON RD	From: Rose Island Rd To: Mindle Rd	\$ 399,218	
	BEAVER LA	From: Daniels La To: End	\$ 42,533	
	DON WILSON RD	From: Coon Lake Rd To: Big Cedar Lake Road	\$ 210,535	
	RENWICK RD	From: Sylvan Dr To: Kingfisher La	\$ 106,887	
	TALLAN LAKE RD	From: Clydesdale Rd To: Scott Settlement Rd	\$ 91,434	
	MILL LAKE RD	From: Burleigh St To: Hwy 28	\$ 162,247	
	FIRE ROUTE 80	From: Hwy 28 To: Anstruther Lake Rd	\$ 107,293	
	FIRE ROUTE 10	From: Fire Route 10A To: Fire Route 10D	\$ 129,352	
	RENWICK RD	From: Beaver La To: Coularmfield La	\$ 100,735	
	WARNER'S RD	From: McConnell La To: End	\$ 75,670	
	COON LAKE RD	From: John Stone Rd To: Fire Route 44	\$ 227,941	
	MAX WILSON RD	From: Cty Rd 620 To: Old Apsley Rd	\$ 90,273	
	OLD APSLEY RD	From: Scott's Rd To: Max Wilson Rd	\$ 74,919	
	WARNER'S RD	From: Cty Rd 620 To: McConnell La	\$ 224,721	
	WEST BAY RD	From: Old Apsley Rd To: Newt's Rd	\$ 48,841	
	WEST BAY RD	From: Paterson La To: Paw Rd	\$ 88,779	
	LASSWADE RD	From: Jackson Rd To: End	\$ 528,300	
	MCCAULEY'S RD	From: Wallys Wy To: Standish La	\$ 151,960	
	LAKEVIEW CR	From: Sawmill Bay Rd To: Fitch Lane Rd	\$ 71,139	
	DICK MARTIN RD	From: Rose Island Rd To: End	\$ 138,975	
	BUSH RD	From: Hogan Lake Rd To: End	\$ 84,732	
	CHANDOS-WOLLASTON RD	From: Mindle Rd To: Boundary Rd	\$ 124,507	
	JOHN STONE RD	From: Coon Lake Rd To: End	\$ 95,456	
	MINDLE RD	From: Hogan Lake Rd To: Chandos-Wollaston Rd	\$ 198,500	
	HILLCREST RD	From: Fire Route 13 To: End	\$ 14,245	
	HOGAN LAKE RD	From: Rose Island Rd To: Bush Rd	\$ 340,349	
	TALLAN LAKE RD	From: Scott Settlement Rd To: End	\$ 121,967	
	BURLEIGH-ANSTRUTHER-CHANDOS TWP CONC 4	From: Hwy 28 - W To: End	\$ 26,209	
	FIRE ROUTE 16	From: Northey's Bay Rd To: End	\$ 51,488	
	FIRE ROUTE 17	From: Fire Route 17A To: End	\$ 21,773	
	FIRE ROUTE 7	From: Mt Julian Viamede Rd To: End	\$ 99,900	
	HILLCREST RD	From: Northey's Bay Rd To: Fire Route 13	\$ 28,316	
	JULIAN LAKE RD	From: Fire Route 37 To: Fire Route 38	\$ 83,373	
	CALDWELL RD	From: Hobson Rd To: End	\$ 132,993	
	NORTH RUSAW RD	From: Rusaw Rd To: End	\$ 122,945	
	JULIAN LAKE RD	From: Fire Route 36 To: Fire Route 37	\$ 46,464	
	EVERETT'S RD	From: Cty Rd 620 To: End	\$ 150,661	
	WINDSOR RD	From: Clydesdale Rd To: End	\$ 194,203	
	PEEBLES RD	From: Clydesdale Rd To: End	\$ 158,073	
	DUNFORD RD	From: Fire Route 4 To: End	\$ 45,574	
	CON 18	From: Hwy 28 To: End	\$ 82,165	
	MCKAY LAKE RD	From: Hwy 28 To: End	\$ 93,040	
	JACK WHITE RD	From: Cty Rd 620 To: Cty Rd 620	\$ 63,603	
	HAULTAIN RD	From: Hwy 28 To: Fire Route 46	\$ 190,952	
	HOBSON RD	From: Caldwell Rd To: End	\$ 81,736	
	CHRISTIAN CEMETERY RD	From: Cty Rd 504 To: End	\$ 12,655	
	FIRE ROUTE 17A	From: Fire Route 17 To: End	\$ 33,833	
	BEDWELL DR	From: Northey's Bay Rd To: Fire Route 20	\$ 46,440	
	HALLIDAY RD	From: Hwy 28 To: End	\$ 15,247	
	JAMES RD	From: Jack Lake Rd To: End	\$ 440,916	
	HALL'S RD	From: Cty Rd 504 To: Quail La	\$ 72,975	
	BUTLER DR	From: Hwy 28 To: End	\$ 62,128	
	JACKSON RD	From: Lasswade Rd To: End	\$ 33,276	
	O'BRIEN RD	From: Clydesdale Rd To: End	\$ 73,683	
	PROUTY'S RD	From: Gill's Gully La To: Brock Rd	\$ 30,681	
	Total Roads			\$ 6,674,329