

**FINAL REPORT**

PREPARED BY HEMSON FOR THE TOWNSHIP OF PERTH SOUTH

# ASSET MANAGEMENT PLAN

June 30<sup>th</sup> 2022



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# EXECUTIVE SUMMARY

The following summarizes the findings of the Township of Perth South's Asset Management Plan (2022 Plan). The 2022 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. This 2022 Plan defines the current levels of service for all core and non-core assets in compliance with the asset management regulation.

The 2022 Plan incorporates all assets that the Township is responsible for to provide a comprehensive overview. All figures are in constant 2022 dollars and should be adjusted annually to account for the effects of inflation.

## A. STATE OF LOCAL INFRASTRUCTURE

- The Township's infrastructure has a total replacement value of \$224.1 million.
  - **Core Assets:** Roads and related represent \$193.7 million (86%) while bridges and culverts represent \$19.4 million (9%). The water system value is included in the analysis but represents only \$1.8 million.
  - **Non-Core Assets:** Buildings represents \$3.8 million (1%) of the total value; and the remaining assets represent \$5.4 million (2%).
- Overall, the Township's assets are considered to be in "Good" condition.
  - About \$155.5 million (69%) of the Township's assets are considered to be in "Good" or "Very Good" condition.
  - Conversely, about \$19.2 million (9%) of infrastructure is considered to be in "Poor" to "Very Poor" condition and \$49.4 million (22%) are considered to be in "Fair" condition. These assets in poor and very poor condition have largely been categorized based on their remaining useful life. Despite this rating, these assets continue to be in working 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*.
  - Overall the Township's asset base is considered to be in Good condition.

- The Township’s buildings, land improvements, roads and related are maintained in “Good” condition.
- The Township’s bridges and culverts are maintained in “Fair” condition.
- The Township’s water systems, machinery and equipment are maintained in “Poor” or “Very Poor” condition. The poor and very poor rating is a result of the data maturity as most of the conditions are assessed relative to the age of the asset.
- Specific level of service measures related to *O. Reg. 588/17* are discussed in Section 3.

### C. FINANCING STRATEGY

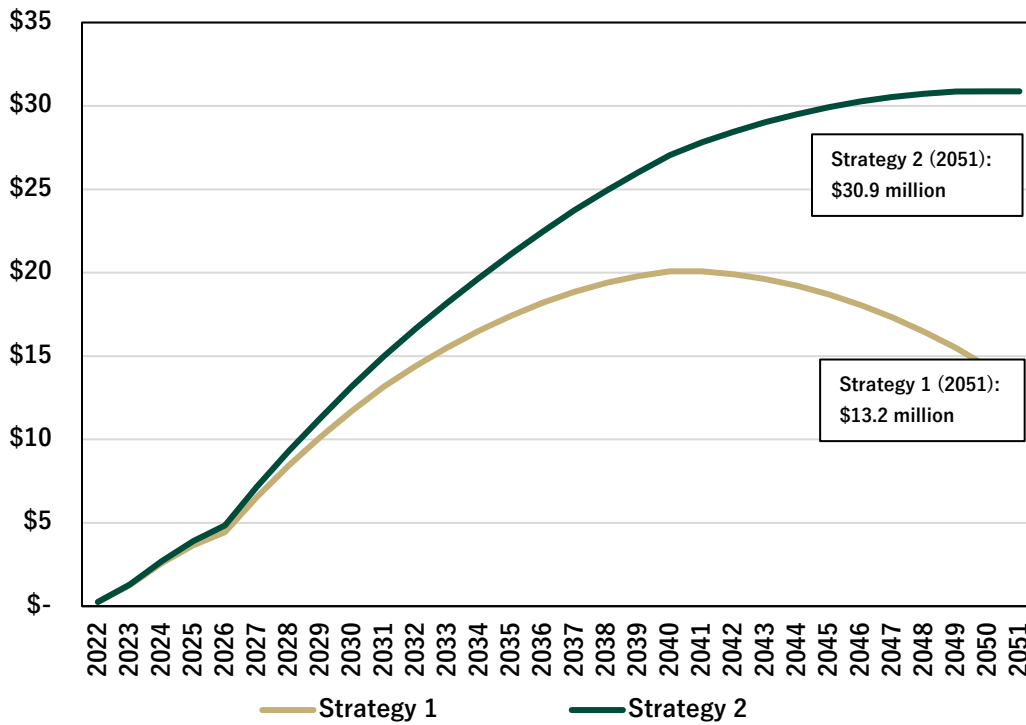
- The 30-year cumulative infrastructure deficit is estimated at about \$62.1 million based on maintaining current funding levels to 2051. It is unrealistic in the current fiscal context to expect the Township to fully address the infrastructure deficit in the short to medium term.
- Two financing strategies were developed to determine what capital contributions would be required to meet asset lifecycle needs over the 30-year period to 2051 while at the same time considering a more modest approach to capital funding from taxation.<sup>1</sup>

Summary of Financing Strategies (in 2022 \$)	
Financing Strategy	Tax Supported Strategy Parameters
<b>Strategy 1</b> <b>Close In-Year Funding Gap by 2041</b>	<ul style="list-style-type: none"> <li>▪ Increase annual capital contributions by approximately \$112,500 per year. For 2023, the increase would be in addition to the estimated 2022 budgeted funding identified.</li> <li>▪ The yearly revenue requirement is equivalent to 3.1% of the Township’s estimated 2022 tax levy (\$3.6 million).</li> </ul>
<b>Strategy 2</b> <b>Close In-Year Funding Gap by 2051</b>	<ul style="list-style-type: none"> <li>▪ Increase annual capital contributions by approximately \$71,800 per year. For 2023, the increase would be in addition to the estimated 2022 budgeted funding identified.</li> <li>▪ The yearly revenue requirement is equivalent to about 2.0% of the Township’s estimated 2022 tax levy (\$3.6 million).</li> </ul>

<sup>1</sup> 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.

- Of the two financing strategies identified for tax supported assets, strategy 2 poses the greatest risk to the Township as the infrastructure deficit continues to grow to 2051, and beyond. Strategy 1 demonstrates the infrastructure deficit being controlled over the planning period. Detailed tables of each strategy are provided in Appendix E; however, the tax supported cumulative infrastructure gaps are summarized in the graph below.

**Infrastructure Deficit Comparison (\$ millions)**



# 1. INTRODUCTION

The Township of Perth South's 2022 Asset Management Plan (2022 Plan) provides the Township with a tool to assist in capital financing decisions. The Plan covers all municipal assets: machinery & equipment, vehicles, buildings, land improvements, bridges & culverts, roads & related, and water systems. The 2022 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 2022 Plan are in constant 2022 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 2022 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. The model contains the information required to update the State of the Local Infrastructure Report Cards presented in Appendix B, which can be reproduced annually to help Council and the public understand the state of assets and overall funding levels.

## 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 Perth South. 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 2022 Plan is to build on existing practices by identifying how best to manage municipal infrastructure over the planning period to 2051. A strategy for maintaining infrastructure so that existing service levels are maintained is an important element. In this respect, the 2022 Plan has been prepared to be consistent with the Township’s Strategic Asset Management Policy. Ultimately, the 2022 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 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 Strategic Asset Management Policy in 2019.

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. Furthermore, in March 2021 the Province amended the regulation to extend the regulatory timelines by one year. 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	Summary of Requirements	Progress
July 1, 2019	<ul style="list-style-type: none"> <li>▪ Municipalities shall prepare their first strategic asset management policy.</li> <li>▪ Municipalities shall review, and if necessary, update the policy every 5 years.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Township Council approved the Strategic Asset Management Policy in 2019.</li> <li>▪ The next review is expected in 2024, although earlier reviews are encouraged whenever a change in policy directives occurs.</li> </ul>
July 1, 2022	<ul style="list-style-type: none"> <li>▪ Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets.</li> <li>▪ The current levels of service must be defined for all core assets.</li> </ul>	<ul style="list-style-type: none"> <li>▪ This 2022 Plan has incorporated the information from the 2018 Road Management Study and 2021 Bridges Inspection Report. This includes condition assessments.</li> <li>▪ Current level of service measures have been identified through this plan, with the Township expecting to develop other metrics on an ongoing basis.</li> <li>▪ It is expected that service level data continue to be monitored and refined over the long-term.</li> </ul>
July 1, 2024	<ul style="list-style-type: none"> <li>▪ Every municipality shall prepare an asset management plan in respect of all other municipal infrastructure assets.</li> <li>▪ The current levels of service must be defined for all other municipal assets</li> </ul>	<ul style="list-style-type: none"> <li>▪ This 2022 Plan has incorporated all non-core assets contained in the Township's TCA information. Some of these assets include condition assessments based on internal staff reviews.</li> <li>▪ Current level of service measures have been identified through this plan, with the Township expecting to develop other metrics on an ongoing basis.</li> </ul>
July 1, 2025	<ul style="list-style-type: none"> <li>▪ Municipalities must establish proposed levels of service for a minimum of 10 years.</li> <li>▪ A lifecycle management and financial strategy that covers a minimum of 10 years.</li> </ul>	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ The proposed levels of service will be established through consultation with Council and the public in a subsequent update of this 2022 Plan.</li> </ul>

## C. ASSET MANAGEMENT PLAN STRUCTURE

The 2022 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 2022 Plan.

<b>Table 2 Guide to the 2021 Asset Management Plan</b>	
<b>Section</b>	<b>Requirement</b>
Section 2 - State of Local Infrastructure	Summarizes the state of the Township's infrastructure with reference to infrastructure quantity and quality. Additional details are provided in Appendix B.
Section 3 - 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. Additional details are provided in Appendix C.
Section 4 - 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. Additional details are provided in Appendix D.
Section 5 - Financing Strategy	Establishes how asset management can be delivered in a financially sustainable way for tax supported services. Additional details are provided in Appendix E.
Section 6 – Continuous Improvements and Updates	Provides key recommendations on how to administer the 2022 Plan and keep it up to date.
Section 7 - Conclusions and Recommendations	Provides recommendations based on the analysis undertaken.

## 2. STATE OF 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 qualitative staff assessments where appropriate. Useful life assumptions for the assets considered under this 2022 Plan were acquired from the Township's tangible capital asset information. 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 for all Township assets considered in the 2022 Plan is estimated at \$224.1 million (represented in constant 2022 dollars). The largest share is related to roads and related assets accounts for about \$193.7 million (86%) of the total replacement cost. The next highest share is attributed to bridges and culverts at \$19.4 million (9%) and this is followed by buildings at \$3.8 million (2%).

The other asset categories in the Township's asset portfolio make up the remaining \$7.2 million (3%). These are made up of \$2.4 million (1%) for machinery and equipment, \$1.8 million (1%) for vehicles, \$1.8 million (1%) in water systems and \$1.2 million (1%) for land improvements.<sup>2</sup>

The replacement costs have been developed based on historical information maintained by staff in the asset inventory and recent benchmark costs from comparable municipalities where possible. Where information was not available, historical acquisition costs were inflated to current 2022 dollars at a rate of 2%. Detailed replacement cost for each asset category is provided in Appendix B.

The two basic methods to estimate replacement costs have been utilized for the purposes of this AMP:

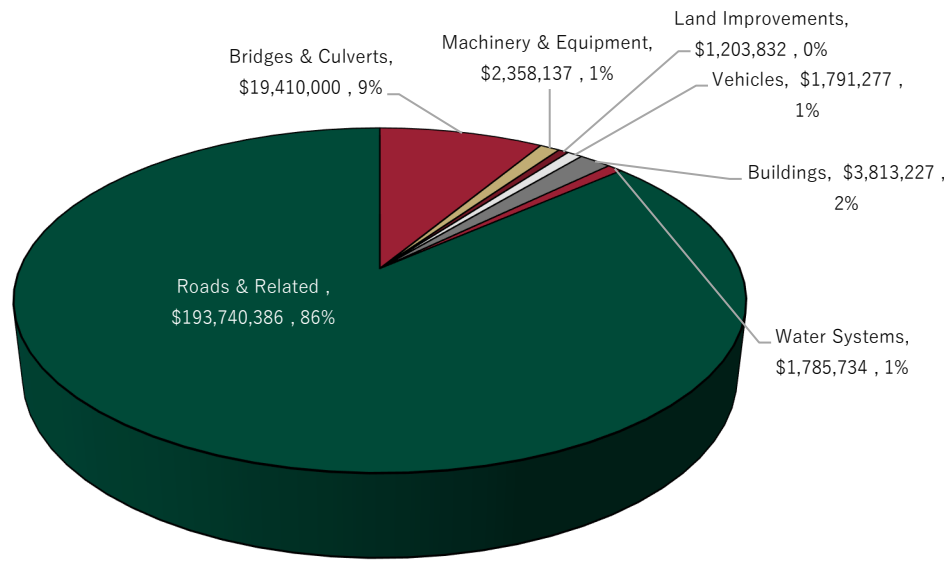
- Benchmark costs: Some replacement costs are based on benchmark engineering costs from comparable municipalities to the Township, in particular for roads, select buildings and bridges and culverts. Detailed unit costs are provided in Appendix B for these assets.

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<sup>2</sup> Percentages may not add to 100% due to rounding.

- Inflationary estimates: When assets cannot be estimated using benchmark costs, the Township uses historical costs, estimated useful life and inflationary effects to determine replacement value.

**Figure 1**  
**Summary of Assets by Total Replacement Value (2022 \$)**



## B. SUMMARY OF 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 \$224.1 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 overdue. The weighted average is largely driven by the relative age of roads & related and bridges & culverts, which have the highest replacement value but are considered overdue in terms of remaining useful life only. The majority of other assets have a weighted remaining useful life of 0 - 49 years. Please note, that although overdue by virtue of useful life, the asset conditions are a better indication of overall asset performance and are described below.

- **Weighted Condition:** Overall, the Township’s assets are determined to be in “Good” condition. Roads & related, land improvements and buildings are maintained in “Good” condition, while the remaining assets are considered to be in “Fair” or “Poor” condition. The poor condition assets generally use age as a proxy to determine condition. It is expected that as data is refined and more accurate condition assessments are undertaken (similar to roads, bridges and culverts), the overall condition would improve.

<b>Table 3 Summary State of Local Infrastructure</b>			
<b>Asset Type</b>	<b>Replacement Cost 2022</b>	<b>Weighted Remaining Useful Life</b>	<b>Weighted Condition</b>
Machinery & Equipment	\$2,358,137	Overdue	<b>Poor</b>
Vehicles	\$1,791,277	3	<b>Poor</b>
Buildings	\$3,813,227	49	<b>Good</b>
Land Improvements	\$1,203,832	39	<b>Good</b>
Bridges & Culverts	\$19,410,000	Overdue	<b>Fair</b>
Roads & Related	\$193,740,386	Overdue	<b>Good</b>
Water Systems	\$1,785,734	6	<b>Poor</b>
<b>Total</b>	<b>\$224,102,593</b>	<b>Overdue</b>	<b>Good</b>

### **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. This methodology provides a standard and easy to understand way of reporting on the condition of assets. Table 4 summarizes the assumed parameters.

Table 4 Condition Assessment Parameters	
Condition Rating	Definition
Very Good	<ul style="list-style-type: none"> <li>Well maintained, good condition, new or recently rehabilitated asset.</li> </ul>
Good	<ul style="list-style-type: none"> <li>Good condition, few elements exhibit existing deficiencies.</li> </ul>
Fair	<ul style="list-style-type: none"> <li>Some elements exhibit significant deficiencies. Asset requires attention.</li> </ul>
Poor	<ul style="list-style-type: none"> <li>A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.</li> </ul>
Very Poor	<ul style="list-style-type: none"> <li>Widespread signs of deterioration, some assets may be unusable. Service is affected.</li> </ul>

Assets were categorized in the 5-tier rating system on an asset by asset basis for the purposes of reporting in this 2022 AMP. Condition assessments for the roads & related and bridges & culverts infrastructure are based on the 2018 Roads Management Study and 2021 Bridge Inspection Report respectively. The 2018 RMS provided conditions based on probable costs whereas the 2021 Bridge Inspection Report provided conditions through BCI. These conditions were adapted to the 5-tier system. Furthermore, Hemson undertook a qualitative review of the condition of some assets known to be in better condition than what their age would suggest, with input from Township staff. This means that, wherever the condition of an asset was assumed, its condition was recorded to an improved condition. Finally, wherever information was not available on the condition of assets, the age of the asset was used as a proxy. Under this method, older assets are assumed to be in poorer condition. Additional details on the methodology used for condition assessments is provided in Appendix B. Moving forward, updating and identifying asset conditions should be part of regular inventory updates. There are several methods to identify asset condition. The ideal methods are outlined as follows:

1. Condition rating systems based on engineered metrics and professional standards. For example, pavement condition index (PCI) for roads or bridge condition index (BCI) for bridges/culverts. These metrics can then be translated into a 5-tier rating system for the purposes of reporting. The Township should continually update the conditions in the asset inventory to reflect changes in conditions, asset replacement or updates to Township engineering reports.
2. Estimates based on expert staff opinion. This approach is important where there is low confidence that age and useful life represents a particular set. This method has already been used as part of the 2022 AMP for select assets and should continue to be utilized and broadened for remaining assets.

3. Estimates based on age and the remaining useful life of the asset. This has been used for any assets where the Township was not able to provide a condition assessment based on existing knowledge or inspection. It is the intention that the Township move towards a condition assessment methodology using approach 1 and 2 as needed. With this said, this methodology can be utilized for lower valued assets that have a shorter useful life.

### 3. 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 Perth South 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 Township has therefore done a good job in assessing and maintaining levels of service given its existing tools.

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, bridges and culverts.

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 2022 Plan. The current level of service measures for each asset category are summarized in Table 5:

- **Weighted Condition:** the condition of the Township's assets is determined to be in "Good" condition overall. Roads and related, and buildings are maintained in "Good" condition, while the remaining assets are considered to be in "Fair" or "Poor" condition. 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 the short to medium term, if proper asset maintenance and rehabilitation is not achieved. 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 decline.

*O. Reg. 588/17* includes a prescribed set of level of service measures for Township services of roads, bridges and culverts. Table 5 includes these level of service measures as required in the regulation. Key findings on these levels of service are outlined:

- **Roads & Related:** Out of a 5 rating scale, the average condition recorded is 3.9 or “Good.” This is based on the street condition ratings provided through the in the 2018 RMS. - the weighted average street condition rating is 7.6 out of 10. The RMS and future updates should therefore continue to be utilized as a key tool for assessing the asset management needs associated to roads and a key input the Township AMP.
- **Bridges & Culverts:** The weighted average condition of the bridges and culverts is considered to be “Fair” with an average BCI of 66.2 – this is comprised of bridges in “Fair” condition (BCI = 65.2) and culverts in “Good” condition (BCI = 71.5). This information was obtained from the 2021 Bridge Inspection Report and consistent with the regulatory requirement to document for the purposes of the LOS analysis. Future updates of the Bridge Inspection Reports should continue to report on BCI for each structure. Furthermore, this report will continue to be used as a key tool to determine regular capital repair and replacement needs for bridges and culverts.
- **Water:** the Township of Perth South owns two separate drinking water systems – the St. Pauls Water System and the Sebringville Water System. These systems supply water to about 35 users and 33 users respectively. The number of users connected to the water system is nominal relative to the entire community as most properties are on a well based private water system. The Township contracts OCWA to maintain the system and following a review of the summary reports posted on the municipal website, no boil water advisories were identified and the systems achieved a high compliance rating (in the 95 percentile for both systems). Please note the Township does not own or operate any wastewater systems.
- **Stormwater:** the Township’s stormwater data is very limited and likely incomplete. In discussions with staff, it is assumed that the Township about 80-90% of properties in the Township are resilient to a 100-year storm with approximately 90% of the stormwater management system resilient to a 5-year storm. The Township would need to make this data validation a priority in the coming years as the impacts of this infrastructure failing to provide service can be far-reaching.

## **B. COSTS TO MAINTAIN CURRENT LEVELS OF SERVICE**

The Township undergoes reviews of the levels of service and services it provides on an annual basis through the budget process. Therefore, the Township considers the short-term implications of any changes in the level of service with consideration to the availability of funds and impacts to residents through its tax rates. The AMP considers the longer term costs of maintaining levels of service over a 30-year period. To do so the financing strategy considers two financing strategy scenarios which are discussed further in Section 5.

**Table 5**  
**Level of Service Performance Tracker**

Asset Category	Strategic Level of Service (Expected Customer Demands)	Community Level of Service (as per O. Reg. 588/17)	Performance Measures	Current LOS	Source
<b>Machinery &amp; Equipment</b>	To provide safe and operational equipment to meet day-to-day work requirements.	Includes mobile heavy machinery such as generators, mowers, and graders.	Average weighted condition assessment	Poor	AMP Model
			Percentage of assets at or above "Good" or "Very Good" condition	5%	AMP Model
			Percentage of assets beyond their useful life	30%	AMP Model
<b>Vehicles</b>	To maintain safe, reliable, and fully operational vehicles to respond to operational demands and emergencies.	Includes fleet vehicles used for public works and fire. Examples include dump trucks, pickups and fire trucks.	Average weighted condition assessment	Poor	AMP Model
			Percentage of assets at or above "Good" or "Very Good" condition	20%	AMP Model
			Percentage of assets beyond their useful life	25%	AMP Model
<b>Buildings</b>	To provide safe, functional and accessible public facilities for the community.	Includes all municipality owned buildings and facilities as well as minor buildings and structures. Buildings have been recorded by components wherever possible.	Average weighted condition assessment	Good	AMP Model
			Percentage of assets at or above "Good" or "Very Good" condition	69%	AMP Model
			Percentage of assets beyond their useful life	1%	AMP Model
<b>Land Improvements</b>	To provide safe, reliable and clean land improvement assets to support a healthy community.	Includes equipment mostly on playgrounds and sportsfields such as fencing, lighting, parking lots and underground water tanks.	Average weighted condition assessment	Good	AMP Model
			Percentage of assets at or above "Good" or "Very Good" condition	63%	AMP Model
			Percentage of assets beyond their useful life	15%	AMP Model
<b>Bridges &amp; Culverts</b>	To provide safe and reliable bridges and culverts for Township residents.	The Township provided a Bridges Inspection Report from 2021 which includes an inventory of bridges and culverts in the Township as well as their respective BCI ratings. This report includes proper mapping and details of the municipal Network.	Average weighted condition assessment	Fair	AMP Model
			Percentage of assets at or above "Good" or "Very Good" condition	40%	AMP Model
			Percentage of assets beyond their useful life	71%	AMP Model
			Percentage of bridges in the municipality with loading or dimensional restrictions ( <i>O. Reg. 588/17</i> ).	3%	2021 Bridges Inspection Report
			1. For bridges in the municipality, the average bridge condition index value ( <i>O. Reg. 588/17</i> ).	Fair	2021 Bridges Inspection Report
			2. For structural culverts in the municipality, the average bridge condition index value ( <i>O. Reg. 588/17</i> ).	Good	2021 Bridges Inspection Report

Table 5 Level of Service Performance Tracker						
Asset Category	Strategic Level of Service (Expected Customer Demands)	Community Level of Service (as per O. Reg. 588/17)	Performance Measures	Current LOS	Source	
<b>Roads &amp; Related</b>	To meet reporting requirements of <i>O. Reg. 588/17</i>	The Township completed a Road Management Study in 2018. The Township maintains detailed maps of the road network and connectivity through this standalone study. The maps describe the condition, connectivity of roads, roads maintained by the Township.	Average weighted condition assessment	Good	AMP Model	
			Percentage of assets at or above "Good" or "Very Good" condition	74%	AMP Model	
			Percentage of assets beyond their useful life	100%	AMP Model	
			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 ( <i>O. Reg. 588/17</i> ).	303.6	AMP Model - 2018 Road Management Plan	
			Arterial	4%	AMP Model - 2018 Road Management Plan	
			Local	74%	AMP Model - 2018 Road Management Plan	
			Gravel	76%	AMP Model - 2018 Road Management Plan	
			1. For paved roads in the municipality, the average pavement condition index value ( <i>O. Reg. 588/17</i> ).*	7.7	AMP Model - 2018 Road Management Plan	
			2. For unpaved roads in the municipality, the average surface condition ( <i>O. Reg. 588/17</i> ).*	6.4	AMP Model - 2018 Road Management Plan	
<b>Water Systems</b>	To meet reporting requirements of <i>O. Reg. 588/17</i>	Both water supply and treatment facilities are owned by the Township and operated by OCWA. Perth South and OCWA are responsible for all monitoring, quality assurance, quality control, reporting, inspecting, distribution and maintenance of these systems.	Average weighted condition assessment	Poor	AMP Model	
			Percentage of assets at or above "Good" or "Very Good" condition	10%	AMP Model	
			Percentage of assets beyond their useful life	10%	AMP Model	
			1. Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal	1. Percentage of properties connected to the municipal water system.	5%	Water Financial Plan, 2021 Census, review of municipal documents
			2. Description, which may include maps, of the user groups or areas of the municipality that have fire flow.	2. Percentage of properties where fire flow is available	100% of serviced area	Water Financial Plan, 2021 Census, review of municipal documents
			Description of boil water advisories and service interruptions.	1. The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system.	0	2020 FIR and review of annual reports
	2. The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.	0	2020 FIR and review of annual reports			
<b>Stormwater</b>	To meet reporting requirements of <i>O. Reg. 588/17</i>	Stormwater facilities are operated by the Township of Perth South. Perth South is responsible for all monitoring, quality assurance, quality control, reporting, inspecting, distribution and maintenance of these systems.	Average weighted condition assessment	n/a	n/a	
			Percentage of assets at or above "Good" or "Very Good" condition	n/a	n/a	
			Percentage of assets beyond their useful life	n/a	n/a	
			1. Percentage of properties in municipality resilient to a 100-year storm ( <i>O. Reg. 588/17</i> ).	Approx. 80-90%	Assumption based on discussions with Township staff & review of assets mapping	
			2. Percentage of properties in municipality resilient to a 5-year storm ( <i>O. Reg. 588/17</i> ).	Approx. 80-90%	Assumption based on discussions with Township staff & review of assets mapping	

\*Condition Value Index used in lieu of PCI.

Note: road LOS - assumed at 2 lane kilometers and 393 square km

## 4. 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 assets to maintain current levels of service.

### A. OVERVIEW OF FULL LIFECYCLE COST MODEL

As part of the Asset Management Plan, the Township, along with Hemson, have identified the total full lifecycle costs of assets that correspond to the requirements of the regulation. This would entail a cost estimation throughout the asset's life including planning, design, construction, acquisition, operation, maintenance, renewal and disposal. In addition, the analysis also takes into consideration the inclusion of expansion related infrastructure into the lifecycle management strategy. This approach ensures that the additional lifecycle costs associated with newly constructed/acquired assets are accounted for in the long-term forecast.

A “lifecycle management approach” in asset management planning not only includes estimating future lifecycle costs, but also embeds the process of monitoring how the asset performs over its life while providing affordable services.

These lifecycle activities can be segmented into six (6) categories: non-infrastructure solutions, operations/maintenance, renewal/rehabilitation, replacement, disposal, and expansion activities. While this AMP looks to address the various cost elements, it is important to recognize that as the asset management maturity level of the Township increases, the costs associated with each lifecycle activity will strengthen and improve the expenditure outlook. The Table 6 provides a description of each lifecycle category and the specific approach used to forecast expenditures in this AMP.

Table 6 Overview of the Full Lifecycle Cost Activities and AMP Approach		
Category	Description	AMP Approach
Non- infrastructure Solutions	<ul style="list-style-type: none"> <li>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.).</li> </ul>	<ul style="list-style-type: none"> <li>Estimated annual provision of \$75,000 has been included.</li> </ul>
Maintenance Activities	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Based on a review of recent budgets by service area.</li> <li>Annual maintenance activities of \$1.7 million per annum for tax supported assets. Of which, \$518,600 is related to additional operations and maintenance needs from the recommendation outlined in the 2018 RMS.</li> <li>Excludes regular costs of municipal operations (i.e. staff salary for programming) and only includes identifiable asset maintenance costs from the Township budget.</li> <li>These figures are based on the 2021 budget and is deemed appropriate to use in the forecast moving forward as it generally represents similar costs compared to previous year's budgets.</li> </ul>

Table 6 Overview of the Full Lifecycle Cost Activities and AMP Approach		
Category	Description	AMP Approach
Renewal/ Rehabilitation Activities	<ul style="list-style-type: none"> <li>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 its designed useful life.</li> </ul>	<ul style="list-style-type: none"> <li>Renewal expenditures are identified for roads, bridges and culverts based on the Township's engineering reports over the next 5 to 10 year period</li> <li>For roads, future renewal expenditures are based on the average probable cost renewal need per km (\$138,300) identified in the RMS and applied to all other roads which no cost was identified.</li> <li>A similar approach to roads was undertaken for bridges and culverts</li> </ul>
Replacement Activities	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporating the average annual investment required to replace assets when they reach the end of their useful life (age/condition replacement schedule).</li> <li>This method is applied to all assets, except for roads, bridges and culverts which is based on the rehabilitation assumptions above.</li> </ul>
Disposal Activities	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Analysis assumes any costs associated with "disposal" is included for in the replacement value and captured in the capital replacement requirements.</li> </ul>

Table 6 Overview of the Full Lifecycle Cost Activities and AMP Approach		
Category	Description	AMP Approach
Expansion Activities	<ul style="list-style-type: none"> <li>Planned activities required to extend or expand municipal services to accommodate the demands of growth.</li> </ul>	<ul style="list-style-type: none"> <li>Assumed Township expansion activities associated to population growth, this equates to an average additional yearly expenditure of about \$50,000 (first round capital acquisition).</li> <li>The asset management related expenses associated to future replacement and ongoing maintenance of net new infrastructure is included for in the calculation of the funding need.</li> </ul>

It should be noted that the Township undertakes all the activities described above, however, the Township’s budget generally accounts for these expenditures in different categories. Specific asset management strategies based on existing practices in the Township are documented in Appendix D. It is recommended that the Township continue to track the asset management activities required to continue to maintain levels of service.

## 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 Poor or Very Poor condition. The evaluation rating is then linked to the condition assessment parameter discussed in Section 2. The formula to determine asset risk is as follows:

$$(\text{Likelihood of Failure}) \times (\text{Consequence of Failure}) = (\text{Risk Rating})$$

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

- Likelihood of Failure:** is directly linked to the condition of an asset. For example, an asset in Very Poor condition would have the likelihood of asset failure in the short-term be high. 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 Good or Very Good condition. Table 7 below outlines the definition of probability of failure used for the Township’s assets.

Table 7 Likelihood of Failure		
Condition	Likelihood 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 were assigned a consequence of failure based on an assessment of the relative importance of the asset. Table 8 below outlines the definition of consequence of failure used for the Township’s assets. The consequence of failure, rated on a 1-5 scale, was weighted relative to each category in Table 8 depending on how impactful the consequence may be to the Township.

Table 8 Consequence of Failure	
Consequence of Failure	Description
1 - Insignificant	No impact to operations.
2 - Minor	Minor impact to operations, all major operations can continue to function.
3 - Moderate	Moderate impact to operations some critical operations may need to stop functioning temporarily.
4 - Major	Major operations seize and some damage control necessary.
5 - Significant	All operations seize to function and major damage control is necessary.

*Note: The consequence of failure was developed based on the description of assets.*

- 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 9 below provides a summary of the risk matrix.

Table 9 Risk Matrix							
Evaluation Rating		Consequence of Failure					Color Code
		1	2	3	4	5	
Likelihood 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 10 presents the findings of the risk analysis and illustrates the Township’s assets rated from low to high risk. Most of the Township’s assets continue to have relatively low to moderate risk, and indication of good maintenance practices overall. The Township’s water system is calculated at a high risk, largely based on the importance of the infrastructure if it were to fail and the condition of the assets and their age.

The risk of each asset and asset category has been determined with reference to the parameters outlined in Table 10. 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 do not further deteriorate posing greater risk to the corporation. Please note that roads& related, bridges and culverts have been excluded from the risk analysis in Table 10 as the infrastructure needs and timing of repair and replacement has been informed based on detailed engineered assessments.

- The 2018 Road Management Study identifies the recommended works for each road segment on a case-by-case basis considering factors such as surface type and average annual daily traffic. These recommendations have been considered through the financing strategy in Section 5.
- The Township completed the 2021 Bridge Inspection Report which includes recommended works and costs for bridges and culverts over a 10-year period. These recommendations have been considered through the financing strategy in Section 5.

Table 10 Summary Risk Assessment			
Asset Category	Replacement Cost 2022	Risk (Weighted Average)	
Machinery & Equipment	\$2,358,137	Moderate	9
Vehicles	\$1,791,277	Moderate	9
Buildings	\$3,813,227	Low	6
Land Improvements	\$1,203,882	Very Low	2
Water Systems	\$1,785,734	High	13
<b>Total</b>	<b>\$10,952,207</b>	<b>Moderate</b>	<b>8</b>
Bridges & Culverts	\$19,410,000	Based on 2021 Bridge Inspection Report <sup>(1)</sup>	
Roads & Related	\$193,740,386	Based on 2018 RMS <sup>(1)</sup>	

Note 1: Immediate 10-year needs based on study.

It is important to recognize the risk associated with the Township's ability to deliver the AMP while recognizing that any deviation may affect the overall ability to deliver service. Table 11 below provides a summary of the identified risks, potential impacts and mitigating actions associated with the asset management program. Moving forward, the Township may continue to update the information in Table 11 to better reflect ongoing changes to policy or practice.

Table 11 Risk Associated to the Plan		
Identified Risk	Potential Impact	Mitigating Action
<b>Failed Infrastructure</b>	<ul style="list-style-type: none"> <li>▪ Delivery of service</li> <li>▪ Asset and equipment damage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Repair and rehabilitate as necessary</li> <li>▪ Increase investment</li> <li>▪ Non-infrastructure solutions</li> </ul>
<b>Inadequate funding</b>	<ul style="list-style-type: none"> <li>▪ Delivery of service</li> <li>▪ Increased risk of failure</li> <li>▪ Shorten asset life</li> <li>▪ Defer funding to future generations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reductions of service</li> <li>▪ Find additional revenue sources</li> </ul>
<b>Regulatory Requirements</b>	<ul style="list-style-type: none"> <li>▪ Non-compliance</li> <li>▪ Mandatory investments</li> <li>▪ Increased costs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Find additional revenue sources</li> <li>▪ Lobby actions</li> </ul>
<b>Plan is not followed</b>	<ul style="list-style-type: none"> <li>▪ Shorten asset life</li> <li>▪ Inefficient investments</li> <li>▪ Prioritization process failure</li> <li>▪ Failure to deliver service</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitor and review</li> <li>▪ Create asset management network</li> <li>▪ Implement processes</li> </ul>

## C. CLIMATE CHANGE INTEGRATION

The management of a municipal assets plays a fundamental role in the delivery of services, which depends on the infrastructure available to deliver the service. Corporate asset management in municipalities largely relates to the management of existing assets to keep them in a state of good repair while planning for future repair and/or replacement of their assets across all service areas. Impacts of climate change are already being experienced around the world, including Canada. It is important for municipalities to begin considering and planning for future climates to ensure the delivery of services, especially as it pertains to the maintenance of key municipal infrastructure. As per *Ontario Regulation 588/17* s3(5), municipalities must include a commitment in their asset management planning to address the vulnerabilities of climate change with respect to operations, levels of service and lifecycle management. There must also be consideration for anticipated costs, mitigation and adaptation approaches and disaster planning to meet all regulatory requirements in Ontario municipal asset management. In response to the regulatory requirements, Township of Perth South adopted its first Strategic Asset Management Policy and committed to integrating climate change as part of its asset management planning.

Expected climate change impacts include hotter, drier summers, warmer winters with increased precipitation, increased frequency and intensity of storms and extreme winds. These changes in climate will likely lead to increased risks associated with flooding, heatwaves, risk of infrastructure damage, health and safety of residents, the alteration or loss of habitats, etc.

Many of these risks are associated with municipal assets and may impact the levels of service. Climate change mitigation and adaptation planning is an important step for municipalities to take to begin managing risks associated with climate change. Therefore, the Township is taking steps towards the integration of climate change considerations into their asset management planning framework moving forward.

Table 12 provides a risk summary, for information purposes, to help further propel climate change integration with asset management, although, recognizing the full utilization would still need to be applied and understood at the staff level. In asset management terms, this table shows the “big picture” effects that climate change hazards may have on the levels of service for various assets. The specific climate change impacts on levels of service are to be developed further as part of future updates to the asset management plan.

Through further understanding of the anticipated extent of climate change events, climate change adaptation projects at the Township will provide additional parameters as to the

likelihood and severity of events. At its most simplistic form, Table 12 provides a range from a “rare” occurrence to “almost certain”. A rare occurrence could be correlated to falling into the tenth percentile of probability, with an almost certain occurrence falling into the ninetieth percentile of probability.

<b>Table 12</b>			
<b>Framework for Climate Change Integration with Risk</b>			
<b>Hazards/ Risks</b>	<b>Likelihood</b>	<b>Consequence</b>	
		<b>Assets Affected</b>	<b>Possible Critical Infrastructure Failure/Service Impacts</b>
Freezing Rain/Ice Storm	Rare to almost certain	<ul style="list-style-type: none"> <li>• Roads &amp; Related</li> <li>• Buildings</li> <li>• Bridges &amp; Culverts</li> <li>• Land Improvements</li> <li>• Water system</li> <li>• Machinery, equipment and vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced road and bridge conditions or damage that may result in potential closures</li> <li>• Potential for increased flooding</li> <li>• Traffic delays due to poor road and bridge conditions</li> </ul>
Extreme Temperatures – Cold Wave	Rare to almost certain	<ul style="list-style-type: none"> <li>• Roads &amp; Related</li> <li>• Buildings</li> <li>• Bridges &amp; Culverts</li> <li>• Land Improvements</li> <li>• Water system</li> </ul>	<ul style="list-style-type: none"> <li>• Closures of outdoor amenities due to extreme weather conditions</li> <li>• Increased strain on indoor heating systems leading to reduced service life and functionality of components and systems</li> </ul>
Intense Rain	Rare to almost certain	<ul style="list-style-type: none"> <li>• Roads &amp; Related</li> <li>• Buildings</li> <li>• Bridges &amp; Culverts</li> <li>• Land Improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding of bridges and roadways leading to closures or property damage</li> <li>• Disruptions to service due to flooding of roads, leading to decreased levels of service</li> </ul>

Table 12 Framework for Climate Change Integration with Risk			
Hazards/ Risks	Likelihood	Consequence	
		Assets Affected	Possible Critical Infrastructure Failure/Service Impacts
Flood – Urban	Rare to almost certain	<ul style="list-style-type: none"> <li>• Roads &amp; Related</li> <li>• Buildings</li> <li>• Bridges &amp; Culverts</li> <li>• Land Improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding of bridges and roadways leading to closures</li> <li>• Disruptions to service due to flooding of roads, leading to decreased levels of service</li> <li>• Flooding of parks and amenities leading to closures and reduced levels of service</li> </ul>
Extreme Temperatures – Heat Wave	Rare to almost certain	<ul style="list-style-type: none"> <li>• Roads &amp; Related</li> <li>• Buildings</li> <li>• Bridges &amp; Culverts</li> <li>• Land Improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Potential closure/reduce used of outdoor amenities due to high temperatures (reduced levels of service). Lost habitats leading to reduced environmental diversity.</li> <li>• Increased strain on indoor cooling systems leading to reduced service life and functionality of components</li> </ul>
Windstorm/ Tornado	Rare to almost certain	<ul style="list-style-type: none"> <li>• Roads &amp; Related</li> <li>• Buildings</li> <li>• Bridges &amp; Culverts</li> <li>• Land Improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Closure of outdoor assets due to potential hazards for residents</li> <li>• Increased strain on facility assets leading to potential damages and reduced service life and functionality of components and systems</li> </ul>

Source: <https://www.assetmanagementbc.ca/wp-content/uploads/Climate-Change-and-Asset-Management.pdf>

## 5. FINANCING STRATEGY

The Township has continually contributed to capital for tax funded services. In order to continue to maintain levels of service, the Township will need to monitor funding levels over the next few years. This section of the 2022 Plan is intended to help the Township build on the existing asset management practices already in place. The financing strategies presented provide the Township with feasible options to increase capital funding in a sustainable manner to maintain service levels. Note that all figures presented in this section are expressed in constant 2022 dollars.

### 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 has aimed to increase its operational and capital budget expenditures to maintain assets and fund capital asset repair and replacement over the past few years, although, the COVID-19 pandemic has somewhat strained resources and limited the ability to increase the amount of funding dedicated to asset maintenance.

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. Using the budget as the basis, the analysis used in the financing strategy assumes about \$1.2 million annually is related to asset maintenance funded through the tax base<sup>3</sup>. The financing strategy also includes "top up" costs (about \$518,600) for recommended operation and maintenance activities outlined in the 2018 RMS. It is recommended that these costs would need to be monitored relative to the road service levels being tracked to quantify if increasing the amount allocated to O&M improves the level of service for roads.

As the Township matures its asset management program, it is expected that other service level adjustments and costs associated with achieving desired levels of services will be incorporated in the model. At this stage, no additional provisions for a level of service adjustments to account for requirements of *O. Reg. 588/17* to define and implement

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<sup>3</sup> Based on 2021 detailed budget and adjusted for inflation at 2% (for 2022).

proposed levels of service has been included in the analysis – this will be further addressed in the next plan to coincide with the regulatory timeline.

## B. CAPITAL REPLACEMENT SCHEDULE

The 2022 Plan includes an estimate of the timing for replacement of all assets. Using the risk assessment discussed in Section 4, 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. The timing is based on a percentage of the useful life of the asset. Table 13 below provides a summary of the risk thresholds used to calculate timing of replacement needs.

Table 13 Risk Thresholds for Asset Life Extension					
Percentage of Useful Life					Color Code
100%	80%	60%	40%	20%	Very Low Risk
80%	65%	50%	30%	16%	Low Risk
60%	50%	35%	25%	10%	Moderate Risk
40%	30%	25%	15%	2%	High Risk
20%	16%	10%	2%	0%	Very High Risk

*Note: Methodology used for all asset categories except roads, bridges and culverts as recommended works and associated costs from engineering reports have been prioritized.*

Figure 3 sets out the schedule of repair and replacement of assets, to maintain current levels of service for the assets considered in the 2022 Plan. Over the 30-year period, to 2051, the repair and replacement program (all assets except roads, bridge and culverts) totals about \$17.6 million. The average yearly expenditure related to these assets amount to approximately \$585,800 per year.

A breakdown of the replacement needs by category is provided below:

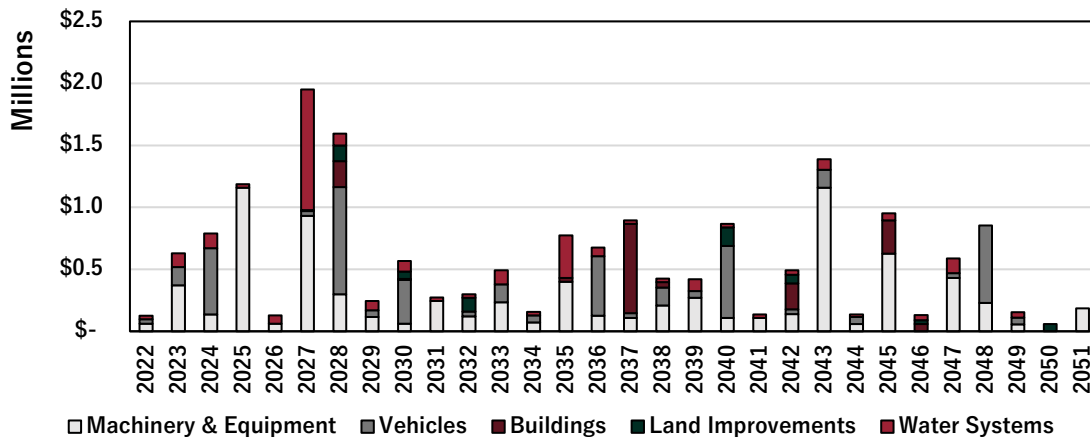
- **Machinery & Equipment:** The 5-year period (2022-2026) identified a replacement cost of \$1.8 million. This includes replacement of approximately several equipment assets, including graders, software, computer accessories, and others.
- **Vehicles:** The 5-year period (2022-2026) has identified replacement of \$719,900 comprised of 8 different vehicle assets.
- **Buildings:** The 5-year period (2022-2026) does not include any works related to asset

replacement. As many of the buildings are relatively new, the risk based replacement schedule for this asset category does not identify any required work until 2027.

- **Land Improvements:** The 5-year period (2022-2026) does not identify any land improvement assets for replacement.
- **Water Systems:** Over the next 5-years (2022-2026) the replacement works related to water systems amount to about \$355,900. This includes replacements of various generators, tanks, pumps, and other assets.

**Figure 2**  
**Replacement Schedule**

(Risk Based, All Assets excluding Roads, Bridges and Culverts)



Specifically for roads, bridges and culverts, the engineered assessments were used to form the need analysis for the immediate 10-year period while a more average based repair and rehabilitation need schedule was prepared for the longer-term which corresponds to the probable costs outlined in the 2018 Roads Management Study supplemented with a similar level of expenditure assumed over a longer-term planning period. The average level of expenditure included in the analysis is \$2.2 million per annum. With the completion of a new Roads Management Study, it is expected that this figure will be updated to correspond to the new datasets. For bridges and culverts, the recommended works outlined in the inspection reports amounted to \$3.1 million over ten years. Table 14 summarizes the 10-year needs as outlined in both the 2018 Roads Management and 2021 Bridge Inspection Report. The average level of expenditure included in the analysis for bridges and culverts is \$434,300 per annum.

Importantly, the average level of expenditure is greater than the 10-year requirements outlined in the engineering reports (and summarized in table 14) as the analysis

assumes savings for works occurring outside of the 10-year period while completing those needs in this horizon.

<b>Table 14</b>	
<b>10-Year Needs: Roads, Bridges and Culverts</b>	
<b>Roads</b>	\$7,155,400
<b>Bridges &amp; Culverts</b>	\$3,120,000

### **C. SUMMARY OF THE CUMULATIVE FULL LIFECYCLE COSTS**

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 municipal 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 or identified year of works and the anticipated cost of replacement in constant 2022 dollars. The aggregate of all individual provisions form an annual contribution to reserves for the purpose of asset repair and replacement.

Over the next thirty years, the analysis indicates a spending need of about \$152.2 million. Figure 3 summarizes the cumulative 30-year investment needs across the tax supported service areas for the various lifecycle activities identified in Section 4. Of the total life cycle cost, most costs can be attributed to saving for the renewal and replacement of existing infrastructure making up about \$97.8 million (64%). Further to this, about \$35.2 million (23%) of the total is related to operating and maintenance (O&M) costs associated to the existing asset base and a further \$15.6 million (10%) is related to “top-up” operating and maintenance costs to achieve the recommendations outlined in the Roads Management Study. The remaining \$2.2 million and \$1.5 million is related to non-infrastructure solutions and future asset management provisions associated to future infrastructure expansion respectively. Note, aside from the identified top-up for roads O&M costs, no provisions for a level of service adjustments to account for requirements of *O. Reg. 588/17* to define and implement desired levels of service has been included in the analysis – this will be further addressed in the next plan to coincide with the regulatory deadline.

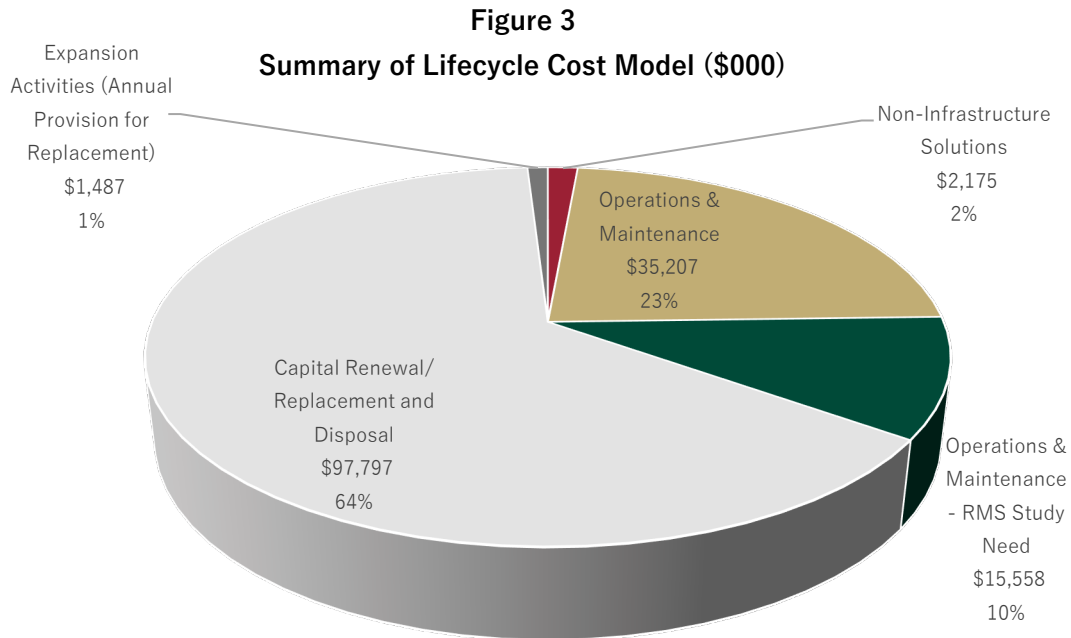
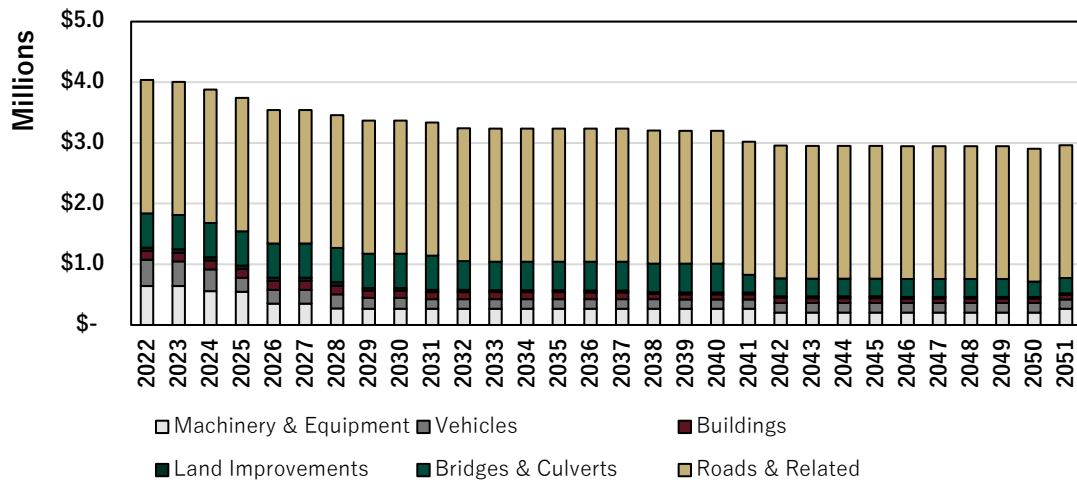


Figure 4 below provides an overview of the annual contributions related to the capital renewal and replacement requirements on an annualized basis over the planning period for the tax supported infrastructure. Figure 4 shows the funds that would have to be contributed annually to reserves to maintain current levels of service for tax supported assets included in this 2022 Plan to 2051. Figure 4 demonstrates that:

- Average annual contributions over the 30-year period would have to be in the order of \$3.1 million per year, with road works, machinery & equipment, and bridges & culverts as the most significant portion.
- The level of investment in Township assets would need to increase from current funding levels. It should be noted that of the 2022 capital funding sources for this set of assets, tax supported revenues are the most secure form of recurring revenue for the Township as other funding sources could be subject to review by the Province and cannot be relied up as a secure funding source for financial planning.

**Figure 4  
Provision Schedule (Risk Based, Tax Services)**



*Note: Includes the results of the engineering assessments*

## D. SUMMARY OF REVENUES

The municipal revenue sources available to address the identified full lifecycle cost requirements outlined above are limited. Generally, the type of capital project aligns to its funding source. In this regard, growth related projects receive most of their funding through development charges in communities that impose DCs and replacement projects are predominantly funded through tax-based contributions for tax supported assets. In Perth South, as DCs are currently not imposed, any new assets would be emplaced using taxation.

When assets require rehabilitation or are due for replacement, the source of funds are essentially limited to reserves or contributions from the operating budget regardless of how the initial first round capital asset was funded. Table 15 provides a summary of the revenues assumed in this analysis for tax supported assets.

**Table 15**  
**Financing Strategy Key Assumptions**

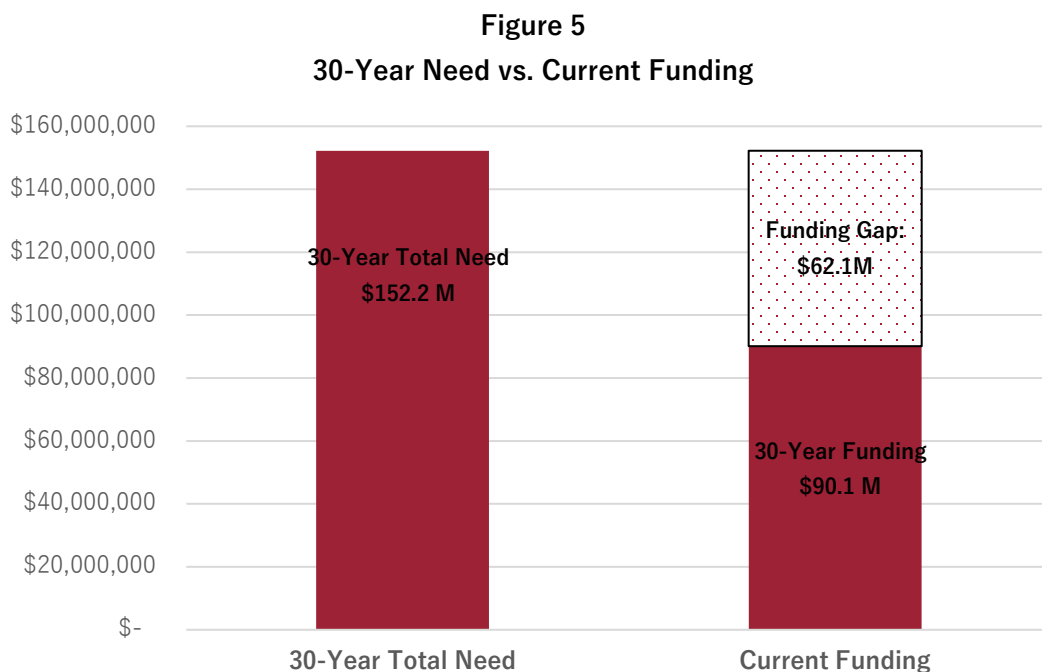
Category	Assumptions
Operations and Maintenance	<ul style="list-style-type: none"> <li>▪ It is assumed that operations and maintenance costs associated to existing assets will remain at similar levels to today (no level of service increase) and will be funded from the tax base.</li> <li>▪ Future operations and maintenance costs associated to expansion related assets will be funded from the tax base.</li> <li>▪ Importantly, the “top-up” O&amp;M contribution included to supplement the existing regular road expenses to match the 2018 Roads Management Plan is not funded and additional revenues would be needed to offset this cost.</li> </ul>
Capital from Taxation (including transfers to reserves)	<ul style="list-style-type: none"> <li>▪ Existing 2022 tax supported capital funding of approximately \$1.4 million is assumed to be the starting point and base case for increasing annual capital contributions.               <ul style="list-style-type: none"> <li>○ In addition to the \$1.1 million of tax supported spending on capital, the total \$1.4 million also includes the \$332,300 contribution to reserves (from operating) for vehicle replacement included in the budget. Both figures were obtained from the 2022 budget.</li> </ul> </li> </ul>
One Time Capital Levy	<ul style="list-style-type: none"> <li>▪ A surplus was carried forward from previous years in which Council opted to utilize these funds to road works. This one time surplus (\$676,713) is included in the revenues for 2022. The staff report outlining the use of these funds is detailed in the report to council dated March 31<sup>st</sup> 2022 with the subject line: Additional Surface Asphalt Paving 2022.</li> </ul>
Debt (funded from taxes)	<ul style="list-style-type: none"> <li>▪ No debt assumptions are included in this analysis.</li> </ul>
Gas Tax	<ul style="list-style-type: none"> <li>▪ Funding for 2022 is approximately \$120,800 annually. Post 2022 gas tax funding is assumed based on AMO allocations to 2023 and remain constant afterwards.</li> </ul>
Other Grants	<ul style="list-style-type: none"> <li>▪ One-time government grants of approximately \$664,400 and \$583,300 are assumed for 2022 and 2023 respectively. No further grant funding is included in the analysis beyond 2023.</li> </ul>
Existing Reserves	<ul style="list-style-type: none"> <li>▪ Existing capital reserves amounting to approximately \$7.2 million have been used against the total costs over the first 5-years of the plan.</li> </ul>
Expansion Activities	<ul style="list-style-type: none"> <li>▪ Assumed Township expansion activities of \$1.45 million are included in the analysis.</li> </ul>

Table 15 Financing Strategy Key Assumptions	
Category	Assumptions
	<ul style="list-style-type: none"> <li>The asset management related expenses associated to future replacement and ongoing maintenance of net new infrastructure is included for in the calculation of the funding need and are expected to be funded through taxes.</li> </ul>
Inflation	<ul style="list-style-type: none"> <li>Financing strategy is expressed in constant 2022 dollars.</li> </ul>

## E. INFRASTRUCTURE DEFICIT & FINANCING STRATEGIES

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 full life-cycle costs related to capital, identified in Part C: Capital Provision Schedule, be delayed.

The 30-year infrastructure deficit shown in Figure 5 represents the difference between the required lifecycle costs and the current contributions to capital for assets in this 2022 Plan. The graph indicates that existing funding levels are insufficient to cover projected costs over the planning period, as a result, a notional gap of \$62.1 million exists over the 30-year period. 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.

If the Township were to implement a funding strategy to eliminate the infrastructure deficit by 2051, the Township would be required to increase capital contributions on an annual basis by an average of about \$142,800 for 30 years (plus annual inflation). For 2023, the increase would be in addition to the \$1.4 million tax supported capital funding, \$676,700 in one time capital levies, \$120,800 in Gas Tax funds, \$664,400 in one time grants, and existing tax supported reserve funds on hand. The yearly revenue requirement is equivalent to 3.9% of the Township's estimated 2022 tax levy revenues of about \$3.6 million. A detailed table of this strategy can be found in Appendix D – Table 1.

Eliminating the infrastructure deficit by 2051 is an aggressive objective and is an initiative the Township may not want 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 over the short-term;
- 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 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, two financing strategies were developed to illustrate a more rational capital contribution level to meet the full lifecycle cost needs for tax supported assets as outlined in Figure 6. The financing strategies illustrate the “smoothed options” to the lifecycle requirements identified in Figure 6. A summary of the two funding strategies is shown in Table 16.

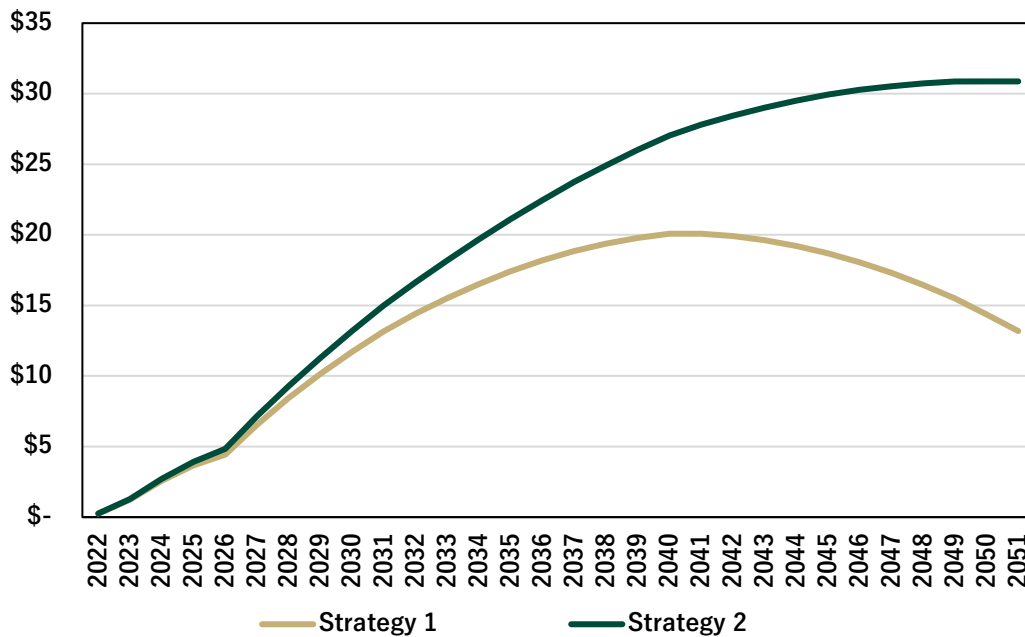
<b>Table 16</b>	
<b>Summary of Financing Strategies</b>	
<b>Financing Strategy</b>	<b>Strategy Parameters</b>
<b>Strategy 1</b> <b>Close in-year Funding Gap by 2041</b>	<ul style="list-style-type: none"> <li>▪ Increase annual capital contributions by approximately \$112,500 per year. For 2023, the increase would be in addition to the estimated 2022 budgeted funding identified.</li> <li>▪ The yearly revenue requirement is equivalent to 3.1% of the Township's estimated 2022 tax levy (\$3.6 million).</li> </ul>
<b>Strategy 2</b> <b>Close in-year Funding Gap by 2051</b>	<ul style="list-style-type: none"> <li>▪ Increase annual capital contributions by approximately \$71,800 per year. For 2023, the increase would be in addition to the estimated 2022 budgeted funding identified.</li> <li>▪ The yearly revenue requirement is equivalent to 2.0% of the Township's estimated 2022 tax levy (\$3.6 million).</li> </ul>

*Note: Key assumptions noted in Table 15 are maintained for both financing strategies.*

Given the capital expenditure requirement to meet the asset lifecycle needs, the cumulative infrastructure deficit will increase in all scenarios before the Township begins to reduce this amount by increasing capital contributions by more than the annual lifecycle requirement. The infrastructure deficit will increase by the annual funding gap and decrease once the annual contributions are greater than the annual provision.

It is important to note that even though the in-year funding gap has been addressed within the planning horizon in both strategies, the infrastructure deficit poses risk to the Township as it 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. The figure below provides a snapshot summary of the infrastructure deficit for the two strategies outlined in Table 16.

**Figure 6**  
**Infrastructure Deficit Comparison (\$ millions)**



**Rate Supported Assets (Water System)**

The Township of Perth South owns two separate drinking water systems – the St. Pauls Water System and the Sebringville Water System - which supply water to the water system users.

The Township completed a Water Financial Plan in accordance with the Financial Plan regulation (*O. Reg. 453/07*) made under the *Safe Drinking Water Act* for the 2021-2026 period. The financial plan was predicated on a capital investment plan that encompasses the entire life cycle of the water system's assets using information from R. J. Burnside & Associates in 2009 with additional information from the water system's operators Ontario Clean Water Agency (OCWA). The Financial Plan included the replacement of assets requiring replacement during the period 2021 – 2026 in which the required funding for these asset replacements are available within each water system. The water financial plan indicated that both systems are financially viable and will be able to fund infrastructure projects when required. As a result, a detailed financing strategy was not prepared for water system assets under this AMP.

## Stormwater Infrastructure

The Township's stormwater dataset is very limited and likely incomplete. Therefore, the Township would need to make this data validation a priority in the coming years as the impacts of this infrastructure failing to provide service can be far-reaching. It can be expected that the next iteration of the AMP will include a more comprehensive inventory, valuation and condition of stormwater infrastructure to inform the proposed levels of services.

## F. COSTS TO MAINTAIN LEVELS OF SERVICE AND RELATIONSHIP WITH FINANCING STRATEGIES

As outlined in Part A, total estimated budgeted asset maintenance expenditures in 2022 are estimated to be about \$1.2 million for all assets. In addition, the Township will spend an estimated \$4.3 million (including grants, gas tax and transfers to reserves) in 2022 for the full lifecycle costs of tax supported assets. The \$4.3 million in capital spending is comprised of:

- \$1.4 million in tax levy capital funding (including reserve contributions);
- \$676,700 in one time capital surplus (transfer from reserve);
- \$120,800 in gas tax funding;
- \$664,400 in other one time grants; and
- \$1.4 million in existing capital-related reserves<sup>4</sup>.

Both the capital maintenance requirements (from operating) and the capital spending provision identified are attributed to maintaining the service level associated with the \$224.1 million of assets.

Overall, this funding allocation is required to ensure the Township delivers the existing levels of service identified in Section 3 of the Asset Management Plan for both core and non-core infrastructure assets. Overall, it is recommended that the Township continues to monitor levels of service on an annual basis in the context of budget expenditures. In this manner, the Township can identify any significant changes in levels of service and identify if funding levels are appropriate to address any asset pressures.

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<sup>4</sup> The existing capital related reserves on hand amount to \$7.2 million and this amount is allocated over a 5-year period in this study, Therefore, the \$1.4 million identified represents 1/5<sup>th</sup> of the capital reserves available.

Furthermore, 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:

- The option to “do nothing” and allow the infrastructure back-log to accumulate 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 with a series of assets moving into poor and very poor condition which would effectively provide a reduction in the level of service over the short and long-term periods.
- Strategy 1 would ultimately result in a service level increase over the long-term as assets are replaced as required based on condition and useful life. Therefore, the deficit would largely be eliminated over the planning period. This strategy would represent a more optimal level of asset repair and replacement than existing trends and should be targeted with the determination of proposed levels of service moving forward.
- The adoption of the 2<sup>nd</sup> strategy would 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 in the Fair or lower category. Continued contributions to reserves will ensure funds are available whenever assets require works to be completed.

## **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 Perth South has indicated that it expects to continue receiving Gas Tax funds (renamed now to the Canada Community Building Fund) – these funds have been incorporated into the financing strategies at current levels. If the Township continues to receive other funding sources over the long-term, it is expected that these funds would be directed to high-priority projects in an effort to reduce the overall infrastructure deficit.

### **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 does not currently impose DCs, therefore any growth-related expansion activities (eligible for DC funding) would currently need to be funded from taxation or utility rates.

Furthermore, the analysis includes the annual asset management requirements associated with any new assets acquired in addition to the net annual requirement for the Township's existing assets as identified in the previous sections.

### **Property Taxes**

The use of property taxes to fund municipal tax supported services is the most secure source of funding for the Township. The most common and secure avenue to generate additional funding to support increased capital asset management functions would be to increase property tax revenues.

### **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 if possible.

## **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 Township’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 Township could endeavour to require the developer to undertake, or fund, the road improvements as a condition of the subdivision agreement. The municipality would benefit 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

### 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. This ensures the tax payers who benefit from the asset share the cost, therefore, the burden of capital is distributed equally between current and future tax payers. It is important to note that debt funding is subject to interest costs.

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 Ministry of Municipal Affairs mandates that a municipality's annual debt repayment must not exceed 25% of annual own-source revenues. The Township currently does not have any debt.

The requirements of the *Municipal Act* and best practice, suggests that 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 municipality to have at any given time, but they should be sufficient to cover emergency work (if required). It is noted that the Township's current primary financial management tool for asset management are its capital reserves.

## I. FUTURE DEMAND

The 2022 Plan reflects the assets that the Township currently owns and operates. According to Statistics Canada datasets, over the last 5 years the Township's population has stayed relatively constant at around 3,800 between 2016 and 2021. Based on the population projections outlined in the County of Perth's Official Plan Update Comprehensive Review (July 17, 2019), the Township's population is projected to increase to about 4,200 people by

2041. The population growth identified is only assumed for the purposes of this asset management plan.

In order to facilitate new development, the Township may be required to emplace new infrastructure to service development. Irrespective of how the first round capital is funded, when assets require rehabilitation or are due for replacement, the source of funds is limited to reserves or contributions from operating. Capital expenditures to carry out the rehabilitation and replacement of aging infrastructure are not growth-related and are therefore not eligible for funding through development charge revenues or other developer contributions.

Despite the additional asset management requirements associated with new infrastructure, growth will have the effect of increasing the overall assessment base and additional user fee and charges revenues to help offset the capital asset provisions required to replace new infrastructure in the future. The collection of these funds is intended to be allocated to the Township's reserves for the future replacement of these assets. This said, the Township should continue to prioritize the repair and replacement of existing "Very Poor" and "Poor" conditioned infrastructure regardless.

## 6. CONTINUOUS IMPROVEMENTS & 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 recommended improvements and next steps will form part of the Township's evolving Asset Management program moving forward.

### A. ASSET MANAGEMENT INTERNAL NETWORK

It is recommended that the Township consider forming an Asset Management Committee to focus on the activities related to the management of Township assets and to coordinate asset management practices and policies. It is recognized that the Township's annual capital budget process considers capital planning at a corporate level based on available funding and municipal priorities. The intention of the asset management committee is to consider capital planning over a longer term period and co-ordinate any initiatives that need to be taken over the longer term.

### B. PLAN MONITORING

The Township will need to carefully monitor and evaluate the asset management progress and effectiveness of the Plan on or before July 1 in each year starting in 2025. This ensures that the Plan is utilized to its full extent and any gaps are identified prior to the regulatory date. 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 and regular updates to the asset management financial Excel model;
- 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).

## C. DATA QUALITY & 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 17 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 ISO 55000 framework 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 4** recognizing that all asset categories are well documented particularly for the core assets of roads, bridges and culverts.

The Township should undertake regular updates of the information available on assets particularly for conditions, replacement values and any other technical information important to the asset management process and assess the quality of the information based on Table 17. The data quality score is included in Appendix B complementing the State of the Local Infrastructure Reports.

Table 17 Data Quality Confidence Grading System		
Confidence Grade	Description	
5	<b>Highly Reliable</b>	<ul style="list-style-type: none"> <li>▪ Data based on sound records, procedure, investigations and analysis, documented properly and recognized as the best method of assessment.</li> <li>▪ <i>Dataset is complete and estimated to be accurate +/- 2%.</i></li> </ul>
4	<b>Reliable Data</b>	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ <i>Dataset is complete and estimated to be accurate +/- 10%.</i></li> </ul>
3	<b>Uncertain</b>	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ <i>Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated +/- 25%.</i></li> </ul>
2	<b>Very Uncertain</b>	<ul style="list-style-type: none"> <li>▪ Data based on unconfirmed verbal reports and/or cursory inspection and analysis.</li> <li>▪ <i>Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy +/- 40%.</i></li> </ul>
1	<b>Unknown</b>	<ul style="list-style-type: none"> <li>▪ None or very little data held</li> </ul>

As indicated in previous sections, Stormwater infrastructure data is between a Level 1 and Level 2 (unknown and very uncertain) as it is not quantified it is excluded from both the state of the local infrastructure and financing plan, although, the level of service is estimated to comply with the regulatory needs. The Township would need to make this data validation a priority in the coming years as the impacts of this infrastructure failing to provide service can be far-reaching.

## D. TIMEFRAMES FOR REVIEW & UPDATES

This Asset Management Plan should be reviewed and updated on a regular basis. Recognizing that a full plan and related policies should only be updated at key intervals, it is important that other asset management components, such as capital budgeting, risk assessments and updates to the asset register should be integrated into staff’s regular routine. Table 18 below outlines the key timelines.

<b>Table 18 Timeframes for Reviews and Updates</b>	
<b>Asset Management Framework</b>	<b>Timeframe</b>
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
Reporting to Council	Annually

This asset management plan has been endorsed by the executive lead of the Township and will need to be approved, through resolution, by Township 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*.

## E. PUBLIC REVIEW & COMMENT

Although the Asset Management Plan is intended to aid Township 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 asset management policy on the website and provide a copy to anyone upon request. Note that the Township of Perth South will require further public consultation and input to develop the proposed levels of service required for July 1, 2025.

## 7. CONCLUSIONS & RECOMMENDATIONS

The objective of this 2022 Plan is to provide the Township of Perth South a complementary tool to make decisions on how best to manage capital assets in a sustainable way to 2051. In this section, recommendations based on the analysis undertaken are made.

### A. SUMMARY OF KEY FINDINGS

- The Township's asset base is valued at \$224.1 million, in relation to the 2021 census population of about 3,780 persons (about \$59,000 per capita).
- Overall, a high proportion of \$155.5 million (69%) of the Township's assets are considered to be in Good to Very Good condition. At the same time, approximately \$19.2 million (9%) of infrastructure is considered to be in Poor to Very Poor condition. The remaining share of \$49.4 million (22%) is in Fair condition.
- The Township of Perth South 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, funded through the 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 if possible.
- The Township does not have any existing debt obligations. Therefore, the Township can use this financing tool for future capital needs as they may arise in tandem with consideration of future fiscal obligations.
- 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 analysis undertaken for this 2022 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;
  - risk assessment;
  - 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 proposed level of service 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 1<sup>st</sup>, 2025 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**

- Sound asset management decisions are only possible if information in the asset registry is accurate. The Township 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 2022 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 facilities, 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 Asset Management Plan.

- 1. Annual Provision** - Given the timing and cost to replace an asset in the future, the amount of savings required year-over-year to replace that asset on schedule. This is also referred to as the annual requirement.
- 2. 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, and very good).
- 3. Cumulative Infrastructure Deficit** - The difference between available funding and the cost of works required based on the replacement schedule added over an extended period. This difference includes the backlog of infrastructure work which remains unfunded. In years where funding continues to be less than the need, the deficit grows. Conversely, years where funding exceeds the need, the deficit decreases.
- 4. Funding Gap** - This is the difference between lifecycle requirement costs and available funding.
- 5. O. Reg. 588/17** - Ontario's Asset Management regulation that came into force on January 1, 2018.
- 6. Provision Schedule** - The required savings year-over-year needed to replace an asset based on the replacement schedule.
- 7. 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.
- 8. Replacement Schedule** - The timing for replacement of an asset based on remaining useful life, condition or risk.
- 9. Useful Life** - The expected service life of an asset expressed in years.
- 10. Weighted Condition** - The average condition of an asset category weighted against the replacement costs of assets.
- 11. Weighted Remaining Useful Life** - The average remaining useful life of an asset category weighted against the replacement cost of assets.

**APPENDIX B**

**STATE OF LOCAL INFRASTRUCTURE**

**REPORT CARDS**

# APPENDIX B – TECHNICAL APPENDIX: STATE OF LOCAL INFRASTRUCTURE

The appendix provides a summary of the Township's assets with reference to quality and quantity. Some assets have condition assessments based on the conditions developed through the Township's engineering reports and staff level qualitative assessments. 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 the 2022 Plan were acquired from the Township's tangible capital asset inventory. Hemson has prepared State of the Local Infrastructure report cards for each asset category which outline: summary of inventory, remaining useful life, asset condition, and data reliability. It is intended that these report cards be updated annually by staff and provided to Council through the annual budget process to help facilitate reporting on assets on an ongoing basis. The components of each of the report cards and major assumptions are outlined here.

## 1. 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 2022 dollars, method used to determine the replacement cost and the engineered useful life of the assets. The inventory summary is developed based on the Township's capital asset information and available engineering reports. Furthermore, an asset management financial model based in Excel was developed as part of the 2022 AMP, this model contains all detailed asset information.

The assets included in this 2022 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 Canada Community-Building Fund agreement (formerly Gas Tax).

## 2. Remaining Useful Life

The remaining useful life summary provides information on the age of assets based on the year assets were acquired or replaced and their engineered useful life. Assets are categorized by remaining useful life based on their replacement cost in 2022 dollars. Assets categorized as overdue are considered to be beyond their engineered useful life, however, the asset may still be in good operating condition and therefore age does not

represent the ideal method to determine condition. Typically, assets such as facilities are used well beyond their engineered useful lives with proper maintenance and repairs.

### 3. Asset Condition

A summary of the condition of assets is presented in a pie graph based on the replacement cost of assets in constant 2022 dollars. As discussed in Section 2, conditions have been determined based on a 5-tier rating system from very poor to very good. Condition assessments are based on several sources including, engineering reports, staff level qualitative assessments and aged based approach. Through the 2022 AMP process staff undertook a detailed review of the asset conditions, and based on their knowledge, provided a more up to date condition based on the 5-tier rating scale wherever possible, however, it is expected that all condition assessments based on “age” be updated and refined with proper visual inspections. Details on the methodology the Township uses to assess the condition of assets is summarized in Table 1 below.

<b>Table 1 Methodology Used for Condition Assessments</b>	
<b>Asset Category</b>	<b>Methodology</b>
Machinery & Equipment	▪ Age based approach with some staff level qualitative conditions
Vehicles	▪ Age based approach with some staff level qualitative conditions
Buildings	▪ Age based approach with some staff level qualitative conditions
Land Improvements	▪ Age based approach with some staff level qualitative conditions
Bridges & Culverts	▪ Based on BCI provided in the 2021 Bridge Inspection Report
Roads & Related	▪ Based on probable costs from the 2018 Road Management Study translated to the 5-tier scale for reporting in the 2022 Township AMP
Water Systems	▪ Age based approach

### 4. Replacement Cost

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 \$211.4 million, and the replacement values are used as the basis for this plan. Specific methods used to determine replacement costs for each asset category are outlined below.

## **Roads**

Replacement costs for the Township's roads are based on an average cost per kilometre. For paved roads, a value of \$1.0 million per kilometre was used, while gravel roads are estimated at \$250,000 per kilometre.

## **Bridges & Culverts**

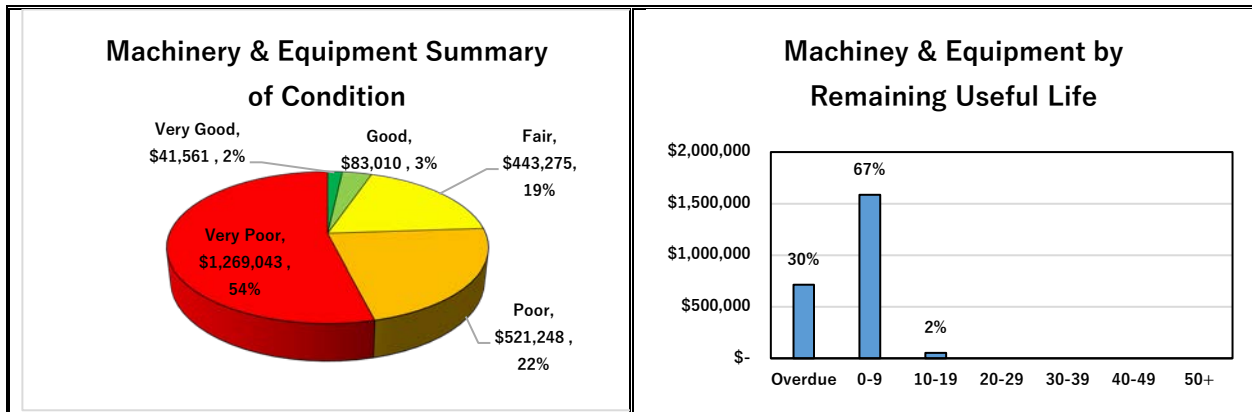
Replacement costs for the Township's bridges & culverts are based on an average cost per square metre of area. For bridges and culverts, a value of \$25,000 per metre was used.

## **Remaining Asset Categories**

For all other remaining asset categories, Hemson has particularly relied upon the initial acquisition costs and adjusted these values to current dollars. That said, some specific adjustments were made to some assets where more accurate replacement cost valuations from other comparable municipalities could be utilized.

Summary of Inventory				
Service Area	Quantity	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
Transportation Services	Pooled	\$1,491,275	Inflation	1-40
General Government	Pooled	\$453,256	Inflation	4-20
Protection Services	Pooled	\$413,606	Inflation	1-20
<b>Total</b>		<b>\$2,358,137</b>		

The Township maintains its inventory of equipment as pooled units for various services including transportation services, general government, and protection services. This machinery & equipment assets in the Township's inventory have a total replacement value of \$2.4 million based on inflation of acquisition costs. The equipment assets have an assumed useful life ranging between 1 and 40 years depending on the type of equipment.

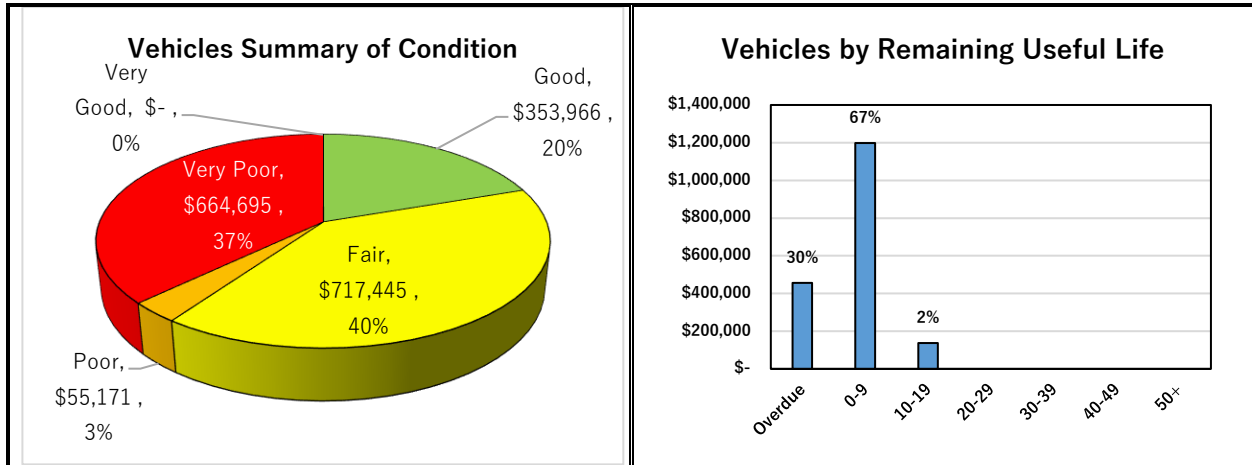


Overall, \$714,000 (30%) of machinery & equipment assets are considered to be overdue by virtue of their design life. Detailed condition analysis of machinery & equipment is not available at this time, however it is recognized that most equipment is likely in better condition than its age would indicate, therefore some assets have been assigned a Fair rating. Overall, the Township maintains about \$124,600 (5%) of machinery & equipment assets in Good to Very Good condition. About 76% (\$1.8 million) of machinery & equipment assets are considered to be in Poor or Very Poor condition, which would indicate potential signs of deterioration. The remaining \$438,400 (19%) of machinery & equipment assets are currently in Fair condition.

Data Confidence and Reliability: Level 4 (Reliable)  
Dataset is complete and estimated to be accurate +/- 10%.

Summary of Inventory				
Service Area	Quantity	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
Protection Services	4	\$529,544	Inflation/Recent Costing	5-25
Transportation Services	21	\$1,261,733	Inflation/Recent Costing	5-12
<b>Total</b>	<b>25</b>	<b>\$1,791,277</b>		

The Township operates vehicles for various services, which include protection and transportation services, with a total replacement value of \$1.8 million. The vehicles assets have an assumed useful life ranging between 5 to 25 years depending on the type of vehicles.



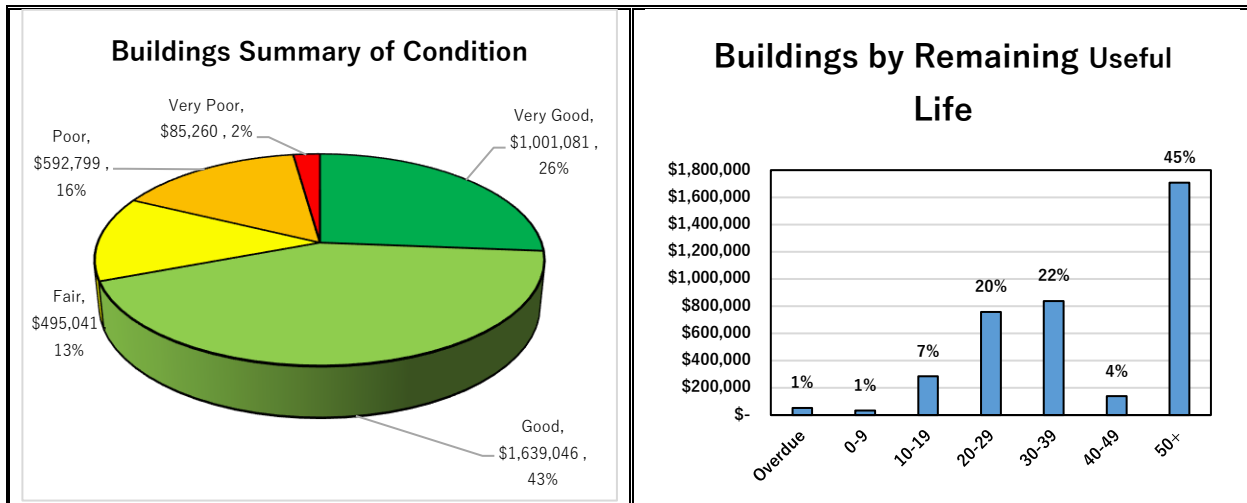
Overall, approximately \$456,500 (30%) of vehicle assets are considered to be overdue by virtue of their design life. The remaining \$1.2 million (67%) of the vehicles have between 0 and 9 years of remaining useful life remaining.

Overall, the Municipality maintains \$354,000 (20%) of vehicle assets in Good or Very Good condition. About 719,900 (40%) of vehicles assets are considered to be in Poor or Very Poor condition, which would indicate potential signs of deterioration which need to be monitored closely. The remaining \$717,400 (40%) of vehicle assets are currently considered in Fair condition.

Data Confidence and Reliability: Level 4 (Reliable)  
Dataset is complete and estimated to be accurate +/- 10%.

Building Space by Service Area	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
Transportation Services	\$340,825	Recent Costing	30 – 100
Environmental Services	\$6,603	Recent Costing	30 – 100
Recreation & Cultural Services	\$1,555,965	Recent Costing	30 – 100
General Government	\$969,820	Recent Costing	30 – 100
Protection Services	\$940,014	Recent Costing	30 - 100
<b>Total</b>	<b>\$3,813,227</b>		

The Township maintains a number of buildings for various services including: transportation services, environmental services, recreation & cultural services, general government, and protection services. These buildings have a total replacement value of \$3.8 million and an assumed useful life of 30 – 100 years based on information provided from Township staff. The replacement values are based historical costs and useful life assumptions.



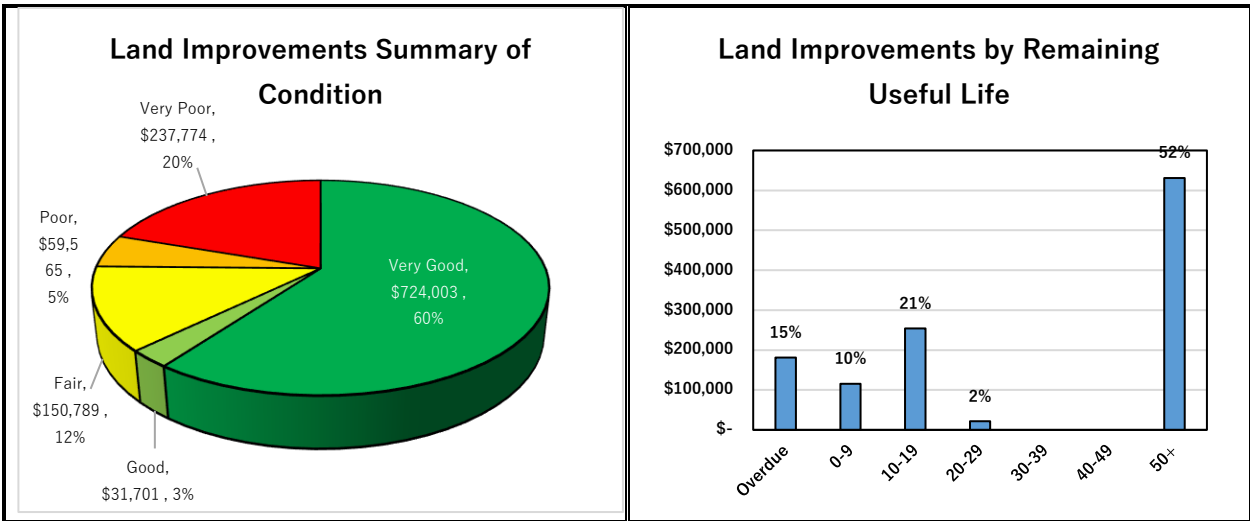
Overall, the Township maintains about \$2.6 million (69%) of building assets in Good to Very Good condition. 18% (\$678,100) of building assets are considered to be in Poor or Very Poor condition. The remainder of the assets \$495,000 (13%) are currently in Fair condition. Therefore, overall the Township's buildings are in Good condition.

Data Confidence and Reliability: Level 4 (Reliable)  
Dataset is complete and estimated to be accurate +/- 10%.

# B.4 Land Improvements Good

Service Area	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
Recreation & Cultural Services	\$513,162	Inflation	1-50
Health Services	\$51	Inflation	101
Transportation Services	\$7,224	Inflation	1
General Government	\$52,321	Inflation	20
Environmental Services	\$592,607	Inflation	75
Protection Services	\$38,447	Inflation	75
<b>Total</b>	<b>\$1,203,832</b>		

The Township owns various types of land improvements including those related to recreation & cultural services, health services, transportation services, general government, environmental services, and protection services. These land improvements have a total replacement value of \$1.2 million and have an assumed useful life of 1-101 years depending on the type of land improvement.



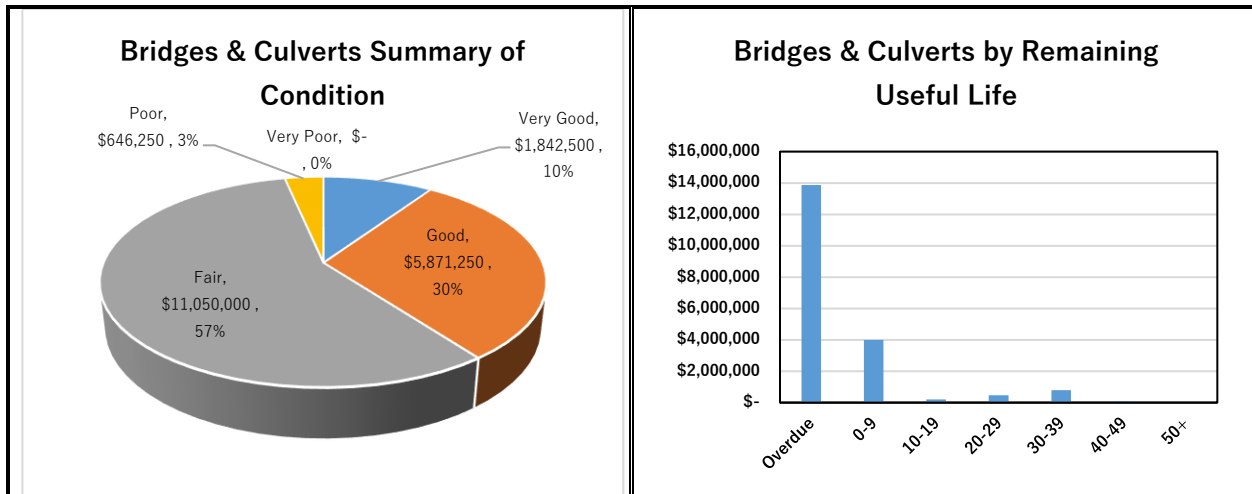
Overall, \$181,600 (15%) of land improvements are considered to be overdue by virtue of their design life. That said, 52% of assets in this category have more than 50 years of remaining useful life.

As the condition analysis for this category is based on the relative age of each asset, the conditions closely link to the remaining useful life graph. Overall, the Township maintains \$755,700 (63%) of land improvements in Good to Very Good condition. \$150,800 (13%) of land improvements are considered to be in Fair condition. The remainder of the land improvements \$297,400 (18%) are considered to be in Poor or Very Poor condition.

Data Confidence and Reliability: Level 4 (Reliable)  
Dataset is complete and estimated to be accurate +/- 10%.

Summary of Inventory				
Type	Quantity	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
Bridge	32	\$16,388,750	Recent Costing	45
Culvert	28	\$3,021,250	Recent Costing	45
<b>Total</b>	<b>60</b>	<b>\$19,410,000</b>		

The Township owns and maintains 32 bridges and 28 culverts with a total replacement value of \$6.7 million. The bridges and culverts have an assumed useful life of 45 years. Information used to develop the asset inventory is based on the Township's 2021 Bridge Inspection Report.

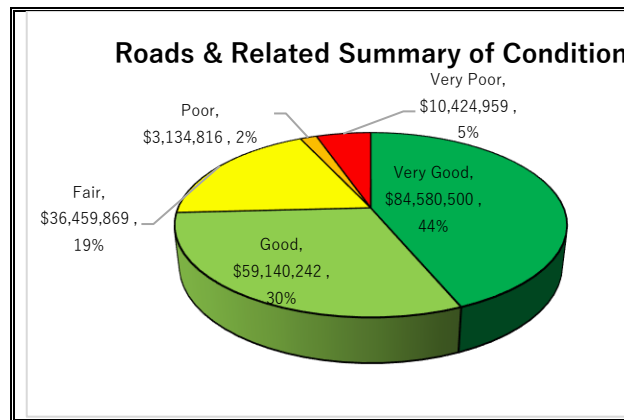


Overall, \$13.9 million (71%) of bridge and culvert assets are considered to be overdue by virtue of their design life. The Township of Perth South maintains about \$7.7 million (40%) of bridge and culvert assets in Good to Very Good condition. About 3% (\$0.6 million) of bridge and culvert assets are considered to be in Poor condition, which would indicate signs of deterioration and these assets should be considered for repair or replacement. The remainder of the assets \$11.1 million (57%) are maintained in Fair condition. Condition assessments have been assumed based on the Township's 2021 Bridge Inspection Report.

Data Confidence and Reliability: Level 4 (Reliable)  
Dataset is complete and estimated to be accurate +/- 10%.

Summary of Inventory				
Roads by Type	Quantity (km)	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
<b>Related Roads</b>		\$264,636	Recent Costing	25
<b>Paved Roads</b>				
Local	145.04	\$145,038,000	Recent Costing	30
Arterial	8.59	\$8,592,000	Recent Costing	30
<b>Sub-Total Paved</b>	<b>153.63</b>	<b>\$153,630,000</b>		
Gravel	149.99	\$39,845,750	Recent Costing	Not Applicable
<b>Total</b>	<b>303.62</b>	<b>\$193,740,386</b>		

The Municipality maintains 303.62 km of roads of which 145.04 km are local paved roads, 8.59 km are arterial paved roads, and 149.99 km are gravel roads. The paved roads have an assumed useful life of 30 years. The asset replacement values are based on recent replacement value costing of \$1.0 million per km for paved roads and \$250,000 per km for gravel roads. Inventory information is based on the Township's 2018 Road Management Study. Additionally, the Township of Perth South maintains 24 streetlights which have a replacement cost of approximately \$264,600.

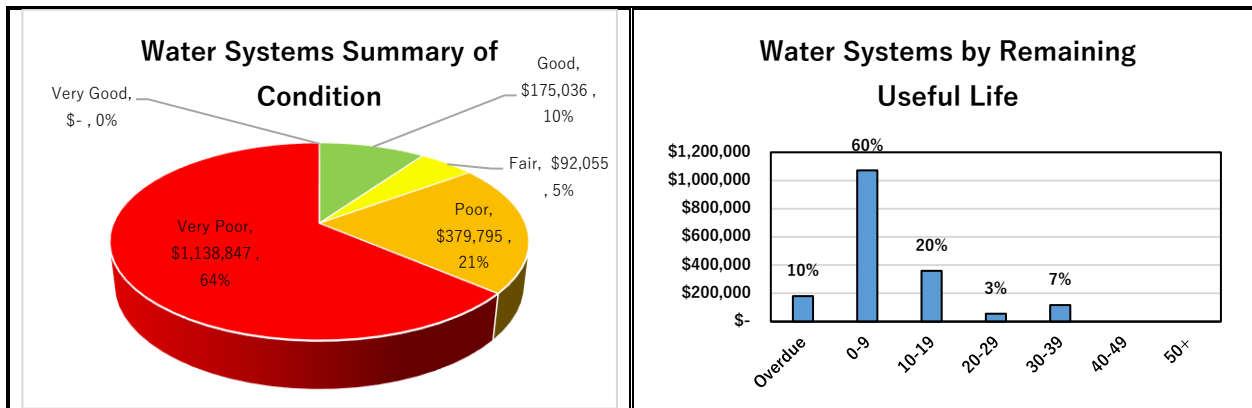


Overall, the Municipality maintains \$143.7 million (74%) of roads & related assets in Good to Very Good condition. About 7% (\$13.6 million) of road assets are considered to be in Poor or Very Poor condition, which would indicate signs of deterioration and these assets should be considered for repair or replacement. The remainder of the road assets \$36.5 million (19%) are maintained in Fair condition.

Data Confidence and Reliability: Level 4 (Reliable)  
Dataset is complete and estimated to be accurate +/- 10%.

Summary of Inventory				
Facility Type	Quantity	Replacement Cost 2022	Replacement Cost Method	Useful Life (Years)
Environmental Services	58	\$1,785,734	Inflation	1 - 50
<b>Total</b>		<b>\$1,785,734</b>		

The Township maintains water systems for environmental services with a total replacement value of \$1.8 million and an assumed useful life of 1 - 50 years.



Overall, 10% (\$180,600) of water systems assets are considered to be overdue by virtue of their design life. Most water systems assets do have 0 - 9 years of remaining useful life remaining.

As the condition analysis for this category is based on the relative age of each asset, the conditions closely link to the remaining useful life graph. Overall, the Township maintains \$175,000 (10%) of water systems assets in Good to Very Good condition. \$1.5 million (85%) of water systems assets are considered to be in Poor or Very Poor condition. The remaining 5% (\$92,100) of the assets are maintained in Fair condition.

Data Confidence and Reliability: Level 4 (Reliable)

Dataset is complete and estimated to be accurate +/- 10%.

# APPENDIX C

## ASSET MANAGEMENT STRATEGY

# APPENDIX C – ASSET MANAGEMENT STRATEGY

## Roads

The roads & related category, includes all Township roads and related infrastructure. Regular maintenance and inspections are required to maintain safety and operational standards for roads. Table 5 summarizes general actions that can be taken to ensure that roads are maintained in a state of good repair.

<b>Table 1 Lifecycle Activities: Roads</b>	
<b>Areas</b>	<b>Lifecycle Activities</b>
Non-Infrastructure Solutions	<ul style="list-style-type: none"> <li>▪ Regularly scheduling of repair work orders.</li> <li>▪ Annually provide the necessary departments with related information when new asset information is acquired.</li> <li>▪ Continue to conduct updates to the Road Management Study in conjunction with updates to the AMP (minimum every 5 years).</li> <li>▪ Monitor and revise load limits to structures as needed.</li> </ul>
Maintenance Activities	<ul style="list-style-type: none"> <li>▪ Regular maintenance including, road sweeping, plowing, sanding, salting, dust control, roadside vegetation management, and roadside ditch cleanout and clearing.</li> <li>▪ Routine maintenance of existing gravel roads consists of reclaiming shoulder granulars for road, adding granulars as required, compacting, grading and adding calcium as per 2018 RMS</li> <li>▪ Continued maintenance of roads in line with O. Reg. 239/02 Minimum Maintenance Standards for Municipal Highways.</li> <li>▪ Continue to monitor road restrictions based on Township policy, in particular for load restrictions in effect during the spring months</li> </ul>
Renewal/Rehabilitation	<p>Implement recommendations of the 2018 RMS including:</p> <ul style="list-style-type: none"> <li>▪ Pulverizing and resurfacing to address minor structural deficiencies (rural and semi-urban roads)</li> <li>▪ Resurfacing to address minor structural deficiencies (urban roads); base and surface improvements to address structural needs (rural and semi-urban roads);</li> </ul>
Replacement	<p>Implement recommendations of the 2018 RMS including:</p> <ul style="list-style-type: none"> <li>▪ Full reconstruction to address major structural deficiencies or issues with the road sub-grade and sub-base (including the presence of rock).</li> </ul>
Disposal	<ul style="list-style-type: none"> <li>▪ Dispose or sell assets that are no longer in use or are in poor condition.</li> </ul>
Expansion	<p>Implement recommendations of the 2018 RMS</p> <ul style="list-style-type: none"> <li>▪ Widening or widening and resurfacing to address surface width deficiencies and/or capacity deficiencies.</li> <li>▪ Identify needs through regular capital planning. Ensure assumed roads are tracked through the asset management plan.</li> <li>▪ Service improvements made where possible (new technologies, environmental impacts, etc.).</li> </ul>

## 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 2 summarizes general actions that can be employed to ensure that Township facilities are maintained in a state of good repair.

<b>Table 2 Lifecycle Activities: Buildings</b>	
<b>Areas</b>	<b>Lifecycle Activities</b>
Non-Infrastructure Solutions	<ul style="list-style-type: none"> <li>▪ Business cases, special studies and consultation with stakeholders should be done when constructing a new facility or modifying an existing facility.</li> <li>▪ Review of the design and layout of buildings and properties to minimize maintenance costs through design efficiencies over the lifecycle of buildings.</li> </ul>
Maintenance Activities	<ul style="list-style-type: none"> <li>▪ Buildings and facilities inspected regularly in accordance with occupational health and safety regulations</li> <li>▪ HVAC and heating systems inspected regularly.</li> <li>▪ Plumbing inspected regularly.</li> <li>▪ Maintain electrical systems to Electrical Safety Authority standards.</li> <li>▪ Fire alarms, fire extinguishers and emergency lights inspected regularly.</li> </ul>
Renewal/ Rehabilitation	<ul style="list-style-type: none"> <li>▪ Regular component repairs or rehabilitation.</li> </ul>
Replacement	<ul style="list-style-type: none"> <li>▪ Asset replacement based on inspections.</li> <li>▪ Asset replacement forecast reviewed annually.</li> </ul>
Disposal	<ul style="list-style-type: none"> <li>▪ Selling or demolishing facilities that are no longer in use or underutilized.</li> <li>▪ Re-use or sell land not in use.</li> </ul>
Expansion	<ul style="list-style-type: none"> <li>▪ Identify needs through regular capital planning.</li> <li>▪ Assumptions on required facility space through development agreements if necessary.</li> </ul>

## Bridges and Culverts

The Township’s 2021 Bridge Inspection Report provides a detailed guide on the recommended works associated to maintaining the Township’s bridges and culverts. Table 3 provides a summary of the lifecycle actions undertaken on these assets to maintain current levels of service with reference to this report.

<b>Table 3</b>	
<b>Lifecycle Activities: Bridges and Culverts</b>	
<b>Areas</b>	<b>Lifecycle Actions</b>
Non-Infrastructure Solutions	<ul style="list-style-type: none"> <li>▪ Annually provide the necessary departments with related information when new asset information is acquired.</li> <li>▪ Continue to conduct updates to Bridge Inspection Report every 2 years as required by Provincial regulation.</li> <li>▪ Monitor and revise load limits to structures as needed.</li> </ul>
Maintenance Activities	<ul style="list-style-type: none"> <li>▪ Regular maintenance including, road sweeping, plowing, sanding, salting, dust control, roadside vegetation management, and roadside ditch cleanout and clearing.</li> </ul>
Renewal/Rehabilitation	<ul style="list-style-type: none"> <li>▪ Undertaking rehabilitation works recommended through the 2021 Bridge Inspection Report</li> </ul>
Replacement	<ul style="list-style-type: none"> <li>▪ Replacement of bridges or culverts based on the recommendations of the 2021 Municipal Structure Inventory and Inspection and the 2022 AMP as needed.</li> </ul>
Disposal	<ul style="list-style-type: none"> <li>▪ Disposal of structures that are in poor condition or no longer in use.</li> </ul>
Expansion	<ul style="list-style-type: none"> <li>▪ Identify needs through regular capital planning. Ensure assumed roads are tracked through the asset management plan.</li> <li>▪ Service improvements made where possible (new technologies, environmental impacts, etc.).</li> </ul>

## Other Asset Categories

Table 4 provides some general points on the actions taken to allow assets to continue to provide the current level of service. It is noted that in general the Township undertakes all the actions listed but should continue to update the table with more details for specific assets on an ongoing basis.

<b>Table 4</b>	
<b>Lifecycle Activities: Other Asset Categories</b>	
<b>Areas</b>	<b>Lifecycle Activities</b>
Non-Infrastructure Solutions	<ul style="list-style-type: none"> <li>▪ Regularly scheduling of repair work orders.</li> <li>▪ Operating budgets should be informed by regular inspections as needed.</li> <li>▪ Adjust service levels if necessary.</li> <li>▪ Annually provide the necessary departments with related information when new and additional assets are acquired.</li> <li>▪ Training for staff to ensure safe and efficient operation of assets</li> </ul>
Maintenance Activities	<ul style="list-style-type: none"> <li>▪ Preventative maintenance program for all Township assets</li> <li>▪ Regular inspection of all Township assets</li> <li>▪ Annual inspection, service and certification performed on all applicable assets</li> <li>▪ Regular safety inspections of assets before and after use to ensure safety standards are maintained (for applicable assets such as vehicles and equipment)</li> </ul>
Renewal/Rehabilitation	<ul style="list-style-type: none"> <li>▪ Regular component repairs based on inspections.</li> <li>▪ Mid-life component replacements are usually common for larger equipment and can be scheduled accordingly (engine/transmission rebuilds for example).</li> </ul>
Replacement	<ul style="list-style-type: none"> <li>▪ Asset replacement based on inspections.</li> <li>▪ Asset replacement forecast reviewed annually.</li> </ul>
Disposal	<ul style="list-style-type: none"> <li>▪ Dispose or sell assets that are no longer in use or are in poor condition.</li> </ul>
Expansion	<ul style="list-style-type: none"> <li>▪ Identify needs through regular capital planning.</li> <li>▪ Service improvements made where possible (new technologies, environmental impacts, etc.).</li> </ul>

# APPENDIX D

## DETAILED FINANCING STRATEGY TABLES

**Table 1**  
**Township of Perth South**  
**2020 Asset Management Plan**  
**Close Cumulative Infrastructure Deficit by (Tax Funded Services)**  
**Close Cumulative Infrastructure Deficit by 2051**

Legend	1. Lifecycle Costs						2. Forecast of Revenues						3. Funding Gap Calculation				
	Year	Non-Infrastructure Solutions	Operations & Maintenance	Operations & Maintenance - RMS Study Need	Capital Renewal/ Replacement and Disposal	Expansion Activities (Annual Provision for Replacement)	Total Lifecycle Costs	O&M from Taxation (less road increase)	Capital from Taxation (Including Transfers to Reserves) <sup>1</sup>	One Time Capital Surplus	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Existing Reserves	Total Capital Funding	Annual Funding Gap
2022			\$ 1,173,578	\$ 518,598	\$ 4,038,662		\$ 5,730,839	\$ 1,173,578	\$ 1,400,437	\$ 676,713		\$ 120,835	\$ 664,382	\$ 1,439,573	\$ 5,475,519	\$ 255,320	\$ 255,320
2023	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 4,008,084	\$ 51,262	\$ 5,826,523	\$ 1,173,578	\$ 1,543,204		\$ 142,767	10.2%	\$ 126,088	\$ 583,330	\$ 1,439,573	\$ 4,865,774	\$ 960,749	\$ 1,216,069
2024	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,880,088	\$ 51,262	\$ 5,698,526	\$ 1,173,578	\$ 1,685,972		\$ 142,767	9.3%	\$ 126,088		\$ 1,439,573	\$ 4,425,211	\$ 1,273,315	\$ 2,489,384
2025	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,741,421	\$ 51,262	\$ 5,559,859	\$ 1,173,578	\$ 1,828,739		\$ 142,767	8.5%	\$ 126,088		\$ 1,439,573	\$ 4,567,978	\$ 991,881	\$ 3,481,265
2026	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,543,361	\$ 51,262	\$ 5,361,800	\$ 1,173,578	\$ 1,971,506		\$ 142,767	7.8%	\$ 126,088		\$ 1,439,573	\$ 4,710,746	\$ 651,054	\$ 4,132,319
2027	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,543,361	\$ 51,262	\$ 5,361,800	\$ 1,173,578	\$ 2,114,273		\$ 142,767	7.2%	\$ 126,088		\$ 1,439,573	\$ 3,413,940	\$ 1,947,860	\$ 6,080,178
2028	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,460,246	\$ 51,262	\$ 5,278,685	\$ 1,173,578	\$ 2,257,041		\$ 142,767	6.8%	\$ 126,088		\$ 1,439,573	\$ 3,556,707	\$ 1,721,978	\$ 7,802,156
2029	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,366,598	\$ 51,262	\$ 5,185,037	\$ 1,173,578	\$ 2,399,808		\$ 142,767	6.3%	\$ 126,088		\$ 1,439,573	\$ 3,699,474	\$ 1,485,563	\$ 9,287,719
2030	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,366,397	\$ 51,262	\$ 5,184,835	\$ 1,173,578	\$ 2,542,575		\$ 142,767	5.9%	\$ 126,088		\$ 1,439,573	\$ 3,842,242	\$ 1,342,594	\$ 10,630,313
2031	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,336,907	\$ 51,262	\$ 5,155,346	\$ 1,173,578	\$ 2,685,343		\$ 142,767	5.6%	\$ 126,088		\$ 1,439,573	\$ 3,985,009	\$ 1,170,337	\$ 11,800,650
2032	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,244,274	\$ 51,262	\$ 5,062,713	\$ 1,173,578	\$ 2,828,110		\$ 142,767	5.3%	\$ 126,088		\$ 1,439,573	\$ 4,127,776	\$ 934,936	\$ 12,735,586
2033	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,970,877		\$ 142,767	5.0%	\$ 126,088		\$ 1,439,573	\$ 4,270,543	\$ 783,843	\$ 13,519,429
2034	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 3,113,644		\$ 142,767	4.8%	\$ 126,088		\$ 1,439,573	\$ 4,413,311	\$ 641,076	\$ 14,160,505
2035	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 3,256,412		\$ 142,767	4.6%	\$ 126,088		\$ 1,439,573	\$ 4,556,078	\$ 498,308	\$ 14,658,813
2036	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,234,042	\$ 51,262	\$ 5,052,480	\$ 1,173,578	\$ 3,399,179		\$ 142,767	4.4%	\$ 126,088		\$ 1,439,573	\$ 4,698,845	\$ 353,635	\$ 15,012,448
2037	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,233,833	\$ 51,262	\$ 5,052,271	\$ 1,173,578	\$ 3,541,946		\$ 142,767	4.2%	\$ 126,088		\$ 1,439,573	\$ 4,841,613	\$ 210,659	\$ 15,223,106
2038	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,202,539	\$ 51,262	\$ 5,020,978	\$ 1,173,578	\$ 3,684,714		\$ 142,767	4.0%	\$ 126,088		\$ 1,439,573	\$ 4,984,380	\$ 36,598	\$ 15,259,704
2039	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,200,252	\$ 51,262	\$ 5,018,690	\$ 1,173,578	\$ 3,827,481		\$ 142,767	3.9%	\$ 126,088		\$ 1,439,573	\$ 5,127,147	\$ (108,457)	\$ 15,151,247
2040	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,200,252	\$ 51,262	\$ 5,018,690	\$ 1,173,578	\$ 3,970,248		\$ 142,767	3.7%	\$ 126,088		\$ 1,439,573	\$ 5,269,914	\$ (251,224)	\$ 14,900,023
2041	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,018,536	\$ 51,262	\$ 4,836,975	\$ 1,173,578	\$ 4,113,015		\$ 142,767	3.6%	\$ 126,088		\$ 1,439,573	\$ 5,412,682	\$ (575,707)	\$ 14,324,317
2042	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,958,158	\$ 51,262	\$ 4,776,597	\$ 1,173,578	\$ 4,255,783		\$ 142,767	3.5%	\$ 126,088		\$ 1,439,573	\$ 5,555,449	\$ (778,852)	\$ 13,545,465
2043	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 4,398,550		\$ 142,767	3.4%	\$ 126,088		\$ 1,439,573	\$ 5,698,216	\$ (925,885)	\$ 12,619,580
2044	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 4,541,317		\$ 142,767	3.2%	\$ 126,088		\$ 1,439,573	\$ 5,840,984	\$ (1,068,652)	\$ 11,550,928
2045	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 4,684,085		\$ 142,767	3.1%	\$ 126,088		\$ 1,439,573	\$ 5,983,751	\$ (1,211,419)	\$ 10,339,509
2046	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,946,272	\$ 51,262	\$ 4,764,711	\$ 1,173,578	\$ 4,826,852		\$ 142,767	3.0%	\$ 126,088		\$ 1,439,573	\$ 6,126,518	\$ (1,361,807)	\$ 8,977,702
2047	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 4,969,619		\$ 142,767	3.0%	\$ 126,088		\$ 1,439,573	\$ 6,269,285	\$ (1,505,175)	\$ 7,472,526
2048	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 5,112,386		\$ 142,767	2.9%	\$ 126,088		\$ 1,439,573	\$ 6,412,053	\$ (1,647,943)	\$ 5,824,584
2049	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 5,255,154		\$ 142,767	2.8%	\$ 126,088		\$ 1,439,573	\$ 6,554,820	\$ (1,790,710)	\$ 4,033,874
2050	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,903,407	\$ 51,262	\$ 4,721,845	\$ 1,173,578	\$ 5,397,921		\$ 142,767	2.7%	\$ 126,088		\$ 1,439,573	\$ 6,697,587	\$ (1,975,742)	\$ 2,058,131
2051	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,963,785	\$ 51,262	\$ 4,782,223	\$ 1,173,578	\$ 5,540,688		\$ 142,767	2.6%	\$ 126,088		\$ 1,439,573	\$ 6,840,355	\$ (2,058,131)	\$ 0

Note 1: Includes taxation funding for capital + transfer to reserves for vehicle replacements

Annual Increase	\$ 142,767
2022 Total Tax Levy	\$ 3,666,856
Inc. as % of Tax Levy	3.89%

**Table 2**  
**Township of Perth South**  
**2020 Asset Management Plan**  
**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	Operations & Maintenance - RMS Study Need	Capital Renewal/ Replacement and Disposal	Expansion Activities (Annual Provision for Replacement)	Total Lifecycle Costs	O&M from Taxation (less road increase)	Capital from Taxation (Including Transfers to Reserves)1	One Time Capital Surplus	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Existing Reserves	Total Capital Funding	Annual Funding Gap
2022	\$ -	\$ 1,173,578	\$ 518,598	\$ 4,038,662	\$ -	\$ 5,730,839	\$ 1,173,578	\$ 1,400,437	\$ 676,713			\$ 120,835	\$ 664,382	\$ 1,439,573	\$ 5,475,519	\$ 255,320	\$ 255,320
2023	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 4,008,084	\$ 51,262	\$ 5,826,523	\$ 1,173,578	\$ 1,512,904		\$ 112,467	8.0%	\$ 126,088	\$ 583,330	\$ 1,439,573	\$ 4,835,474	\$ 991,049	\$ 1,246,369
2024	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,880,088	\$ 51,262	\$ 5,698,526	\$ 1,173,578	\$ 1,625,371		\$ 112,467	7.4%	\$ 126,088		\$ 1,439,573	\$ 4,364,610	\$ 1,333,916	\$ 2,580,285
2025	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,741,421	\$ 51,262	\$ 5,559,859	\$ 1,173,578	\$ 1,737,838		\$ 112,467	6.9%	\$ 126,088		\$ 1,439,573	\$ 4,477,077	\$ 1,082,782	\$ 3,663,067
2026	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,543,361	\$ 51,262	\$ 5,361,800	\$ 1,173,578	\$ 1,850,305		\$ 112,467	6.5%	\$ 126,088		\$ 1,439,573	\$ 4,589,544	\$ 772,255	\$ 4,435,322
2027	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,543,361	\$ 51,262	\$ 5,361,800	\$ 1,173,578	\$ 1,962,772		\$ 112,467	6.1%	\$ 126,088		\$ 1,439,573	\$ 3,262,438	\$ 2,099,362	\$ 6,534,684
2028	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,460,246	\$ 51,262	\$ 5,278,685	\$ 1,173,578	\$ 2,075,239		\$ 112,467	5.7%	\$ 126,088		\$ 1,439,573	\$ 3,374,905	\$ 1,903,780	\$ 8,438,464
2029	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,366,598	\$ 51,262	\$ 5,185,037	\$ 1,173,578	\$ 2,187,706		\$ 112,467	5.4%	\$ 126,088		\$ 1,439,573	\$ 3,487,372	\$ 1,697,665	\$ 10,136,129
2030	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,366,397	\$ 51,262	\$ 5,184,835	\$ 1,173,578	\$ 2,300,172		\$ 112,467	5.1%	\$ 126,088		\$ 1,439,573	\$ 3,599,839	\$ 1,584,997	\$ 11,721,126
2031	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,336,907	\$ 51,262	\$ 5,155,346	\$ 1,173,578	\$ 2,412,639		\$ 112,467	4.9%	\$ 126,088		\$ 1,439,573	\$ 3,712,306	\$ 1,443,040	\$ 13,164,166
2032	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,244,274	\$ 51,262	\$ 5,062,713	\$ 1,173,578	\$ 2,525,106		\$ 112,467	4.7%	\$ 126,088		\$ 1,439,573	\$ 3,824,773	\$ 1,237,940	\$ 14,402,106
2033	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,637,573		\$ 112,467	4.5%	\$ 126,088		\$ 1,439,573	\$ 3,937,240	\$ 1,117,147	\$ 15,519,253
2034	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,750,040		\$ 112,467	4.3%	\$ 126,088		\$ 1,439,573	\$ 4,049,706	\$ 1,004,680	\$ 16,523,932
2035	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,862,507		\$ 112,467	4.1%	\$ 126,088		\$ 1,439,573	\$ 4,162,173	\$ 892,213	\$ 17,416,145
2036	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,234,042	\$ 51,262	\$ 5,052,480	\$ 1,173,578	\$ 2,974,974		\$ 112,467	3.9%	\$ 126,088		\$ 1,439,573	\$ 4,274,640	\$ 777,840	\$ 18,193,985
2037	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,233,833	\$ 51,262	\$ 5,052,271	\$ 1,173,578	\$ 3,087,441		\$ 112,467	3.8%	\$ 126,088		\$ 1,439,573	\$ 4,387,107	\$ 665,164	\$ 18,859,149
2038	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,202,539	\$ 51,262	\$ 5,020,978	\$ 1,173,578	\$ 3,199,908		\$ 112,467	3.6%	\$ 126,088		\$ 1,439,573	\$ 4,499,574	\$ 521,404	\$ 19,380,552
2039	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,200,252	\$ 51,262	\$ 5,018,690	\$ 1,173,578	\$ 3,312,375		\$ 112,467	3.5%	\$ 126,088		\$ 1,439,573	\$ 4,612,041	\$ 406,649	\$ 19,787,202
2040	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,200,252	\$ 51,262	\$ 5,018,690	\$ 1,173,578	\$ 3,424,842		\$ 112,467	3.4%	\$ 126,088		\$ 1,439,573	\$ 4,724,508	\$ 294,182	\$ 20,081,384
2041	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,018,536	\$ 51,262	\$ 4,836,975	\$ 1,173,578	\$ 3,537,309		\$ 112,467	3.3%	\$ 126,088		\$ 1,439,573	\$ 4,836,975	\$ -	\$ 20,081,384
2042	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,958,158	\$ 51,262	\$ 4,776,597	\$ 1,173,578	\$ 3,649,776		\$ 112,467	3.2%	\$ 126,088		\$ 1,439,573	\$ 4,949,442	\$ (172,845)	\$ 19,908,539
2043	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 3,762,243		\$ 112,467	3.1%	\$ 126,088		\$ 1,439,573	\$ 5,061,909	\$ (289,577)	\$ 19,618,962
2044	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 3,874,709		\$ 112,467	3.0%	\$ 126,088		\$ 1,439,573	\$ 5,174,376	\$ (402,044)	\$ 19,216,918
2045	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 3,987,176		\$ 112,467	2.9%	\$ 126,088		\$ 1,439,573	\$ 5,286,843	\$ (514,511)	\$ 18,702,407
2046	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,946,272	\$ 51,262	\$ 4,764,711	\$ 1,173,578	\$ 4,099,643		\$ 112,467	2.8%	\$ 126,088		\$ 1,439,573	\$ 5,399,310	\$ (634,599)	\$ 18,067,808
2047	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 4,212,110		\$ 112,467	2.7%	\$ 126,088		\$ 1,439,573	\$ 5,511,777	\$ (747,667)	\$ 17,320,142
2048	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 4,324,577		\$ 112,467	2.7%	\$ 126,088		\$ 1,439,573	\$ 5,624,244	\$ (860,134)	\$ 16,460,008
2049	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 4,437,044		\$ 112,467	2.6%	\$ 126,088		\$ 1,439,573	\$ 5,736,710	\$ (972,600)	\$ 15,487,408
2050	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,903,407	\$ 51,262	\$ 4,721,845	\$ 1,173,578	\$ 4,549,511		\$ 112,467	2.5%	\$ 126,088		\$ 1,439,573	\$ 5,849,177	\$ (1,127,332)	\$ 14,360,075
2051	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,963,785	\$ 51,262	\$ 4,782,223	\$ 1,173,578	\$ 4,661,978		\$ 112,467	2.5%	\$ 126,088		\$ 1,439,573	\$ 5,961,644	\$ (1,179,421)	\$ 13,180,654

**30-Year Infrastructure Deficit**

Note 1: Includes taxation funding for capital + transfer to reserves for vehicle replacements

Annual Increase	\$ 112,467
2022 Total Tax Levy	\$ 3,666,856
Inc. as % of Tax Levy	3.07%



**Table 3**  
**Township of Perth South**  
**2020 Asset Management Plan**  
**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	Operations & Maintenance - RMS Study Need	Capital Renewal/ Replacement and Disposal	Expansion Activities (Annual Provision for Replacement)	Total Lifecycle Costs	O&M from Taxation (less road increase)	Capital from Taxation (Including Transfers to Reserves)1	One Time Capital Surplus	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Existing Reserves	Total Capital Funding	Annual Funding Gap
2022	\$ -	\$ 1,173,578	\$ 518,598	\$ 4,038,662	\$ -	\$ 5,730,839	\$ 1,173,578	\$ 1,400,437	\$ 676,713			\$ 120,835	\$ 664,382	\$ 1,439,573	\$ 5,475,519	\$ 255,320	\$ 255,320
2023	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 4,008,084	\$ 51,262	\$ 5,826,523	\$ 1,173,578	\$ 1,472,234		\$ 71,797	5.1%	\$ 126,088	\$ 583,330	\$ 1,439,573	\$ 4,794,804	\$ 1,031,719	\$ 1,287,039
2024	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,880,088	\$ 51,262	\$ 5,698,526	\$ 1,173,578	\$ 1,544,031		\$ 71,797	4.9%	\$ 126,088		\$ 1,439,573	\$ 4,283,271	\$ 1,415,255	\$ 2,702,294
2025	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,741,421	\$ 51,262	\$ 5,559,859	\$ 1,173,578	\$ 1,615,829		\$ 71,797	4.6%	\$ 126,088		\$ 1,439,573	\$ 4,355,068	\$ 1,204,791	\$ 3,907,085
2026	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,543,361	\$ 51,262	\$ 5,361,800	\$ 1,173,578	\$ 1,687,626		\$ 71,797	4.4%	\$ 126,088		\$ 1,439,573	\$ 4,426,866	\$ 934,934	\$ 4,842,019
2027	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,543,361	\$ 51,262	\$ 5,361,800	\$ 1,173,578	\$ 1,759,423		\$ 71,797	4.3%	\$ 126,088		\$ 1,439,573	\$ 3,059,090	\$ 2,302,710	\$ 7,144,729
2028	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,460,246	\$ 51,262	\$ 5,278,685	\$ 1,173,578	\$ 1,831,220		\$ 71,797	4.1%	\$ 126,088		\$ 1,439,573	\$ 3,130,887	\$ 2,147,798	\$ 9,292,527
2029	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,366,598	\$ 51,262	\$ 5,185,037	\$ 1,173,578	\$ 1,903,018		\$ 71,797	3.9%	\$ 126,088		\$ 1,439,573	\$ 3,202,684	\$ 1,982,353	\$ 11,274,880
2030	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,366,397	\$ 51,262	\$ 5,184,835	\$ 1,173,578	\$ 1,974,815		\$ 71,797	3.8%	\$ 126,088		\$ 1,439,573	\$ 3,274,481	\$ 1,910,354	\$ 13,185,235
2031	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,336,907	\$ 51,262	\$ 5,155,346	\$ 1,173,578	\$ 2,046,612		\$ 71,797	3.6%	\$ 126,088		\$ 1,439,573	\$ 3,346,278	\$ 1,809,068	\$ 14,994,302
2032	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,244,274	\$ 51,262	\$ 5,062,713	\$ 1,173,578	\$ 2,118,409		\$ 71,797	3.5%	\$ 126,088		\$ 1,439,573	\$ 3,418,076	\$ 1,644,637	\$ 16,638,939
2033	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,190,207		\$ 71,797	3.4%	\$ 126,088		\$ 1,439,573	\$ 3,489,873	\$ 1,564,513	\$ 18,203,452
2034	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,262,004		\$ 71,797	3.3%	\$ 126,088		\$ 1,439,573	\$ 3,561,670	\$ 1,492,716	\$ 19,696,169
2035	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,235,948	\$ 51,262	\$ 5,054,386	\$ 1,173,578	\$ 2,333,801		\$ 71,797	3.2%	\$ 126,088		\$ 1,439,573	\$ 3,633,467	\$ 1,420,919	\$ 21,117,087
2036	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,234,042	\$ 51,262	\$ 5,052,480	\$ 1,173,578	\$ 2,405,598		\$ 71,797	3.1%	\$ 126,088		\$ 1,439,573	\$ 3,705,265	\$ 1,347,215	\$ 22,464,303
2037	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,233,833	\$ 51,262	\$ 5,052,271	\$ 1,173,578	\$ 2,477,396		\$ 71,797	3.0%	\$ 126,088		\$ 1,439,573	\$ 3,777,062	\$ 1,275,209	\$ 23,739,512
2038	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,202,539	\$ 51,262	\$ 5,020,978	\$ 1,173,578	\$ 2,549,193		\$ 71,797	2.9%	\$ 126,088		\$ 1,439,573	\$ 3,848,859	\$ 1,172,119	\$ 24,911,631
2039	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,200,252	\$ 51,262	\$ 5,018,690	\$ 1,173,578	\$ 2,620,990		\$ 71,797	2.8%	\$ 126,088		\$ 1,439,573	\$ 3,920,656	\$ 1,098,034	\$ 26,009,665
2040	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,200,252	\$ 51,262	\$ 5,018,690	\$ 1,173,578	\$ 2,692,787		\$ 71,797	2.7%	\$ 126,088		\$ 1,439,573	\$ 3,992,454	\$ 1,026,237	\$ 27,035,902
2041	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 3,018,536	\$ 51,262	\$ 4,836,975	\$ 1,173,578	\$ 2,764,584		\$ 71,797	2.7%	\$ 126,088		\$ 1,439,573	\$ 4,064,251	\$ 772,724	\$ 27,808,626
2042	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,958,158	\$ 51,262	\$ 4,776,597	\$ 1,173,578	\$ 2,836,382		\$ 71,797	2.6%	\$ 126,088		\$ 1,439,573	\$ 4,136,048	\$ 640,549	\$ 28,449,175
2043	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 2,908,179		\$ 71,797	2.5%	\$ 126,088		\$ 1,439,573	\$ 4,207,845	\$ 564,486	\$ 29,013,662
2044	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 2,979,976		\$ 71,797	2.5%	\$ 126,088		\$ 1,439,573	\$ 4,279,642	\$ 492,689	\$ 29,506,351
2045	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,953,893	\$ 51,262	\$ 4,772,332	\$ 1,173,578	\$ 3,051,773		\$ 71,797	2.4%	\$ 126,088		\$ 1,439,573	\$ 4,351,440	\$ 420,892	\$ 29,927,243
2046	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,946,272	\$ 51,262	\$ 4,764,711	\$ 1,173,578	\$ 3,123,571		\$ 71,797	2.4%	\$ 126,088		\$ 1,439,573	\$ 4,423,237	\$ 341,474	\$ 30,268,717
2047	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 3,195,368		\$ 71,797	2.3%	\$ 126,088		\$ 1,439,573	\$ 4,495,034	\$ 269,076	\$ 30,537,793
2048	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 3,267,165		\$ 71,797	2.2%	\$ 126,088		\$ 1,439,573	\$ 4,566,831	\$ 197,279	\$ 30,735,071
2049	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,945,671	\$ 51,262	\$ 4,764,110	\$ 1,173,578	\$ 3,338,962		\$ 71,797	2.2%	\$ 126,088		\$ 1,439,573	\$ 4,638,629	\$ 125,481	\$ 30,860,553
2050	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,903,407	\$ 51,262	\$ 4,721,845	\$ 1,173,578	\$ 3,410,760		\$ 71,797	2.2%	\$ 126,088		\$ 1,439,573	\$ 4,710,426	\$ 11,419	\$ 30,871,972
2051	\$ 75,000	\$ 1,173,578	\$ 518,598	\$ 2,963,785	\$ 51,262	\$ 4,782,223	\$ 1,173,578	\$ 3,482,557		\$ 71,797	2.1%	\$ 126,088		\$ 1,439,573	\$ 4,782,223	\$ -	\$ 30,871,972
<b>30-Year Infrastructure Deficit</b>						<b>\$ 152,223,908</b>									<b>\$ 121,351,936</b>		

Note 1: Includes taxation funding for capital + transfer to reserves for vehicle replacements

Annual Increase	\$ 71,797
2022 Total Tax Levy	\$ 3,666,856
Inc. as % of Tax Levy	1.96%

# APPENDIX E

## HIGH PRIORITY CAPITAL WORKS

## APPENDIX E - HIGH PRIORITY CAPITAL WORKS

The following is a list of high priority capital works for the Township. In consultation with Township staff, and the results of the Asset Management Plan, the following table outlines a list of key projects which have been identified as a high priority and require immediate attention.

Asset Class	Project Description	Estimated Cost
<b>Machinery &amp; Equipment</b>	Machinery & Equipment repair for Very Poor Machinery & Equipment as Identified in the AMP	\$1,269,040
<b>Vehicles</b>	2012 7600 International Truck	\$241,070
	Sterling LT9500 Tandem Dump Truck	\$238,040
<b>Land Improvements</b>	Optimists Hall Paved Parking Lot	\$126,840
<b>Bridges &amp; Culverts</b>	Rigid Frame Vertical Legs	\$420,000
<b>Roads &amp; Related</b>	Road 164 (Line 4 – Line 2)	\$2,074,000
	Perth Line 20 (Road 122 – Road 125)	\$2,066,000
	Line 34 (Hammond Street – Road 125)	\$1,856,000
	Road 164 (Davis Street – Line 4)	\$1,786,000
<b>Water Systems</b>	Road 122 W/M	\$274,440
	Perth Line 20 W/M	\$198,440
	Pumphouse Building Services	\$194,030

The level of capital repair and replacement works required would necessitate the Township to seek funding from a variety of sources, in addition to tax or utility rate based revenues, to fund all of part these works. As part of the Asset Management Plan, the Township has

committed to consider increasing annual capital contributions consistent with Strategies 1 or 2 of the Asset Management Plan during the 2023 budget process and beyond (see [Staff Report](#)). However, in the short-medium term, the Township should look to secure grant funding to offset the capital costs of completing the noted projects.

The Township has always used internal control measures to prioritize capital related repair and replacement activities to align with available funds/resources to meet current levels of service. The Township will continue to utilize such measures to ensure capital works are carried out in a fiscally responsible manner. It is in this regard the Township has identified the need to complete some of the projects within 1 year, while the remaining high priority projects will be considered for completion in subsequent years beyond 2023. The Township's ability to undertake these projects is largely dependent on securing upper-level government grant funding, and therefore, the Township should exercise all available grant funding opportunities while continuing to move towards increasing capital tax and rate supported contributions.

The financing strategies outlined in the Section 5 of the Asset Management Plan, and through the adoption of the staff report dated June 2022, indicates the Township's commitment to increase capital contributions over time to progressively move towards a self sustaining asset system. It should be noted; annual capital budgeting exercises may reprioritize the capital works identified.