ASSET MANAGEMENT PLAN

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June 2019 and reviewed for *O.Reg 588/17*
July 1 2024 compliance in March 2023

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EXECUTIVE SUMMARY

The following summarizes the findings of the Township of Brock Asset Management Plan (2019 Plan). The results of the 2018 Road Needs Study, as it relates to 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 Brock for which the Region of Durham is responsible for is not included (e.g. regional roads, water and wastewater infrastructure, etc.). All figures are in constant 2019 dollars and should be adjusted annually to account for the effects of inflation.

The 2019 Plan follows the format set out in the *Building Together: Guide for Municipal Asset Management Plans* and it has also been developed to be consistent with the requirements of *Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure* (O. Reg. 588/17) with consideration to the Township's Strategic Asset Management Policy.

A. STATE OF THE LOCAL INFRASTRUCTURE

- The Township's infrastructure has a total replacement value of $335.3 million.
    - Roads represent $212.0 million (63%) and buildings represent $58.7 million (18%) of the total value; and
    - The remaining tax supported assets represent $64.5 million.
- Overall, the Township's assets are considered to be in Fair condition.
    - Of the total, about 49% or $163.0 million, of Township assets are considered to be in "Good" to "Very Good" condition.
    - Conversely, nearly 23% ($77.0 million) of infrastructure is considered to be in "Poor" to "Very Poor" condition.

B. LEVEL OF SERVICE

- The Township's current levels of service have been defined based on the condition of assets and the measures required as per O. Reg. 588/17.
    - The Township's roads and stormwater infrastructure are currently maintained in Good condition overall.
    - The Township's land improvements are considered to be in Poor condition.

- Load restrictions are in place for all roads and bridges during the spring months.

C. FINANCING STRATEGY

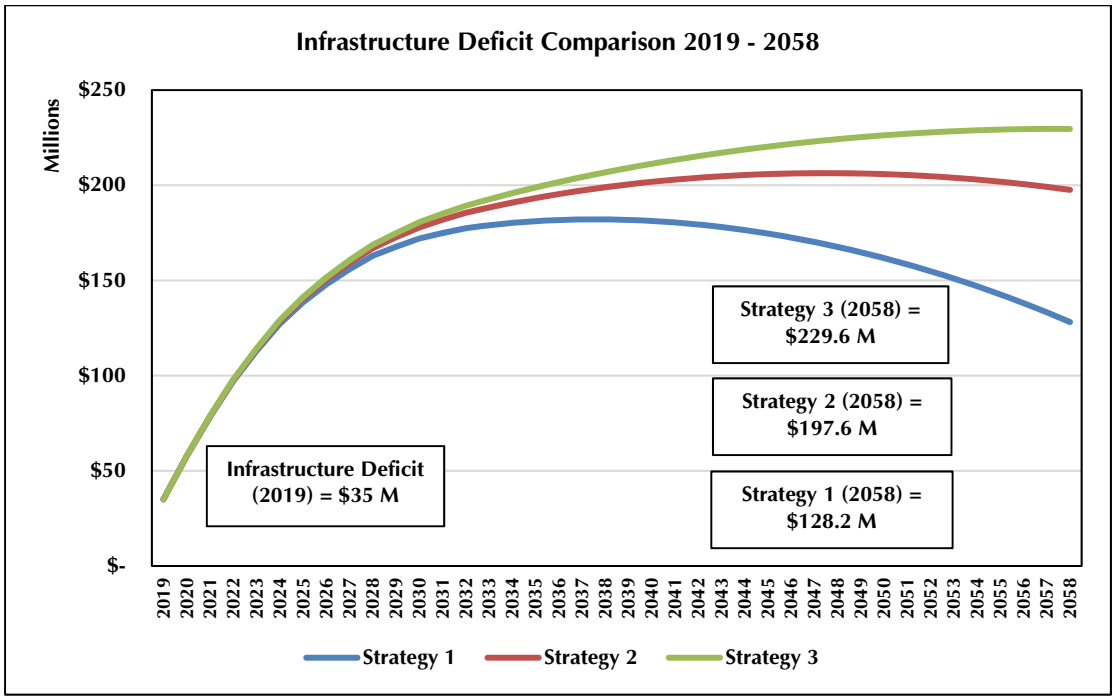
- The current 2019 infrastructure deficit for all tax supported assets is calculated to be about $35.0 million. This represents the difference between the required in-year contributions to capital and the current contributions to capital.

- 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 2038**	• Increase annual capital contributions by approximately $248,000 per year. • For 2020, the increase would be in addition to the 2019 budgeted $2.2 million tax supported capital funding. • The yearly revenue requirement is equivalent to 3.0% of the Township's 2019 tax levy.
Strategy 2 **Close in-year Funding Gap by 2048**	• Increase annual capital contributions by approximately $159,000 per year. • For 2020, the increase would be in addition to the 2019 budgeted $2.2 million tax supported capital funding. • The yearly revenue requirement is equivalent to 1.9% of the Township's 2019 tax levy.
Strategy 3 **Close in-year Funding Gap by 2058**	• Increase annual capital contributions by approximately $118,000 per year. • For 2020, the increase would be in addition to the 2019 budgeted $2.2 million tax supported capital funding. • The yearly revenue requirement is equivalent to 1.4% of the Township's 2019 tax levy.

- Of the three financing strategies identified, strategy 3 poses the greatest risk to the Township as the infrastructure deficit continues to grow to 2058, 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 E.



I INTRODUCTION

The Township of Brock's 2019 Asset Management Plan (2019 Plan) provides the Township with a tool to assist in capital financing decisions. The Plan covers all Township assets of: buildings, vehicles & machinery, land improvements, stormwater infrastructure, equipment & furnishings, sidewalks & pathways, bridges & culverts and roads. The 2019 Plan builds on the standalone analyses prepared from the 2018 Road Needs Study and the 2017 Structure Inspections Summary Report.

The 2019 Plan follows the format set out by the Ministry of Infrastructure through the *Building Together: Guide for Municipal Asset Management Plans* and it has also been developed to be consistent with the requirements of *Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure* (O. Reg 588/17) and the Township's Strategic Asset Management Policy. All figures reported in this 2019 Plan are in constant 2019 dollars and therefore should be adjusted annually to account for the effects of inflation.

An Excel based asset management financial model has been developed as part of the 2019 Plan. The model contains the Township's asset inventory and it is intended to be updated on a regular basis to inform future capital investment decisions.

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:

- Township can make informed and traceable decisions;
- Township has the opportunity to coordinate and plan accordingly by taking a risk-based approach to asset management;
- Higher customer satisfaction is possible;
- Documents a funding plan and strategy to manage infrastructure; and
- Demonstrates compliance with regulations and legislation.

Asset management is an ongoing practice in the Township of Brock. 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 2019 Plan is to build on existing practices by identifying how best to manage Township infrastructure over the planning period to 2058. A strategy for maintaining infrastructure so that desired service levels are achieved is an important element. In this respect, the 2019 Plan has been prepared to be consistent with the Township's Asset Management Policy. Ultimately, the 2019 Plan will provide Council with information that can guide sustainable infrastructure investment decisions.

B. ONTARIO'S ASSET MANAGEMENT REGULATION (O. REG. 588/17)

In 2015, the Province of Ontario established the *Infrastructure for Jobs and Prosperity Act.* The purpose of this Act is to establish mechanisms to encourage principled, evidence-based and strategic long-term infrastructure planning that supports job creation and training opportunities, economic growth, protection of the environment, and incorporate design excellence into infrastructure planning.

In December 2017, *Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure* (O. Reg. 588/17) was passed under the *Infrastructure for Jobs and Prosperity Act.* The regulation aims to provide a more standardized framework to facilitate asset management planning for Ontario municipalities. The regulation requires municipalities to develop a Strategic Asset Management Policy which will help municipalities document the relationship between their Asset Management Plan and existing policies and practices as well as provide guidance for future capital investment decisions. Township Council approved the Asset Management Policy in 2018.

The regulations also contain more specific requirements on the type of analyses municipal asset management plans should include. The aim is to provide guidance to municipalities so that asset management plans are more consistent across the Province. Table 1 provides a summary of the key regulatory timelines as outlined by *Regulation 588/17* and where the Township currently stands in the timeline.

Table 1 O. Reg. 588/17 Timeline		
Regulation Timeline	**Requirement**	**Progress**
July 1, 2019	• Municipalities shall prepare their first strategic asset management policy. • Municipalities shall review, and if necessary, update the policy every 5 years.	• Township Council approved the Asset Management Policy in 2018. • The next review is expected in 2023.
July 1, 2021	• Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets. • The current levels of service must be defined for all core assets.	• This 2019 Plan has incorporated the findings of the 2018 Road Needs Study and 2017 Structure Inspections Report which identify the conditions and repair needs of these assets. • Current level of service measures have been identified through this plan, with the Township expecting to develop other metrics on an ongoing basis.
July 1, 2023	• Every municipality shall prepare an asset management plan in respect of all other municipal infrastructure assets. • The current levels of service must be defined for all other municipal assets	• This 2019 Plan has incorporated all non-core assets contained in the Township's inventory. • Current level of service measures have been identified through this plan, with the Township expecting to develop other metrics on an ongoing basis
July 1, 2024	• Municipalities must establish proposed levels of service for a minimum of 10 years. • A lifecycle management and financial strategy that covers a minimum of 10 years.	• The Township is expecting to develop the analysis needed to establish proposed levels of service and a financial plan to achieve the proposed levels of service. • The proposed levels of service will be established through consultation with Council and the public in a subsequent update of this 2019 Plan.

C. ASSET MANAGEMENT PLAN STRUCTURE

The 2019 Plan is developed to be consistent with the structure recommended through the 2013 *Building Together: Guide for Municipal Asset Management Plans.* At the same time, it has been developed to meet the requirements of O. Reg. 588/17. Table 2 below provides a guide to the sections of the 2019 Plan.

Table 2
Guide to the 2019 Asset Management Plan

Section	Requirement
Section II - State of the Local Infrastructure	• Summarizes the state of the Township's infrastructure with reference to infrastructure quantity and quality.
Section III - Level of Service	• A summary of the current levels of service is presented as well as recommendations on additional metrics the Township can look to track in the future.
Section IV - Asset Management Strategy	• Sets out several strategies that will assist the Township in maintaining assets so that current service levels are maintained. This section also includes a risk analysis of Township assets.
Section V - Financing Strategy	• Establishes how asset management can be delivered in a financially sustainable way.
Section VI – Continuous Improvements and Updates	• Provides key recommendations on how to administer the 2019 Plan and keep it up to date.
Section VII - Conclusions and Recommendations	• 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 engineering inspections (roads, bridges and culverts), while the balance of assets considered are based on the useful life of the asset relative to its age as well as independent staff assessments. Useful life assumptions for the assets considered under this 2019 Plan were acquired from the Township's tangible capital database. Detailed technical information on the asset inventory, remaining useful life and conditions for each asset category is provided in Appendix B.

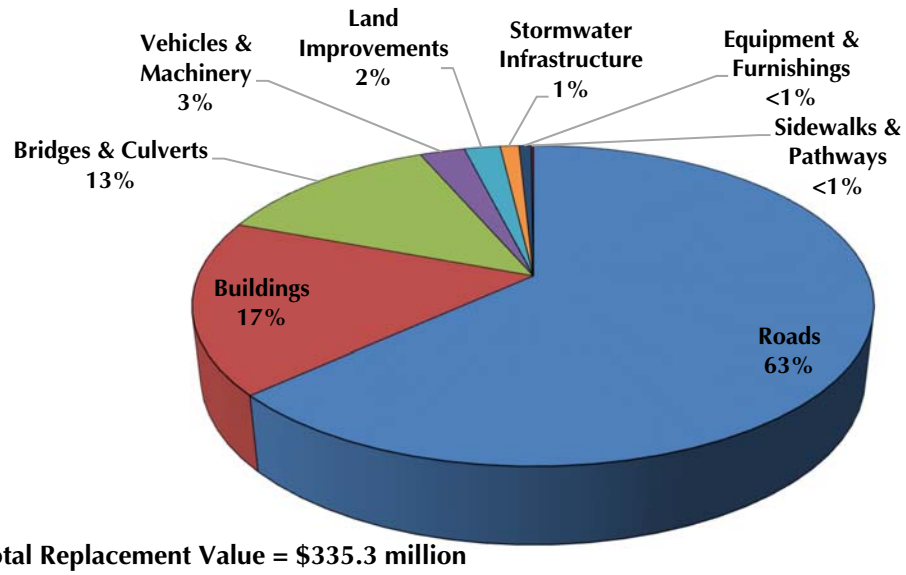
A. REPLACEMENT COST OF INFRASTRUCTURE

The replacement cost in all Township assets considered in the 2019 Plan is estimated at $335.3 million (represented in constant 2019 dollars). The largest share is related to roads and accounts for about $212.0 million (63%) of the total replacement cost. The next highest share is attributed to buildings at $58.7 million (18%). This is followed by bridges and culverts at $42.9 million (13%).

The other asset categories of the Township's asset portfolio make up the remaining $21.7 million (6.5%). These are made up of $8.5 million (3%) in vehicles and machinery, $6.8 million (2%) in land improvements, $3.6 million (1%) in stormwater infrastructure, $2.3 million (<1%) in equipment and furnishings and $449,000 in sidewalks and pathways.

The replacement costs in the asset inventory have been developed based on information outlined in the Road Needs Study and other engineering documents, costing information obtained from the Township's asset database as well as information from municipalities comparable to Brock wherever possible. Where information was not available historical acquisition costs where inflated to current 2019 dollars at a rate of 2%. Detailed replacement cost for each asset category is provided in Appendix B.

Figure 1
Summary of All Assets by Total Replacement Value (2019 $)



Total Replacement Value = $335.3 million

B. SUMMARY STATE OF LOCAL INFRASTRUCTURE

Table 3 provides a summary of the state of local infrastructure for all asset categories considered in this study which is valued at $335.3 million. The weighted remaining useful life (WRUL) and weighted average condition (WAC) for each asset category has been derived relative to the replacement value of each asset. Detailed information is provided in Appendix B. The table illustrates several key findings:

- **Weighted Remaining Useful Life:** the WRUL of the Township's assets is approximately 23 years. In general, most of the Township's assets are still well within their engineered design lives with the exception of equipment and furnishing assets as those are considered overdue. Also, land improvements and vehicle assets are nearing the end of their useful life.

- **Weighted Condition:** Overall, the Township's assets are determined to be in Fair condition. The overall condition is largely driven by the high values assets of roads, bridges and culverts and buildings. Only land improvements are considered to be in Poor condition, although, the condition of these assets is directly related to the asset age. Conversely, stormwater infrastructure is relatively new and is considered to be in Good condition.

Table 3 Summary State of Local Infrastructure					
Asset Type	**Replacement Cost (2019)**	**Useful Life (Years)**	**Remaining Useful Life (Weighted Average)**	**Condition (Weighted Average)**	
Buildings	$58,704,781	10/15/20/25/30/40/50/60/100	43	**Fair**	2.9
Vehicles & Machinery	$8,541,460	10/15	2	**Fair**	2.5
Land Improvements	$6,834,401	10/15/20/30	1	**Poor**	2.4
Stormwater Infrastructure	$3,560,009	75	57	**Good**	4.3
Equipment & Furnishings	$2,300,609	5/7/8/10/15/30	Overdue	**Fair**	2.9
Sidewalks & Pathways	$448,806	25/30	16	**Fair**	3.5
Bridges & Culverts	$42,851,690	60	9	**Fair**	3.5
Roads	$212,020,000	40	22	**Good**	3.6
Total	**$335,261,758**		**23**	**Fair**	**3.4**

C. CONDITION ASSESSMENTS

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. Table 4 summarizes the assumed parameters.

Table 4
Condition Assessment Parameters

Condition Rating	Definition
Very Good	• Well maintained, good condition, new or recently rehabilitated asset.
Good	• Good condition, few elements exhibit existing deficiencies.
Fair	• Some elements exhibit significant deficiencies. Asset requires attention.
Poor	• A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.
Very Poor	• Widespread signs of deterioration, some assets may be unusable. Service is affected.

Assets were categorized in the 5-tier rating system on an asset by asset basis. Some assets have condition assessments based on staff inspections and engineering reports. For those assets, conditions were consolidated into the 5-tier rating system in Table 4 above. For assets where no condition assessments are available the remaining useful life of the assets was used as a proxy for its condition. Table 5 below provides a summary of the asset categories and the methodology used to assign a condition.

Table 5
Condition Rating Methodology

Condition Rating	Bridges & Culverts (BCI Range)	Roads (PCI Range)	All Other Asset Categories (Remaining Useful Life)
Very Good	80 - 100	80 - 100	80% - 100%
Good	70 - 80	70 - 80	60% - 80%
Fair	60 - 70	60 - 70	40% - 60%
Poor	50 - 60	50 - 60	20% - 40%
Very Poor	Less than 50	Less than 50	0% - 20%

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. The Township already performs detailed condition assessments of bridges and culverts through the Structure Inspections Report and of roads by way of a Road Needs Study.

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.

III LEVEL OF SERVICE

Asset management decisions must be made with reference to the level of service planned for by the Township. Current service levels in Brock 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.

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. However, safety and performance are also important for core services such as roads and stormwater infrastructure.

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 current levels of service as they relate to the requirements outlined in *Ontario Regulation 588/17*.

A. CURRENT LEVELS OF SERVICE

The Township has determined the current levels of service through the analysis and model developed in this 2019 Plan. The current level of service measures for each asset category are summarized in Table 6:

- **Weighted Condition:** the condition of the Township's assets are determined to be in Fair condition overall. The conditions are largely driven by the high values assets of roads, bridges and culverts and buildings. Only land improvements are considered to be in Poor condition which can be attributed to the age of those assets. Stormwater infrastructure is relatively new and is therefore in Good condition (see Section II and Appendix B for details). It is important to note that assets in Fair condition may transition into the Poor or Very Poor category in the near future and may require attention in short to medium term. It will be important for the Township to determine which assets in the Fair category should be prioritized to ensure that current levels of service do not decrease in the future.

- **Stormwater Infrastructure:** for many municipalities across Ontario, stormwater infrastructure is becoming increasingly important as the impacts of climate change become more pronounced and the need to respond to such pressures place a challenge on municipal

infrastructure. The Township's stormwater infrastructure largely covers the urban areas of Cannington, Beaverton and Sunderland to ensure adequate water runoff. The Township is currently undertaking a stormwater master plan, and it is expected that this analysis will provide further information on Township's urban stormwater system. The study should identify the areas of the Township protected for 5-year storms and 100-year storms.

- **Bridges and Culverts:** the average weighted BCI for bridges and culverts is about 69%. The Township continues to ensure that bridges and culverts continue to operate in a safe and efficient manner. During the spring thaw season, load restrictions are placed on all roads in the Township to ensure the safety of drivers and the structural integrity of roads and structures. Currently 2 bridges have load limits year round. The Township will continue to monitor bridges and culverts carefully to ensure that current levels of service are maintained.

- **Roads:** Based on the 2018 Roads Need Study, the Township's road network is comprised of either collector roads (53%) or local roads (47%). Most of the paved roads are in the urban areas of Cannington, Beaverton and Sunderland and have an average pavement condition index of 75%. Gravel roads have an average surface condition index of 64%. The Township's Road Needs Study is updated every 5 years and provides the repair and rehabilitation needs for the entire road network. The Township should continue to ensure that repair and rehabilitation of roads are in line with the recommendations of the 2018 Road Needs Study to maintain current levels of service.

Table 6
Level of Service Performance Tracker

Asset Category	Community Level of Service	Performance Measures (Current Level of Service)		Additional Notes
Buildings	Includes all Township owned buildings and facilities as well as minor buildings and structures. Buildings have been recorded by components wherever possible.	Average weighted condition assessment	Fair	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition	22%	Calculated based in dollars (constant dollars).
Vehicles & Machinery	Includes fleet vehicles including fire, parks and roads related. Also includes heavy machinery and all major equipment associated to the vehicles.	Average weighted condition assessment	Fair	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition	15%	Calculated based in dollars (constant dollars).
Land Improvements	Includes equipment mostly on playgrounds and sportsfields such as fencing, lighting, skate ramps, etc. Also includes parking lots.	Average weighted condition assessment	Poor	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition	30%	Calculated based in dollars (constant dollars).
Stormwater Infrastructure	The Township is currently undertaking a Stormwater Master Plan and it is expected this information will be updated once the master plan is finalized.	1. Percentage of properties in municipality resilient to a 100-year storm (O. Reg. 588/17).	100% (Urban Area)	Assumed.
		2. Percentage of the municipal stormwater management system resilient to a 5-year storm (O. Reg. 588/17).	100% (Urban Area)	Assumed.
		Average weighted condition assessment	Good	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition	99%	Calculated based in dollars (constant dollars).
Equipment & Furnishings	Equipment includes all mechanical and stationary equipment. Examples include furniture at facilites, fire bunker gear and library materials.	Average weighted condition assessment	Fair	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition	8%	Calculated based in dollars (constant dollars).
Sidewalks & Pathways	Includes all Township sidewalks, trails and pathways.	Average weighted condition assessment	Fair	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition	49%	Calculated based in dollars (constant dollars).
Bridges and Culverts	The Township's bridges and culverts supports regular vehicle traffic including transport trucks. The Township currently has a Township-wide weight restriction of 5 tonnes per axle on all roads which began in March 1, 2019 and expected to end by April 30, 2019 depending on weather conditions. The weight restrictions are typically put in place in the spring months when soil erosion occurs as a result of the spring thaw. This is done to ensure safety and reduce damage to roads and bridges.	Percentage of bridges in the municipality with loading or dimensional restrictions (O. Reg. 588/17).	2% (Permanent) 100% (Spring season)	2 bridges currently have load limits.
	Inspections of bridges are completed under the *Public Transportation and Improvement Act,* specifically *O.Reg. 104/97 Standards for Bridges.* Visual inspections are performed and bridge conditions are assessed. Detailed information and images are provided in the 2017 Structure Inspections Summary Report available under separate cover.	1. For bridges in the municipality, the average bridge condition index value (O. Reg. 588/17).	69%	Weighted Average BCI for Bridges only.
	Inspections of culverts with span greater than 3 metres are completed under the *Public Transportation and Improvement Act,* specifically *O.Reg. 104/97 Standards for Bridges.* Visual inspections are performed and culvert conditions are assessed. Detailed information and images are provided in the 2017 Structure Inspections Summary Report available under separate cover.	2. For structural culverts in the municipality, the average bridge condition index value (O. Reg. 588/17).	69%	Weighted Average BCI for Culverts >3m span only.
		Average weighted condition assessment (All bridges & culverts)	Fair	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition (all bridges & culverts)	52%	Calculated based in dollars (constant dollars).
Roads	The Township's bridges and culverts supports regular vehicle traffic including transport trucks. The Township currently has a Township-wide weight restriction of 5 tonnes per axle on all roads which began in March 1, 2019 and expected to end by April 30, 2019 depending on weather conditions. The weight restrictions are typically put in place in the spring months when soil erosion occurs as a result of the spring thaw. This is done to ensure safety and reduce damage to roads. Maps of the road network and descriptions of the connectivity of roads are provided in the standalone 2018 Road Needs Study available under separate cover.	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality (O. Reg. 588/17).		
		Arterial	0%	Kilometres of roads divided by area of Township in square kilometres.
		Collector	53%	Kilometres of roads divided by area of Township in square kilometres.
		Local	47%	Kilometres of roads divided by area of Township in square kilometres.
	Maps of the road network that illustrate the conditions and works needed on all Township roads over the next 10 years is provided in the standalone 2018 Road Needs Study available under separate cover.	1. For paved roads in the municipality, the average pavement condition index value (O. Reg. 588/17).	75%	Weighted condition index calculated based on information from 2018 Road Needs Study.
		2. For unpaved roads in the municipality, the average surface condition (O. Reg. 588/17).	64%	Weighted condition index calculated based on information from 2018 Road Needs Study.
		Average weighted condition assessment (All Roads)	Good	Based on AMP 5-tier rating.
		Percentage of assets at or above "Good" or "Very Good" condition (All Roads)	57%	Calculated based in dollars (constant dollars).

Note: Indicates level of service measures required by O.Reg. 588/17.
Note: The Level of Service measures are based on the Township's asset inventory and various engineering studies which have been continually updated since they were developed.
Note: Roads have been categorized as arterial, collector and local based on highway class from 2018 Road Needs Study.

IV ASSET MANAGEMENT STRATEGY

This section sets out an action plan that will assist the Township in maintaining assets so that current service levels are maintained. 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 analysis which can be used to assist Township staff and Council measure and manage risks to maintain current levels of service.

A. SET OF PLANNED ACTIONS

The Township employs various practices to maintain current 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. Table 7 outlines the set of planned actions the Township undertakes to maintain assets. The set of existing actions and planned activities are summarized for each of the asset categories in Appendix D.

Table 7
Planned Actions

Section	Requirement
Non-infrastructure Solutions	• Actions or policies that can lower costs or extend asset life (e.g., better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, managed failures, etc.).
Maintenance Activities	• Servicing assets on a regular basis in order to fully realize the original service potential. Maintenance will not extend the life of an asset or add to its value. Not performing regular maintenance may reduce an asset's useful life.
Renewal/Rehabilitation Activities	• Mostly associated to significant repairs designed to extend the useful life of an asset. These types of activities are typically done at key points in the lifecycle of an asset to ensure the asset reaches it designed useful life.
Replacement Activities	• Activities that are expected to occur once an asset has reached the end of its useful life and renewal/ rehabilitation is no longer an option.

Table 7 Planned Actions	
Section	**Requirement**
Disposal Activities	• The activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed. Typically disposal costs are accounted under replacement activities. Some assets, such as landfills, may have perpetual maintenance costs.
Expansion Activities	• Planned activities required to extend or expand municipal services to accommodate the demands of growth. Expansion activities are captured in the Townships Development Charges Background Study.

It should be noted that the Township undertakes all the activities described above and in Appendix D, however the Township's budget generally accounts for these expenditures in different categories. The Township can aim to categorize budget expenditures based on the categories above.

B. RISK ANALYSIS

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. The formula to determine asset risk is as follows:

(Probability of Failure) X (Consequence of Failure) = (Risk Rating)

Each of the components of the Risk Rating methodology is defined as follows:

- **Probability of Failure:** is directly linked to the condition of an asset. An asset in Very Poor condition is considered to be almost certain to fail in the short term. This type of asset may be near the end of its useful life or has deteriorated significantly. Conversely it would be considered rare for an asset to fail in the short term if it is considered to be in Very Good condition. Table 8 below outlines the definition of probability of failure used for the Township's assets.

Table 8 Probability of Failure		
Condition	**Probability of Failure**	**Description**
Very Good	1	Rare
Good	2	Unlikely
Fair	3	Possible
Poor	4	Likely
Very Poor	5	Almost Certain

Note: Definitions are based on the MFOA Asset Management Framework.

- **Consequence of Failure:** refers to the impact on the Township if an asset were to fail. The consequence of failure has been determined separately for each asset category, as the impact to the Township differs greatly by asset type. For example, if a fire emergency vehicle was not available for service, the potential impact could be severe compared to a vehicle used for administrative purposes. For the purposes of this analysis, assets with higher replacement costs have been considered to have a higher consequence of failure, although, roads, bridges and culverts are prioritized based on the conditions and risks identified in the Road Needs Study and Structures Report. Table 9 below outlines the definition of consequence of failure used for the Township's assets.

Table 9 Consequence of Failure		
Replacement Cost	**Consequence of Failure**	**Description**
Very High	1	Insignificant
High	2	Minor
Moderate	3	Moderate
Low	4	Major
Very Low	5	Significant

Note: Definitions are based on the MFOA Asset Management Framework. Replacement cost thresholds have been determined separately for each asset category and are summarized in the Township's AMP model.

- **Risk Rating:** categorizes assets based on the level of risk to the Township. The risk rating provides a guide to prioritize assets by determining which assets require attention first and which capital works can be deferred. Higher risk assets should be prioritized for attention in the short term by determining which of the lifecycle actions is required to be performed on the asset (see Appendix D). Table 10 below provides a summary of the risk matrix.

Table 10 Risk Matrix							
Evaluation Rating		Consequence of failure					Color Code
		1	2	3	4	5	
Probability of Failure	1	1	2	3	4	5	Very Low Risk
	2	2	4	6	8	10	Low Risk
	3	3	6	9	12	15	Moderate Risk
	4	4	8	12	16	20	High Risk
	5	5	10	15	20	25	Very High Risk

Table 11 presents the findings of the risk analysis and illustrates the Townships assets are rated from Low to High risk with the overall risk being Moderate. Assets in the high risk category include vehicles and machinery and sidewalks and pathways which is largely due to the age of these assets. The risk of each asset and asset category has been determined with reference to the parameters outlined in Table 10 above with the exception of roads, bridges and culverts which are prioritized based on the conditions and risks identified in the Road Needs Study and Structures Report. It is important to note, that the Township will need to continue regular maintenance activities and capital works moving forward to maintain current levels of service – this ensures assets don't further deteriorate posing greater risk to the corporation.

Table 11 Summary of Risk Assessment			
Asset Category	Replacement Cost (2019)	Risk (Weighted Average Table 10)	
Buildings	$58,704,781	**Moderate**	9
Vehicles & Machinery	$8,541,460	**High**	11
Land Improvements	$6,834,401	**Low**	7
Stormwater Infrastructure	$3,560,009	**Low**	4
Equipment & Furnishings	$2,300,609	**Low**	7
Sidewalks & Pathways	$ 448,806	**High**	10
Bridges & Culverts	$42,851,690	Identified through 2017 Structures Report	
Roads	$212,020,000	Identified through 2018 Road Needs Study	
Total	**$335,261,758**	**Moderate**	**9**

It is important to recognize the risk associated with the Township's ability to deliver the plan while recognizing that any deviation may affect the overall ability to deliver service. Table 12

below provides a summary of the identified risks, potential impacts and mitigating actions associated with the asset management program.

Table 12
Risk Associated to the Plan

Identified Risk	Potential Impact	Mitigating Action
Failed Infrastructure	• Delivery of service • Asset and equipment damage	• Repair and rehabilitate as necessary • Increase investment • Non-infrastructure solutions.
Inadequate funding	• Delivery of service • Increased risk of failure • Shorten asset life • Defer funding to future generations	• Reductions of service • Find additional revenue sources
Regulatory Requirements	• Non-compliance • Mandatory investments • Increased costs	• Find additional revenue sources • Lobby actions
Plan is not followed	• Shorten asset life • Inefficient investments • Prioritization process failure • Failure to deliver service	• Monitor and review • Create asset management network • Implement processes

V FINANCING STRATEGY

This section of the 2019 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. The Township maintains some funding in reserves which further enhances Council's commitment to its strategic objective to ensure infrastructure sustainability.

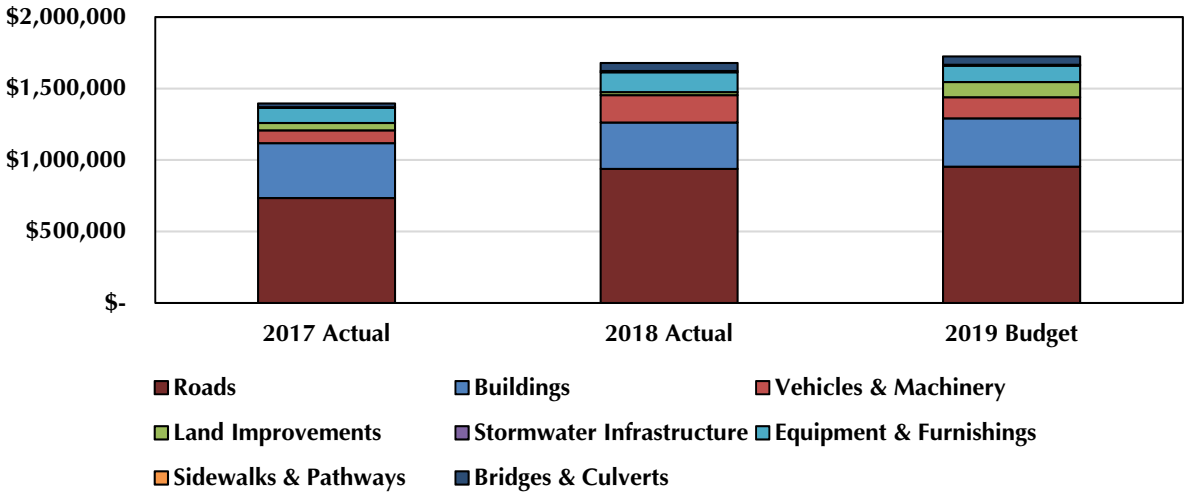
A. OPERATING BUDGET EXPENDITURES

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 2 illustrates total asset maintenance related expenditures by asset category based on the Township's annual budget. Total expenditures were $1.40 million in 2017 and increased to $1.68 million in 2018. For 2019, approximately $1.72 million has been budgeted for asset maintenance. The largest share of expenditures has consistently been related to Roads. Roads maintenance expenditures account for 55% of the tax-supported budget for 2019, at approximately $953,000.

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.

Figure 2
Township of Brock Asset Maintenance Related Expenditures 2017-2019



Source: Township of Brock annual budget reports.

B. CAPITAL REPLACEMENT SCHEDULE

The 2019 Plan includes an estimate of the timing for replacement of all assets with the exception of roads, bridges and culverts as the capital requirements of those assets are informed by the 2018 Road Needs Study and 2017 Structure Inspections Report. Using the risk assessment discussed in Section IV, a schedule for the replacement of assets has been developed on an asset by asset basis. Assets with a higher risk rating are prioritized earlier in the schedule to reflect a higher priority while assets with lower risk ratings are moved further out into the future forecast to reflect a more "smoothed" expenditure outlook. Table 13 below provides a summary of the risk thresholds used to calculate timing of replacement needs. In the case of roads, bridges and culverts, priority works have been identified through the standalone 2018 Road Needs Study for roads and the 2017 Structure Inspections Report for bridges and culverts.

Table 13
Risk Thresholds for Asset Life Extension

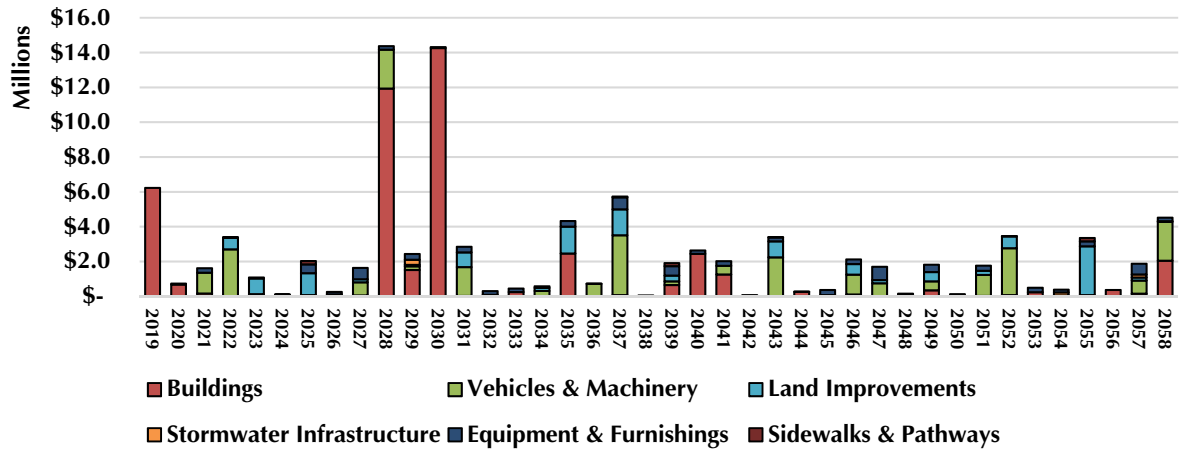
Risk Rating	Percentage of Useful Life Remaining
Very Low Risk	100%
Low Risk	80%
Moderate Risk	60%
High Risk	20%
Very High Risk	10%

Figure 3 sets out the schedule of repair and replacement of assets, excluding roads bridges and culverts, required to maintain current levels of service for the assets considered in the 2019 Plan. Over the 40-year period, to 2058, the tax supported repair and replacement program totals about $95.8 million. The average yearly replacement costs of these assets amount to approximately $2.4 million.

In 2019, some expenditures have been identified that are required to repair or replace higher risk assets amounting to a total of $6.2 million. This amount relates to buildings and can mostly be attributed to the Beaverton Town Hall $2.7 million and the Beaverton Patrol Yard at $2.4 million.

Over the long term there are some notable building requirements identified for replacement in the forecast. In 2028, significant repairs to the Rick Macleish Memorial Community centre are anticipated of approximately $10.6 million and the Beaverton Fire Hall of approximately $1.3 million. In 2030, significant work is expected at the Beaverton-Thorah Community Centre of $7.5 million and the Sunderland Memorial Arena of $6.7 million.

Figure 3
Capital Replacement Schedule excl. Roads, Bridges and Culverts
(Risk Based)



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 2019 dollars.

The aggregate of all individual provisions form an annual contribution to reserves for the purpose of asset repair and replacement.

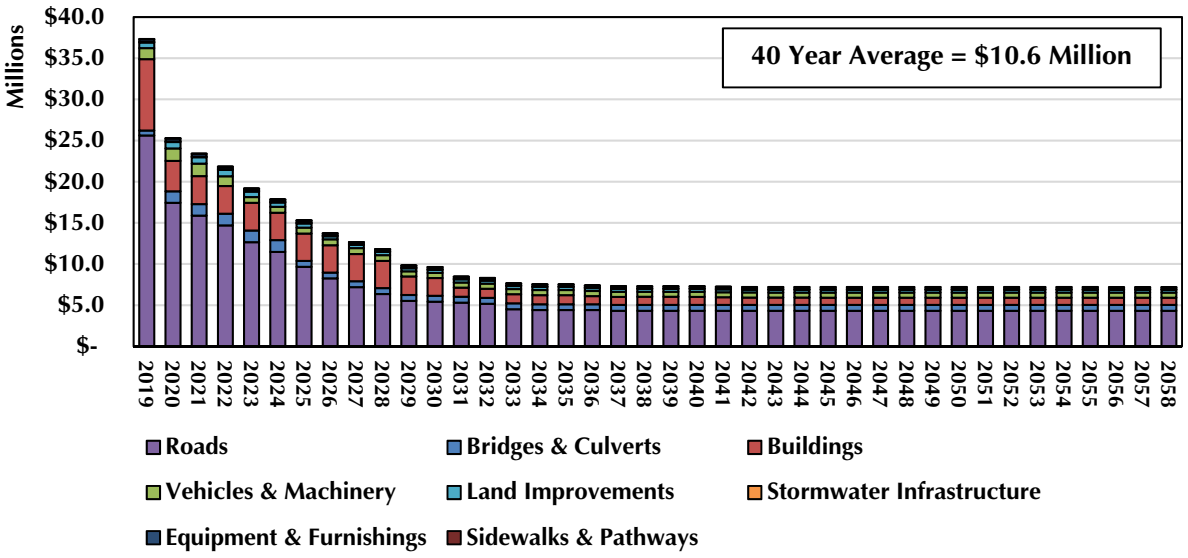
It is important to note that this provision includes cost associated to renewal/rehabilitation and replacement based on the replacement schedule in Figure 3 above and the recommended works in the Structures Report and Road Needs Study adjusted to 2019 dollars at a rate of 2%. Total recommended work for bridges and culverts is assumed to be defined by the works identified in the 2017 Structures Report and depreciation net of budgeted works completed since 2017 and existing reserves. In 2019, this amounts to $842,000. The long term total depreciation of bridges and culverts assets amounts to approximately $714,000 per year which is based on a 60 year useful life.

Road works identified in the 2018 Road Needs Study are required to ensure the roads continue to meet service standards. Typically, roads are not fully replaced and are therefore reconstructed or rehabilitated. Therefore, the provision identified incorporates the 10 year work identified in the 2018 Road Needs Study plus a long term provision for works beyond the 10 year period to 2058.

Figure 4 shows the funds that would have to be contributed annually to reserves to maintain current levels of service for assets included in this 2019 Plan to 2058. Figure 4 demonstrates that:

- Average annual contributions over the 40-year period would have to be in the order of $10.6 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 2019, which amount to $37.6 million (including transfers to reserves). However, there will likely be measures the Township could take to mitigate this financial pressure in 2019 (and future years). These measures are more fully discussed in Part E and G of this section.
- The Township will spend nearly $2.6 million (including gas tax and reserves) in 2019 for repair/replacement of assets. The $2.6 million in capital spending is comprised of:
    - $2.2 million in tax levy capital funding including reserve contributions;
    - $353,000 in gas tax funding.
- Investment in Township assets would need to increase by over $8.0 million to achieve the $10.6 million average requirement in 2019. It should be noted that of the 2019 capital funding sources, tax supported revenues are the most secure form of recurring revenue for the Township.

Figure 4
Annual Capital Contribution Schedule (Risk Based): 2019-2058



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 14 represents the difference between the required in-year contributions to capital and the current contributions to capital for all assets in this 2019 Plan. The total 2019 capital provision required is $37.6 million (including infrastructure backlog) and current capital spending is $2.6 million (includes capital levy, reserves and gas tax). The current in-year infrastructure deficit is therefore $35.0 million, which represents about 10% 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 14 Infrastructure Deficit for Base Year 2019	
Calculation of Current Infrastructure Deficit	
Projected 2019 Capital Provision (excl. roads, bridges, culverts)	$11,111,583
Projected 2019 Capital Provision (Roads, bridges, culverts only)	$26,455,186
Total 2019 Capital Provision	$37,566,769
Total 2019 Capital Spending (Budget)	$2,565,406
Funding Gap	$35,001,363
Cumulative Infrastructure Deficit	$35,001,363
Cumulative Infrastructure Deficit as a Percentage of Total Replacement Value	10%
Note: Total 2019 capital spending is derived from 2019 budget and includes in year-funding for capital from: tax levy, reserves, gas tax.	

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: capital Replacement Schedule.

If the Township were to implement a funding strategy to eliminate the infrastructure deficit by 2058, the Township would be required to increase capital contributions on an annual basis by an average of about $412,000 for 40 years. For 2019, the increase would be in addition to the $2.2 million tax supported capital funding and $353,000 in Gas Tax funds. The yearly revenue requirement is equivalent to 4.9% of the Township's 2019 tax levy revenues of about $8.4 million. A detailed table of this strategy can be found in Appendix E – Table 1.

Eliminating the infrastructure deficit by 2058 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 current 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 as outlined in Figure 4. 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 15 and each financing strategy is shown in Table 16.

Table 15
Financing Strategy Key Assumptions

Category	Assumptions
Tax Levy Support (including reserve contributions)	• Existing 2019 tax supported capital funding of $2.2 million is assumed to be the starting point and base case for increasing annual capital contributions. o Transfers to capital reserves amount to $1.3 million in 2019 o Capital levy amounts to $921,000 in 2019.
Gas Tax Reserve Fund	• Gas tax funding for 2019 is $353,000. In 2020 and onwards gas tax funding is assumed based on AMO allocations to 2023 and remain constant afterwards.
Inflation	• Financing strategy is expressed in constant 2019 dollars.
Existing Reserves	• Existing reserve balances have been accounted and are used against the expenditures in 2019 for the purposes of forecast calculation.

Table 16
Summary of Financing Strategies

Financing Strategy	Strategy Parameters
Strategy 1 **Close in-year Funding Gap by 2038**	• Increase annual capital contributions by approximately $248,000 per year. • For 2020, the increase would be in addition to the 2019 budgeted $2.2 million tax supported capital funding. • The yearly revenue requirement is equivalent to 3.0% of the Township's 2019 tax levy.

Table 16 Summary of Financing Strategies	
Financing Strategy	**Strategy Parameters**
Strategy 2 **Close in-year Funding Gap by 2048**	• Increase annual capital contributions by approximately $159,000 per year. • For 2020, the increase would be in addition to the 2019 budgeted $2.2 million tax supported capital funding. • The yearly revenue requirement is equivalent to 1.9% of the Township's 2019 tax levy.
Strategy 3 **Close in-year Funding Gap by 2058**	• Increase annual capital contributions by approximately $118,000 per year. • For 2020, the increase would be in addition to the 2019 budgeted $2.2 million tax supported capital funding. • The yearly revenue requirement is equivalent to 1.4% of the Township's 2019 tax levy.

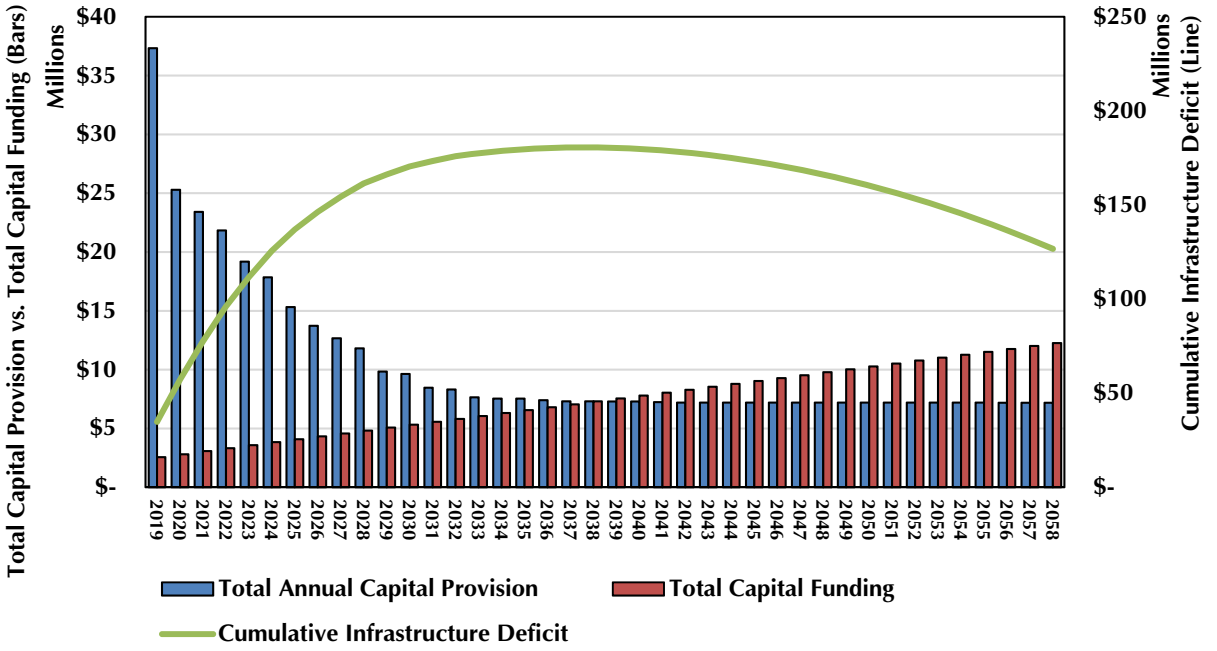
Note: Key assumptions noted in Table 15 are maintained for all three financing strategies.

1. Financing Strategy 1 – Close in-year Funding Gap by 2038

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach $182.0 million before the Township begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2038 (Figure 5). 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 $248,000 per year. This represents 3.0% of the Township's 2019 net tax levy budget of about $8.4 million. A detailed table of Strategy 1 can be found in Appendix E – Table 2.

It is important to note that even though the in-year funding gap has been addressed by 2038, the infrastructure deficit poses risk to the Township. The cumulative deficit in 2038 of $182.0 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.

Figure 5
Financing Strategy 1: Close In-Year Funding Gap by 2038 (Risk Based)



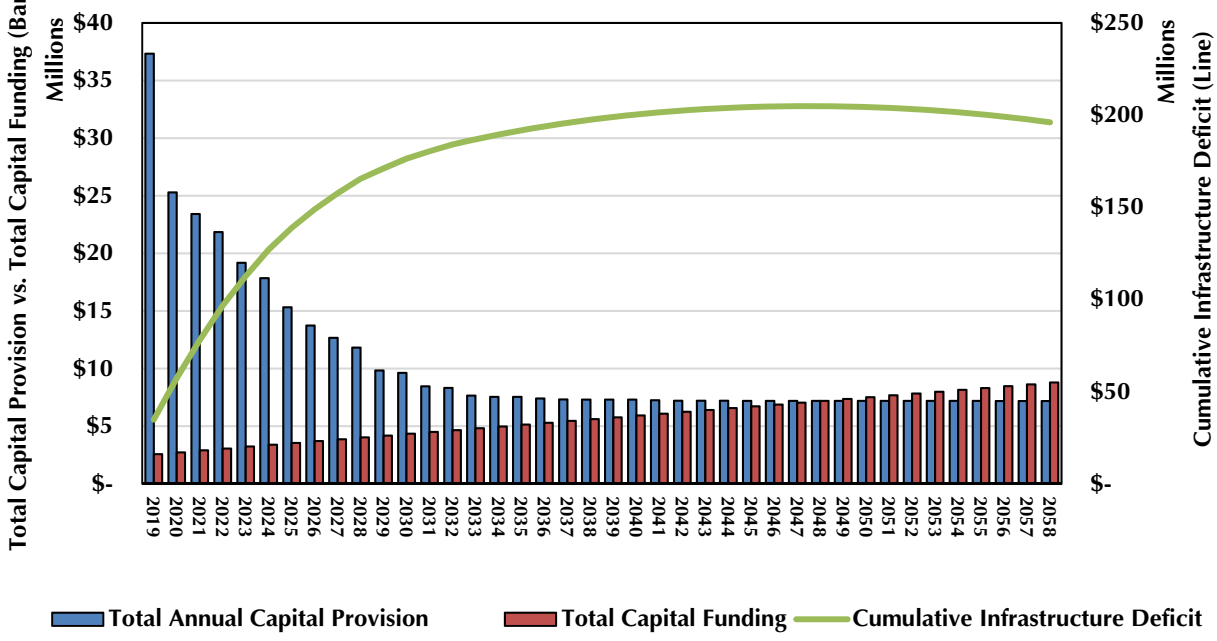
Note: The projected capital provision represents the annual requirement to repair and replace existing Township assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated).

2. Financing Strategy 2 – Close in-year Funding Gap by 2048

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach $206.3 million before the Township begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2048 (Figure 6). 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 $159,000 per year, representing 1.9% of the Township's 2019 net budget of $8.4 million. A detailed table of Strategy 2 can be found in Appendix E – Table 3.

It is important to note that even though the in-year funding gap has been addressed by 2048, the infrastructure deficit poses risk to the Township. The cumulative deficit in 2048 of $206.3 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.

Figure 6
Financing Strategy 2: Close In-Year Funding Gap by 2048 (Risk Based)



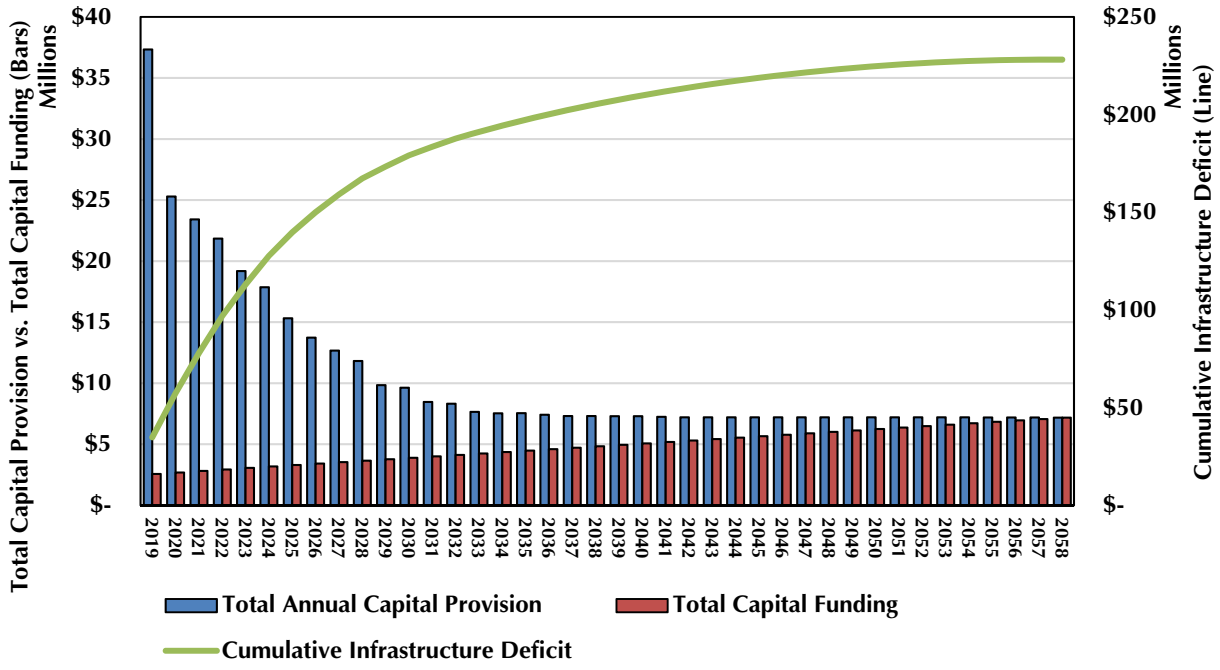
Note: The projected capital provision represents the annual requirement to repair and replace existing Township assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated).

3. Financing Strategy 3 – Close in-year Funding Gap by 2058

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach $229.6 million before the Township begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2058 (Figure 7). 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 $118,000 per year, representing 1.4% of the Township's 2019 net budget of $8.4 million. A detailed table of Strategy 2 can be found in Appendix E – Table 3.

It is important to note that even though the in-year funding gap has been addressed by 2058, the infrastructure deficit poses risk to the Township. The cumulative deficit in 2058 of $229.6 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.

Figure 7
Financing Strategy 3: Close In-Year Funding Gap by 2058 (Risk Based)



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).

F. CAPITAL EXPENDITURE FORECAST

A capital expenditure forecast is outlined in Table 17. The forecast is based on the Township's 2019 operating budget, the replacement schedule from Section B and works identified through the Road Needs Study and Structures Report. A provision for a level of service adjustment to account for requirements of O. Reg. 588/17 to define desired levels of service has been included in 2024 and onwards. This provision amounts to $100,000, which is approximately 1.2% of the 2019 tax levy of $8.4 million. The Township's yearly infrastructure related capital and operating expenditures are subject to the yearly budget and are adjusted on an ongoing basis. The Township can however look to develop a 5 to 10 year capital program in the future.

Table 17 10-Year Expenditure Forecast					
Expenditures	**2020 Forecast**	**2021 Forecast**	**2022 Forecast**	**2023 Forecast**	**2024 Forecast**
Non-Infrastructure Solutions	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000
Maintenance Activities	$ 1,565,600	$ 1,565,600	$ 1,565,600	$ 1,565,600	$ 1,565,600
Renewal/Rehabilitation Activities	$ 4,283,294	$ 4,729,350	$ 9,793,283	$ 8,216,819	$ 13,609,443
Replacement Activities	$ 727,862	$ 1,614,185	$ 3,394,287	$ 1,075,367	$ 104,958
Total	**$ 6,610,757**	**$ 7,943,135**	**$ 14,787,170**	**$ 10,891,786**	**$ 15,314,002**
Level of Service Adjustments	*$ -*	*$ -*	*$ -*	*$ -*	*$ 100,000*
Grand Total Lifecycle Costs	**$ 6,610,757**	**$ 7,943,135**	**$ 14,787,170**	**$ 10,891,786**	**$ 15,414,002**
Expenditures	**2025 Forecast**	**2026 Forecast**	**2027 Forecast**	**2028 Forecast**	**2029 Forecast**
Non-Infrastructure Solutions	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000
Maintenance Activities	$ 1,565,600	$ 1,565,600	$ 1,565,600	$ 1,565,600	$ 1,565,600
Renewal/Rehabilitation Activities	$ 12,349,211	$ 9,329,401	$ 9,612,574	$ 19,149,199	$ 1,896,665
Replacement Activities	$ 2,021,912	$ 254,591	$ 1,631,866	$ 14,365,395	$ 2,433,254
Total	**$ 15,970,723**	**$ 11,183,592**	**$ 12,844,040**	**$ 35,114,194**	**$ 5,929,518**
Level of Service Adjustments	*$ 100,000*	*$ 100,000*	*$ 100,000*	*$ 100,000*	*$ 100,000*
Grand Total Lifecycle Costs	**$ 16,070,723**	**$ 11,283,592**	**$ 12,944,040**	**$ 35,214,194**	**$ 6,029,518**

G. 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 Brock 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 Brock currently has development charges in force and is currently in the process of updating the development charges background study in order to approve a new development charges by-law.

Property Taxes

According to the 2019 budget, property taxes represent about $8.4 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.

H. 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 currently has net debt charges of $112,000, with an annual repayment limit of $2.7 million as identified in the Township's 2019 Annual Debt Repayment Limit. As a safe practice, any potential debt should not be financed for a period longer than the average useful life of the asset. This will ensure the Township is not paying for an asset outside the design life and 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 2019, the Township had an estimated capital reserve balance of $6.0 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 2019 infrastructure deficit.

I. FUTURE DEMAND

The Asset Management Plan is based on the assets which the Township currently owns and operates. The Township's 2016 census population is estimated at 11,600 persons and this number is expected to grow to about 13,400 by 2028. According to the Township's 2019 Development Charges Background Study, the Township anticipates spending about $28.9 million on new growth-related infrastructure, although, recognizing some of this figure represents studies, which do not have any long-term financial requirements.

The *Development Charges Act* now requires that municipalities complete an Asset Management Plan before passing a development charges by-law. A key function of the Asset Management Plan is to demonstrate that all assets proposed to be funded under the development charges by-law are financially sustainable over their full life-cycle. Therefore, consistent with the requirements of the *Development Charges Act*, assets that are proposed to be funded under the development charges by-law have been identified in the study and represents annual contributions to fund the full life-cycle costs of the new assets related to the services under the development charges by-law be about $1.0 million, by 2028. The annual contribution to repair and replace new growth-related infrastructure once emplaced would be in addition to those requirements identified for all existing assets covered under this plan.

As continued changes in population and employment are projected, it will require the municipality to properly plan for the life-cycle needs of the new assets while managing existing assets. Furthermore, the Township will need to monitor the impact of these new assets on existing and proposed levels of service.

VI CONTINOUS IMPROVEMENTS AND UPDATES

The major premise of comprehensive corporate asset management is that an organization will seldom have perfect processes and data to manage the asset portfolio. Instead, the underlying culture of continuous improvement and reliability is its key to success. The improvements and next steps will form part of the Township's evolving Asset Management program moving forward.

A. 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 Brock 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 18 below, the Township's 2017 Consolidated Financial Statement reported the Net Book Value of the Township's Tangible Capital Assets as of December 31, 2017 at $59.1 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.

Table 18
Summary of Tangible Capital Asset Values

Asset Category	2017 Closing NBV
Land	$ 2,340,725
Land Improvements (parks, fencing, tennis court, etc.)	$ 1,909,370
Buildings	$ 7,073,270
Machinery and Equipment	$ 750,761
Vehicles	$ 2,827,316
Linear Assets (roads, bridge, etc.)	$ 44,231,075
Other (computer equipment & software)	$ -
Construction-In-Progress	$ -
Total	**$ 59,132,317**

Note: Categories/information derived from the 2017 Financial Information Return.

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 $335.3 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.

B. 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) has been created, in which the Treasurer assumes the lead role and responsibility for the maintenance of and reporting on the activity related to the management of Township assets. The Director of Public Works together with the other department heads will assist in this task through the utilization of condition assessment information and service level requirements to update the long and short term asset requirements. This information will be reviewed with the Chair of the Finance Committee and presented to the Committee annually for consideration during the budget deliberations.

C. PLAN MONITORING

The Township will need to monitor the asset management progress and effectiveness of the Plan on or before July 1 in each starting in 2025. This ensures that the Plan is utilized to its full extent and any gaps are identified. Although the extent to which the regulation applies would not be applicable to the Township for several years, the Township could look to advance the review process and address the following criteria each year:

a) The Township's progress in implementing its asset management plan;

b) Any factors impeding the Township's ability to implement its asset management plan; and

c) A strategy to address the factors described above in clause (b)

D. DATA QUALITY AND CONFIDENCE

The Township should regularly review the confidence of existing data as well as its effectiveness integrating asset management activities into regular business processes. The Confidence Level Rating approach identified in Table 19 below will be used to identify what specific asset categories/areas the Township can improve upon. The Confidence Level Rating is based on principles of the Ministry's Guide to Municipal Asset Management Plans, Federal Gas Tax Agreement Requirements, ISO 55000, and International Infrastructure Management Manual (IIMM). Current data used in the preparation of this asset management plan would be generally reliable and based on a **Level 3 – 4** recognizing that many of the high valued asset categories of roads and bridges are well documented but certain gaps exist for asset categories related to storm water infrastructure or machinery, equipment and land improvements.

Table 19
Data Quality Confidence Grading System

Confidence Grade		Description
5	**Highly Reliable**	• Data based on sound records, procedure, investigations and analysis, documented properly and recognized as the best method of assessment. • *Dataset is complete and estimated to be accurate +/- 2%.*
4	**Reliable Data**	• Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. • *Dataset is complete and estimated to be accurate +/- 10%.*
3	**Uncertain**	• Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade 4 or 5 data is available. • *Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated +/- 25%.*
2	**Very Uncertain**	• Data based on unconfirmed verbal reports and/or cursory inspection and analysis. • *Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy +/- 40%.*
1	**Unknown**	• None or very little data held

E. 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 20 below outlines the key timelines for updates and reviews.

Table 20
Timeframes for Reviews and Updates

Asset Management Framework	Timeframe
Asset Management Policy	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
Level of Service Framework	Semi-Annually or Annually

This asset management plan has been endorsed by the executive lead of the Township and will need to be approved, by resolution, by municipal council. The Township will need to be mindful of the reporting timelines noted above relative to any potential changes to the timelines referenced by *Ontario Regulation 588/17.*

F. PUBLIC REVIEW AND COMMENT

Although the Asset Management Plan is intended to aid municipal staff and council make informed decisions regarding future capital investment needs, the plan is intended to be available to the public. Therefore, it is recommended that the Township post this plan as well as the strategic policy on the website and provide a copy to anyone upon request.

VII CONCLUSIONS AND RECOMMENDATIONS

The objective of this 2019 Plan is to provide the Township of Brock with the information it needs to make decisions on how best to manage capital assets in a sustainable way to 2058. In this section, recommendations based on the analysis undertaken are made.

A. SUMMARY OF KEY FINDINGS

- The Township's asset base is extensive, valued at $335.3 million, in relation to the census permanent population of about 11,600 persons ($28.90 per thousand persons).
- Overall, a high proportion (about 49% or $163.0 million) of Township assets are considered to be in "Good" to "Very Good" condition. At the same time, approximately 23% ($77.0 million) of infrastructure is considered to be in "Poor" to "Very Poor" condition. The remaining share of $95.2 million (28%) is in "Fair" condition.
- The Township of Brock 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 capital replacement reserves, and has been contributing to reserves on an annual basis, which is in addition to in tear funding from the capital tax levy;
    - Through its annual capital budgeting process, the Township addresses critical issues and assets in need of 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 low external debt - the Township currently operates well below the annual repayment

limit of $2.7 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 2019 Plan the following conclusions can be reached:

1. Continue to Improve Capital Development Planning Process

- The Township should develop a multi-year capital budget and forecasts for all services based on a 10-year forecast horizon. The capital budget can be based on the asset replacement schedule in the Township's Asset Management Model.

- 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 non-infrastructure solutions, maintenance activities, renewal/rehabilitation activities, replacement activities, disposal activities and expansion activities;
    - 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 explored and established for all services over the next few years. Targets should be measured, reported on, and adjusted annually. This requirement will need to be in place by July 1st 2024 as per O. Reg. 588/17.

- Repair and replacement capital works should be prioritized based on a risk assessment. For example, assets identified as "Very Poor" and "Poor" and having a significant consequence of failure should be prioritized first.

- Infrastructure assets which have been provided a "Fair" condition rating should be targeted for maintenance to ensure they continue to perform at current levels of service.

- 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 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 2019 Plan; and

- The Township should update this Asset Management Plan at a minimum every 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, taking the lifecycle actions presented in Appendix D.

- 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

DEFINITIONS

APPENDIX A
DEFINITIONS

This appendix contains definitions for commonly used terms throughout the Township's Asset Management Plan.

1. **Condition Assessment -** A description of the state of an asset based on engineered or staff inspections on a 5-tier scale (very poor, poor, fair, good, very good).
2. **O. Reg 588/17** - Ontario's Asset Management regulation that came into force on January 1st 2018.
3. **Provision Schedule -** The required savings year-over-year needed to replace an asset based on the replacement schedule.
4. **Replacement Cost -** The cost of an asset to replace or reconstruct that asset at current prevailing market prices. The replacement cost will typically include all costs to procure, design, build and acquire the asset.
5. **Replacement Schedule -** The timing for replacement of an asset based on remaining useful life, condition or risk.
6. **Useful Life -** The expected service life of an asset expressed in years.
7. **Weighted Condition -** The average condition of an asset category weighted against the replacement costs of assets.
8. **Weighted Remaining Useful Life** - The average remaining useful life of an asset category weighted against the replacement cost of assets.

APPENDIX B

TECHNICAL APPENDIX:

STATE OF THE LOCAL INFRASTRUCTURE

APPENDIX B
TECHNICAL APPENDIX:
STATE OF THE LOCAL INFRASTRUCTURE

This appendix provides a summary of the Township's assets with reference to asset quantity and quality. Some assets have condition assessments based on engineering inspections (roads, bridges and culverts), 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 2019 Plan were acquired from the Township's tangible capital database. Three summaries are presented for each asset category: summary of inventory, remaining useful life and asset condition.

Summary of Inventory

The summary of inventory provides an overview of the Township's assets including asset components, the quantity of those components, the replacement cost in 2019 dollars, the method used to determine the replacement cost and the engineered useful life of the assets. The summary of inventory is developed based on the Township's capital asset database. In the case of roads, the inventory from the 2018 Road Needs Study has been used.

The assets included in this 2019 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.

Remaining Useful Life

The remaining useful life summary provides information on the age of assets based on the year assets were acquired or emplaced and their engineered useful life. Assets are categorized by remaining useful life based on their replacement cost in 2019 dollars. Assets categorized as overdue, are considered to be beyond their engineered useful life, however the asset may still be in good operating condition. Typically assets such as buildings are used well beyond their engineered useful lives with proper maintenance and repairs. Every asset category has a remaining useful life summary with the exception of bridges, culverts and roads because these asset classes have standalone documents which outline the repair and rehabilitation needs.

Asset Condition

A summary of the condition of assets is presented in a pie graph based on the replacement cost of assets in current 2019 dollars. As discussed in Section II, conditions have been determined based on a 5-tier rating system from Very Poor to Very Good. For bridges, culverts and roads, asset

conditions from the 2017 Structures Report and 2018 Road Needs Study have been consolidated into the 5-tier rating. For all other assets, the remaining useful life of the asset is used as a proxy for asset condition.

BUILDINGS

Summary of Inventory

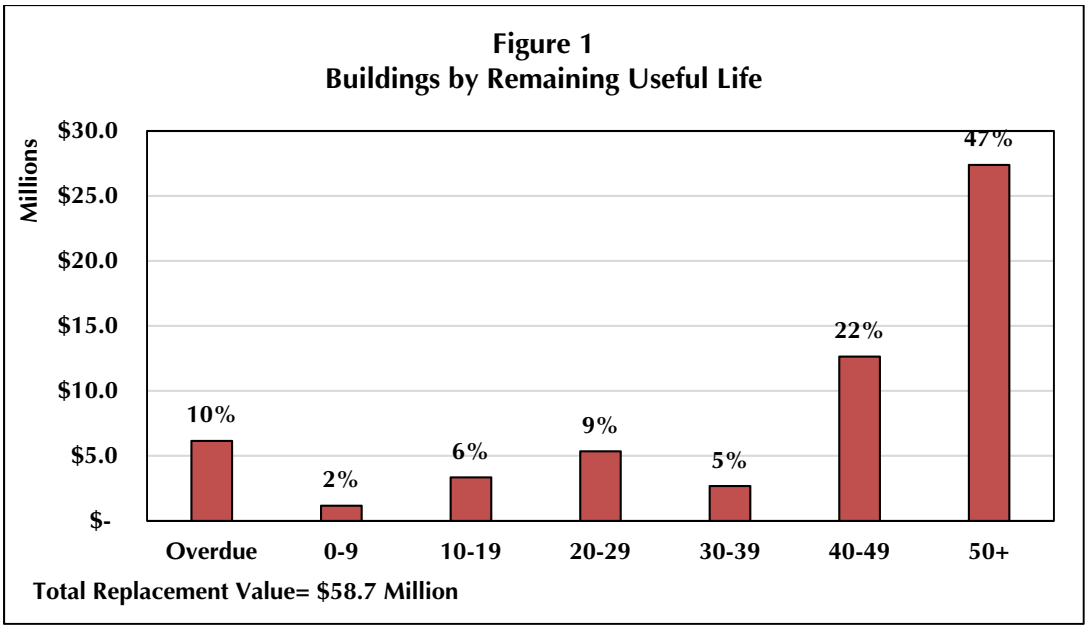
The Township maintains a total of 31 municipal buildings and structures with a total replacement cost of $58.7 million. Most buildings in the asset inventory are maintained on a component basis with the exception of Fire stations and smaller structures – 103 individual building units have been identified. Wherever building components have been identified a useful life specific to that component has been assumed and range from 10 or 15 years for roof, mechanical and electrical components to 100 years for major structural components. Table 1 summarizes the buildings inventory.

Table 1
Summary of Inventory - Buildings

Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Buildings	Roof	18	$1,702,094	Recent Costing	10/15/30/40
	Mechanical & Electrical	18	$426,356	Recent Costing	15/25
	Windows & Doors	18	$452,573	Recent Costing	20
	Exterior Cladding	18	$530,604	Recent Costing	20/60
	Structure	31	$55,593,154	Recent Costing	50/100
Total		**103**	**$58,704,781**		

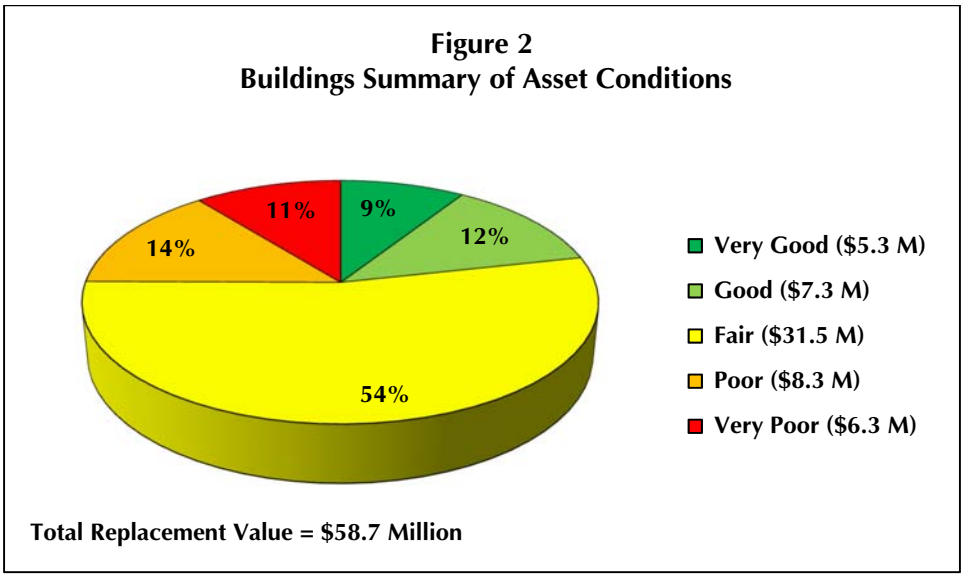
Remaining Useful Life

The Township's buildings and components have been categorized by remaining useful life. Figure 1 shows that about $27.4 million (47%) of the Township's buildings have well over 50 years of remaining useful life. About $12.6 million (22%) have 40-49 years or remaining useful. Approximately $6.1 million (10%) are considered overdue and are well beyond their engineered useful life and may require repairs or replacement. About $4.5 million (8%) have 0-19 years of remaining useful life. Special attention should be paid to these buildings as they are expected to transition into the overdue category over the short term. Finally, the remaining $8.0 million has 20-39 years of remaining useful life.



Asset Condition

The Township maintains $12.6 million (21%) of the buildings in Good to Very Good condition. Roughly $8.3 million (14%) are in Poor condition and $6.3 million (11%) are in Very Poor condition. Finally, the majority of the Township's buildings are considered to be in Fair condition, this amounts to $31.5 million (54%). Figure 2 summarizes the conditions of building assets by replacement cost.



Vehicles & Machinery

Summary of Inventory

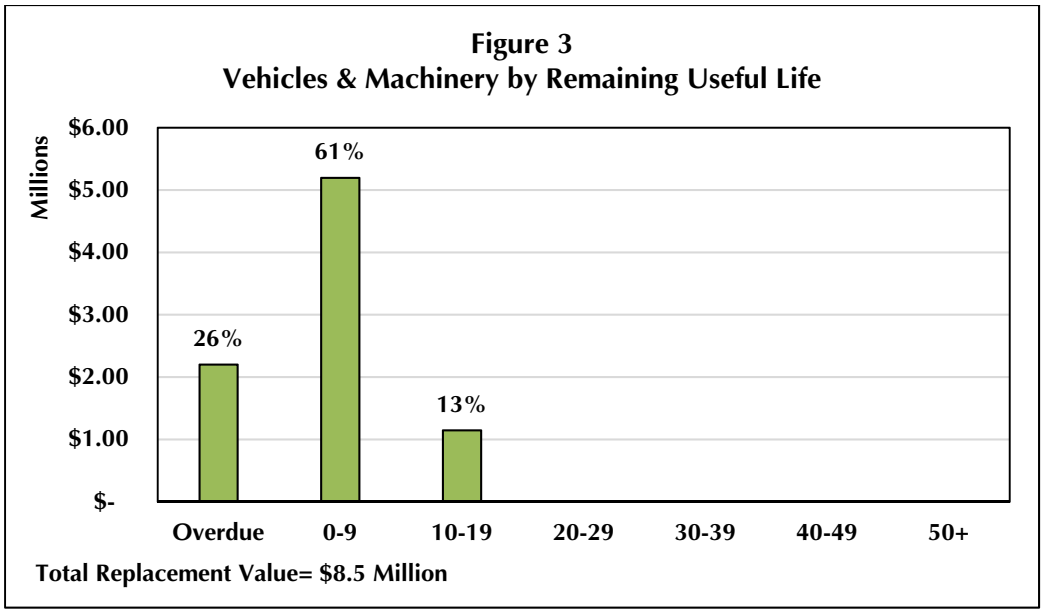
The Township maintains a combined total of 76 units of vehicles and machinery with a total replacement cost of $8.5 million. Most assets in the vehicles and machinery category are maintained as pooled units, where equipment on vehicles is recorded as one line item. The engineered useful life for vehicles and machinery ranges from 10 to 15 years. The inventory replacement costs for larger vehicles such as fire trucks and road machinery have been derived based on the costs identified through the Development Charges Background Study. The majority of the replacement costs for vehicles is based on inflation. Table 2 summarizes the vehicles and machinery inventory.

Table 2
Summary of Inventory - Vehicles & Machinery

Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Vehicles & Machinery	Pooled Units	**76**	**$8,541,460**	Recent Costing/Inflation	10/15

Remaining Useful Life

The Township's vehicles and machinery have been categorized by remaining useful life. Figure 3 shows that about $1.1 million (13%) have 10-19 years or remaining useful life. The majority of the assets have 0-9 years of remaining useful life which amounts to approximately $5.2 million (61%). Finally, $2.2 million (26%) worth of vehicles and machinery is considered overdue and may require replacement in the short term.

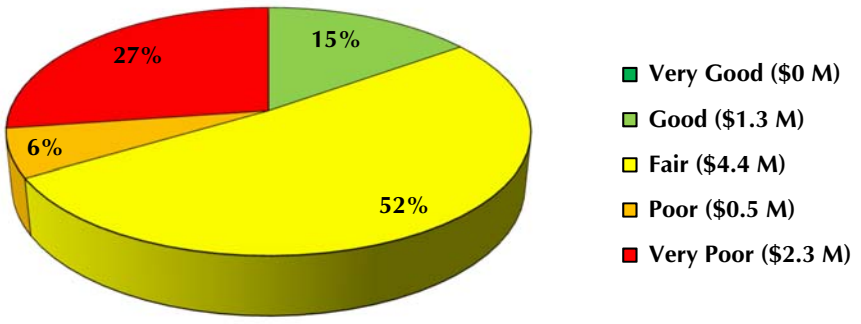


Asset Condition

The Township maintains $1.3 million (15%) of the vehicle and machinery in Good to Very Good condition. Roughly $536,000 (6%) are in Poor condition and $2.3 million (27%) are in Very Poor condition. Finally, the majority of the Township's vehicles and machinery are considered to be in Fair condition, this amounts to $4.4 million (52%).

It is important to note that the conditions are largely reflective of the remaining useful life of these assets. Typically vehicles and machinery have shorter engineered useful lives than other larger infrastructure assets, however many vehicles are used beyond their useful lives with proper maintenance and repair. As a result adjustments have been made for some fire and roads related vehicles and machinery. These have been assumed to be in Fair condition, as these assets are generally in proper working condition due to more stringent regulatory and safety standards. Figure 4 summarizes the conditions of vehicles and machinery assets by replacement cost.

Figure 4
Vehicles & Machinery Summary of Asset Conditions



Total Replacement Value = $8.5 Million

LAND IMPROVEMENTS

Summary of Inventory

The Township maintains a combined total of 82 units of land improvements with a total replacement cost of $6.8 million which includes 67 structures (playgrounds, fields, play structures, etc.) and 15 parking lots. Most assets in the land improvement category have been recorded as individual units. The engineered useful life for land improvements ranges from 10 to 30 years. Some inventory replacement costs have been derived based on the costs identified through the Development Charges Background Study. The majority of the replacement costs are based on inflation from historical acquisition costs. Table 3 summarizes the land improvements inventory.

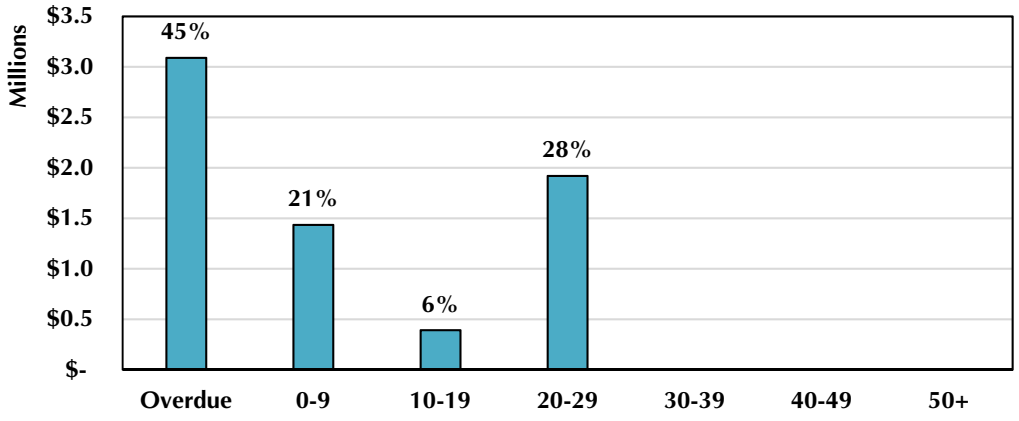
Table 3
Summary of Inventory - Land Improvements

Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Land Improvements	Structures	67	$5,195,278	Recent Costing/Inflation	10/15/20/30
	Parking Lots	15	$1,639,124	Recent Costing/Inflation	20
Total		**82**	**$6,834,401**		

Remaining Useful Life

The Township's land improvements have been categorized by remaining useful life. Figure 5 shows that about $1.9 million (28%) have 20-29 years of remaining useful life. This is followed up by assets with 10-19 years or remaining useful life of $391,000 and 0-9 years or remaining useful life of $1.4 million (21%). Finally, assets considered overdue for replacement account for the largest share of $3.1 million (45%).

Figure 5
Land Improvements by Remaining Useful Life

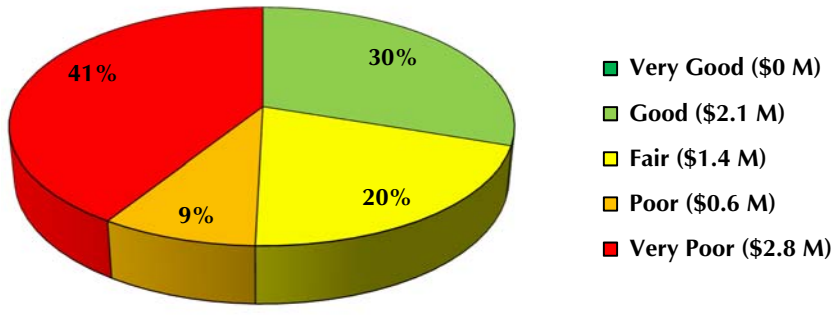


Total Replacement Value= $6.8 Million

Asset Condition

The Township maintains $2.1 million (30%) of the land improvements in Good to Very Good condition. Approximately $1.4 million (20%) of the Township's land improvements are considered to be in Fair condition. Approximately, $584,000 (9%) are in Poor condition and $2.8 million (41%) are in Very Poor condition. Many of the Very Poor condition assets are largely related to outdoor structures such as courts, ball diamonds, picnic shelters, playground structures, etc. which have been categorized as Very Poor based on remaining useful. Figure 6 summarizes the conditions of land improvement assets by replacement cost.

Figure 6
Land Improvements Summary of Asset Conditions



Total Replacement Value = $6.8 Million

STORMWATER INFRASTRUCTURE

Summary of Inventory

The Township owns and maintains a stormwater network valued at approximately $3.6 million. The stormwater inventory includes retention ponds, catch basins, manholes, 5772 metres of pipes and 604 metres of laterals which have been maintained in the asset inventory on a component basis. All replacement costs are based on inflation from historical acquisition costs. Table 4 summarizes the stormwater infrastructure inventory.

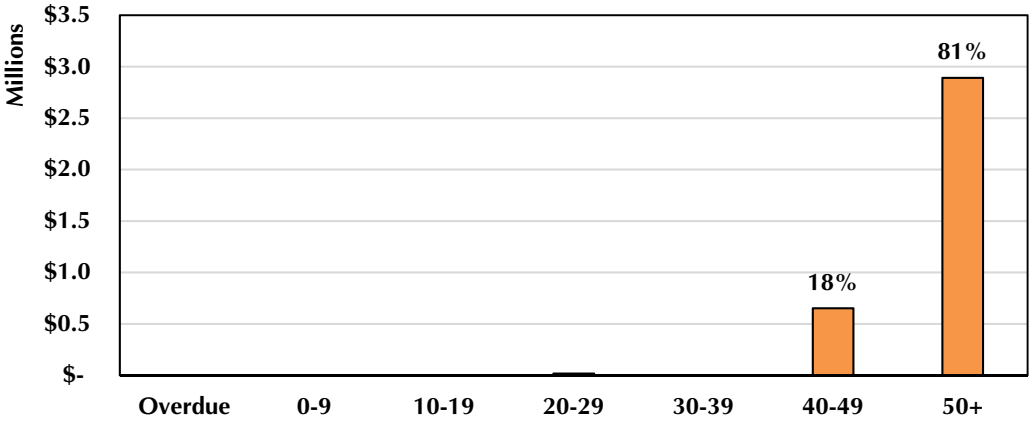
Table 4
Summary of Inventory - Stormwater Infrastructure

Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Stormwater Infrastructure	Retention Ponds	4	$448,358	Inflation	75
	Pipes (metres)	5772	$2,062,790	Inflation	75
	Catch Basins	51	$489,526	Inflation	75
	Laterals (metres)	604	$126,791	Inflation	75
	Manholes	51	$432,544	Inflation	75
Total			**$3,560,009**		

Remaining Useful Life

Most of the Township's stormwater infrastructure is relatively new and has a 75 year useful life, therefore the majority of the infrastructure has several years of engineered useful life remaining. Figure 7 shows that the majority of the assets, approximately $2.9 million (81%), has 50 or more years of engineered useful life remaining. The remaining $652,000 (18%) has 40-49 years of remaining useful life.

Figure 7
Stormwater Assets by Remaining Useful Life

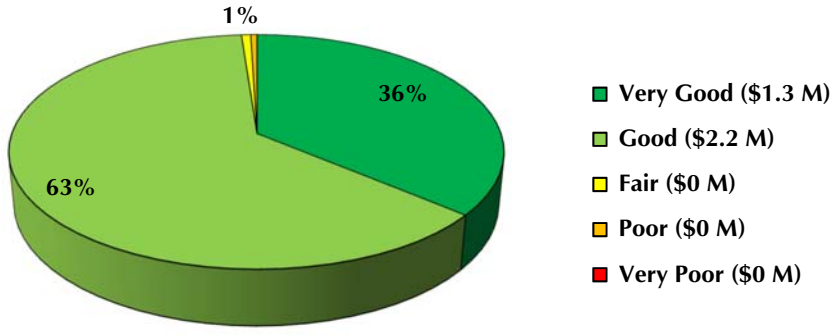


Total Replacement Value= $3.6 Million

Asset Condition

Much of the stormwater infrastructure is relatively new, therefore virtually all of the infrastructure is considered to be in Good to Very Good condition. This amounts to $3.5 million (99%). Only a small portion of $42,000 (1%), is in Fair or Poor condition. Figure 8 summarizes the condition and value of the assets.

Figure 8
Stormwater Infrastructure Summary of Asset Conditions



Total Replacement Value = $3.6 Million

EQUIPMENT & FURNISHINGS

Summary of Inventory

Most assets in the equipment and furnishings category have been pooled together and includes library materials, furniture, bunker gear, cleaning equipment, etc. The total replacement cost of these assets is $2.3 million. The engineered useful life for equipment and furnishings ranges from 5 to 30 years. All replacement costs are based on inflation from historical acquisition costs. Table 5 summarizes the equipment & furnishings inventory.

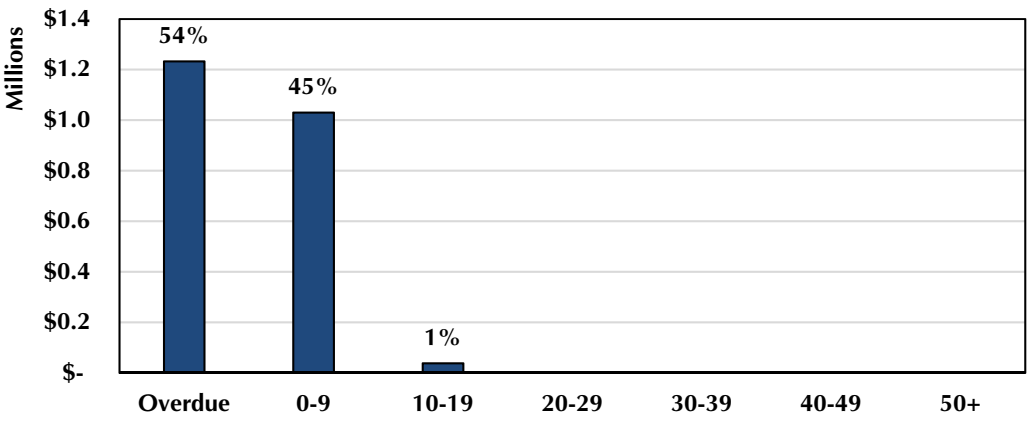
Table 5
Summary of Inventory - Equipment & Furnishings

Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Equipment & Furnishings	Pooled Assets	n/a	**$2,300,609**	Inflation	5/7/8/10/15/30

Remaining Useful Life

The Township's equipment and furnishings have been categorized by remaining useful life. Figure 9 shows that about $38,000 (1%) of the assets have 10-19 years of remaining useful life. $1.0 million (45%) of the assets have 0-9 years of remaining useful life. Finally, assets considered overdue for replacement account for the largest share of $1.2 million (54%).

Figure 9
Equipment & Furnishings Assets by Remaining Useful Life



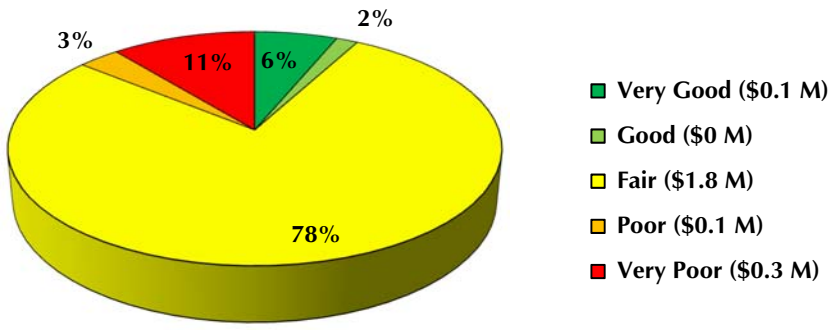
Total Replacement Value= $2.3 Million

Asset Condition

A significant majority of these assets, $1.8 million (78%) are considered to be in Fair condition. $183,000 (8%) are considered to be in Good or Very Good condition. $326,000 (14%) are considered to be in the Poor or Very Poor category.

It is important to note that the conditions are largely reflective of the remaining useful life of these assets. Typically equipment and furnishings have shorter engineered useful lives than other larger infrastructure assets, however many of these assets are used well beyond their useful lives with proper maintenance and repair. As a result adjustments have been made for some fire equipment which are assumed to be in Fair condition, as these assets are generally in proper working condition due to more stringent regulatory and safety standards. Figure 10 summarizes the conditions of equipment and furnishing assets by replacement cost.

Figure 10
Equipment & Furnishings Summary of Asset Conditions



Total Replacement Value = $2.3 Million

SIDEWALKS & PATHWAYS

Summary of Inventory

Most assets in the sidewalks and pathways category have been categorized by segment in the Township's asset inventory and are about 25 km in length. The total replacement cost of these assets is approximately $449,000. The engineered useful life for sidewalks and pathways ranges from 25 to 30 years. All replacement costs are based on inflation from historical acquisition costs. Table 6 summarizes the sidewalks & pathways inventory.

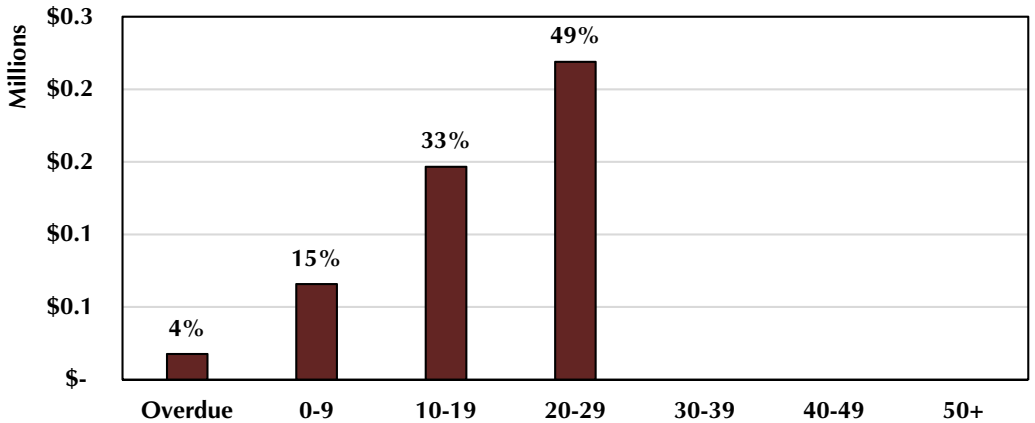
Table 6
Summary of Inventory - Sidewalks & Pathways

Asset Type	Components	Quantity (metres)	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Sidewalks & Pathways	Length in Metres	**25,455**	**$448,806**	Inflation	25/30

Remaining Useful Life

The Township's sidewalks & pathways have been categorized by remaining useful life. Figure 11 shows that the largest share of $219,000 (49%) has 20-29 years of remaining useful life. This is followed by $147,000 (33%) with 10-19 years of remaining useful life. $66,000 (15%) have 0-9 years of remaining useful life. Finally, assets considered overdue for replacement account for the smallest share of $18,000 (4%).

Figure 11
Sidewalks & Pathways Assets by Remaining Useful Life

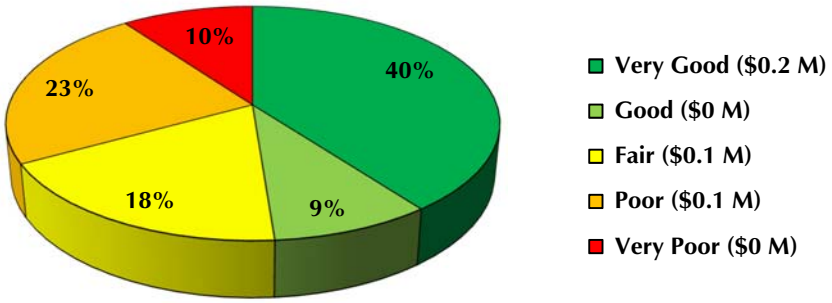


Total Replacement Value= $0.4 Million

Asset Condition

As shown in Figure 12, $219,000 (49%) of these assets are considered to be in Good to Very Good condition with a significant majority of $178,000 (40%) falling within the Very Good category. Fair condition sidewalks and pathways make up $82,000 (18%). Assets in Poor condition make up $103,000 (23%) and Very Poor condition assets make up $45,000 (10%).

Figure 12
Sidewalks & Pathways Summary of Asset Conditions



Total Replacement Value = $0.4 Million

BRIDGES & CULVERTS

Summary of Inventory

The bridges and culverts inventory has been developed based on the Township's existing inventory and the condition reports provided in the 2017 Structure Inspections Report. The total replacement cost of all bridges and culverts is approximately $42.9 million made up of 40 bridges and 49 culverts. The engineered useful life for bridges and culverts is set at 60 years. All replacement costs are based on recent costs from comparable municipalities inflated to current dollars. Table 7 summarizes the bridges and culverts inventory.

Table 7
Summary of Inventory - Bridges & Culverts

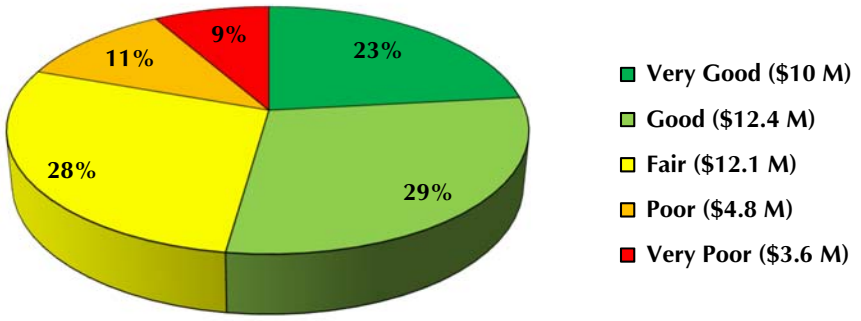
Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Bridges & Culverts	Bridges	40	$36,957,892	Recent Costing/Inflation	60
	Culverts	49	$5,893,798	Recent Costing/Inflation	60
Total		**89**	**$42,851,690**		

Asset Condition

Condition assessments were incorporated for all of the Township's bridges and culverts with a 3 metre span or greater based on the 2017 Structure Inspections Report. The condition assessment in the 2017 Structures Report are based on a Bridge Condition Index (BCI) scale out of 100. This scale has been simplified into the 5-tier rating system (Very Poor to Very Good). For remaining structures, conditions are based on the remaining useful life of assets.

Approximately $22.4 million (52%) is considered to be in Good or Very Good condition. $4.8 million (11%) is in Poor condition and $3.6 million (9%) is in Very Poor condition. The remaining proportion, $12.1 million (28%), is considered to be in Fair condition. The conditions of the Township's bridges and culverts are summarized in Figure 13.

Figure 13
Bridges & Culverts Summary of Asset Conditions



Total Replacement Value = $42.9 Million

ROADS

Summary of Inventory

The roads asset inventory has been developed based on the Township's 2018 Road Needs Study. The Township owns approximately 365 km of gravel and paved roads with a total replacement value of approximately $212.02 million. All replacement costs are based on recent costs as identified in the Township's Development Charges Background Study. Roads are assumed to have an engineered useful life of 40 years. Table 8 summarizes the roads inventory by road surface type.

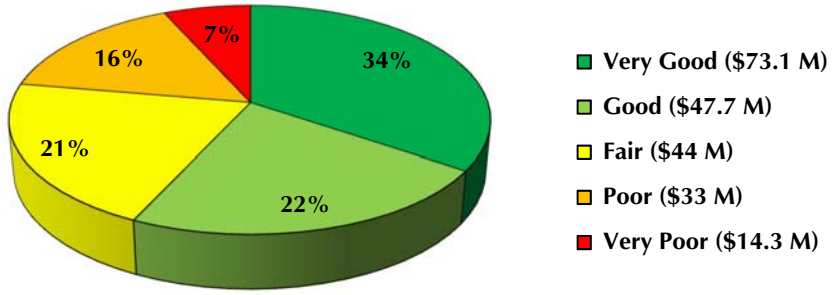
Table 8
Summary of Inventory - Roads

Asset Type	Road Surface Type	Quantity (km)	Replacement Cost	Replacement Cost	Useful Life (Years)
Roads	Gravel	237.76	$59,440,000	Recent Costing/Inflation	40
	High Class Bituminous	65.04	$78,048,000	Recent Costing/Inflation	40
	Intermediate Class Bituminous	5.18	$6,216,000	Recent Costing/Inflation	40
	Low Class Bituminous	49.43	$59,316,000	Recent Costing/Inflation	40
	Cold Mix Asphalt	2.35	$2,820,000	Recent Costing/Inflation	40
	Asphalt over Concrete	5.15	$6,180,000	Recent Costing/Inflation	40
Total		**364.91**	**$212,020,000**		

Asset Condition

Approximately $120.7 million (56%) of the Township's roads are considered to be in Good or Very Good condition. Roughly $44 million (21%) is in Fair condition and $33 million (16%) is in Poor condition. The smallest proportion, $14.3 million (7%), is considered to be in Very Poor condition and will likely require repair or replacement in the near term. The condition ratings in the 2018 Road Needs Study were consolidated into the 5-tier rating system based on the 100 point rating system used. Figure 14 summarizes the condition of Township roads.

Figure 14
Roads Summary of Asset Conditions



Total Replacement Value = $212 Million

APPENDIX C

LEVEL OF SERVICE MEASURES

APPENDIX C

LEVEL OF SERVICE MEASURES

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 1 shows project outcomes relevant to the assets included in the 2019 Plan.

Table 1
Relevant Project Outcomes Required for Gas Tax Funding

Category	Outcomes
Local Roads and Bridges Subcategory: Roads	• 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/repaired/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
Local Roads and Bridges Subcategory: Bridges	• 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	• 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	• 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	• Number of registered users per year • Number of residents who will benefit from the new or upgraded recreational infrastructure

Table 1 Relevant Project Outcomes Required for Gas Tax Funding	
Category	**Outcomes**
Cultural Infrastructure	• 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	• 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	• Area of properties projected to be less at-risk due to the investment • Emergency response costs

Source: AMO.

For 2019, it is expected that the Township will continue to report on the assets included in this Asset Management Plan to meet the asset management plan gas tax funding requirement.

APPENDIX D

ASSET MANAGEMENT STRATEGY

APPENDIX D

ASSET MANAGEMENT STRATEGY

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 1 summarizes general actions that can be employed to ensure that Township buildings are maintained in a state of good repair.

Table 1
Planned Actions: Buildings

Areas	Planned Actions
Non-Infrastructure Solutions	• 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. • Review of the design and layout of buildings and properties, to minimize maintenance costs through design efficiencies over the lifecycle of buildings. • Adjust service levels if necessary.
Maintenance Activities	• 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	• Regular component repairs based on inspections.
Replacement	• Component replacement based on inspections.
Disposal	• Selling or demolishing buildings that are no longer in use. • Re-use or sell land not in use.
Expansion	• Identify needs through regular capital planning. • Assumptions on required facility space through development agreements if necessary. • Service improvements made where possible (accessibility, etc.).

Vehicles & Machinery

Vehicles and machinery are considered for all service areas including Fire, Roads and other general government vehicles. Actions related to maintaining vehicles and machinery are unique to each type of vehicle and machinery unit. Table 2 summarizes general actions that can be taken to ensure that Township vehicle and machinery assets are maintained in a state of good repair.

Table 2
Planned Actions: Vehicles & Machinery

Areas	Planned Actions
Non-Infrastructure Solutions	• 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 units are acquired.
Maintenance Activities	• 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. • Regular safety inspections of all machinery before and after use to ensure safety standards are maintained.
Renewal/ Rehabilitation	• Regular component repairs based on inspections. • Mid-life component replacements are usually common for larger vehicles and can be scheduled accordingly (engine/transmission rebuilds).
Replacement	• Vehicle and machinery replacement based on inspections. • Vehicle and machinery replacement forecast reviewed annually.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	• Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

Land Improvements

Land improvement assets in the Township includes assets such as, ball diamonds, tennis courts, playgrounds, basketball courts, skateboard parks, parking lots and other assets. Table 3 summarizes general actions that are taken to ensure that Township land improvement related assets are maintained in a state of good repair.

Table 3
Planned Actions: Land Improvements

Areas	Planned Actions
Non-Infrastructure Solutions	• 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	• Playground equipment inspected on a regular basis to ensure safety standards are met. • All Parks department equipment inspected on a regular basis. • Regularly scheduled grass cutting, trimming and field observations of Township parks.
Renewal/ Rehabilitation	• Regular component repairs based on inspections. • Regular maintenance of playfields (for example, dragging of baseball diamonds). • 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	• Component replacement based on inspections.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition. • Re-use or sell land not in use.
Expansion	• 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.).

Stormwater Infrastructure

This asset category, includes the Township's stormwater laterals, pipes, manholes, retention ponds and catch basins. Table 4 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 4
Planned Actions: Stormwater Infrastructure

Areas	Planned Actions
Non-Infrastructure Solutions	• Operating budgets should be informed by regular inspections as needed. • Adjust service levels if necessary. • Regularly scheduling of repair work orders. • Follow up on reports of potential illegal dumping or pollutants.
Maintenance Activities	• Ensure erosion/sedimentation controls are in working order. • Regular CCTV inspections. • Cleaning and inspections of maintenance holes, catch basins and pipes. • Identify priority maintenance activities for stormwater ponds (for example regular pond cleanouts).
Renewal/ Rehabilitation	• Regular component repairs based on inspections.
Replacement	• Component replacement based on needs.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	• Identify needs through regular capital planning. • Level of service agreements in relation to new development (required neighbourhood storm ponds, drainage, etc.) • Service improvements made where possible For example, new technologies such as storm drain defenders/catch basin inserts, rainwater harvesting barrels, permeable pavements, etc.

Equipment & Furnishings

Equipment and furnishing assets are encompassed in all Township services. These assets include various types of equipment including fire equipment and library materials. This asset class requires specific types of maintenance unique to each type of asset. Table 5 summarizes general actions that can be taken to ensure that Township equipment and furnishings are maintained in a state of good repair.

Table 5
Planned Actions: Equipment & Furnishings

Areas	Planned Actions
Non-Infrastructure Solutions	• 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	• Preventative maintenance program for all Township equipment and furnishings. • Regular inspection of all Township equipment and furnishings. • Certification of applicable equipment to meet regulatory requirements (for example, fire equipment).
Renewal/ Rehabilitation	• Regular component repairs based on inspections.
Replacement	• Equipment and furnishing replacement based on inspections. • Equipment and furnishing replacement forecast reviewed annually.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	• Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

Sidewalks & Pathways

Regular maintenance and inspections are required to maintain sidewalks and pathways in a state of good repair. Table 6 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 6
Planned Actions: Sidewalk & Pathways

Areas	Planned Actions
Non-Infrastructure Solutions	• 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. • Respond and follow-up to sidewalk safety complaints as needed.
Maintenance Activities	• Regular inspections and repair of sidewalks. • Regular maintenance such as sweeping, levelling, snow clearing, etc.
Renewal/ Rehabilitation	• Regular component repairs based on inspections.
Replacement	• Component replacement based on needs.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	• Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, accessibility, etc.).

Bridges & Culverts

This asset category includes the Township's bridges and culverts. Regular maintenance and inspections are required to maintain these assets in a state of good repair. Table 7 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 7
Planned Actions: Bridges & Culverts

Areas	Planned Actions
Non-Infrastructure Solutions	• 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 works are completed. • Update Structures Report on a regular basis.
Maintenance Activities	• Regular inspections and repairs of all bridges and culverts. • Continue required OSIM inspections. • Regular maintenance schedule (sweep and clean debris from bridge deck, etc.). • Continue to monitor load restrictions as needed.
Renewal/ Rehabilitation	• Regular component repairs based on inspections. • Continue to implement recommendations of Structures Report.
Replacement	• Component replacement based on needs.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	• 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 2018 Road Needs Study. Regular maintenance and inspections are required to maintain safety and operational standards for roads. Table 8 summarizes general actions that can be taken to ensure that roads are maintained in a state of good repair.

Table 8
Planned Actions: Roads

Areas	Planned Actions
Non-Infrastructure Solutions	• 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	• Regular maintenance including, road sweeping, snow removal, roadside ditch cleanout and clearing. • Regular clearing of vegetation. • Continued maintenance of roads in line with *O. Reg. 239/02 Minimum Maintenance Standards for Municipal Highways.*
Renewal/ Rehabilitation	• Resurfacing of poor conditioned paved roads. • Regular grading and application of gravel for gravel roads. • Regular component repairs based on inspections.
Replacement	• Component replacement based on needs.
Disposal	• Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	• Identify needs through regular capital planning. • Service improvements made where possible (new technologies, environmental impacts, etc.).

APPENDIX E

DETAILED FINANCING STRATEGY TABLES

Table 1
Township of Brock
2019 Asset Management Plan
Close Cumulative Infrastructure Deficit by 2058 (Risk Based)

Legend	A	B	C	D	E	F	G	H	I	J
Year	**Projected Annual Capital Provision (2019 AMP Assets)**	**Projected Annual Capital Provision (Roads & Structures)**	**Total Annual Capital Provision**	**Capital from Taxation**	**Yearly Increase in Capital Tax Levy ($)**	**Yearly Increase in Capital Tax Levy (%)**	**Gas Tax**	**Total Capital Funding**	**Annual Funding Gap**	**Cumulative Infrastructure Deficit**
2016				$ 2,119,238						
2017				$ 2,417,434						
2018				$ 2,287,276			$ 314,100	$ 7,523,309		
2019	$ 11,111,583	$ 26,455,186	$ 37,566,769	$ 2,212,232			$ 353,174	$ 2,565,406	$ 35,001,363	$ 35,001,363
2020	$ 6,457,617	$ 19,067,498	$ 25,525,115	$ 2,624,181	$ 411,949	18.6%	$ 353,174	$ 2,977,355	$ 22,547,760	$ 57,549,123
2021	$ 6,137,497	$ 17,526,761	$ 23,664,258	$ 3,036,130	$ 411,949	15.7%	$ 369,228	$ 3,405,358	$ 20,258,900	$ 77,808,024
2022	$ 5,729,695	$ 16,361,354	$ 22,091,049	$ 3,448,079	$ 411,949	13.6%	$ 369,228	$ 3,817,307	$ 18,273,743	$ 96,081,766
2023	$ 5,106,574	$ 14,331,420	$ 19,437,994	$ 3,860,028	$ 411,949	11.9%	$ 385,281	$ 4,245,309	$ 15,192,685	$ 111,274,451
2024	$ 4,950,712	$ 13,160,580	$ 18,111,293	$ 4,271,976	$ 411,949	10.7%	$ 385,281	$ 4,657,257	$ 13,454,035	$ 124,728,487
2025	$ 4,941,171	$ 10,380,216	$ 15,321,387	$ 4,683,925	$ 411,949	9.6%	$ 385,281	$ 5,069,206	$ 10,252,181	$ 134,980,667
2026	$ 4,765,127	$ 8,966,468	$ 13,731,596	$ 5,095,874	$ 411,949	8.8%	$ 385,281	$ 5,481,155	$ 8,250,440	$ 143,231,108
2027	$ 4,759,009	$ 7,913,054	$ 12,672,063	$ 5,507,823	$ 411,949	8.1%	$ 385,281	$ 5,893,104	$ 6,778,959	$ 150,010,067
2028	$ 4,738,604	$ 7,077,847	$ 11,816,451	$ 5,919,772	$ 411,949	7.5%	$ 385,281	$ 6,305,053	$ 5,511,398	$ 155,521,465
2029	$ 3,599,451	$ 6,239,677	$ 9,839,128	$ 6,331,721	$ 411,949	7.0%	$ 385,281	$ 6,717,002	$ 3,122,126	$ 158,643,591
2030	$ 3,495,856	$ 6,131,841	$ 9,627,697	$ 6,743,670	$ 411,949	6.5%	$ 385,281	$ 7,128,951	$ 2,498,747	$ 161,142,338
2031	$ 2,452,021	$ 6,012,671	$ 8,464,692	$ 7,155,619	$ 411,949	6.1%	$ 385,281	$ 7,540,900	$ 923,792	$ 162,066,130
2032	$ 2,426,328	$ 5,885,881	$ 8,312,208	$ 7,567,567	$ 411,949	5.8%	$ 385,281	$ 7,952,848	$ 359,360	$ 162,425,489
2033	$ 2,423,581	$ 5,226,897	$ 7,650,478	$ 7,979,516	$ 411,949	5.4%	$ 385,281	$ 8,364,797	$ (714,320)	$ 161,711,170
2034	$ 2,419,489	$ 5,116,765	$ 7,536,253	$ 8,391,465	$ 411,949	5.2%	$ 385,281	$ 8,776,746	$ (1,240,493)	$ 160,470,677
2035	$ 2,421,830	$ 5,116,765	$ 7,538,595	$ 8,803,414	$ 411,949	4.9%	$ 385,281	$ 9,188,695	$ (1,650,100)	$ 158,820,577
2036	$ 2,290,543	$ 5,116,765	$ 7,407,308	$ 9,215,363	$ 411,949	4.7%	$ 385,281	$ 9,600,644	$ (2,193,336)	$ 156,627,241
2037	$ 2,289,580	$ 5,024,237	$ 7,313,817	$ 9,627,312	$ 411,949	4.5%	$ 385,281	$ 10,012,593	$ (2,698,776)	$ 153,928,465
2038	$ 2,274,847	$ 5,027,547	$ 7,302,394	$ 10,039,261	$ 411,949	4.3%	$ 385,281	$ 10,424,542	$ (3,122,148)	$ 150,806,317
2039	$ 2,274,847	$ 5,026,014	$ 7,300,861	$ 10,451,210	$ 411,949	4.1%	$ 385,281	$ 10,836,491	$ (3,535,629)	$ 147,270,688
2040	$ 2,273,186	$ 5,026,014	$ 7,299,200	$ 10,863,158	$ 411,949	3.9%	$ 385,281	$ 11,248,439	$ (3,949,239)	$ 143,321,449
2041	$ 2,217,042	$ 5,026,014	$ 7,243,056	$ 11,275,107	$ 411,949	3.8%	$ 385,281	$ 11,660,388	$ (4,417,332)	$ 138,904,117
2042	$ 2,180,102	$ 5,026,014	$ 7,206,116	$ 11,687,056	$ 411,949	3.7%	$ 385,281	$ 12,072,337	$ (4,866,221)	$ 134,037,895
2043	$ 2,178,637	$ 5,025,569	$ 7,204,205	$ 12,099,005	$ 411,949	3.5%	$ 385,281	$ 12,484,286	$ (5,280,081)	$ 128,757,815
2044	$ 2,178,464	$ 5,025,503	$ 7,203,967	$ 12,510,954	$ 411,949	3.4%	$ 385,281	$ 12,896,235	$ (5,692,268)	$ 123,065,547
2045	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 12,922,903	$ 411,949	3.3%	$ 385,281	$ 13,308,184	$ (6,109,731)	$ 116,955,816
2046	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 13,334,852	$ 411,949	3.2%	$ 385,281	$ 13,720,133	$ (6,521,680)	$ 110,434,136
2047	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 13,746,801	$ 411,949	3.1%	$ 385,281	$ 14,132,082	$ (6,933,629)	$ 103,500,507
2048	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 14,158,749	$ 411,949	3.0%	$ 385,281	$ 14,544,030	$ (7,345,578)	$ 96,154,929
2049	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 14,570,698	$ 411,949	2.9%	$ 385,281	$ 14,955,979	$ (7,757,527)	$ 88,397,403
2050	$ 2,173,243	$ 5,025,503	$ 7,198,746	$ 14,982,647	$ 411,949	2.8%	$ 385,281	$ 15,367,928	$ (8,169,182)	$ 80,228,221
2051	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 15,394,596	$ 411,949	2.7%	$ 385,281	$ 15,779,877	$ (8,581,228)	$ 71,646,993
2052	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 15,806,545	$ 411,949	2.7%	$ 385,281	$ 16,191,826	$ (8,993,177)	$ 62,653,816
2053	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 16,218,494	$ 411,949	2.6%	$ 385,281	$ 16,603,775	$ (9,405,199)	$ 53,248,616
2054	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 16,630,443	$ 411,949	2.5%	$ 385,281	$ 17,015,724	$ (9,817,148)	$ 43,431,468
2055	$ 2,170,572	$ 5,025,503	$ 7,196,075	$ 17,042,392	$ 411,949	2.5%	$ 385,281	$ 17,427,673	$ (10,231,598)	$ 33,199,870
2056	$ 2,160,459	$ 5,025,503	$ 7,185,962	$ 17,454,340	$ 411,949	2.4%	$ 385,281	$ 17,839,621	$ (10,653,659)	$ 22,546,211
2057	$ 2,159,980	$ 5,025,503	$ 7,185,483	$ 17,866,289	$ 411,949	2.4%	$ 385,281	$ 18,251,570	$ (11,066,087)	$ 11,480,124
2058	$ 2,157,892	$ 5,025,503	$ 7,183,395	$ 18,278,238	$ 411,949	2.3%	$ 385,281	$ 18,663,519	$ (11,480,124)	$ 0
40-Year Infrastructure Deficit									**$ 0**	

Total Tax Funding	$	407,597,172
2019 Total Tax Levy	$	8,372,236
Inc. as % of Tax Levy		4.92%

Table 2
Township of Brock
2019 Asset Management Plan
Financing Strategy 1: Close In-Year Funding Gap by 2038 (Risk Based)

Legend	A	B	C	D	E	F	H	K	L	M
Year	**Projected Annual Capital Provision (2019 AMP Assets)**	**Projected Annual Capital Provision (Roads & Structures)**	**Total Annual Capital Provision**	**Capital from Taxation**	**Yearly Increase in Capital Tax Levy ($)**	**Yearly Increase in Capital Tax Levy (%)**	**Gas Tax**	**Total Capital Funding**	**Annual Funding Gap**	**Cumulative Infrastructure Deficit**
2016				$ 2,119,238						
2017				$ 2,417,434						
2018				$ 2,287,276			$ 314,100	$ 7,523,309		
2019	$ 11,111,583	$ 26,455,186	$ 37,566,769	$ 2,212,232			$ 353,174	$ 2,565,406	$ 35,001,363	$ 35,001,363
2020	$ 6,457,617	$ 19,067,498	$ 25,525,115	$ 2,459,857	$ 247,625	11.2%	$ 353,174	$ 2,813,031	$ 22,712,084	$ 57,713,447
2021	$ 6,137,497	$ 17,526,761	$ 23,664,258	$ 2,707,483	$ 247,625	10.1%	$ 369,228	$ 3,076,711	$ 20,587,547	$ 78,300,994
2022	$ 5,729,695	$ 16,361,354	$ 22,091,049	$ 2,955,108	$ 247,625	9.1%	$ 369,228	$ 3,324,336	$ 18,766,713	$ 97,067,708
2023	$ 5,106,574	$ 14,331,420	$ 19,437,994	$ 3,202,733	$ 247,625	8.4%	$ 385,281	$ 3,588,014	$ 15,849,979	$ 112,917,687
2024	$ 4,950,712	$ 13,160,580	$ 18,111,293	$ 3,450,359	$ 247,625	7.7%	$ 385,281	$ 3,835,640	$ 14,275,653	$ 127,193,340
2025	$ 4,941,171	$ 10,380,216	$ 15,321,387	$ 3,697,984	$ 247,625	7.2%	$ 385,281	$ 4,083,265	$ 11,238,122	$ 138,431,462
2026	$ 4,765,127	$ 8,966,468	$ 13,731,596	$ 3,945,609	$ 247,625	6.7%	$ 385,281	$ 4,330,890	$ 9,400,705	$ 147,832,168
2027	$ 4,759,009	$ 7,913,054	$ 12,672,063	$ 4,193,234	$ 247,625	6.3%	$ 385,281	$ 4,578,515	$ 8,093,548	$ 155,925,715
2028	$ 4,738,604	$ 7,077,847	$ 11,816,451	$ 4,440,860	$ 247,625	5.9%	$ 385,281	$ 4,826,141	$ 6,990,310	$ 162,916,026
2029	$ 3,599,451	$ 6,239,677	$ 9,839,128	$ 4,688,485	$ 247,625	5.6%	$ 385,281	$ 5,073,766	$ 4,765,362	$ 167,681,387
2030	$ 3,495,856	$ 6,131,841	$ 9,627,697	$ 4,936,110	$ 247,625	5.3%	$ 385,281	$ 5,321,391	$ 4,306,306	$ 171,987,693
2031	$ 2,452,021	$ 6,012,671	$ 8,464,692	$ 5,183,736	$ 247,625	5.0%	$ 385,281	$ 5,569,017	$ 2,895,675	$ 174,883,368
2032	$ 2,426,328	$ 5,885,881	$ 8,312,208	$ 5,431,361	$ 247,625	4.8%	$ 385,281	$ 5,816,642	$ 2,495,566	$ 177,378,934
2033	$ 2,423,581	$ 5,226,897	$ 7,650,478	$ 5,678,986	$ 247,625	4.6%	$ 385,281	$ 6,064,267	$ 1,586,210	$ 178,965,145
2034	$ 2,419,489	$ 5,116,765	$ 7,536,253	$ 5,926,612	$ 247,625	4.4%	$ 385,281	$ 6,311,893	$ 1,224,361	$ 180,189,506
2035	$ 2,421,830	$ 5,116,765	$ 7,538,595	$ 6,174,237	$ 247,625	4.2%	$ 385,281	$ 6,559,518	$ 979,077	$ 181,168,583
2036	$ 2,290,543	$ 5,116,765	$ 7,407,308	$ 6,421,862	$ 247,625	4.0%	$ 385,281	$ 6,807,143	$ 600,165	$ 181,768,748
2037	$ 2,289,580	$ 5,024,237	$ 7,313,817	$ 6,669,487	$ 247,625	3.9%	$ 385,281	$ 7,054,768	$ 259,048	$ 182,027,796
2038	$ 2,274,847	$ 5,027,547	$ 7,302,394	$ 6,917,113	$ 247,625	3.7%	$ 385,281	$ 7,302,394	$ -	$ 182,027,796
2039	$ 2,274,847	$ 5,026,014	$ 7,300,861	$ 7,164,738	$ 247,625	3.6%	$ 385,281	$ 7,550,019	$ (249,158)	$ 181,778,638
2040	$ 2,273,186	$ 5,026,014	$ 7,299,200	$ 7,412,363	$ 247,625	3.5%	$ 385,281	$ 7,797,644	$ (498,444)	$ 181,280,194
2041	$ 2,217,042	$ 5,026,014	$ 7,243,056	$ 7,659,989	$ 247,625	3.3%	$ 385,281	$ 8,045,270	$ (802,213)	$ 180,477,981
2042	$ 2,180,102	$ 5,026,014	$ 7,206,116	$ 7,907,614	$ 247,625	3.2%	$ 385,281	$ 8,292,895	$ (1,086,779)	$ 179,391,201
2043	$ 2,178,637	$ 5,025,569	$ 7,204,205	$ 8,155,239	$ 247,625	3.1%	$ 385,281	$ 8,540,520	$ (1,336,315)	$ 178,054,886
2044	$ 2,178,464	$ 5,025,503	$ 7,203,967	$ 8,402,865	$ 247,625	3.0%	$ 385,281	$ 8,788,146	$ (1,584,179)	$ 176,470,708
2045	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 8,650,490	$ 247,625	2.9%	$ 385,281	$ 9,035,771	$ (1,837,318)	$ 174,633,390
2046	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 8,898,115	$ 247,625	2.9%	$ 385,281	$ 9,283,396	$ (2,084,943)	$ 172,548,446
2047	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 9,145,741	$ 247,625	2.8%	$ 385,281	$ 9,531,022	$ (2,332,569)	$ 170,215,877
2048	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 9,393,366	$ 247,625	2.7%	$ 385,281	$ 9,778,647	$ (2,580,194)	$ 167,635,683
2049	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 9,640,991	$ 247,625	2.6%	$ 385,281	$ 10,026,272	$ (2,827,819)	$ 164,807,864
2050	$ 2,173,243	$ 5,025,503	$ 7,198,746	$ 9,888,616	$ 247,625	2.6%	$ 385,281	$ 10,273,897	$ (3,075,151)	$ 161,732,713
2051	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 10,136,242	$ 247,625	2.5%	$ 385,281	$ 10,521,523	$ (3,322,874)	$ 158,409,839
2052	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 10,383,867	$ 247,625	2.4%	$ 385,281	$ 10,769,148	$ (3,570,499)	$ 154,839,340
2053	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 10,631,492	$ 247,625	2.4%	$ 385,281	$ 11,016,773	$ (3,818,198)	$ 151,021,142
2054	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 10,879,118	$ 247,625	2.3%	$ 385,281	$ 11,264,399	$ (4,065,823)	$ 146,955,319
2055	$ 2,170,572	$ 5,025,503	$ 7,196,075	$ 11,126,743	$ 247,625	2.3%	$ 385,281	$ 11,512,024	$ (4,315,949)	$ 142,639,369
2056	$ 2,160,459	$ 5,025,503	$ 7,185,962	$ 11,374,368	$ 247,625	2.2%	$ 385,281	$ 11,759,649	$ (4,573,687)	$ 138,065,682
2057	$ 2,159,980	$ 5,025,503	$ 7,185,483	$ 11,621,994	$ 247,625	2.2%	$ 385,281	$ 12,007,275	$ (4,821,791)	$ 133,243,891
2058	$ 2,157,892	$ 5,025,503	$ 7,183,395	$ 11,869,619	$ 247,625	2.1%	$ 385,281	$ 12,254,900	$ (5,071,505)	$ 128,172,386
40-Year Infrastructure Deficit									**$ 128,172,386**	

Total Tax Funding	$	279,424,785
2019 Total Tax Levy	$	8,372,236
Inc. as % of Tax Levy		2.96%

Table 3
Township of Brock
2019 Asset Management Plan
Financing Strategy 2: Close In-Year Funding Gap by 2048 (Risk Based)

Legend	A	B	C	D	E	F	H	K	L	M
Year	**Projected Annual Capital Provision (2019 AMP Assets)**	**Projected Annual Capital Provision (Roads & Structures)**	**Total Annual Capital Provision**	**Capital from Taxation**	**Yearly Increase in Capital Tax Levy ($)**	**Yearly Increase in Capital Tax Levy (%)**	**Gas Tax**	**Total Capital Funding**	**Annual Funding Gap**	**Cumulative Infrastructure Deficit**
2016				$ 2,119,238						
2017				$ 2,417,434						
2018				$ 2,287,276			$ 314,100	$ 7,523,309		
2019	$ 11,111,583	$ 26,455,186	$ 37,566,769	$ 2,212,232			$ 353,174	$ 2,565,406	$ 35,001,363	$ 35,001,363
2020	$ 6,457,617	$ 19,067,498	$ 25,525,115	$ 2,370,885	$ 158,653	7.2%	$ 353,174	$ 2,724,059	$ 22,801,056	$ 57,802,419
2021	$ 6,137,497	$ 17,526,761	$ 23,664,258	$ 2,529,538	$ 158,653	6.7%	$ 369,228	$ 2,898,766	$ 20,765,492	$ 78,567,911
2022	$ 5,729,695	$ 16,361,354	$ 22,091,049	$ 2,688,191	$ 158,653	6.3%	$ 369,228	$ 3,057,419	$ 19,033,630	$ 97,601,541
2023	$ 5,106,574	$ 14,331,420	$ 19,437,994	$ 2,846,844	$ 158,653	5.9%	$ 385,281	$ 3,232,125	$ 16,205,868	$ 113,807,409
2024	$ 4,950,712	$ 13,160,580	$ 18,111,293	$ 3,005,497	$ 158,653	5.6%	$ 385,281	$ 3,390,778	$ 14,720,514	$ 128,527,923
2025	$ 4,941,171	$ 10,380,216	$ 15,321,387	$ 3,164,151	$ 158,653	5.3%	$ 385,281	$ 3,549,432	$ 11,771,955	$ 140,299,879
2026	$ 4,765,127	$ 8,966,468	$ 13,731,596	$ 3,322,804	$ 158,653	5.0%	$ 385,281	$ 3,708,085	$ 10,023,511	$ 150,323,390
2027	$ 4,759,009	$ 7,913,054	$ 12,672,063	$ 3,481,457	$ 158,653	4.8%	$ 385,281	$ 3,866,738	$ 8,805,325	$ 159,128,715
2028	$ 4,738,604	$ 7,077,847	$ 11,816,451	$ 3,640,110	$ 158,653	4.6%	$ 385,281	$ 4,025,391	$ 7,791,060	$ 166,919,775
2029	$ 3,599,451	$ 6,239,677	$ 9,839,128	$ 3,798,763	$ 158,653	4.4%	$ 385,281	$ 4,184,044	$ 5,655,084	$ 172,574,859
2030	$ 3,495,856	$ 6,131,841	$ 9,627,697	$ 3,957,416	$ 158,653	4.2%	$ 385,281	$ 4,342,697	$ 5,285,000	$ 177,859,859
2031	$ 2,452,021	$ 6,012,671	$ 8,464,692	$ 4,116,069	$ 158,653	4.0%	$ 385,281	$ 4,501,350	$ 3,963,341	$ 181,823,201
2032	$ 2,426,328	$ 5,885,881	$ 8,312,208	$ 4,274,722	$ 158,653	3.9%	$ 385,281	$ 4,660,003	$ 3,652,205	$ 185,475,406
2033	$ 2,423,581	$ 5,226,897	$ 7,650,478	$ 4,433,375	$ 158,653	3.7%	$ 385,281	$ 4,818,656	$ 2,831,821	$ 188,307,227
2034	$ 2,419,489	$ 5,116,765	$ 7,536,253	$ 4,592,028	$ 158,653	3.6%	$ 385,281	$ 4,977,309	$ 2,558,944	$ 190,866,171
2035	$ 2,421,830	$ 5,116,765	$ 7,538,595	$ 4,750,682	$ 158,653	3.5%	$ 385,281	$ 5,135,963	$ 2,402,633	$ 193,268,803
2036	$ 2,290,543	$ 5,116,765	$ 7,407,308	$ 4,909,335	$ 158,653	3.3%	$ 385,281	$ 5,294,616	$ 2,112,692	$ 195,381,496
2037	$ 2,289,580	$ 5,024,237	$ 7,313,817	$ 5,067,988	$ 158,653	3.2%	$ 385,281	$ 5,453,269	$ 1,860,548	$ 197,242,044
2038	$ 2,274,847	$ 5,027,547	$ 7,302,394	$ 5,226,641	$ 158,653	3.1%	$ 385,281	$ 5,611,922	$ 1,690,472	$ 198,932,516
2039	$ 2,274,847	$ 5,026,014	$ 7,300,861	$ 5,385,294	$ 158,653	3.0%	$ 385,281	$ 5,770,575	$ 1,530,286	$ 200,462,802
2040	$ 2,273,186	$ 5,026,014	$ 7,299,200	$ 5,543,947	$ 158,653	2.9%	$ 385,281	$ 5,929,228	$ 1,369,972	$ 201,832,775
2041	$ 2,217,042	$ 5,026,014	$ 7,243,056	$ 5,702,600	$ 158,653	2.9%	$ 385,281	$ 6,087,881	$ 1,155,175	$ 202,987,950
2042	$ 2,180,102	$ 5,026,014	$ 7,206,116	$ 5,861,253	$ 158,653	2.8%	$ 385,281	$ 6,246,534	$ 959,582	$ 203,947,531
2043	$ 2,178,637	$ 5,025,569	$ 7,204,205	$ 6,019,906	$ 158,653	2.7%	$ 385,281	$ 6,405,187	$ 799,018	$ 204,746,549
2044	$ 2,178,464	$ 5,025,503	$ 7,203,967	$ 6,178,559	$ 158,653	2.6%	$ 385,281	$ 6,563,840	$ 640,127	$ 205,386,676
2045	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 6,337,212	$ 158,653	2.6%	$ 385,281	$ 6,722,493	$ 475,959	$ 205,862,635
2046	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 6,495,866	$ 158,653	2.5%	$ 385,281	$ 6,881,147	$ 317,306	$ 206,179,942
2047	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 6,654,519	$ 158,653	2.4%	$ 385,281	$ 7,039,800	$ 158,653	$ 206,338,595
2048	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 6,813,172	$ 158,653	2.4%	$ 385,281	$ 7,198,453	$ -	$ 206,338,595
2049	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 6,971,825	$ 158,653	2.3%	$ 385,281	$ 7,357,106	$ (158,653)	$ 206,179,942
2050	$ 2,173,243	$ 5,025,503	$ 7,198,746	$ 7,130,478	$ 158,653	2.3%	$ 385,281	$ 7,515,759	$ (317,013)	$ 205,862,929
2051	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 7,289,131	$ 158,653	2.2%	$ 385,281	$ 7,674,412	$ (475,763)	$ 205,387,166
2052	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 7,447,784	$ 158,653	2.2%	$ 385,281	$ 7,833,065	$ (634,416)	$ 204,752,750
2053	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 7,606,437	$ 158,653	2.1%	$ 385,281	$ 7,991,718	$ (793,143)	$ 203,959,607
2054	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 7,765,090	$ 158,653	2.1%	$ 385,281	$ 8,150,371	$ (951,796)	$ 203,007,811
2055	$ 2,170,572	$ 5,025,503	$ 7,196,075	$ 7,923,743	$ 158,653	2.0%	$ 385,281	$ 8,309,024	$ (1,112,950)	$ 201,894,861
2056	$ 2,160,459	$ 5,025,503	$ 7,185,962	$ 8,082,396	$ 158,653	2.0%	$ 385,281	$ 8,467,677	$ (1,281,715)	$ 200,613,146
2057	$ 2,159,980	$ 5,025,503	$ 7,185,483	$ 8,241,050	$ 158,653	2.0%	$ 385,281	$ 8,626,331	$ (1,440,847)	$ 199,172,299
2058	$ 2,157,892	$ 5,025,503	$ 7,183,395	$ 8,399,703	$ 158,653	1.9%	$ 385,281	$ 8,784,984	$ (1,601,588)	$ 197,570,710
40-Year Infrastructure Deficit									**$ 197,570,710**	

Total Tax Funding	$	210,026,461
2019 Total Tax Levy	$	8,372,236
Inc. as % of Tax Levy		1.89%

Table 4
Township of Brock
2019 Asset Management Plan
Financing Strategy 3: Close In-Year Funding Gap by 2058 (Risk Based)

Legend	A	B	C	D	E	F	H	K	L	M
Year	**Projected Annual Capital Provision (2019 AMP Assets)**	**Projected Annual Capital Provision (Roads & Structures)**	**Total Annual Capital Provision**	**Capital from Taxation**	**Yearly Increase in Capital Tax Levy ($)**	**Yearly Increase in Capital Tax Levy (%)**	**Gas Tax**	**Total Capital Funding**	**Annual Funding Gap**	**Cumulative Infrastructure Deficit**
2016				$ 2,119,238						
2017				$ 2,417,434						
2018				$ 2,287,276			$ 314,100	$ 7,523,309		
2019	$ 11,111,583	$ 26,455,186	$ 37,566,769	$ 2,212,232			$ 353,174	$ 2,565,406	$ 35,001,363	$ 35,001,363
2020	$ 6,457,617	$ 19,067,498	$ 25,525,115	$ 2,329,819	$ 117,587	5.3%	$ 353,174	$ 2,682,993	$ 22,842,122	$ 57,843,486
2021	$ 6,137,497	$ 17,526,761	$ 23,664,258	$ 2,447,405	$ 117,587	5.0%	$ 369,228	$ 2,816,633	$ 20,847,625	$ 78,691,110
2022	$ 5,729,695	$ 16,361,354	$ 22,091,049	$ 2,564,992	$ 117,587	4.8%	$ 369,228	$ 2,934,220	$ 19,156,829	$ 97,847,939
2023	$ 5,106,574	$ 14,331,420	$ 19,437,994	$ 2,682,579	$ 117,587	4.6%	$ 385,281	$ 3,067,860	$ 16,370,134	$ 114,218,073
2024	$ 4,950,712	$ 13,160,580	$ 18,111,293	$ 2,800,166	$ 117,587	4.4%	$ 385,281	$ 3,185,447	$ 14,925,846	$ 129,143,919
2025	$ 4,941,171	$ 10,380,216	$ 15,321,387	$ 2,917,752	$ 117,587	4.2%	$ 385,281	$ 3,303,033	$ 12,018,354	$ 141,162,272
2026	$ 4,765,127	$ 8,966,468	$ 13,731,596	$ 3,035,339	$ 117,587	4.0%	$ 385,281	$ 3,420,620	$ 10,310,976	$ 151,473,248
2027	$ 4,759,009	$ 7,913,054	$ 12,672,063	$ 3,152,926	$ 117,587	3.9%	$ 385,281	$ 3,538,207	$ 9,133,856	$ 160,607,104
2028	$ 4,738,604	$ 7,077,847	$ 11,816,451	$ 3,270,513	$ 117,587	3.7%	$ 385,281	$ 3,655,794	$ 8,160,657	$ 168,767,762
2029	$ 3,599,451	$ 6,239,677	$ 9,839,128	$ 3,388,099	$ 117,587	3.6%	$ 385,281	$ 3,773,380	$ 6,065,748	$ 174,833,509
2030	$ 3,495,856	$ 6,131,841	$ 9,627,697	$ 3,505,686	$ 117,587	3.5%	$ 385,281	$ 3,890,967	$ 5,736,730	$ 180,570,239
2031	$ 2,452,021	$ 6,012,671	$ 8,464,692	$ 3,623,273	$ 117,587	3.4%	$ 385,281	$ 4,008,554	$ 4,456,138	$ 185,026,377
2032	$ 2,426,328	$ 5,885,881	$ 8,312,208	$ 3,740,859	$ 117,587	3.2%	$ 385,281	$ 4,126,140	$ 4,186,068	$ 189,212,445
2033	$ 2,423,581	$ 5,226,897	$ 7,650,478	$ 3,858,446	$ 117,587	3.1%	$ 385,281	$ 4,243,727	$ 3,406,750	$ 192,619,195
2034	$ 2,419,489	$ 5,116,765	$ 7,536,253	$ 3,976,033	$ 117,587	3.0%	$ 385,281	$ 4,361,314	$ 3,174,939	$ 195,794,135
2035	$ 2,421,830	$ 5,116,765	$ 7,538,595	$ 4,093,620	$ 117,587	3.0%	$ 385,281	$ 4,478,901	$ 3,059,694	$ 198,853,829
2036	$ 2,290,543	$ 5,116,765	$ 7,407,308	$ 4,211,206	$ 117,587	2.9%	$ 385,281	$ 4,596,487	$ 2,810,821	$ 201,664,650
2037	$ 2,289,580	$ 5,024,237	$ 7,313,817	$ 4,328,793	$ 117,587	2.8%	$ 385,281	$ 4,714,074	$ 2,599,743	$ 204,264,393
2038	$ 2,274,847	$ 5,027,547	$ 7,302,394	$ 4,446,380	$ 117,587	2.7%	$ 385,281	$ 4,831,661	$ 2,470,733	$ 206,735,126
2039	$ 2,274,847	$ 5,026,014	$ 7,300,861	$ 4,563,967	$ 117,587	2.6%	$ 385,281	$ 4,949,248	$ 2,351,614	$ 209,086,739
2040	$ 2,273,186	$ 5,026,014	$ 7,299,200	$ 4,681,553	$ 117,587	2.6%	$ 385,281	$ 5,066,834	$ 2,232,366	$ 211,319,105
2041	$ 2,217,042	$ 5,026,014	$ 7,243,056	$ 4,799,140	$ 117,587	2.5%	$ 385,281	$ 5,184,421	$ 2,058,635	$ 213,377,741
2042	$ 2,180,102	$ 5,026,014	$ 7,206,116	$ 4,916,727	$ 117,587	2.5%	$ 385,281	$ 5,302,008	$ 1,904,108	$ 215,281,849
2043	$ 2,178,637	$ 5,025,569	$ 7,204,205	$ 5,034,313	$ 117,587	2.4%	$ 385,281	$ 5,419,594	$ 1,784,611	$ 217,066,460
2044	$ 2,178,464	$ 5,025,503	$ 7,203,967	$ 5,151,900	$ 117,587	2.3%	$ 385,281	$ 5,537,181	$ 1,666,786	$ 218,733,245
2045	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 5,269,487	$ 117,587	2.3%	$ 385,281	$ 5,654,768	$ 1,543,685	$ 220,276,930
2046	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 5,387,074	$ 117,587	2.2%	$ 385,281	$ 5,772,355	$ 1,426,098	$ 221,703,028
2047	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 5,504,660	$ 117,587	2.2%	$ 385,281	$ 5,889,941	$ 1,308,511	$ 223,011,540
2048	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 5,622,247	$ 117,587	2.1%	$ 385,281	$ 6,007,528	$ 1,190,925	$ 224,202,464
2049	$ 2,172,950	$ 5,025,503	$ 7,198,453	$ 5,739,834	$ 117,587	2.1%	$ 385,281	$ 6,125,115	$ 1,073,338	$ 225,275,802
2050	$ 2,173,243	$ 5,025,503	$ 7,198,746	$ 5,857,421	$ 117,587	2.0%	$ 385,281	$ 6,242,702	$ 956,045	$ 226,231,847
2051	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 5,975,007	$ 117,587	2.0%	$ 385,281	$ 6,360,288	$ 838,361	$ 227,070,208
2052	$ 2,173,146	$ 5,025,503	$ 7,198,649	$ 6,092,594	$ 117,587	2.0%	$ 385,281	$ 6,477,875	$ 720,774	$ 227,790,982
2053	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 6,210,181	$ 117,587	1.9%	$ 385,281	$ 6,595,462	$ 603,114	$ 228,394,095
2054	$ 2,173,072	$ 5,025,503	$ 7,198,575	$ 6,327,767	$ 117,587	1.9%	$ 385,281	$ 6,713,048	$ 485,527	$ 228,879,622
2055	$ 2,170,572	$ 5,025,503	$ 7,196,075	$ 6,445,354	$ 117,587	1.9%	$ 385,281	$ 6,830,635	$ 365,440	$ 229,245,062
2056	$ 2,160,459	$ 5,025,503	$ 7,185,962	$ 6,562,941	$ 117,587	1.8%	$ 385,281	$ 6,948,222	$ 237,740	$ 229,482,802
2057	$ 2,159,980	$ 5,025,503	$ 7,185,483	$ 6,680,528	$ 117,587	1.8%	$ 385,281	$ 7,065,809	$ 119,675	$ 229,602,477
2058	$ 2,157,892	$ 5,025,503	$ 7,183,395	$ 6,798,114	$ 117,587	1.8%	$ 385,281	$ 7,183,395	$ (0)	$ 229,602,477
40-Year Infrastructure Deficit									**$ 229,602,477**	

Total Tax Funding	$ 177,994,695
2019 Total Tax Levy	$ 8,372,236
Inc. as % of Tax Levy	1.40%

MEMORANDUM

To: Lisa, Chen, Township of Brock

From: Andrew Mirabella, Hemson Consulting Ltd

Date: March 23, 2023

Re: Review of 2019 Township of Brock Asset Management Plan for consistency with O. Reg. 588/17

The following outlines a review undertaken by the Township of Brock and Hemson Consulting of the Township's 2019 Asset Management Plan (2019 AMP). As part of the Township's regular review of its AMP, this document aims to undertake a detailed look at the 2019 AMP to ensure that it is consistent with the requirements of O. Reg. 588/17 while at the same time continuing to be the main tool to guide long-term asset management planning in the Township. This memorandum maintains all key inputs from the 2019 AMP and updated the base dataset with the effects of inflation. It is recommended that the Township initiate a more fulsome update of the AMP soon to comply with the 2025 proposed level of service requirements of O. Reg. 588/17 – at this time the key inputs of the 2019 AMP would be updated.

A. BACKGROUND

In December 2017, Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure (O. Reg. 588/17) was passed under the *Infrastructure for Jobs and Prosperity Act*. The regulation requires municipalities to develop a Strategic Asset Management Policy, which will help municipalities document the relationship between their Asset Management Plan and existing policies and practices as well as provide guidance for future capital investment decisions. The regulation also contains more specific requirements on the type of analyses municipal asset management plans should include. The aim is to provide guidance to municipalities so that asset management plans are more consistent across the Province. Furthermore, in March 2021 the Province amended the regulation to extend the regulatory timelines by one year.

In 2018, Hemson Consulting was retained by the Township of Brock to prepare a Strategic Asset Management Policy and undertake an Asset Management Plan (2019 AMP) consistent with the requirements of *Ontario Regulation 588/17 Asset Management Planning*

for Municipal Infrastructure (O. Reg. 588/17). In November 2019, the Plan was prepared which followed the format set out in the *Building Together: Guide for Municipal Asset Management Plans* and defined the current levels of service for all core and non-core assets in compliance with the asset management regulation.

The objectives of the 2019 AMP were to develop a guide for long-term investment decisions for tax funded infrastructure as well as meet the reporting requirements of O. Reg. 588/17. Furthermore, the 2019 AMP was based on development of an Excel based financial model which was provided to staff for use.

One of the key deliverables of the 2019 AMP was to develop a financing strategy to ensure that Township infrastructure is maintained while keeping with the principles of financial sustainability and affordability over the long-term. Three financing strategy options were developed as part of the exercise and Council approved the study and approved the financing strategies in principle with the goal of formally adopting a capital funding increase in the future. Note that the financing strategy is discussed in more detail later in this review.

B. OBJECTIVES OF THE AMP REVIEW

Since completion of the 2019 AMP, the Township has continued to improve and adapt lessons learned and best practices to its asset management processes. Notwithstanding the Covid-19 pandemic, which created financial challenges for the Township over the past three years, there has been continued effort to improve both the asset management practices at the Township and continue to fund operating and capital obligations to maintain levels of service. With this in mind, the objective of this review is to determine:

1. That the 2019 AMP continues to be consistent with the requirements of O. Reg. 588/17;
2. Identify any areas for improvement in the 2019 AMP and address them through this review and identify other improvements which should be addressed in a future plan; and,
3. Provide a high level assessment of the progress the Township has made in implementing the 2019 AMP.

To facilitate the review, a line-by-line assessment of the 2019 AMP was developed. Appendix A of this review outlines the key details of the assessment. Appendix A includes the following elements[1]:

- The actual language from the O. Reg. 588/17 outlined by each section;
- A summary, in simplified terms, of the regulation requirement;
- An indication of the relevant section of the 2019 AMP that relates to the specific requirements of the regulation; and
- Action plan notes which relate to whether the particular requirement is complete, in-progress or not complete. If not complete, then an approximate timeline for completion is outlined.

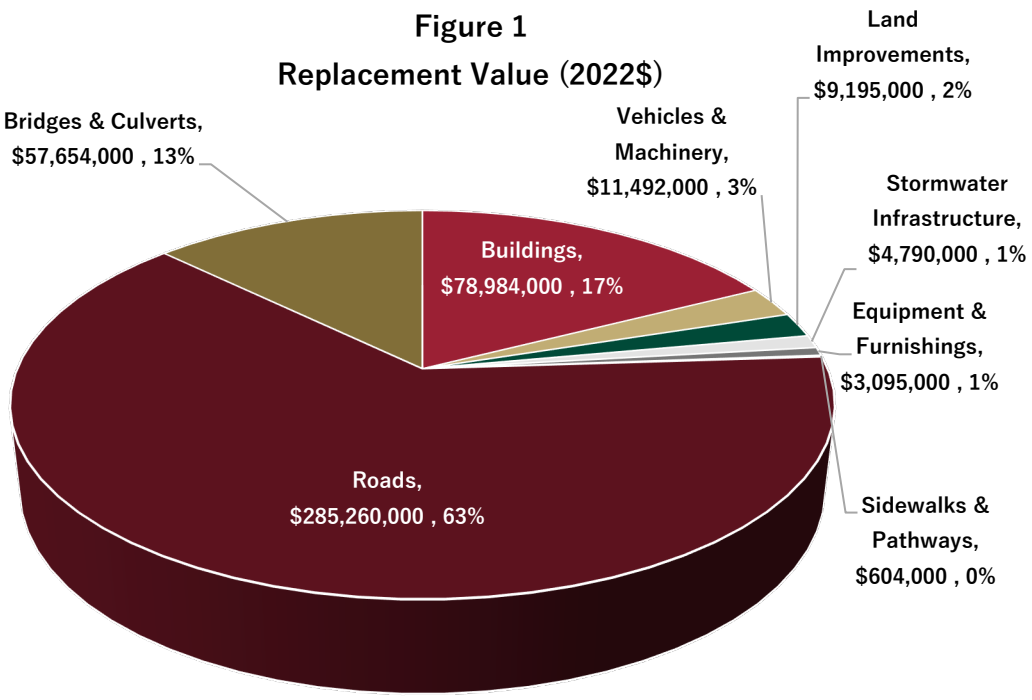
C. REVIEW OF STATE OF LOCAL INFRASTRUCTURE

Section 2 of the 2019 AMP outlines a summary of the state of local infrastructure which is complemented with detailed asset report cards in Appendix B of the 2019 Plan for each asset category. Based on the review, the reporting done through the 2019 Plan meets all the requirements of O. Reg. 588/17 in that reports are included for both core and non-core assets. Furthermore, the reports outline a description of the assets in the category, their quantity (where available), replacement cost, remaining useful life (a function of age), and condition assessments and methodology used. Appendix A of this review includes the detailed assessment of the 2019 AMP with reference to the reporting of assets.

Recognizing that inflationary pressures continue to create fiscal challenges for the Township, a review of the replacement values was undertaken at a high-level. Based on the Statistics Canada Non-Residential Construction Price Index, the replacement value of the Township's assets was updated. The total value of the assets amount to approximately **$451.1 million ($2022)**. Of this the largest shares continue to be related to the Township's core services of roads, and bridges/culverts. Buildings make up the largest category of non-core infrastructure. Figure 1 below outlines the replacement value breakdown. Importantly, this updated replacement value should be considered to be more representative of the value of the Township's assets today but recognizing that as data continues to be refined, the valuations will again be adjusted in a more fulsome study update during the next AMP.

[1] Note that Appendix A Table 1 and 3 are relevant to this review as they relate to requirements of the regulation associated to reporting on current levels of service for core assets (by July 2022) and all other assets (by July 2024). Table 2 relates to reporting on proposed levels of service (by July 2025) which the Township will undertake in a future AMP update.

Figure 1
Replacement Value (2022$)



D. REVIEW OF LEVEL OF SERVICE FOR CORE ASSETS

The Township's 2019 AMP included the development of a level of service tracker to identify current levels of service. It is noted that the current levels of service were defined for the core services of roads, bridges/culverts, water, sewer and storm as prescribed by O. Reg. 588/17. Furthermore, the Township included all non-core assets in the 2019 AMP and therefore developed level of service measures for those services with the best available information. It is noted that the Township uses a blended methodology of level of service measures and performance measures.

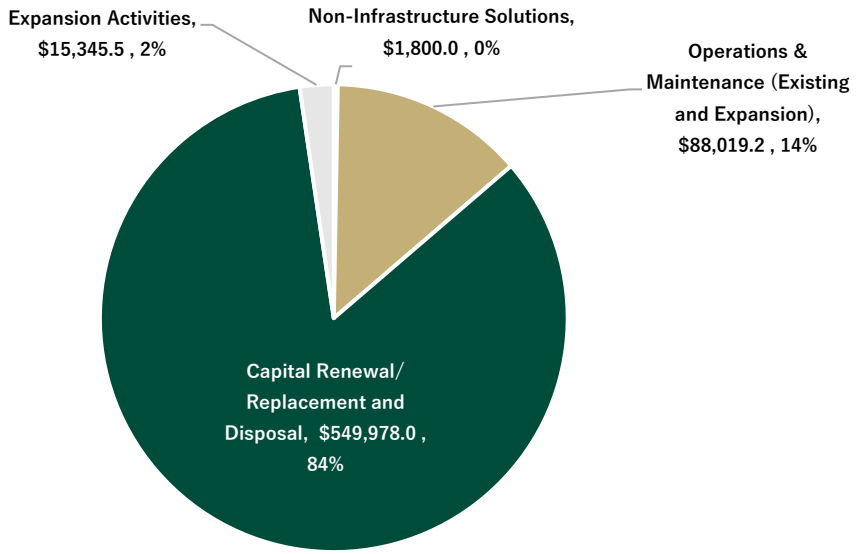
Based on the Township's review, it has been determined that the current levels of service outlined in the 2019 AMP continue to generally represent the levels of service the Township currently provides and therefore no major changes to the data presented is proposed at this time. However, some level of service measures required by the regulation were not defined at the time of the 2019 AMP due to lack of data available at that time. With this said, the Township has made effort to define the measures on current levels of service through this review based on more current information. The revised level of service table, including additional level of service measures previously undefined, is included in Appendix B of this review. The Township continues to undertake internal improvements of the asset data in preparation for the 2025 proposed level of service requirements of O. Reg. 588/17.

E. REVIEW OF FINANCING STRATEGY

The financing strategy lifecycle costs associated to the 2019 AMP have been updated to reflect long-term expenditures that represent more up to date costing based on the Statistics Canada Non-Residential Construction Price Index. Furthermore, the financing strategy analysis has been updated to reflect the full lifecycle costs of the Township's assets as discussed in Section 4 of the 2019 AMP. The expansion activities are generally estimated based on growth assets in the 2019 Development Charges Background Study and recent DC spending trends. Note, that no provisions for level of service adjustments to account for requirements of O. Reg. 588/17 to define and implement proposed levels of service have been included in the analysis – this will be further addressed in the next plan to coincide with the regulatory deadline.

For tax funded services, over the next forty years, the analysis indicates a spending need of about $655.1 million. Figure 2 summarizes the cumulative 40-year investment needs across the tax supported service areas for the various lifecycle activities identified in Section 4 of the 2019 AMP. Of the total life cycle cost, most costs can be attributed to saving for the renewal and replacement of existing infrastructure making up about $550.0 million (84%). About $88.0 million (14%) of the total is related to operating and maintenance costs while any potential future capital infrastructure requirements associated to expansions is estimated at $15.3 million (2%). The remaining $1.8 million (less than 1%) is associated to non-infrastructure solutions.

Figure 2
Summary of Lifecycle Cost Model 2022-2061 ($000)

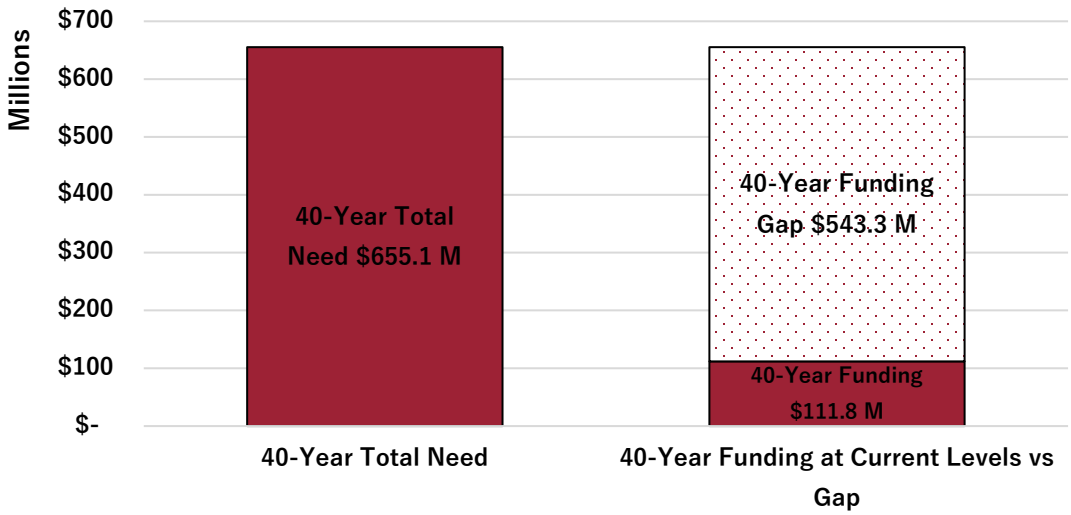


F. COSTS TO MAINTAIN CURRENT LEVELS OF SERVICE

As noted in Part E, costs associated to the full lifecycle of assets have been restated to reflect 2022 dollars and the cumulative full lifecycle costs over the 40-year period. Therefore, a consistent approach has also been used to restate the level of funding currently available to undertake regular capital repair/replacement activities. With this information, a restated analysis of the cumulative 40-year infrastructure gap can be developed if current funding levels are maintained with no further increases.

The 40-year infrastructure deficit shown in Figure 3 represents the difference between the required lifecycle costs and the current contributions to capital, without further increases, for the tax funded assets. The graph indicates that existing funding levels are insufficient to cover projected costs over the planning period; as a result, a gap of $543.3 million exists over the 40-year period. In order to close this gap, an increase in capital contributions of about $588,200 per annum would be required over the 40-year period (Table 1). As a result, it is unrealistic to expect the Township to address the total infrastructure deficit in the short-term. Therefore, the three long-term funding strategies that identify options for addressing current and future asset expenditures was developed as part of the 2019 AMP and updated through this memorandum (Tables 2-4)[2].

Figure 3
40-Year Need vs Current Funding (Tax Funded Assets)



[2] Table 1 represents the baseline scenario to close the cumulative infrastructure gap by 2041 while Tables 2 – 4 illustrate various options to manage the infrastructure deficit.

The financing strategies represent options at maintaining the current levels of service from a long-term perspective. In summary, the following conclusions can be made:

- Township Council approved the study in principle with the goal of formally adopting a capital funding increase in the future. As a result, since the 2019 AMP, capital funding contributions for asset repair and replacement have not materially increased. That said, part of the reason for maintaining capital asset management funding contributions is a result of the COVID-19 pandemic. Moreover, the option to maintain a "do nothing" approach over the long-term and allow the infrastructure back-log to accumulate by not continuing to increase funding would mean that existing funding levels would not be sufficient to manage the infrastructure in place over the long-term. Therefore, the assets in service would deteriorate which could cause a series of assets to move into Poor and Very Poor condition resulting in a reduction in the level of service over the short and long-term period. This scenario is reflected in Figure 3 and would not be the recommended course of action over the long-term.

- A funding strategy more in line with Strategy 3 would strive to ensure, that over the long-term, the funding gap-stabilizes and the infrastructure deficit is controlled. Under this approach, the additional funding would allow for increased targeted investments in asset areas currently in Fair condition to ensure these assets don't transition into the Poor category in the next 5 -10 years therefore maintaining the existing level of service.

    - Also of importance, the assets in Good/Very Good condition require continued investment to ensure service levels are maintained. As these assets age, they may also transition into Fair or lower category. Continued contributions to reserves will ensure funds are available whenever assets require works to be completed.

- Although funding Strategies 1 and 2 are most fiscally prudent and looks to eliminate the infrastructure deficit in the planning horizon, it would require more substantial tax rate implications that may be unfeasible at this time.

Importantly, under all options, Hemson has maintained a very conservative approach on the level of grant funding received – only the Canada Community Building Fund (formerly gas tax) is considered a confirmed funding source over the 40-year period while we have assumed a small share of OCIF funding is allocated to capital through to 2041. All other one-time grants, modernization funding or more substantial OCIF funding is not accounted

for in the financing strategy. Should funding be received, the Township's asset management goals could be advanced.

G. CONTINOUS IMPROVEMENT

The completion of the 2019 AMP not only provided the Township with the opportunity to develop a plan to develop a sustainable funding strategy for its assets, but also helped the Township to identify the gaps in its asset data. With this in mind, the Township is undertaking several key improvements. These improvements are expected to help develop the information needed to meet the 2025 requirements of O. Reg. 588/17 particularly those to develop proposed levels of service and the costs associated to meeting proposed levels of service. The Township recognizes that a key component of asset management is the principle of continuing to improve its practices. Some initiatives the Township is undertaking include:

- The Township has continued its annual updates of the corporate asset inventory. Based on information from departmental staff and other available reports, work is being done to amalgamate all the information from various sources into a centralized database.
- The Township has developed annual asset management reports in the past to help keep the reporting on assets up to date. It is expected that the Township will continue to develop annual reports on the state of local infrastructure.
- The Township expects to continue to track the current level of service on an annual basis. Furthermore, the Township also expects to better track the specific lifecycle activities and costs needed to maintain the current levels of service at a more granular level. This information will be necessary to help inform development of the proposed levels of service.

Table 1
Township of Brock
Review of 2019 Asset Management Plan
Close Cumulative Infrastructure Deficit by 2058

	1. Lifecycle Costs					2. Forecast of Revenues								3. Funding Gap Calculation		
Year	Non-Infrastructure Solutions	Operations & Maintenance (Existing and Expansion)	Capital Renewal/ Replacement and Disposal	Expansion Activities	Total Lifecycle Costs	O&M from Taxation	Capital from Taxation	Yearly Increase in Capital Tax Levy ($)	Yearly Increase in Capital Tax Levy (%)	Reserves/Reserve Funds	Canada Community Building Fund CCBF (formerly Gas Tax)	OCIF & Other Grants	Other Revenue	Total Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2022	$ 45,000	$ 2,106,417	$ 52,261,883	$ -	$ 54,413,301	$ 2,106,417	$ 1,957,300			$ 11,126,482	$ 369,228	$ 377,000	$ -	$ 15,936,427	$ 38,476,874	$ 41,954,705
2023	$ 45,000	$ 2,115,605	$ 30,792,642	$ 19,674	$ 32,972,920	$ 2,115,605	$ 2,545,455	$ 588,155	30.0%	$ -	$ 385,281	$ 350,000	$ -	$ 5,396,341	$ 27,576,580	$ 69,531,284
2024	$ 45,000	$ 2,120,199	$ 28,345,268	$ 39,347	$ 30,549,815	$ 2,120,199	$ 3,133,609	$ 588,155	23.1%	$ -	$ 385,281	$ 350,000	$ -	$ 5,989,090	$ 24,560,725	$ 94,092,010
2025	$ 45,000	$ 2,124,793	$ 26,719,536	$ 59,021	$ 28,948,350	$ 2,124,793	$ 3,721,764	$ 588,155	18.8%	$ -	$ 385,281	$ 350,000	$ -	$ 6,581,838	$ 22,366,512	$ 116,458,522
2026	$ 45,000	$ 2,129,387	$ 23,812,877	$ 78,695	$ 26,065,959	$ 2,129,387	$ 4,309,918	$ 588,155	15.8%	$ -	$ 385,281	$ 350,000	$ -	$ 7,174,587	$ 18,891,372	$ 135,349,894
2027	$ 45,000	$ 2,133,981	$ 22,002,905	$ 98,369	$ 24,280,254	$ 2,133,981	$ 4,898,073	$ 588,155	13.6%	$ -	$ 385,281	$ 350,000	$ -	$ 7,767,335	$ 16,512,919	$ 151,862,813
2028	$ 45,000	$ 2,138,575	$ 18,055,126	$ 118,042	$ 20,356,744	$ 2,138,575	$ 5,486,228	$ 588,155	12.0%	$ -	$ 385,281	$ 350,000	$ -	$ 8,360,084	$ 11,996,660	$ 163,859,472
2029	$ 45,000	$ 2,143,169	$ 15,717,082	$ 137,716	$ 18,042,967	$ 2,143,169	$ 6,074,382	$ 588,155	10.7%	$ -	$ 385,281	$ 350,000	$ -	$ 8,952,833	$ 9,090,134	$ 172,949,607
2030	$ 45,000	$ 2,147,763	$ 14,261,956	$ 157,390	$ 16,612,109	$ 2,147,763	$ 6,662,537	$ 588,155	9.7%	$ -	$ 385,281	$ 350,000	$ -	$ 9,545,581	$ 7,066,528	$ 180,016,134
2031	$ 45,000	$ 2,152,357	$ 13,117,353	$ 177,063	$ 15,491,774	$ 2,152,357	$ 7,250,691	$ 588,155	8.8%	$ -	$ 385,281	$ 350,000	$ -	$ 10,138,330	$ 5,353,444	$ 185,369,578
2032	$ 45,000	$ 2,156,951	$ 11,929,716	$ 196,737	$ 14,328,405	$ 2,156,951	$ 7,838,846	$ 588,155	8.1%	$ -	$ 385,281	$ 350,000	$ -	$ 10,731,078	$ 3,597,326	$ 188,966,904
2033	$ 45,000	$ 2,161,545	$ 11,762,728	$ 216,411	$ 14,185,684	$ 2,161,545	$ 8,427,001	$ 588,155	7.5%	$ -	$ 385,281	$ 350,000	$ -	$ 11,323,827	$ 2,861,857	$ 191,828,762
2034	$ 45,000	$ 2,166,139	$ 11,466,138	$ 236,084	$ 13,913,361	$ 2,166,139	$ 9,015,155	$ 588,155	7.0%	$ -	$ 385,281	$ 350,000	$ -	$ 11,916,576	$ 1,996,786	$ 193,825,547
2035	$ 45,000	$ 2,170,733	$ 11,278,769	$ 255,758	$ 13,750,261	$ 2,170,733	$ 9,603,310	$ 588,155	6.5%	$ -	$ 385,281	$ 350,000	$ -	$ 12,509,324	$ 1,240,936	$ 195,066,484
2036	$ 45,000	$ 2,175,327	$ 10,309,564	$ 275,432	$ 12,805,322	$ 2,175,327	$ 10,191,465	$ 588,155	6.1%	$ -	$ 385,281	$ 350,000	$ -	$ 13,102,073	$ (296,750)	$ 194,769,734
2037	$ 45,000	$ 2,179,921	$ 10,159,148	$ 295,106	$ 12,679,175	$ 2,179,921	$ 10,779,619	$ 588,155	5.8%	$ -	$ 385,281	$ 350,000	$ -	$ 13,694,821	$ (1,015,647)	$ 193,754,087
2038	$ 45,000	$ 2,184,515	$ 10,159,112	$ 314,779	$ 12,703,406	$ 2,184,515	$ 11,367,774	$ 588,155	5.5%	$ -	$ 385,281	$ 350,000	$ -	$ 14,287,570	$ (1,584,164)	$ 192,169,923
2039	$ 45,000	$ 2,189,109	$ 10,153,609	$ 334,453	$ 12,722,171	$ 2,189,109	$ 11,955,928	$ 588,155	5.2%	$ -	$ 385,281	$ 350,000	$ -	$ 14,880,319	$ (2,158,147)	$ 190,011,776
2040	$ 45,000	$ 2,193,703	$ 10,028,325	$ 354,127	$ 12,621,155	$ 2,193,703	$ 12,544,083	$ 588,155	4.9%	$ -	$ 385,281	$ 350,000	$ -	$ 15,473,067	$ (2,851,912)	$ 187,159,863
2041	$ 45,000	$ 2,198,297	$ 10,031,968	$ 373,800	$ 12,649,066	$ 2,198,297	$ 13,132,238	$ 588,155	4.7%	$ -	$ 385,281	$ 350,000	$ -	$ 16,065,816	$ (3,416,750)	$ 183,743,113
2042	$ 45,000	$ 2,202,891	$ 10,029,906	$ 393,474	$ 12,671,272	$ 2,202,891	$ 13,720,392	$ 588,155	4.5%	$ -	$ 385,281	$ -	$ -	$ 16,308,565	$ (3,637,293)	$ 180,105,820
2043	$ 45,000	$ 2,207,485	$ 10,028,707	$ 413,148	$ 12,694,339	$ 2,207,485	$ 14,308,547	$ 588,155	4.3%	$ -	$ 385,281	$ -	$ -	$ 16,901,313	$ (4,206,974)	$ 175,898,847
2044	$ 45,000	$ 2,212,079	$ 10,011,102	$ 432,821	$ 12,701,002	$ 2,212,079	$ 14,896,701	$ 588,155	4.1%	$ -	$ 385,281	$ -	$ -	$ 17,494,062	$ (4,793,059)	$ 171,105,787
2045	$ 45,000	$ 2,216,673	$ 10,010,323	$ 452,495	$ 12,724,491	$ 2,216,673	$ 15,484,856	$ 588,155	3.9%	$ -	$ 385,281	$ -	$ -	$ 18,086,810	$ (5,362,319)	$ 165,743,468
2046	$ 45,000	$ 2,221,267	$ 9,989,652	$ 472,169	$ 12,728,088	$ 2,221,267	$ 16,073,011	$ 588,155	3.8%	$ -	$ 385,281	$ -	$ -	$ 18,679,559	$ (5,951,471)	$ 159,791,997
2047	$ 45,000	$ 2,225,861	$ 9,988,112	$ 491,843	$ 12,750,816	$ 2,225,861	$ 16,661,165	$ 588,155	3.7%	$ -	$ 385,281	$ -	$ -	$ 19,272,308	$ (6,521,492)	$ 153,270,505
2048	$ 45,000	$ 2,230,455	$ 9,988,112	$ 511,516	$ 12,775,084	$ 2,230,455	$ 17,249,320	$ 588,155	3.5%	$ -	$ 385,281	$ -	$ -	$ 19,865,056	$ (7,089,973)	$ 146,180,532
2049	$ 45,000	$ 2,235,049	$ 9,855,862	$ 531,190	$ 12,667,102	$ 2,235,049	$ 17,837,474	$ 588,155	3.4%	$ -	$ 385,281	$ -	$ -	$ 20,457,805	$ (7,790,703)	$ 138,389,829
2050	$ 45,000	$ 2,239,643	$ 9,855,862	$ 550,864	$ 12,691,369	$ 2,239,643	$ 18,425,629	$ 588,155	3.3%	$ -	$ 385,281	$ -	$ -	$ 21,050,553	$ (8,359,184)	$ 130,030,645
2051	$ 45,000	$ 2,244,237	$ 9,819,516	$ 570,537	$ 12,679,290	$ 2,244,237	$ 19,013,784	$ 588,155	3.2%	$ -	$ 385,281	$ -	$ -	$ 21,643,302	$ (8,964,012)	$ 121,066,633
2052	$ 45,000	$ 2,248,831	$ 9,819,516	$ 590,211	$ 12,703,558	$ 2,248,831	$ 19,601,938	$ 588,155	3.1%	$ -	$ 385,281	$ -	$ -	$ 22,236,051	$ (9,532,492)	$ 111,534,141
2053	$ 45,000	$ 2,253,425	$ 9,819,516	$ 609,885	$ 12,727,826	$ 2,253,425	$ 20,190,093	$ 588,155	3.0%	$ -	$ 385,281	$ -	$ -	$ 22,828,799	$ (10,100,973)	$ 101,433,168
2054	$ 45,000	$ 2,258,019	$ 9,813,846	$ 629,558	$ 12,746,423	$ 2,258,019	$ 20,778,247	$ 588,155	2.9%	$ -	$ 385,281	$ -	$ -	$ 23,421,548	$ (10,675,125)	$ 90,758,043
2055	$ 45,000	$ 2,262,613	$ 9,813,846	$ 649,232	$ 12,770,691	$ 2,262,613	$ 21,366,402	$ 588,155	2.8%	$ -	$ 385,281	$ -	$ -	$ 24,014,296	$ (11,243,606)	$ 79,514,437
2056	$ 45,000	$ 2,267,207	$ 9,813,747	$ 668,906	$ 12,794,860	$ 2,267,207	$ 21,954,557	$ 588,155	2.8%	$ -	$ 385,281	$ -	$ -	$ 24,607,045	$ (11,812,185)	$ 67,702,252
2057	$ 45,000	$ 2,271,801	$ 9,813,747	$ 688,580	$ 12,819,127	$ 2,271,801	$ 22,542,711	$ 588,155	2.7%	$ -	$ 385,281	$ -	$ -	$ 25,199,794	$ (12,380,666)	$ 55,321,586
2058	$ 45,000	$ 2,276,395	$ 9,788,343	$ 708,253	$ 12,817,991	$ 2,276,395	$ 23,130,866	$ 588,155	2.6%	$ -	$ 385,281	$ -	$ -	$ 25,792,542	$ (12,974,551)	$ 42,347,035
2059	$ 45,000	$ 2,280,989	$ 9,788,343	$ 727,927	$ 12,842,259	$ 2,280,989	$ 23,719,021	$ 588,155	2.5%	$ -	$ 385,281	$ -	$ -	$ 26,385,291	$ (13,543,032)	$ 28,804,003
2060	$ 45,000	$ 2,285,583	$ 9,782,095	$ 747,601	$ 12,860,278	$ 2,285,583	$ 24,307,175	$ 588,155	2.5%	$ -	$ 385,281	$ -	$ -	$ 26,978,039	$ (14,117,761)	$ 14,686,242
2061	$ 45,000	$ 2,290,177	$ 9,782,095	$ 767,274	$ 12,884,546	$ 2,290,177	$ 24,895,330	$ 588,155	2.4%	$ -	$ 385,281	$ -	$ -	$ 27,570,788	$ (14,686,242)	$ 0
40-Year Infrastructure Deficit					**$ 655,142,612**									**$ 658,620,443**		

Total Tax Funding	$	535,095,295
2022 Total Tax Levy	$	9,723,191
Inc. as % of Tax Levy		6.05%

Note: Estimated

Table 2
Township of Brock
Review of 2019 Asset Management Plan
Financing Strategy 1: Close In-Year Funding Gap by 2041

Legend	1. Lifecycle Costs						2. Forecast of Revenues								3. Funding Gap Calculation		
Year	Non-Infrastructure Solutions	Operations & Maintenance (Existing and Expansion)	Capital Renewal/ Replacement and Disposal	Expansion Activities	Total Lifecycle Costs	O&M from Taxation	Capital from Taxation	Yearly Increase in Capital Tax Levy ($)	Yearly Increase in Capital Tax Levy (%)	Reserves/Reserve Funds	Canada Community Building Fund CCBF (formerly Gas Tax)	OCIF & Other Grants	Other Revenue	Total Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2022	$ 45,000	$ 2,106,417	$ 52,261,883	$ -	$ 54,413,301	$ 2,106,417	$ 1,957,300	$ -		$ 11,126,482	$ 369,228	$ 377,000	$ -	$ 13,830,010	$ 40,583,291	$ 44,061,122
2023	$ 45,000	$ 2,115,605	$ 30,792,642	$ 19,674	$ 32,972,920	$ 2,115,605	$ 2,481,326	$ 524,026	26.8%	$ -	$ 385,281	$ 350,000	$ -	$ 3,216,607	$ 29,756,314	$ 73,817,436
2024	$ 45,000	$ 2,120,199	$ 28,345,268	$ 39,347	$ 30,549,815	$ 2,120,199	$ 3,005,351	$ 524,026	21.1%	$ -	$ 385,281	$ 350,000	$ -	$ 3,740,632	$ 26,809,183	$ 100,626,619
2025	$ 45,000	$ 2,124,793	$ 26,719,536	$ 59,021	$ 28,948,350	$ 2,124,793	$ 3,529,377	$ 524,026	17.4%	$ -	$ 385,281	$ 350,000	$ -	$ 4,264,658	$ 24,683,692	$ 125,310,311
2026	$ 45,000	$ 2,129,387	$ 23,812,877	$ 78,695	$ 26,065,959	$ 2,129,387	$ 4,053,402	$ 524,026	14.8%	$ -	$ 385,281	$ 350,000	$ -	$ 4,788,683	$ 21,277,276	$ 146,587,587
2027	$ 45,000	$ 2,133,981	$ 22,002,905	$ 98,369	$ 24,280,254	$ 2,133,981	$ 4,577,428	$ 524,026	12.9%	$ -	$ 385,281	$ 350,000	$ -	$ 5,312,709	$ 18,967,545	$ 165,555,132
2028	$ 45,000	$ 2,138,575	$ 18,055,126	$ 118,042	$ 20,356,744	$ 2,138,575	$ 5,101,453	$ 524,026	11.4%	$ -	$ 385,281	$ 350,000	$ -	$ 5,836,734	$ 14,520,009	$ 180,075,142
2029	$ 45,000	$ 2,143,169	$ 15,717,082	$ 137,716	$ 18,042,967	$ 2,143,169	$ 5,625,479	$ 524,026	10.3%	$ -	$ 385,281	$ 350,000	$ -	$ 6,360,760	$ 11,682,207	$ 191,757,349
2030	$ 45,000	$ 2,147,763	$ 14,261,956	$ 157,390	$ 16,612,109	$ 2,147,763	$ 6,149,504	$ 524,026	9.3%	$ -	$ 385,281	$ 350,000	$ -	$ 6,884,785	$ 9,727,324	$ 201,484,672
2031	$ 45,000	$ 2,152,357	$ 13,117,353	$ 177,063	$ 15,491,774	$ 2,152,357	$ 6,673,530	$ 524,026	8.5%	$ -	$ 385,281	$ 350,000	$ -	$ 7,408,811	$ 8,082,963	$ 209,567,635
2032	$ 45,000	$ 2,156,951	$ 11,929,716	$ 196,737	$ 14,328,405	$ 2,156,951	$ 7,197,555	$ 524,026	7.9%	$ -	$ 385,281	$ 350,000	$ -	$ 7,932,836	$ 6,395,568	$ 215,963,204
2033	$ 45,000	$ 2,161,545	$ 11,762,728	$ 216,411	$ 14,185,684	$ 2,161,545	$ 7,721,581	$ 524,026	7.3%	$ -	$ 385,281	$ 350,000	$ -	$ 8,456,862	$ 5,728,823	$ 221,692,026
2034	$ 45,000	$ 2,166,139	$ 11,466,138	$ 236,084	$ 13,913,361	$ 2,166,139	$ 8,245,606	$ 524,026	6.8%	$ -	$ 385,281	$ 350,000	$ -	$ 8,980,887	$ 4,932,474	$ 226,624,500
2035	$ 45,000	$ 2,170,733	$ 11,278,769	$ 255,758	$ 13,750,261	$ 2,170,733	$ 8,769,632	$ 524,026	6.4%	$ -	$ 385,281	$ 350,000	$ -	$ 9,504,913	$ 4,245,348	$ 230,869,848
2036	$ 45,000	$ 2,175,327	$ 10,309,564	$ 275,432	$ 12,805,322	$ 2,175,327	$ 9,293,657	$ 524,026	6.0%	$ -	$ 385,281	$ 350,000	$ -	$ 10,028,938	$ 2,776,384	$ 233,646,232
2037	$ 45,000	$ 2,179,921	$ 10,159,148	$ 295,106	$ 12,679,175	$ 2,179,921	$ 9,817,683	$ 524,026	5.6%	$ -	$ 385,281	$ 350,000	$ -	$ 10,552,964	$ 2,126,211	$ 235,772,443
2038	$ 45,000	$ 2,184,515	$ 10,159,112	$ 314,779	$ 12,703,406	$ 2,184,515	$ 10,341,708	$ 524,026	5.3%	$ -	$ 385,281	$ 350,000	$ -	$ 11,076,989	$ 1,626,417	$ 237,398,860
2039	$ 45,000	$ 2,189,109	$ 10,153,609	$ 334,453	$ 12,722,171	$ 2,189,109	$ 10,865,734	$ 524,026	5.1%	$ -	$ 385,281	$ 350,000	$ -	$ 11,601,015	$ 1,121,157	$ 238,520,017
2040	$ 45,000	$ 2,193,703	$ 10,028,325	$ 354,127	$ 12,621,155	$ 2,193,703	$ 11,389,759	$ 524,026	4.8%	$ -	$ 385,281	$ 350,000	$ -	$ 12,125,040	$ 496,115	$ 239,016,132
2041	$ 45,000	$ 2,198,297	$ 10,031,968	$ 373,800	$ 12,649,066	$ 2,198,297	$ 11,913,785	$ 524,026	4.6%	$ -	$ 385,281	$ 350,000	$ -	$ 12,649,066	$ -	$ 239,016,132
2042	$ 45,000	$ 2,202,891	$ 10,029,906	$ 393,474	$ 12,671,272	$ 2,202,891	$ 12,437,810	$ 524,026	4.4%	$ -	$ 385,281	$ -	$ -	$ 12,823,091	$ (151,820)	$ 238,864,312
2043	$ 45,000	$ 2,207,485	$ 10,028,707	$ 413,148	$ 12,694,339	$ 2,207,485	$ 12,961,836	$ 524,026	4.2%	$ -	$ 385,281	$ -	$ -	$ 13,347,117	$ (652,777)	$ 238,211,534
2044	$ 45,000	$ 2,212,079	$ 10,011,102	$ 432,821	$ 12,701,002	$ 2,212,079	$ 13,485,861	$ 524,026	4.0%	$ -	$ 385,281	$ -	$ -	$ 13,871,142	$ (1,170,140)	$ 237,041,394
2045	$ 45,000	$ 2,216,673	$ 10,010,323	$ 452,495	$ 12,724,491	$ 2,216,673	$ 14,009,887	$ 524,026	3.9%	$ -	$ 385,281	$ -	$ -	$ 14,395,168	$ (1,670,677)	$ 235,370,717
2046	$ 45,000	$ 2,221,267	$ 9,989,652	$ 472,169	$ 12,728,088	$ 2,221,267	$ 14,533,912	$ 524,026	3.7%	$ -	$ 385,281	$ -	$ -	$ 14,919,193	$ (2,191,106)	$ 233,179,612
2047	$ 45,000	$ 2,225,861	$ 9,988,112	$ 491,843	$ 12,750,816	$ 2,225,861	$ 15,057,938	$ 524,026	3.6%	$ -	$ 385,281	$ -	$ -	$ 15,443,219	$ (2,692,403)	$ 230,487,209
2048	$ 45,000	$ 2,230,455	$ 9,988,112	$ 511,516	$ 12,775,084	$ 2,230,455	$ 15,581,963	$ 524,026	3.5%	$ -	$ 385,281	$ -	$ -	$ 15,967,244	$ (3,192,161)	$ 227,295,048
2049	$ 45,000	$ 2,235,049	$ 9,855,862	$ 531,190	$ 12,667,102	$ 2,235,049	$ 16,105,989	$ 524,026	3.4%	$ -	$ 385,281	$ -	$ -	$ 16,491,270	$ (3,824,168)	$ 223,470,880
2050	$ 45,000	$ 2,239,643	$ 9,855,862	$ 550,864	$ 12,691,369	$ 2,239,643	$ 16,630,014	$ 524,026	3.3%	$ -	$ 385,281	$ -	$ -	$ 17,015,295	$ (4,323,926)	$ 219,146,953
2051	$ 45,000	$ 2,244,237	$ 9,819,516	$ 570,537	$ 12,679,290	$ 2,244,237	$ 17,154,040	$ 524,026	3.2%	$ -	$ 385,281	$ -	$ -	$ 17,539,321	$ (4,860,030)	$ 214,286,923
2052	$ 45,000	$ 2,248,831	$ 9,819,516	$ 590,211	$ 12,703,558	$ 2,248,831	$ 17,678,065	$ 524,026	3.1%	$ -	$ 385,281	$ -	$ -	$ 18,063,346	$ (5,359,788)	$ 208,927,135
2053	$ 45,000	$ 2,253,425	$ 9,819,516	$ 609,885	$ 12,727,826	$ 2,253,425	$ 18,202,091	$ 524,026	3.0%	$ -	$ 385,281	$ -	$ -	$ 18,587,372	$ (5,859,546)	$ 203,067,589
2054	$ 45,000	$ 2,258,019	$ 9,813,846	$ 629,558	$ 12,746,423	$ 2,258,019	$ 18,726,116	$ 524,026	2.9%	$ -	$ 385,281	$ -	$ -	$ 19,111,397	$ (6,364,974)	$ 196,702,614
2055	$ 45,000	$ 2,262,613	$ 9,813,846	$ 649,232	$ 12,770,691	$ 2,262,613	$ 19,250,142	$ 524,026	2.8%	$ -	$ 385,281	$ -	$ -	$ 19,635,423	$ (6,864,732)	$ 189,837,882
2056	$ 45,000	$ 2,267,207	$ 9,813,747	$ 668,906	$ 12,794,860	$ 2,267,207	$ 19,774,167	$ 524,026	2.7%	$ -	$ 385,281	$ -	$ -	$ 20,159,448	$ (7,364,589)	$ 182,473,294
2057	$ 45,000	$ 2,271,801	$ 9,813,747	$ 688,580	$ 12,819,127	$ 2,271,801	$ 20,298,193	$ 524,026	2.7%	$ -	$ 385,281	$ -	$ -	$ 20,683,474	$ (7,864,347)	$ 174,608,947
2058	$ 45,000	$ 2,276,395	$ 9,788,343	$ 708,253	$ 12,817,991	$ 2,276,395	$ 20,822,218	$ 524,026	2.6%	$ -	$ 385,281	$ -	$ -	$ 21,207,499	$ (8,389,508)	$ 166,219,439
2059	$ 45,000	$ 2,280,989	$ 9,788,343	$ 727,927	$ 12,842,259	$ 2,280,989	$ 21,346,244	$ 524,026	2.5%	$ -	$ 385,281	$ -	$ -	$ 21,731,525	$ (8,889,266)	$ 157,330,173
2060	$ 45,000	$ 2,285,583	$ 9,782,095	$ 747,601	$ 12,860,278	$ 2,285,583	$ 21,870,269	$ 524,026	2.5%	$ -	$ 385,281	$ -	$ -	$ 22,255,550	$ (9,395,272)	$ 147,934,901
2061	$ 45,000	$ 2,290,177	$ 9,782,095	$ 767,274	$ 12,884,546	$ 2,290,177	$ 22,394,295	$ 524,026	2.4%	$ -	$ 385,281	$ -	$ -	$ 22,779,576	$ (9,895,030)	$ 138,039,871
40-Year Infrastructure Deficit					**$ 655,142,612**									**$ 520,580,572**	**$ 134,562,040**	

Total Tax Funding	$	485,074,595
2022 Total Tax Levy	$	9,723,191
Inc. as % of Tax Levy		5.39%

Table 3
Township of Brock
Review of 2019 Asset Management Plan
Financing Strategy 2: Close In-Year Funding Gap by 2051

Legend	1. Lifecycle Costs						2. Forecast of Revenues							3. Funding Gap Calculation		
Year	Non-Infrastructure Solutions	Operations & Maintenance (Existing and Expansion)	Capital Renewal/ Replacement and Disposal	Expansion Activities	Total Lifecycle Costs	O&M from Taxation	Capital from Taxation	Yearly Increase in Capital Tax Levy ($)	Yearly Increase in Capital Tax Levy (%)	Reserves/Reserve Funds	Canada Community Building Fund CCBF (formerly Gas Tax)	OCIF & Other Grants	Other Revenue	Total Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2022	$ 45,000	$ 2,106,417	$ 52,261,883	$ -	$ 54,413,301	$ 2,106,417	$ 1,957,300			$ 11,126,482	$ 369,228	$ 377,000	$ -	$ 13,830,010	$ 40,583,291	$ 37,609,491
2023	$ 45,000	$ 2,115,605	$ 30,792,642	$ 19,674	$ 32,972,920	$ 2,115,605	$ 2,313,738	$ 356,438	18.2%	$ -	$ 385,281	$ 350,000	$ -	$ 3,049,019	$ 29,923,901	$ 67,533,392
2024	$ 45,000	$ 2,120,199	$ 28,345,268	$ 39,347	$ 30,549,815	$ 2,120,199	$ 2,670,177	$ 356,438	15.4%	$ -	$ 385,281	$ 350,000	$ -	$ 3,405,458	$ 27,144,357	$ 94,677,749
2025	$ 45,000	$ 2,124,793	$ 26,719,536	$ 59,021	$ 28,948,350	$ 2,124,793	$ 3,026,615	$ 356,438	13.3%	$ -	$ 385,281	$ 350,000	$ -	$ 3,761,896	$ 25,186,454	$ 119,864,203
2026	$ 45,000	$ 2,129,387	$ 23,812,877	$ 78,695	$ 26,065,959	$ 2,129,387	$ 3,383,053	$ 356,438	11.8%	$ -	$ 385,281	$ 350,000	$ -	$ 4,118,334	$ 21,947,625	$ 141,811,828
2027	$ 45,000	$ 2,133,981	$ 22,002,905	$ 98,369	$ 24,280,254	$ 2,133,981	$ 3,739,491	$ 356,438	10.5%	$ -	$ 385,281	$ 350,000	$ -	$ 4,474,772	$ 19,805,482	$ 161,617,310
2028	$ 45,000	$ 2,138,575	$ 18,055,126	$ 118,042	$ 20,356,744	$ 2,138,575	$ 4,095,930	$ 356,438	9.5%	$ -	$ 385,281	$ 350,000	$ -	$ 4,831,211	$ 15,525,533	$ 177,142,843
2029	$ 45,000	$ 2,143,169	$ 15,717,082	$ 137,716	$ 18,042,967	$ 2,143,169	$ 4,452,368	$ 356,438	8.7%	$ -	$ 385,281	$ 350,000	$ -	$ 5,187,649	$ 12,855,318	$ 189,998,161
2030	$ 45,000	$ 2,147,763	$ 14,261,956	$ 157,390	$ 16,612,109	$ 2,147,763	$ 4,808,806	$ 356,438	8.0%	$ -	$ 385,281	$ 350,000	$ -	$ 5,544,087	$ 11,068,022	$ 201,066,182
2031	$ 45,000	$ 2,152,357	$ 13,117,353	$ 177,063	$ 15,491,774	$ 2,152,357	$ 5,165,244	$ 356,438	7.4%	$ -	$ 385,281	$ 350,000	$ -	$ 5,900,525	$ 9,591,248	$ 210,657,430
2032	$ 45,000	$ 2,156,951	$ 11,929,716	$ 196,737	$ 14,328,405	$ 2,156,951	$ 5,521,683	$ 356,438	6.9%	$ -	$ 385,281	$ 350,000	$ -	$ 6,256,964	$ 8,071,441	$ 218,728,871
2033	$ 45,000	$ 2,161,545	$ 11,762,728	$ 216,411	$ 14,185,684	$ 2,161,545	$ 5,878,121	$ 356,438	6.5%	$ -	$ 385,281	$ 350,000	$ -	$ 6,613,402	$ 7,572,282	$ 226,301,154
2034	$ 45,000	$ 2,166,139	$ 11,466,138	$ 236,084	$ 13,913,361	$ 2,166,139	$ 6,234,559	$ 356,438	6.1%	$ -	$ 385,281	$ 350,000	$ -	$ 6,969,840	$ 6,943,521	$ 233,244,675
2035	$ 45,000	$ 2,170,733	$ 11,278,769	$ 255,758	$ 13,750,261	$ 2,170,733	$ 6,590,997	$ 356,438	5.7%	$ -	$ 385,281	$ 350,000	$ -	$ 7,326,278	$ 6,423,982	$ 239,668,657
2036	$ 45,000	$ 2,175,327	$ 10,309,564	$ 275,432	$ 12,805,322	$ 2,175,327	$ 6,947,436	$ 356,438	5.4%	$ -	$ 385,281	$ 350,000	$ -	$ 7,682,717	$ 5,122,606	$ 244,791,263
2037	$ 45,000	$ 2,179,921	$ 10,159,148	$ 295,106	$ 12,679,175	$ 2,179,921	$ 7,303,874	$ 356,438	5.1%	$ -	$ 385,281	$ 350,000	$ -	$ 8,039,155	$ 4,640,020	$ 249,431,283
2038	$ 45,000	$ 2,184,515	$ 10,159,112	$ 314,779	$ 12,703,406	$ 2,184,515	$ 7,660,312	$ 356,438	4.9%	$ -	$ 385,281	$ 350,000	$ -	$ 8,395,593	$ 4,307,813	$ 253,739,096
2039	$ 45,000	$ 2,189,109	$ 10,153,609	$ 334,453	$ 12,722,171	$ 2,189,109	$ 8,016,750	$ 356,438	4.7%	$ -	$ 385,281	$ 350,000	$ -	$ 8,752,031	$ 3,970,140	$ 257,709,235
2040	$ 45,000	$ 2,193,703	$ 10,028,325	$ 354,127	$ 12,621,155	$ 2,193,703	$ 8,373,189	$ 356,438	4.4%	$ -	$ 385,281	$ 350,000	$ -	$ 9,108,470	$ 3,512,685	$ 261,221,921
2041	$ 45,000	$ 2,198,297	$ 10,031,968	$ 373,800	$ 12,649,066	$ 2,198,297	$ 8,729,627	$ 356,438	4.3%	$ -	$ 385,281	$ 350,000	$ -	$ 9,464,908	$ 3,184,158	$ 264,406,079
2042	$ 45,000	$ 2,202,891	$ 10,029,906	$ 393,474	$ 12,671,272	$ 2,202,891	$ 9,086,065	$ 356,438	4.1%	$ -	$ 385,281	$ -	$ -	$ 9,471,346	$ 3,199,925	$ 267,606,004
2043	$ 45,000	$ 2,207,485	$ 10,028,707	$ 413,148	$ 12,694,339	$ 2,207,485	$ 9,442,503	$ 356,438	3.9%	$ -	$ 385,281	$ -	$ -	$ 9,827,784	$ 2,866,555	$ 270,472,559
2044	$ 45,000	$ 2,212,079	$ 10,011,102	$ 432,821	$ 12,701,002	$ 2,212,079	$ 9,798,942	$ 356,438	3.8%	$ -	$ 385,281	$ -	$ -	$ 10,184,223	$ 2,516,780	$ 272,989,339
2045	$ 45,000	$ 2,216,673	$ 10,010,323	$ 452,495	$ 12,724,491	$ 2,216,673	$ 10,155,380	$ 356,438	3.6%	$ -	$ 385,281	$ -	$ -	$ 10,540,661	$ 2,183,830	$ 275,173,169
2046	$ 45,000	$ 2,221,267	$ 9,989,652	$ 472,169	$ 12,728,088	$ 2,221,267	$ 10,511,818	$ 356,438	3.5%	$ -	$ 385,281	$ -	$ -	$ 10,897,099	$ 1,830,988	$ 277,004,157
2047	$ 45,000	$ 2,225,861	$ 9,988,112	$ 491,843	$ 12,750,816	$ 2,225,861	$ 10,868,256	$ 356,438	3.4%	$ -	$ 385,281	$ -	$ -	$ 11,253,537	$ 1,497,278	$ 278,501,436
2048	$ 45,000	$ 2,230,455	$ 9,988,112	$ 511,516	$ 12,775,084	$ 2,230,455	$ 11,224,695	$ 356,438	3.3%	$ -	$ 385,281	$ -	$ -	$ 11,609,976	$ 1,165,108	$ 279,666,543
2049	$ 45,000	$ 2,235,049	$ 9,855,862	$ 531,190	$ 12,667,102	$ 2,235,049	$ 11,581,133	$ 356,438	3.2%	$ -	$ 385,281	$ -	$ -	$ 11,966,414	$ 700,688	$ 280,367,231
2050	$ 45,000	$ 2,239,643	$ 9,855,862	$ 550,864	$ 12,691,369	$ 2,239,643	$ 11,937,571	$ 356,438	3.1%	$ -	$ 385,281	$ -	$ -	$ 12,322,852	$ 368,517	$ 280,735,748
2051	$ 45,000	$ 2,244,237	$ 9,819,516	$ 570,537	$ 12,679,290	$ 2,244,237	$ 12,294,009	$ 356,438	3.0%	$ -	$ 385,281	$ -	$ -	$ 12,679,290	$ (0)	$ 280,735,748
2052	$ 45,000	$ 2,248,831	$ 9,819,516	$ 590,211	$ 12,703,558	$ 2,248,831	$ 12,650,448	$ 356,438	2.9%	$ -	$ 385,281	$ -	$ -	$ 13,035,729	$ (332,171)	$ 280,403,577
2053	$ 45,000	$ 2,253,425	$ 9,819,516	$ 609,885	$ 12,727,826	$ 2,253,425	$ 13,006,886	$ 356,438	2.8%	$ -	$ 385,281	$ -	$ -	$ 13,392,167	$ (664,341)	$ 279,739,236
2054	$ 45,000	$ 2,258,019	$ 9,813,846	$ 629,558	$ 12,746,423	$ 2,258,019	$ 13,363,324	$ 356,438	2.7%	$ -	$ 385,281	$ -	$ -	$ 13,748,605	$ (1,002,182)	$ 278,737,054
2055	$ 45,000	$ 2,262,613	$ 9,813,846	$ 649,232	$ 12,770,691	$ 2,262,613	$ 13,719,762	$ 356,438	2.7%	$ -	$ 385,281	$ -	$ -	$ 14,105,043	$ (1,334,353)	$ 277,402,702
2056	$ 45,000	$ 2,267,207	$ 9,813,747	$ 668,906	$ 12,794,860	$ 2,267,207	$ 14,076,201	$ 356,438	2.6%	$ -	$ 385,281	$ -	$ -	$ 14,461,482	$ (1,666,622)	$ 275,736,080
2057	$ 45,000	$ 2,271,801	$ 9,813,747	$ 688,580	$ 12,819,127	$ 2,271,801	$ 14,432,639	$ 356,438	2.5%	$ -	$ 385,281	$ -	$ -	$ 14,817,920	$ (1,998,793)	$ 273,737,287
2058	$ 45,000	$ 2,276,395	$ 9,788,343	$ 708,253	$ 12,817,991	$ 2,276,395	$ 14,789,077	$ 356,438	2.5%	$ -	$ 385,281	$ -	$ -	$ 15,174,358	$ (2,356,367)	$ 271,380,920
2059	$ 45,000	$ 2,280,989	$ 9,788,343	$ 727,927	$ 12,842,259	$ 2,280,989	$ 15,145,515	$ 356,438	2.4%	$ -	$ 385,281	$ -	$ -	$ 15,530,796	$ (2,688,537)	$ 268,692,383
2060	$ 45,000	$ 2,285,583	$ 9,782,095	$ 747,601	$ 12,860,278	$ 2,285,583	$ 15,501,954	$ 356,438	2.4%	$ -	$ 385,281	$ -	$ -	$ 15,887,235	$ (3,026,956)	$ 265,665,427
2061	$ 45,000	$ 2,290,177	$ 9,782,095	$ 767,274	$ 12,884,546	$ 2,290,177	$ 15,858,392	$ 356,438	2.3%	$ -	$ 385,281	$ -	$ -	$ 16,243,673	$ (3,359,127)	$ 262,306,300
40-Year Infrastructure Deficit					**$ 655,142,612**									**$ 389,862,512**	**$ 265,280,100**	

Total Tax Funding	$ 354,356,535
2022 Total Tax Levy	$ 9,723,191
Inc. as % of Tax Levy	3.67%

Table 4
Township of Brock
Review of 2019 Asset Management Plan
Financing Strategy 3: Close In-Year Funding Gap by 2061

Legend	1. Lifecycle Costs						2. Forecast of Revenues							3. Funding Gap Calculation		
Year	Non-Infrastructure Solutions	Operations & Maintenance (Existing and Expansion)	Capital Renewal/ Replacement and Disposal	Expansion Activities	Total Lifecycle Costs	O&M from Taxation	Capital from Taxation	Yearly Increase in Capital Tax Levy ($)	Yearly Increase in Capital Tax Levy (%)	Reserves/Reserve Funds	Canada Community Building Fund CCBF (formerly Gas Tax)	OCIF & Other Grants	Other Revenue	Total Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2022	$ 45,000	$ 2,106,417	$ 52,261,883	$ -	$ 54,413,301	$ 2,106,417	$ 1,957,300	$ -		$ 11,126,482	$ 369,228	$ 377,000	$ -	$ 13,830,010	$ 40,583,291	$ 37,739,525
2023	$ 45,000	$ 2,115,605	$ 30,792,642	$ 19,674	$ 32,972,920	$ 2,115,605	$ 2,227,607	$ 270,307	13.8%	$ -	$ 385,281	$ 350,000	$ -	$ 2,962,888	$ 30,010,032	$ 67,749,558
2024	$ 45,000	$ 2,120,199	$ 28,345,268	$ 39,347	$ 30,549,815	$ 2,120,199	$ 2,497,914	$ 270,307	12.1%	$ -	$ 385,281	$ 350,000	$ -	$ 3,233,195	$ 27,316,620	$ 95,066,178
2025	$ 45,000	$ 2,124,793	$ 26,719,536	$ 59,021	$ 28,948,350	$ 2,124,793	$ 2,768,220	$ 270,307	10.8%	$ -	$ 385,281	$ 350,000	$ -	$ 3,503,502	$ 25,444,848	$ 120,511,026
2026	$ 45,000	$ 2,129,387	$ 23,812,877	$ 78,695	$ 26,065,959	$ 2,129,387	$ 3,038,527	$ 270,307	9.8%	$ -	$ 385,281	$ 350,000	$ -	$ 3,773,808	$ 22,292,151	$ 142,803,177
2027	$ 45,000	$ 2,133,981	$ 22,002,905	$ 98,369	$ 24,280,254	$ 2,133,981	$ 3,308,834	$ 270,307	8.9%	$ -	$ 385,281	$ 350,000	$ -	$ 4,044,115	$ 20,236,139	$ 163,039,316
2028	$ 45,000	$ 2,138,575	$ 18,055,126	$ 118,042	$ 20,356,744	$ 2,138,575	$ 3,579,141	$ 270,307	8.2%	$ -	$ 385,281	$ 350,000	$ -	$ 4,314,422	$ 16,042,322	$ 179,081,638
2029	$ 45,000	$ 2,143,169	$ 15,717,082	$ 137,716	$ 18,042,967	$ 2,143,169	$ 3,849,448	$ 270,307	7.6%	$ -	$ 385,281	$ 350,000	$ -	$ 4,584,729	$ 13,458,238	$ 192,539,876
2030	$ 45,000	$ 2,147,763	$ 14,261,956	$ 157,390	$ 16,612,109	$ 2,147,763	$ 4,119,754	$ 270,307	7.0%	$ -	$ 385,281	$ 350,000	$ -	$ 4,855,036	$ 11,757,073	$ 204,296,949
2031	$ 45,000	$ 2,152,357	$ 13,117,353	$ 177,063	$ 15,491,774	$ 2,152,357	$ 4,390,061	$ 270,307	6.6%	$ -	$ 385,281	$ 350,000	$ -	$ 5,125,342	$ 10,366,431	$ 214,663,381
2032	$ 45,000	$ 2,156,951	$ 11,929,716	$ 196,737	$ 14,328,405	$ 2,156,951	$ 4,660,368	$ 270,307	6.2%	$ -	$ 385,281	$ 350,000	$ -	$ 5,395,649	$ 8,932,755	$ 223,596,136
2033	$ 45,000	$ 2,161,545	$ 11,762,728	$ 216,411	$ 14,185,684	$ 2,161,545	$ 4,930,675	$ 270,307	5.8%	$ -	$ 385,281	$ 350,000	$ -	$ 5,665,956	$ 8,519,728	$ 232,115,865
2034	$ 45,000	$ 2,166,139	$ 11,466,138	$ 236,084	$ 13,913,361	$ 2,166,139	$ 5,200,982	$ 270,307	5.5%	$ -	$ 385,281	$ 350,000	$ -	$ 5,936,263	$ 7,977,099	$ 240,092,963
2035	$ 45,000	$ 2,170,733	$ 11,278,769	$ 255,758	$ 13,750,261	$ 2,170,733	$ 5,471,288	$ 270,307	5.2%	$ -	$ 385,281	$ 350,000	$ -	$ 6,206,569	$ 7,543,691	$ 247,636,654
2036	$ 45,000	$ 2,175,327	$ 10,309,564	$ 275,432	$ 12,805,322	$ 2,175,327	$ 5,741,595	$ 270,307	4.9%	$ -	$ 385,281	$ 350,000	$ -	$ 6,476,876	$ 6,328,446	$ 253,965,101
2037	$ 45,000	$ 2,179,921	$ 10,159,148	$ 295,106	$ 12,679,175	$ 2,179,921	$ 6,011,902	$ 270,307	4.7%	$ -	$ 385,281	$ 350,000	$ -	$ 6,747,183	$ 5,931,992	$ 259,897,092
2038	$ 45,000	$ 2,184,515	$ 10,159,112	$ 314,779	$ 12,703,406	$ 2,184,515	$ 6,282,209	$ 270,307	4.5%	$ -	$ 385,281	$ 350,000	$ -	$ 7,017,490	$ 5,685,916	$ 265,583,009
2039	$ 45,000	$ 2,189,109	$ 10,153,609	$ 334,453	$ 12,722,171	$ 2,189,109	$ 6,552,515	$ 270,307	4.3%	$ -	$ 385,281	$ 350,000	$ -	$ 7,287,797	$ 5,434,375	$ 271,017,383
2040	$ 45,000	$ 2,193,703	$ 10,028,325	$ 354,127	$ 12,621,155	$ 2,193,703	$ 6,822,822	$ 270,307	4.1%	$ -	$ 385,281	$ 350,000	$ -	$ 7,558,103	$ 5,063,052	$ 276,080,435
2041	$ 45,000	$ 2,198,297	$ 10,031,968	$ 373,800	$ 12,649,066	$ 2,198,297	$ 7,093,129	$ 270,307	4.0%	$ -	$ 385,281	$ 350,000	$ -	$ 7,828,410	$ 4,820,656	$ 280,901,091
2042	$ 45,000	$ 2,202,891	$ 10,029,906	$ 393,474	$ 12,671,272	$ 2,202,891	$ 7,363,436	$ 270,307	3.8%	$ -	$ 385,281	$ -	$ -	$ 7,748,717	$ 4,922,554	$ 285,823,645
2043	$ 45,000	$ 2,207,485	$ 10,028,707	$ 413,148	$ 12,694,339	$ 2,207,485	$ 7,633,743	$ 270,307	3.7%	$ -	$ 385,281	$ -	$ -	$ 8,019,024	$ 4,675,316	$ 290,498,961
2044	$ 45,000	$ 2,212,079	$ 10,011,102	$ 432,821	$ 12,701,002	$ 2,212,079	$ 7,904,049	$ 270,307	3.5%	$ -	$ 385,281	$ -	$ -	$ 8,289,331	$ 4,411,672	$ 294,910,632
2045	$ 45,000	$ 2,216,673	$ 10,010,323	$ 452,495	$ 12,724,491	$ 2,216,673	$ 8,174,356	$ 270,307	3.4%	$ -	$ 385,281	$ -	$ -	$ 8,559,637	$ 4,164,854	$ 299,075,486
2046	$ 45,000	$ 2,221,267	$ 9,989,652	$ 472,169	$ 12,728,088	$ 2,221,267	$ 8,444,663	$ 270,307	3.3%	$ -	$ 385,281	$ -	$ -	$ 8,829,944	$ 3,898,143	$ 302,973,629
2047	$ 45,000	$ 2,225,861	$ 9,988,112	$ 491,843	$ 12,750,816	$ 2,225,861	$ 8,714,970	$ 270,307	3.2%	$ -	$ 385,281	$ -	$ -	$ 9,100,251	$ 3,650,565	$ 306,624,194
2048	$ 45,000	$ 2,230,455	$ 9,988,112	$ 511,516	$ 12,775,084	$ 2,230,455	$ 8,985,277	$ 270,307	3.1%	$ -	$ 385,281	$ -	$ -	$ 9,370,558	$ 3,404,526	$ 310,028,720
2049	$ 45,000	$ 2,235,049	$ 9,855,862	$ 531,190	$ 12,667,102	$ 2,235,049	$ 9,255,583	$ 270,307	3.0%	$ -	$ 385,281	$ -	$ -	$ 9,640,865	$ 3,026,237	$ 313,054,957
2050	$ 45,000	$ 2,239,643	$ 9,855,862	$ 550,864	$ 12,691,369	$ 2,239,643	$ 9,525,890	$ 270,307	2.9%	$ -	$ 385,281	$ -	$ -	$ 9,911,171	$ 2,780,198	$ 315,835,155
2051	$ 45,000	$ 2,244,237	$ 9,819,516	$ 570,537	$ 12,679,290	$ 2,244,237	$ 9,796,197	$ 270,307	2.8%	$ -	$ 385,281	$ -	$ -	$ 10,181,478	$ 2,497,812	$ 318,332,967
2052	$ 45,000	$ 2,248,831	$ 9,819,516	$ 590,211	$ 12,703,558	$ 2,248,831	$ 10,066,504	$ 270,307	2.8%	$ -	$ 385,281	$ -	$ -	$ 10,451,785	$ 2,251,773	$ 320,584,740
2053	$ 45,000	$ 2,253,425	$ 9,819,516	$ 609,885	$ 12,727,826	$ 2,253,425	$ 10,336,811	$ 270,307	2.7%	$ -	$ 385,281	$ -	$ -	$ 10,722,092	$ 2,005,734	$ 322,590,474
2054	$ 45,000	$ 2,258,019	$ 9,813,846	$ 629,558	$ 12,746,423	$ 2,258,019	$ 10,607,117	$ 270,307	2.6%	$ -	$ 385,281	$ -	$ -	$ 10,992,399	$ 1,754,025	$ 324,344,499
2055	$ 45,000	$ 2,262,613	$ 9,813,846	$ 649,232	$ 12,770,691	$ 2,262,613	$ 10,877,424	$ 270,307	2.5%	$ -	$ 385,281	$ -	$ -	$ 11,262,705	$ 1,507,985	$ 325,852,484
2056	$ 45,000	$ 2,267,207	$ 9,813,747	$ 668,906	$ 12,794,860	$ 2,267,207	$ 11,147,731	$ 270,307	2.5%	$ -	$ 385,281	$ -	$ -	$ 11,533,012	$ 1,261,848	$ 327,114,332
2057	$ 45,000	$ 2,271,801	$ 9,813,747	$ 688,580	$ 12,819,127	$ 2,271,801	$ 11,418,038	$ 270,307	2.4%	$ -	$ 385,281	$ -	$ -	$ 11,803,319	$ 1,015,808	$ 328,130,140
2058	$ 45,000	$ 2,276,395	$ 9,788,343	$ 708,253	$ 12,817,991	$ 2,276,395	$ 11,688,345	$ 270,307	2.4%	$ -	$ 385,281	$ -	$ -	$ 12,073,626	$ 744,366	$ 328,874,506
2059	$ 45,000	$ 2,280,989	$ 9,788,343	$ 727,927	$ 12,842,259	$ 2,280,989	$ 11,958,651	$ 270,307	2.3%	$ -	$ 385,281	$ -	$ -	$ 12,343,933	$ 498,327	$ 329,372,833
2060	$ 45,000	$ 2,285,583	$ 9,782,095	$ 747,601	$ 12,860,278	$ 2,285,583	$ 12,228,958	$ 270,307	2.3%	$ -	$ 385,281	$ -	$ -	$ 12,614,239	$ 246,039	$ 329,618,872
2061	$ 45,000	$ 2,290,177	$ 9,782,095	$ 767,274	$ 12,884,546	$ 2,290,177	$ 12,499,265	$ 270,307	2.2%	$ -	$ 385,281	$ -	$ -	$ 12,884,546	$ -	$ 329,618,872
	$ 1,800,000	**$ 88,019,171**	**$ 549,977,953**	**$ 15,345,487**	**$ 655,142,612**									**$ 322,679,974**	**$ 332,462,637**	

Total Tax Funding	$ 287,173,998
2022 Total Tax Levy	$ 9,723,191
Inc. as % of Tax Levy	2.78%

Table 5
Township of Brock
Review of 2019 Asset Management Plan
No Yearly Increase Scenario

Legend	1. Lifecycle Costs						2. Forecast of Revenues							3. Funding Gap Calculation		
Year	Non-Infrastructure Solutions	Operations & Maintenance (Existing and Expansion)	Capital Renewal/ Replacement and Disposal	Expansion Activities	Total Lifecycle Costs	O&M from Taxation	Capital from Taxation	Yearly Increase in Capital Tax Levy ($)	Yearly Increase in Capital Tax Levy (%)	Reserves/Reserve Funds	Canada Community Building Fund CCBF (formerly Gas Tax)	OCIF & Other Grants	Other Revenue	Total Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2022	$ 45,000	$ 2,106,417	$ 52,261,883	$ -	$ 54,413,301	$ 2,106,417	$ 1,957,300			$ 11,126,482	$ 369,228	$ 377,000	$ -	$ 13,830,010	$ 40,583,291	$ 37,739,525
2023	$ 45,000	$ 2,115,605	$ 30,792,642	$ 19,674	$ 32,972,920	$ 2,115,605	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 30,280,339	$ 68,019,865
2024	$ 45,000	$ 2,120,199	$ 28,345,268	$ 39,347	$ 30,549,815	$ 2,120,199	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 27,857,234	$ 95,877,099
2025	$ 45,000	$ 2,124,793	$ 26,719,536	$ 59,021	$ 28,948,350	$ 2,124,793	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 26,255,769	$ 122,132,867
2026	$ 45,000	$ 2,129,387	$ 23,812,877	$ 78,695	$ 26,065,959	$ 2,129,387	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 23,373,378	$ 145,506,245
2027	$ 45,000	$ 2,133,981	$ 22,002,905	$ 98,369	$ 24,280,254	$ 2,133,981	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 21,587,673	$ 167,093,918
2028	$ 45,000	$ 2,138,575	$ 18,055,126	$ 118,042	$ 20,356,744	$ 2,138,575	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 17,664,162	$ 184,758,081
2029	$ 45,000	$ 2,143,169	$ 15,717,082	$ 137,716	$ 18,042,967	$ 2,143,169	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 15,350,386	$ 200,108,466
2030	$ 45,000	$ 2,147,763	$ 14,261,956	$ 157,390	$ 16,612,109	$ 2,147,763	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 13,919,528	$ 214,027,994
2031	$ 45,000	$ 2,152,357	$ 13,117,353	$ 177,063	$ 15,491,774	$ 2,152,357	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 12,799,193	$ 226,827,186
2032	$ 45,000	$ 2,156,951	$ 11,929,716	$ 196,737	$ 14,328,405	$ 2,156,951	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 11,635,823	$ 238,463,010
2033	$ 45,000	$ 2,161,545	$ 11,762,728	$ 216,411	$ 14,185,684	$ 2,161,545	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 11,493,103	$ 249,956,113
2034	$ 45,000	$ 2,166,139	$ 11,466,138	$ 236,084	$ 13,913,361	$ 2,166,139	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 11,220,780	$ 261,176,893
2035	$ 45,000	$ 2,170,733	$ 11,278,769	$ 255,758	$ 13,750,261	$ 2,170,733	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 11,057,679	$ 272,234,573
2036	$ 45,000	$ 2,175,327	$ 10,309,564	$ 275,432	$ 12,805,322	$ 2,175,327	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 10,112,741	$ 282,347,314
2037	$ 45,000	$ 2,179,921	$ 10,159,148	$ 295,106	$ 12,679,175	$ 2,179,921	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 9,986,594	$ 292,333,907
2038	$ 45,000	$ 2,184,515	$ 10,159,112	$ 314,779	$ 12,703,406	$ 2,184,515	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 10,010,825	$ 302,344,732
2039	$ 45,000	$ 2,189,109	$ 10,153,609	$ 334,453	$ 12,722,171	$ 2,189,109	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 10,029,590	$ 312,374,322
2040	$ 45,000	$ 2,193,703	$ 10,028,325	$ 354,127	$ 12,621,155	$ 2,193,703	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 9,928,574	$ 322,302,896
2041	$ 45,000	$ 2,198,297	$ 10,031,968	$ 373,800	$ 12,649,066	$ 2,198,297	$ 1,957,300			$ -	$ 385,281	$ 350,000	$ -	$ 2,692,581	$ 9,956,485	$ 332,259,381
2042	$ 45,000	$ 2,202,891	$ 10,029,906	$ 393,474	$ 12,671,272	$ 2,202,891	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,328,690	$ 342,588,071
2043	$ 45,000	$ 2,207,485	$ 10,028,707	$ 413,148	$ 12,694,339	$ 2,207,485	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,351,758	$ 352,939,830
2044	$ 45,000	$ 2,212,079	$ 10,011,102	$ 432,821	$ 12,701,002	$ 2,212,079	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,358,421	$ 363,298,251
2045	$ 45,000	$ 2,216,673	$ 10,010,323	$ 452,495	$ 12,724,491	$ 2,216,673	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,381,910	$ 373,680,160
2046	$ 45,000	$ 2,221,267	$ 9,989,652	$ 472,169	$ 12,728,088	$ 2,221,267	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,385,506	$ 384,065,667
2047	$ 45,000	$ 2,225,861	$ 9,988,112	$ 491,843	$ 12,750,816	$ 2,225,861	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,408,235	$ 394,473,902
2048	$ 45,000	$ 2,230,455	$ 9,988,112	$ 511,516	$ 12,775,084	$ 2,230,455	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,432,502	$ 404,906,404
2049	$ 45,000	$ 2,235,049	$ 9,855,862	$ 531,190	$ 12,667,102	$ 2,235,049	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,324,520	$ 415,230,924
2050	$ 45,000	$ 2,239,643	$ 9,855,862	$ 550,864	$ 12,691,369	$ 2,239,643	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,348,788	$ 425,579,712
2051	$ 45,000	$ 2,244,237	$ 9,819,516	$ 570,537	$ 12,679,290	$ 2,244,237	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,336,709	$ 435,916,422
2052	$ 45,000	$ 2,248,831	$ 9,819,516	$ 590,211	$ 12,703,558	$ 2,248,831	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,360,977	$ 446,277,399
2053	$ 45,000	$ 2,253,425	$ 9,819,516	$ 609,885	$ 12,727,826	$ 2,253,425	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,385,245	$ 456,662,643
2054	$ 45,000	$ 2,258,019	$ 9,813,846	$ 629,558	$ 12,746,423	$ 2,258,019	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,403,842	$ 467,066,485
2055	$ 45,000	$ 2,262,613	$ 9,813,846	$ 649,232	$ 12,770,691	$ 2,262,613	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,428,110	$ 477,494,595
2056	$ 45,000	$ 2,267,207	$ 9,813,747	$ 668,906	$ 12,794,860	$ 2,267,207	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,452,278	$ 487,946,873
2057	$ 45,000	$ 2,271,801	$ 9,813,747	$ 688,580	$ 12,819,127	$ 2,271,801	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,476,546	$ 498,423,420
2058	$ 45,000	$ 2,276,395	$ 9,788,343	$ 708,253	$ 12,817,991	$ 2,276,395	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,475,410	$ 508,898,830
2059	$ 45,000	$ 2,280,989	$ 9,788,343	$ 727,927	$ 12,842,259	$ 2,280,989	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,499,678	$ 519,398,508
2060	$ 45,000	$ 2,285,583	$ 9,782,095	$ 747,601	$ 12,860,278	$ 2,285,583	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,517,697	$ 529,916,205
2061	$ 45,000	$ 2,290,177	$ 9,782,095	$ 767,274	$ 12,884,546	$ 2,290,177	$ 1,957,300			$ -	$ 385,281	$ -	$ -	$ 2,342,581	$ 10,541,965	$ 540,458,170
	$ 1,800,000	**$ 88,019,171**	**$ 549,977,953**	**$ 15,345,487**	**$ 655,142,612**									**$ 111,840,677**	**$ 543,301,935**	

Total Tax Funding	$ 76,334,700
2022 Total Tax Levy	$ 9,723,191
Inc. as % of Tax Levy	2.78%

APPENDIX A

DETAILED REVIEW OF 2019 AMP

Appendix A - Table 1
Township of Brock
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of AMP	Action Plan	
5. Asset management plans, current level of service				**Action Items or Notes**	**Timeline to Complete**
(1)	Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2022, and in respect of all of its other municipal infrastructure assets by July 1, 2024.	*This requirement establishes timelines for core and non-core municipal assets to be included in the asset management plan in relation to current levels of service.*		•All assets are included in the 2019 AMP. •Non-core assets: vehicles and machinery, equipment and furnishings, land improvements, buildings, sidewalks and pathways •Core assets: roads, bridges and culverts, storm	Complete
(2)	A municipality's asset management plan must include the following:				
1.	For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan:	*This section outlines reporting requirements for existing levels of service. Historical data should be at least 2 years old.*	Section 3 Levels of Service	•Levels of service were developed as part of the 2019 AMP. Upon review of the level of service measures included, it has been determined that the continue to represent the current level of service in 2022 based on a high-level review of existing data. Note that the level of service tracker (Table 6) of the 2019 AMP has been restated to include some level of service measures that were not included.	Complete
i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	*Include the community and technical levels of service from Table 4 in this appendix in the AMP for core assets.*	Section 3 Levels of Service	•The required level of service measures associated to the core assets as per O.Reg. 588/17 for roads, bridges/culverts and storm were developed as part of the 2019 AMP.	Complete
ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	*Include the qualitative and quantitative descriptors outlined by the municipality for assets such as facilities, vehicles, equipment, land improvements, etc. These will have to be defined by the municipality.*	Section 3 Levels of Service	•Level of service measures for non-core assets were developed as part of the 2019 AMP.	Complete
2.	The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan.	*Include the performance of each asset category which is measured using data less than 2 years old as outlined by the municipality. Performance measures will vary by asset category.*	Section 3 Levels of Service	•The 2019 AMP includes a blend of performance measures and level of service measures. The Township is currently undertaking several initiatives to improve its available asset data. This will facilitate development of additional performance measures in future years.	Complete

Appendix A - Table 1
Township of Brock
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of AMP	Action Plan	
5. Asset management plans, current level of service				**Action Items or Notes**	**Timeline to Complete**
3.	For each asset category,				
i.	a summary of the assets in the category,	*A summary describing the assets in each category. For assets that are broken down into components, a summary can be developed by component.*	Section 2 State of Local Infrastructure	•State of the local infrastructure report cards were developed as part of the 2019 AMP. The report cards summarize the assets in each asset category in a table.	Complete
ii.	the replacement cost of the assets in the category,	*Include total replacement cost of all assets in each category.*		•State of the local infrastructure report cards were developed as part of the 2019 AMP. The report cards summarize the replacement value of assets by type/components wherever possible.	Complete
iii.	the average age of the assets in the category, determined by assessing the average age of the components of the assets,	*Include the weighted average age of all assets in each category weighted relative to their replacement cost.*		•State of the local infrastructure report cards were developed as part of the 2019 AMP. The report cards summarize the remaining useful life of the assets. Although the remaining useful life of the assets does not explicitly state the age of the assets, it is a direct function of the age. The remaining useful life is reported as this value is a key measure of condition utilized wherever engineered or staff condition assessments are not available.	Complete
iv.	the information available on the condition of the assets in the category, and	*Where available, include the weighted condition rating of assets in each category weighted relative to their replacement cost.*	Section 2 State of Local Infrastructure	•State of the local infrastructure report cards were developed as part of the 2019 AMP. The report cards summarize the condition of assets based on a 5-tier scale from Very Poor to Very Good.	Complete
v.	a description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.	*Include the engineering methods used to assess condition rating of all assets in each category. This can include staff visual inspections, remote sensors, etc.*		•State of the local infrastructure report cards were developed as part of the 2019 AMP. Appendix B of the 2019 AMP outlines the methodology used to determine conditions of assets.	Complete

Appendix A - Table 1
Township of Brock
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of AMP	Action Plan	
5. Asset management plans, current level of service				**Action Items or Notes**	**Timeline to Complete**
4.	For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service as described in paragraph 1 for each of the 10 years following the year for which the current levels of service under paragraph 1 are determined and the costs of providing those activities based on an assessment of the following:	*Include all maintenance activities required to maintain current service levels for at least a 10 year period. For example, for buildings this can include frequency of inspections, maintenance schedules, maintenance procedures, etc.*	Section 4 Asset Management Strategy	•Appendix D of the 2019 AMP documents lifecycle activities needed to maintain current levels of service at a high level. It is noted that the Township expects to improve documentation of its asset management strategies on an ongoing basis. The 2019 AMP also discusses the lifecycle activities: non-infrastructure solutions, maintenance activities, renewal/rehabilitation, replacement, disposal and expansion.	Complete
I.	The full lifecycle of the assets.	*The activities listed should be relevant to the useful life of the asset.*	Section 5 Financing Strategy	•The 2019 Plan focuses on the to lifecycle costs associated to maintenance and replacement activities. This 2022 review includes an updated methodology that captures costs for all lifecycle activities.	Complete
ii.	The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.	*Discuss alternative options that can be undertaken to maintain current service levels and what options work best.*	Section 5 Financing Strategy	•Appendix D of the 2019 AMP documents lifecycle activities needed to maintain current levels of service at a high level. It is noted that the Township expects to improve documentation of its asset management strategies on an ongoing basis. The 2019 AMP also discusses the lifecycle activities: non-infrastructure solutions, maintenance activities, renewal/rehabilitation, replacement, disposal and expansion.	Complete
iii.	The risks associated with the options referred to in subparagraph ii.	*Discuss the risks involved with the options in sub-section 4.ii.Risks include discussion of consequences of not undertaking such maintenance activities.*	Section 4 Asset Management Strategy	•Section 4 of the 2019 AMP discusses risks associated to not implementing the key outcomes of the plan. It is expected that the Township will continue to update the information to provide additional details over time.	Complete
iv.	The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.	*Discuss the lowest cost options that can be undertaken to maintain current service levels.*	Section 5 Financing Strategy	•The costs identified in the 2019 Plan associated to the 40-year planning period are based on the Township's budget and associated lifecycle activities identified through Appendix D. The Township considers this to be the lowest cost options based on the best available information available today and the current level of service provided. This 2022 review provides additional details on the financing strategy to supplement the 2019 Plan.	Complete

Appendix A - Table 1
Township of Brock
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of AMP	Action Plan	
5. Asset management plans, current level of service				**Action Items or Notes**	**Timeline to Complete**
5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:		Section 5 Financing Strategy		
i.	A description of assumptions regarding future changes in population or economic activity.	*This can include: population forecasts, development forecasts or economic reports.*		•The 2019 Plan includes a Future Demand section which discusses the Township's expected future development and costs associated to growth-identified through the DC study which are considered expansion activities. The costs associated to expansion have also been included in updated financing strategy discussion in this review.	Complete
ii.	How the assumptions referred to in subparagraph i relate to the information required by paragraph 4.	*Discussion on the relationship of growth on maintenance activities. For example as population grows, further maintenance activities are required for roads as more roads experience larger traffic volumes.*		•The 2019 Plan includes a Future Demand section which discusses the Township's expected future development and costs associated to growth-identified through the DC study which are considered expansion activities. The costs associated to expansion have also been included in updated financing strategy discussion in this review.	Complete
(3)	Every asset management plan must indicate how all background information and reports upon which the information required by paragraph 3 of subsection (2) is based will be made available to the public.	*Include the sources of the information and ensure that the information is available to the public.*	Section 6 Making Asset Management Operational	•The 2019 Plan indicates that the report and strategic asset management policy should be made available to the public. Both are available on the Township website.	Complete

Appendix A - Table 2
Township of Perth East
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of Future AMP	Action Plan	
6. Asset management plans, proposed level of service				**Action Items**	**Timeline to Complete**
(1)	Subject to subsection (2), by July 1, 2025, every asset management plan prepared under section 5 must include the following additional information:	*The regulations has additional requirements which must be included in the asset management plan by 2025.*		•It is expected that the 2019 Plan will be updated to include the additional information required by 2025.	To be completed by 2025
1.	For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following the year in which all information required under section 5 and this section is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics:	*This section refers to the proposed or planned level of service for a minimum of 10 years.*	Section 3 Levels of Service	• Proposed levels of service should be defined with consideration of the current levels of service determined through the 2019 AMP. It is noted the proposed levels of service are those expected to be achieved over a minimum 10-year period. •Consultation with Council and the public should occur before establishing targets.	Q4 2024
i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	*Include the community and technical levels of service from Table 4 in this appendix in the AMP for roads, water, wastewater and stormwater infrastructure.*	Section 3 Levels of Service	• Proposed levels of service should be defined with consideration of the current core levels of service determined through the 2019 AMP.	Q4 2024
ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	*Include the qualitative and quantitative descriptors outlined by the municipality for assets such as facilities, vehicles, equipment, land improvements, etc. These will have to be defined by the municipality.*	Section 3 Levels of Service	• Proposed levels of service should be defined with consideration of the current non-core levels of service determined through the 2019 AMP.	Q4 2024

Appendix A - Table 2
Township of Perth East
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of Future AMP	Action Plan	
6. Asset management plans, proposed level of service				**Action Items**	**Timeline to Complete**
2.	An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality, based on an assessment of the following:	*An explanation on how levels of service targets have been determined will need to be outlined.*	Section 3 Levels of Service	• Describe why the proposed levels of service are appropriate, this should include the process that was used to establish the proposed levels of service and how Council and the public was consulted.	Q4 2024
i.	The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality.	*Options to achieve the proposed levels of service and all risks associated to not meeting the targets.*	Section 3 Levels of Service	• Ensure that the proposed levels of service are based on measurable targets that the Town can track over time and maintain up to date. Include a discussion on the risks associated with not meeting proposed levels of service and if possible the consequence (ie. costs).	Q4 2024
ii.	How the proposed levels of service differ from the current levels of service set out under paragraph 1 of subsection 5 (2).	*Include a description of how proposed service levels differ from current service levels. Include quantitative and qualitative differences. Identify which service measures are new.*	Section 3 Levels of Service	• Compare the proposed levels of service to the current levels of service. They can be added as an additional "column" in the level of service tracker of the 2019 AMP once it is updated.	Q4 2024
iii.	Whether the proposed levels of service are achievable.	*Discuss whether proposed service levels are attainable. Only feasible and realistic level of service targets should be included in any plan.*	Section 3 Levels of Service	• Ensure that the proposed levels of service are achievable, feasible and realistic. Include a discussion in the AMP on why the proposed levels of service are achievable.	Q4 2024
iv.	The municipality's ability to afford the proposed levels of service.	*Discuss whether proposed service levels are affordable. This will require a cost of analysis of work required to achieve the proposed targets.*	Section 5 Financing Strategy	•Costs associated to meeting the proposed levels of service will need to be included as part of the financing strategy. The financing strategy in the 2019 AMP can be utilized as a basis for the analysis. The tax impact of undertaking these costs can be assessed.	Q2 2025

Appendix A - Table 2
Township of Perth East
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of Future AMP	Action Plan	
6. Asset management plans, proposed level of service				**Action Items**	**Timeline to Complete**
3.	The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.	*Include the planned performance levels established by the municipality. Performance measures will vary by asset category.*	Section 3 Levels of Service	• The Township is currently undertaking several initiatives to improve its available asset data. This will faciliate development of additional performance measures in future years and defining proposed levels of service.	Q4 2024
4.	A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period referred to in	*Lifecycle cost analysis for each asset category. Should be for at least a 10 year period.*	Section 4 Asset Management Strategy	•The work required for this would are related to the Asset Management Strategy and Financing Strategy sections of the AMP which are expected to be updated by July 2025.	Q2 2025
i.	An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:	*Identify the lifecycle activities that need to be performed to provide proposed service levels based on:*		•Section 4 of the AMP and Appendix D which outline the lifecycle activities associated to maintainin current levels of service would need to be updated to reflect the lifecycle activities needs to meet proposed levels of service (if any change is warranted).	Q2 2025
A.	The full lifecycle of the assets.	*The activities listed should be relevant to the useful life of the asset.*		•Consistent with the full lifecycle of assets consideration needs to be made for all lifecycle activities: non-infrastructure solutions, maintenance, renewal/rehabiltation, replacement, disposal and expansion.	Q2 2025
B.	The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.	*Discuss alternative options that can be undertaken to achieve proposed service levels and what options work best.*		•Section 4 of the AMP and Appendix D which outline the lifecycle activities associated to maintainin current levels of service would need to be updated to reflect the lifecycle activities needs to meet proposed levels of service (if any change is warranted).	Q2 2025
C.	The risks associated with the options referred to in sub-subparagraph B.	*Discuss the risks involved with the options to achieve proposed service levels. Risks include discussion of consequences of not undertaking such maintenance activities.*		•A discussion on the risks associated to not meeting the objectives of the AMP. Section 4 of the 2019 AMP discusses risks associated to not implementing the key outcomes of the plan. It is expected that the Township will continue to update the information to provide additional details over time.	Q2 2025
D.	The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.	*Discuss the lowest cost options that can be undertaken to achieve proposed service levels.*		•The costs identified in the 2019 Plan associated to the 40-year planning period are based on the Township's budget and associated lifecycle activities identifed through Appendix D. The Township would need to discuss why the activities are considered to be the lowest	Q2 2025

Appendix A - Table 2
Township of Perth East
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of Future AMP	Action Plan	
6. Asset management plans, proposed level of service				**Action Items**	**Timeline to Complete**
ii.	An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.	*Forecast of capital and operating costs associated to achieving the proposed levels of service. Forecast should be for at least a 10 year period.*	Section 5 Financing Strategy	•The financing strategy will need to be updated to reflect the full lifecycle costs associated to meeting the proposed levels of service for each lifecycle activity: non-infrastructure solutions, maintenance, renewal/rehabiltation, replacement, disposal and expansion.	Q2 2025
iii.	An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.	*Identify funding options and forecast funding for a minimum of 10 years. Funding is associated to the lifecycle cost forecast above.*		•The financing strategy will need to be updated to reflect the expected funding available to meet the proposed level of service.	Q2 2025
iv.	If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,	*Conditions if a funding shortfall is identified.*			
A.	an identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and	*Identify lifecycle activities that the municipality will undertake.*		•The financing strategy will need to be updated to reflect the full lifecycle costs associated to meeting the proposed levels of service for each lifecycle activity: non-infrastructure solutions, maintenance, renewal/rehabiltation, replacement, disposal and expansion.	Q2 2025
B.	if applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.	*Discussion on risk management activities associated to the funding shortfall.*		•A discussion on the risks associated to not meeting the objectives of the AMP. Section 4 of the 2019 AMP discusses risks associated to not implementing the key outcomes of the plan. It is expected that the Township will continue to update the information to provide additional details over time.	Q2 2025
5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity, set out in subparagraph 5 i of subsection 5 (2), informed the preparation of the lifecycle management and financial strategy referred to in paragraph 4 of this subsection.	*For municipalities with a population less than 25,000, explain how population and economic forecasts assumptions tie into the lifecycle management and financial strategy for the municipal asset management plan.*	Section 5 Financing Strategy	•The 2019 Plan includes a Future Demand section which discusses the Township's expected future development and costs associated to growth-identified through the DC study which are considered expansion activities. This section should be updated in the future.	Q2 2025

Appendix A - Table 2
Township of Perth East
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of Future AMP	Action Plan	
6. Asset management plans, proposed level of service				**Action Items**	**Timeline to Complete**
7.	An explanation of any other key assumptions underlying the plan that have not previously been explained.	*All assumptions in the AMP should be clearly laid out.*	Where Applicable	•Expand the documentation of assumptions in the AMP that are used to develop future updates (if applicable)	Q2 2025
(2)	With respect to an asset management plan prepared under section 5 on or before July 1, 2022, if the additional information required under this section is not included before July 1, 2024, the municipality shall, before including the additional information, update the current levels of service set out under paragraph 1 of subsection 5 (2) and the current performance measures set out under paragraph 2 of subsection 5 (2) based on data from the two most recent calendar years.	*If proposed level of service analysis is not included in the AMP by July 1, 2025 then the municipality will need to update the current level of service analysis with the most recent 2 years of data.*	Section 3 Levels of Service	•The current level of service is recommended to be updated with every update of the AMP. This said, it should be tracked on an ongoing basis to identify if there are any differences between the current level of service relative to the proposed level of service.	Q2 2025

Appendix A - Table 3
Township of Perth East
Asset Management Regulation (O.Reg. 588/17) and Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section of AMP	Action Plan	
7. Update of asset management plans				**Action Items**	**Timeline to Complete**
(1)	Every municipality shall review and update its asset management plan at least five years after the year in which the plan is completed under section 6 and at least every five years thereafter.	*The AMP should be updated every 5 years after July 1st 2024.*	Section 6 Making Asset Management Operational	•The Township expects to update the AMP at minimum every 5-years or as needed. Although it is noted that the information utilized through the AMP should be reviewed more frequently. •All future updates of the asset management plan should be consistent with O. Reg. 588/17.	Every 5-years after 2025
(2)	The updated asset management plan must comply with the requirements set out under paragraphs 1, 2 and 3 and subparagraphs 5 i and 6 i, ii, iii, iv and v of subsection 5 (2), subsection 5 (3) and paragraphs 1 to 7 of subsection 6 (1).	*Any updates to the AMP should comply with the requirements of O.Reg 588/17 as well.*			
8. Endorsement and approval required					
	Every asset management plan prepared under section 5 or 6, or updated under section 7, must be,		Section 6 Making Asset Management Operational	•The 2019 Plan was endorsed by the CAO and approved by Council. Council has not yet supported a financing strategy.	Complete
(a)	endorsed by the executive lead of the municipality; and	*The AMP must be endorsed by the executive lead of the municipality.*			
(b)	approved by a resolution passed by the municipal council.	*The AMP must be approved by Council.*			
9. Annual review of asset management planning progress					
(1)	Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed under section 6.	*Review the AMP annually before or on July 1st of each year starting after all requirements of O.Reg 588/17 have been met.*	Section 6 Making Asset Management Operational	• Monitor asset management plan progress on an annual basis. This can be done through the AMP Report Cards. • A discussion on barriers and gaps in progress on the AMP should be included. • Progress on the plan can be monitored by considering the points outlined in Section 6.	after 2025
(2) (a)	The annual review must address, the municipality's progress in implementing its asset management plan;	*The annual review should discuss the progress made in implementing the AMP.*			
(b)	any factors impeding the municipality's ability to implement its asset management plan; and	*The annual review should discuss any factors that act as barriers, gaps or challenges in implementing the AMP.*			
(c)	a strategy to address the factors described in clause (b).	*The annual review should discuss a strategy to address any factors that act as barriers, gaps or challenges in implementing the AMP.*			
10. Public Availability					
	Every municipality shall post its current strategic asset management policy and asset management plan on a website that is available to the public, and shall provide a copy of the policy and plan to any person who requests it.	*Post the asset management policy and plan on the municipality's website so that the public can access it. Provide a copy of the asset management policy and plan to any person who requests it.*	Section 6 Making Asset Management Operational	• The 2019 Plan and policy are posted on the Township website.	Complete