Asset Management Plan

2024

The preparation of this project was carried out with assistance from the Government of Canada and the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.

Approved by Council Resolution #2024-200

This Asset Management Plan was prepared with the following asset management software:

PSD | CITYWIDE

Empowering your organization through advanced asset management, budgeting & GIS solutions

Key Statistics

Replacement cost of asset portfolio
$14,979,539

Replacement cost of infrastructure per household
$45,809 (2016)

Percentage of assets in fair or better condition
59%

Percentage of assets with assessed condition data
76%

Annual capital infrastructure deficit
$547 thousand

Recommended timeframe for eliminating annual infrastructure deficit
15 Years

Target reinvestment rate
4.6%

Actual reinvestment rate
0.9%

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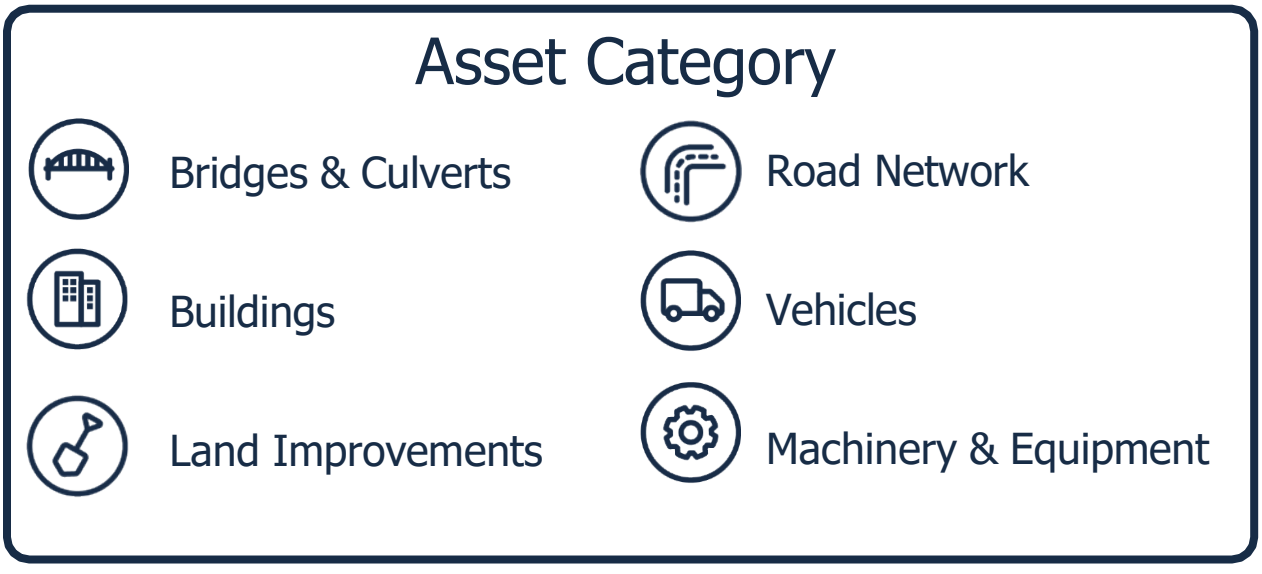
Executive Summary

Municipal infrastructure supports the environmental, social, and economic health and growth of a community through the delivery of critical services. The goal of asset management is to deliver an adequate level of service in the most cost-effective manner. This involves the development and implementation of asset management strategies and long-term financial planning.

All municipalities in Ontario are required to complete an asset management plan (AMP) in accordance with Ontario Regulation 588/17 (O. Reg. 588/17). This AMP outlines the current state of asset management planning at the Township of Conmee. It identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Township can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

This AMP is based on inventory data from 2020 and includes the following tax-funded asset categories:



The overall replacement cost of the asset categories included in this AMP totals $14.9 million. 59% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 76% of assets. For the remaining 24% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (Roads, Bridges & Culverts, and Buildings) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Township's average annual capital requirement totals $684 thousand. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $137 thousand towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $547 thousand.

It is important to note that this AMP represents a snapshot in time and is based on the best available processes, data, and information at the Township. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources.

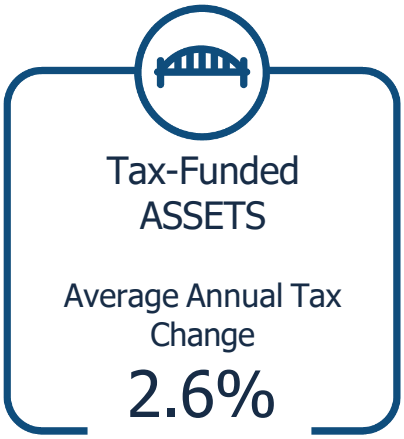
This AMP identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Township can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

With the development of this AMP the Township has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2024. There are additional requirements concerning proposed levels of service and growth that must be met by July 1, 2025.

Annual Infrastructure Gap Per Household

Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax/rate change required to eliminate the Township's infrastructure deficit based on a 15-year plan:



Recommendations to guide continuous refinement of the Township's asset management program. These include:

- Review data to update and maintain a complete and accurate dataset
- Develop a Condition Assessment Program for all asset categories
- The continuous review, development, and implementation of optimal lifecycle management strategies for all asset categories
- Development and regularly review short- and long-term plans to meet capital requirements
- Measure current levels of service and identify sustainable proposed levels of service

1 Introduction & Context

Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value taxpayers receive from the asset portfolio

- The Township's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management

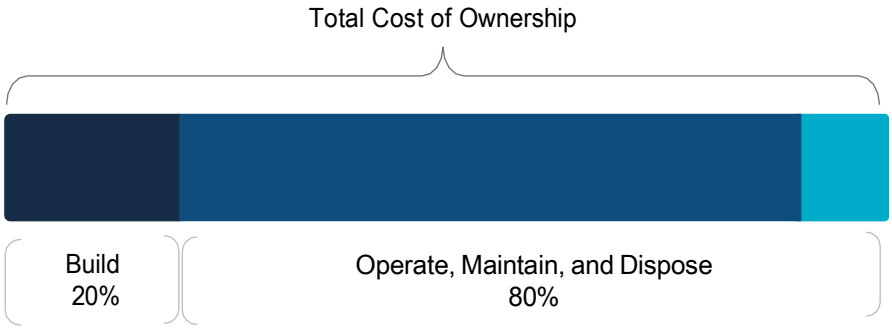
- An asset management plan is a living document that should be updated regularly to inform long-term planning

- Ontario Regulation 588/17 outlines several key milestones and requirements for asset management plans in Ontario between July 1, 2022 and 2025

1.1 An Overview of Asset Management

Municipalities are responsible for managing and maintaining a broad portfolio of infrastructure assets to deliver services to the community. The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio.

The acquisition of capital assets accounts for only 10-20% of their total cost of ownership. The remaining 80-90% derives from operations and maintenance. This AMP focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.



These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan and various asset management documents. The strategic plan has a direct, and cascading impact on asset management planning and reporting.

The Township is taking a proactive approach to asset management by considering the capital, operational, maintenance and replacement costs of assets as part of the development review process.

1.1.1 Asset Management Policy

An asset management policy represents a statement of the principles guiding the municipality's approach to asset management activities. It aligns with the organizational strategic plan and provides clear direction to municipal staff on their roles and responsibilities as part of the asset management program.

The Township adopted Policy No. 71 "Strategic Asset Management Policy" in December 2018 in accordance with Ontario Regulation 588/17.

The objectives of the policy include:

- Provide a consistent framework for implementing asset management throughout the organization.
- Provide transparency and accountability and to demonstrate to stakeholders the legitimacy of decision-making processes which combine strategic plans, budgets, service levels and risks.

1.1.2 Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the activities required to meet these objectives. It provides greater detail than the policy on how the municipality plans to achieve asset management objectives through planned activities and decision-making criteria.

The Township's Asset Management Policy contains many of the key components of an asset management strategy and may be expanded on in future revisions or as part of a separate strategic document.

1.1.3 Asset Management Plan

The asset management plan (AMP) presents the outcomes of the municipality's asset management program and identifies the resource requirements needed to achieve a defined level of service. The AMP typically includes the following content:

- State of Infrastructure
- Asset Management Strategies
- Levels of Service
- Financial Strategies

The AMP is a living document that should be updated regularly as additional asset and financial data becomes available. This will allow the municipality to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

1.2 Key Concepts in Asset Management

Effective asset management integrates several key components, including lifecycle management, risk management, and levels of service. These concepts are applied throughout this asset management plan and are described below in greater detail.

1.2.1 Lifecycle Management Strategies

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its intended function, and may be characterized by increased cost, risk and even service disruption.

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. There are several field intervention activities that are available to extend the life of an asset. These activities can generally fall within the categories of maintenance, rehabilitation, and replacement. The following table provides a description of each type of activity and the general difference in cost.

Lifecycle Activity	Description	Example (Roads)	Cost
General Maintenance	Activities that repair current defects or inhibits deterioration	Pothole Repairs	$
Preventative Maintenance	Activities that prevent defects or deteriorations from occurring	Crack Seal	$
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	Mill & Re-surface	$$
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	Full Reconstruction	$$$
Replacement Upgrade/Reconstruction	Asset end-of-life activities that involve the complete replacement of assets with an upgraded asset	Full Reconstruction LCB to HCB Design Upgrade	$$$$

Depending on initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation, but at some point, replacement is required. Understanding what effect these activities will have on the lifecycle of an asset, and their cost, will enable staff to make better recommendations.

The Township's approach to lifecycle management is described within each asset category outlined in this AMP. Developing and implementing a proactive lifecycle strategy will help staff to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

1.2.2 Risk Management Strategies

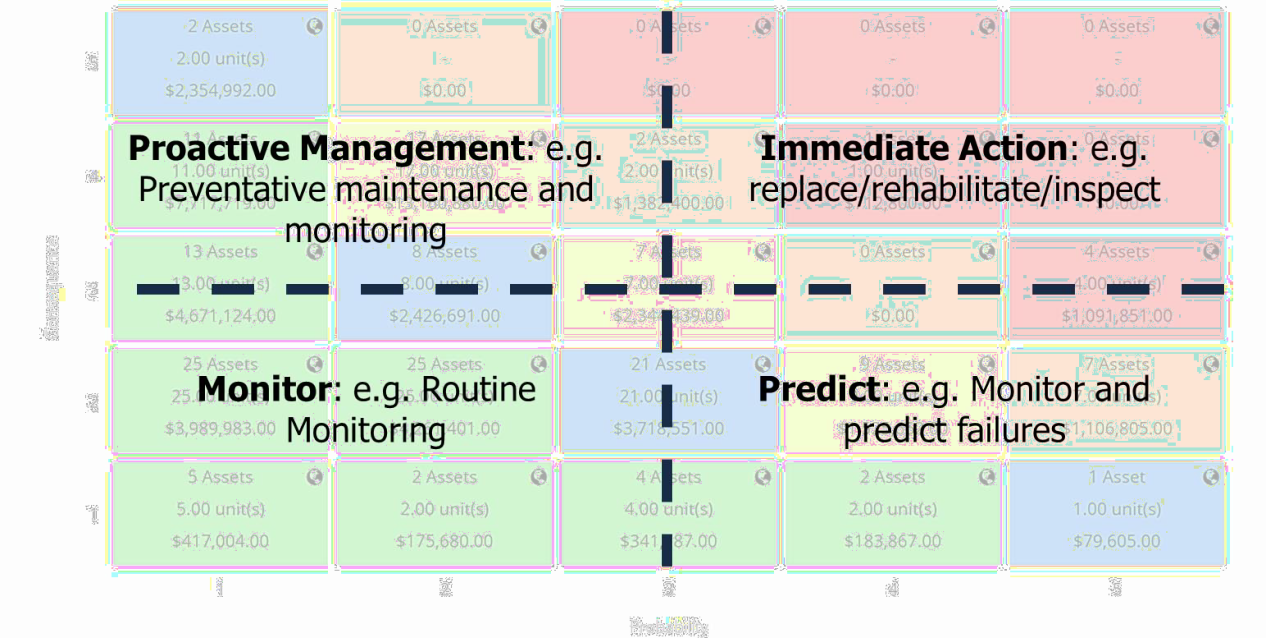
Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community than that of others. For example, a road with a high volume of traffic that provides access to critical services poses a higher risk than a low volume rural road servicing a very small number of properties. However, not all assets are created equal, and some assets pose a greater risk to service delivery if they were to fail.

$$\boldsymbol{Risk\ Rating} = Probability\ of\ Failure\ x\ Consequence\ of\ Failure$$

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused.

This AMP includes a high-level evaluation of asset risk and criticality. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to prioritize maintenance, rehabilitation, and replacement strategies for critical assets.

Risk matrices are a useful tool used to visualize risk across a group of assets. The following image provides an example of the actions or strategies that may be considered depending on an asset's risk rating.



1.2.3 Levels of Service

A level of service (LOS) is a measure of what the Township is providing to the community and the nature and quality of that service. Within each core infrastructure asset category in this AMP, technical metrics and qualitative descriptions that measure both technical and community levels of service have been established and measured as data is available.

These measures include a combination of those that have been outlined in O. Reg. 588/17 in addition to performance measures identified by the Township as worth measuring and evaluating. The Township measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

1.2.3.1 Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For the Township's core asset categories (Roads and Bridges & Culverts) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. These descriptions can be found in the Levels of Service subsection within each asset category.

For non-core asset categories, the Municipality has determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

1.2.3.2 Technical Levels of Service

Technical levels of service are a measure of key technical attributes of the service being provided to the community. These include mostly quantitative measures and tend to reflect the impact of the municipality's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For the Township's core asset categories (Road Network and Bridges & Culverts) the province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP. These metrics can be found in the Levels of Service subsection within each asset category.

For non-core asset categories, the Municipality has determined the technical metrics that will be used to determine the technical level of service provided. These metrics can be found in the Levels of Service subsection within each asset category.

1.2.3.3 Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community. Once current levels of service have been measured, the Township plans to establish proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

Proposed levels of service should be realistic and achievable within the timeframe outlined by the Township. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals and long-term sustainability. Once proposed levels of service have been established, and prior to July 2025, the Township must identify a lifecycle management and financial strategy which allows these targets to be achieved.

1.3 Ontario Regulation 588/17

As part of the *Infrastructure for Jobs and Prosperity Act, 2015*, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17). Along with creating better performing organizations, more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

The diagram below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

2019

Strategic Asset Management Policy

2022

Asset Management Plan for Core Assets with the following components:

1. Current levels of service
2. Inventory analysis
3. Lifecycle activities to sustain LOS
4. Cost of lifecycle activities
5. Population and employment forecasts
6. Discussion of growth impacts

2024

Asset Management Plan for Core and Non-Core Assets (same components as 2022)

2025

Asset Management Policy Update

and

an Asset Management Plan for All Assets with the following additional components:

1. Proposed levels of service for next 10 years
2. Updated inventory analysis
3. Lifecycle management strategy
4. Financial strategy and addressing shortfalls
5. Discussion of how growth assumptions impacted lifecycle and financial

1.3.1 O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2024. Next to each requirement a page or section reference is included in addition to any necessary commentary.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	3.1.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1.1, 4.2.1, 5.1.1, 5.2.1, 5.3.1, 5.4.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.1.3, 4.2.3, 5.1.3, 5.2.3, 5.3.3, 5.4.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.1.2, 4.2.2	Complete
Description of municipality's approach to assessing the condition of core assets in each category	S.5(2), 3(v)	4.1.2 - 4.2.2	Complete
Current levels of service for core assets	S.5(2), 1(i-ii)	4.1.6 - 4.2.6	Complete
Current performance measures for core assets	S.5(2), 2	4.1.6 - 4.2.6	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.1.4 - 4.2.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	6.1 - 6.2	Complete

2 Scope and Methodology

- This asset management plan includes 6 asset categories belonging to the tax-funded category

- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation

- Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life

2.1 AMP Asset Categories

This asset management plan for Conmee Township is produced in compliance with Ontario Regulation 588/17. The July 2022 deadline under the regulation—the first of three AMPs—required analysis of only core assets (Road Network and Bridges & Culverts).

The AMP summarizes the state of the infrastructure for the Township's entire asset portfolio, establishes current levels of service and the associated technical and customer oriented key performance indicators (KPIs) for core infrastructure, outlines lifecycle strategies for optimal asset management and performance, and provides financial strategies to reach sustainability for the asset categories listed below.

Asset Category	Source of Funding
Road Network	Tax Levy
Bridges & Culverts	
Buildings	
Machinery & Equipment	
Vehicles	
Land Improvements	

2.2 Deriving Replacement Costs

There are a range of methods to determine the replacement cost of an asset, and some are more accurate and reliable than others. This AMP relies on two methodologies:

- **User-Defined Cost and Cost/Unit**: Based on costs provided by municipal staff which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience
- **Cost Inflation/CPI Tables**: Historical cost of the asset is inflated based on Consumer Price Index or Non-Residential Building Construction Price Index

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost inflation is typically used in the absence of reliable replacement cost data. It is a reliable method for recently purchased and/or constructed assets where the total cost is reflective of the actual costs that the Township incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.3 Estimated Useful Life and Service Life Remaining

The estimated useful life (EUL) of an asset is the period over which the Township expects the asset to be available for use and remain in service before requiring replacement or disposal. The EUL for each asset in this AMP was assigned according to the knowledge and expertise of municipal staff and supplemented by existing industry standards when necessary.

By using an asset's in-service data and its EUL, the Township can determine the service life remaining (SLR) for each asset. Using condition data and the asset's SLR, the Township can more accurately forecast when it will require replacement. The SLR is calculated as follows:

$$Service\ Life\ Remaining\ (SLR) = In\ Service\ Date + Estimated\ Useful\ Life(EUL) - Current\ Year$$

2.4 Reinvestment Rate

As assets age and deteriorate they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment rate is a measurement of available or required funding relative to the total replacement cost.

By comparing the actual vs. target reinvestment rate the Township can determine the extent of any existing funding gap. The reinvestment rate is calculated as follows:

$$Target\ Reinvestment\ Rate = \frac{Annual\ Capital\ Requirement}{Total\ Replacement\ Cost}$$

$$Actual\ Reinvestment\ Rate = \frac{Annual\ Capital\ Funding}{Total\ Replacement\ Cost}$$

2.5 Deriving Asset Condition

An incomplete or limited understanding of asset condition can mislead long-term planning and decision-making. Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life.

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the Township's asset portfolio. The table below illustrates a typical condition rating system applied to determine asset condition. This rating system is aligned with the Canadian Core Public Infrastructure Survey which is used to develop the Canadian Infrastructure Report Card. When assessed condition data is not available, service life remaining is used to approximate asset condition.

Condition	Description	Criteria	Service Life Remaining (%)
Very Good	Fit for the future	Well maintained, good condition, new or recently rehabilitated	80-100
Good	Adequate for now	Acceptable, generally approaching mid-stage of expected service life	60-80
Fair	Requires attention	Signs of deterioration, some elements exhibit significant deficiencies	40-60
Poor	Increasing potential of affecting service	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20-40
Very Poor	Unfit for sustained service	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	0-20

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition.

3 Portfolio Overview

- The total replacement cost of the Township's asset portfolio is $14.9 million

- The Township's target re-investment rate is 4.6%, and the actual re-investment rate is 0.9%, contributing to an expanding infrastructure deficit

- 59% of all assets are in fair or better condition

- 48% of assets are projected to require replacement in the next 10 years

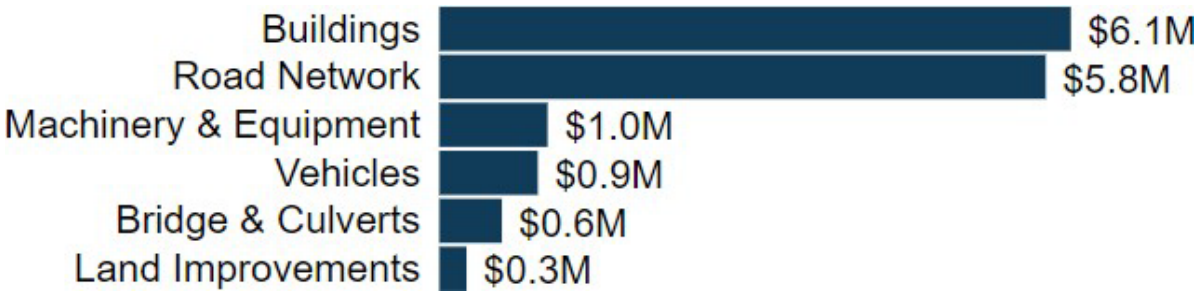
- Average annual capital requirements total $684 thousand per year across all assets

3.1 State of the Infrastructure

Asset Category	Replacement Cost	Asset Condition	Financial Capacity	
Road Network	$5.8M	Fair	Annual Requirement:	$140,000
			Funding Available:	$134,000
			Annual Deficit:	**$6,000**
Bridges & Culverts	$602k	Good	Annual Requirement:	$10,300
			Funding Available:	$3,000
			Annual Deficit:	**$7,300**
Buildings	$6.1M	Good	Annual Requirement:	$413,000
			Funding Available:	$0
			Annual Deficit:	**$413,000**
Machinery & Equipment	$1M	Fair	Annual Requirement:	$59,000
			Funding Available:	$0
			Annual Deficit:	**$59,000**
Vehicles	$948k	Very Poor	Annual Requirement:	$317,000
			Funding Available:	$0
			Annual Deficit:	**$317,000**
Land Improvements	$262k	Fair	Annual Requirement:	$12,000
			Funding Available:	$0
			Annual Deficit:	**$12,000**
Overall	$14.9M	Fair	Annual Requirement:	$684,000
			Funding Available:	$137,000
			Annual Deficit:	**$547,000**

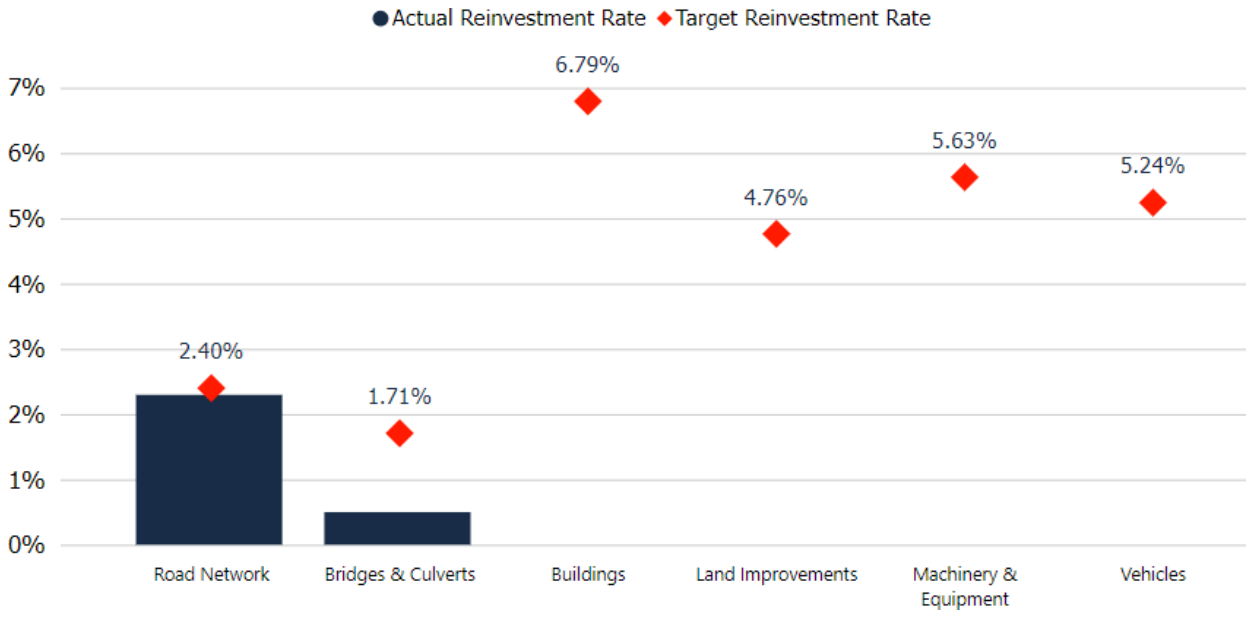
3.2 Asset Portfolio Total Replacement Cost

The asset categories analyzed in this AMP have a total replacement cost of $14.9 million based on inventory data from 2024. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.



3.3 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Township should be allocating approximately $684 thousand annually, for a target reinvestment rate of 4.6%. Actual annual spending on infrastructure totals approximately $137 thousand, for an actual reinvestment rate of 0.9%.



3.4 Condition of Asset Portfolio

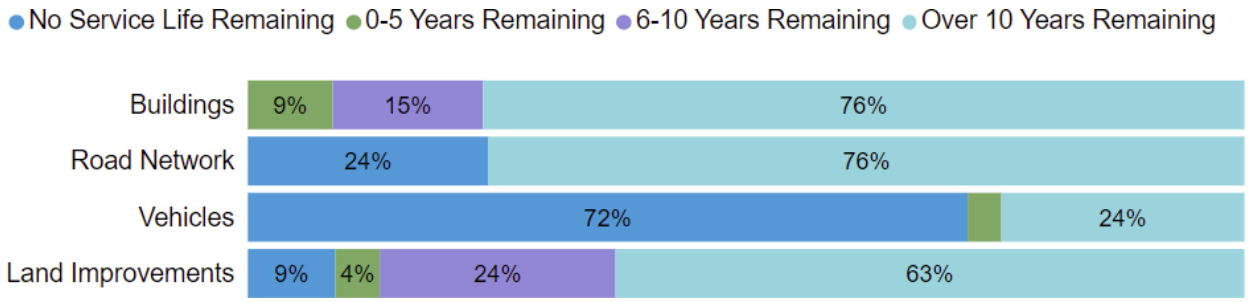
The current condition of the assets is central to all asset management planning. Collectively, 59% of assets in Conmee Township are in fair or better condition. This estimate relies on both age-based and field condition data.

This AMP relies on assessed condition data for 76% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment	% Of Assets with Assessed Condition	Source of Condition Data
Road Network	All Roads	70%	2020 Internal Assessment / Age-Based
Bridges & Culverts	Bridges	100%	2019/2020 OSIM Report
	Structural Culverts	100%	2019 OSIM Report
Buildings	All	100%	2020 Building Assessments
Machinery & Equipment	All	0%	Age-Based
Vehicles	All	0%	Age-Based
Land Improvements	All	0%	Age-Based

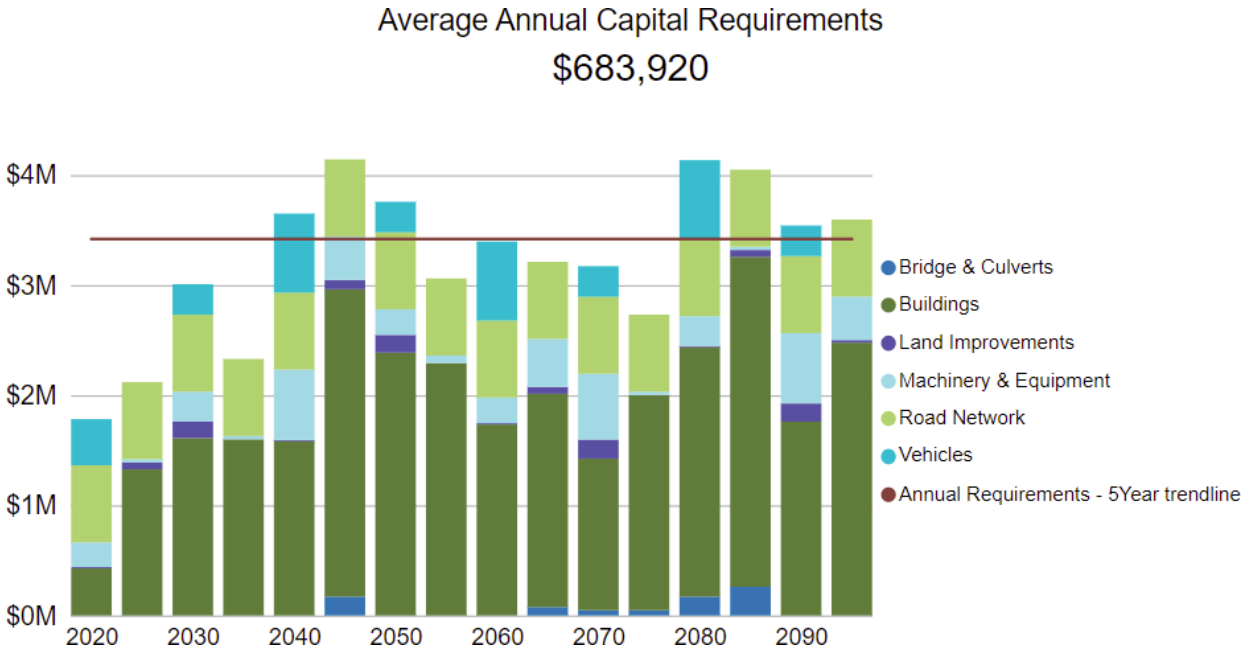
3.5 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 48% of the Township's assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix A.



3.6 Forecasted Capital Requirements

The following graph identifies the average annual capital requirements for the next 75 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and are based on the Township's asset inventory as of 2020 and do not include assets that may be required for growth. The trend line represents the average 5-year capital requirements.



4 State of Local Infrastructure Core Assets

- 59% of core assets are in fair or better condition

- The average annual capital requirement to sustain the current level of service for core assets is approximately $150 thousand

- Core infrastructure assets should be assessed regularly to better understand the performance of assets

4.1 Road Network

The road network is a critical component of the provision of safe and efficient transportation services and represents the second highest value asset category in the Township's asset portfolio. The road network is mainly comprised of gravel roads with the exception of one surface treated road segment providing access to the Township's Municipal Complex in addition to supporting roadside infrastructure including road culverts and guiderails.

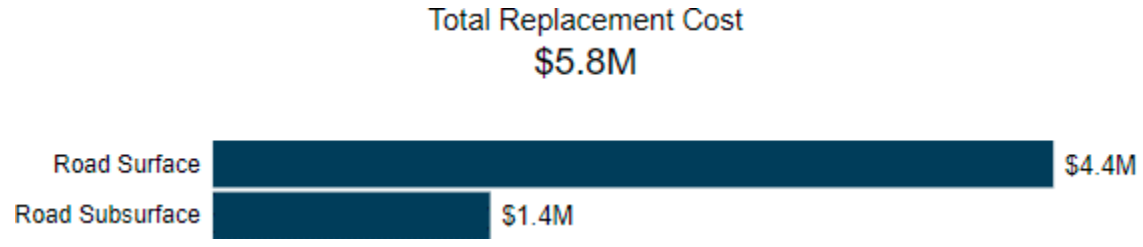
The Township's roads are maintained by the Public Works department, which is also responsible for winter snow clearing, ice control and snow removal operations.

4.1.1 Asset Inventory & Replacement Cost

Table 1 below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Road Network inventory.

Table 1: Road Network Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Road Surface	70,459m	Not Planned for Replacement[1]	$4,389,046
Road Subsurfaces (Including Culverts)	70,459m	Subsurface Not Planned for Replacement[1] Accept for strategic culvert replacement cycles	$1,448,096
			$5,837,142



[1] Gravel roads have been included as they comprise all the Township's Road Network with the exception of one surface treated segment. However, the lifecycle management strategies for these assets consist of perpetual maintenance activities funded by an operational budget and annual rehabilitation strategies funded through an annual capital budget.

4.1.2 Asset Condition

Table 2 below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Table 2: Road Network Asset Condition Summary

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Road Surface	63%	Good	100% Assessed
Road Subsurface	18%	Very Poor	Age-Based
	40.5%	**Poor**	**70% Assessed**

4.1.3 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- 2013 field review of the existing road network was conducted by Hatch Mott MacDonald
- The Township's Public Works Manager performs weekly road patrol visual inspections

4.1.4 Estimated Useful Life & Average Age

Table 3 illustrates the Estimated Useful Life for Road Network assets that have been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Table 3: Road Network Service Life Summary

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Road Surface	15 Years	15.2	3.3
Road Subsurface	60 Years	78.5	0
		46.8	**1.6**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.1.5 Lifecycle Management Strategy

Gravel roads typically have poor base construction. This can lead to wheel track rutting in wet weather, and traffic will continually displace gravel from the surface to the shoulder and ditch areas during wet and dry weather. Maintaining the shape of the road surface and shoulder is essential to ensure proper performance and to provide a sufficient level of service for the public.

Therefore, the management of gravel roads is not through major rehabilitation and replacement, but rather through good perpetual maintenance and some minor rehabilitation which depend on a few basic principles: proper techniques and cycles for grading; the use and upkeep of good surface gravel; and dust abatement and stabilization. The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment.

The following lifecycle strategies in **Table 4** have been documented to illustrate the perpetual maintenance and rehabilitation required to keep gravel roads in a good state of repair.

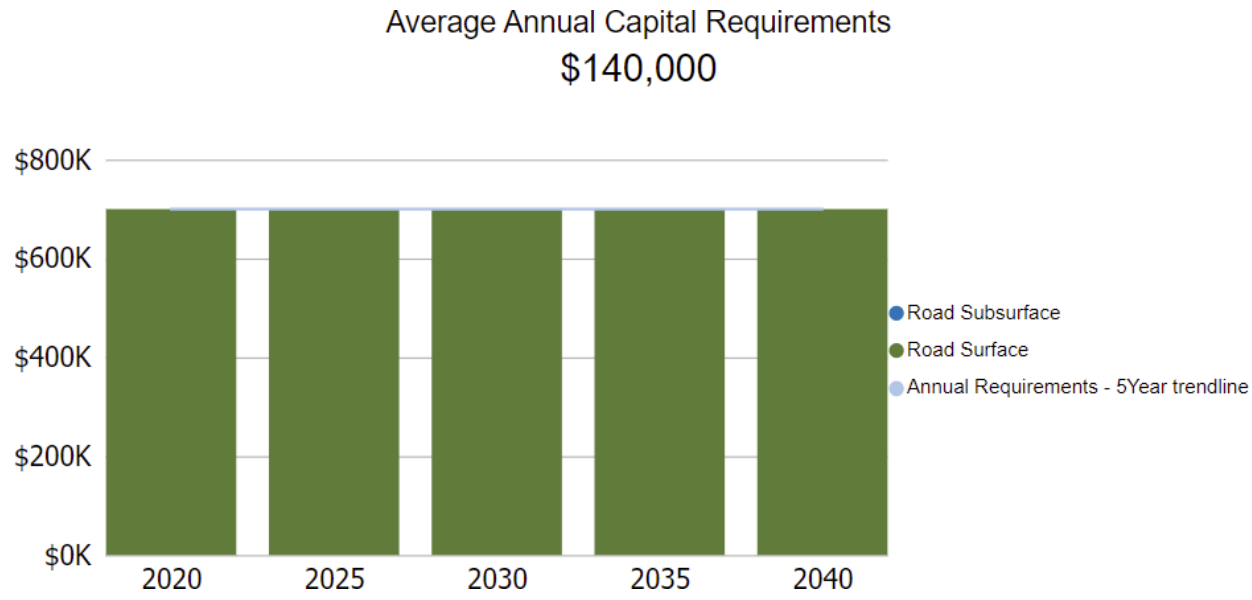
Instead of allowing the roads to deteriorate until replacement is required, strategic maintenance and rehabilitation is expected to extend the service life of roads at a lower total cost.

Table 4: Road Network Lifecycle Strategies

Gravel Roads		
Event Name	**Event Class**	**Event Trigger**
Gravelling	Rehabilitation	5 Yr Plan Approx. 6km/Yr.
Ditching / Culvert Replacements	Rehabilitation	Aligned with Gravelling 5yr Plan Approx. 6km/Yr.
Grading	Preventative Maintenance	As Needed
Dust Abatement	Maintenance	Seasonal Approx. 30-40 km/Yr.

4.1.6 Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for gravel roads, and assuming gravel roads are never planned for replacement, the following graph forecasts the annual capital requirements for the Road Network in 5-year blocks.



The annual capital requirement represents the average amount per year that the Township should allocate towards funding road rehabilitation and end of life replacement for road culverts to meet future capital needs. In addition to the Township's commitment to capital projects, an estimated $182,000 is required annually to sustain the Township's current maintenance program for all roads.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.1.7 Risk Analysis - Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2018 inventory data. **See** Table 5 for the criteria used to determine the risk rating of each asset.

Table 5: Road Network Quantitative Risk Rating Criteria

Asset Category	Criteria & Weight	Value/Range	Probability of Failure Score
Road Network	Performance (PCI) 100%	0 - 20	5
		20 - 40	4
		40 - 60	3
		60 - 80	2
		80 - 100	1
			Consequence of Failure Score
	Economic 100%	$250,000 or greater	5
		$100,000 - $250,000	4
		$25,000 - $100,000	3
		$10,000 - $25,000	2
		$0 - $10,000	1

4.1.8 Critical Assets

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. These may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data. Critical assets do not necessarily require immediate renewal or replacement.

4.1.9 Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Township is currently facing in addition to the stated risks in section 1.2.2:

4.1.10 Accessibility to Government Grants and Programs

Government funding and programs are specific to project components leaving the Municipalities to cover other costs (i.e., engineer, contract admin, etc.) which the Township may not have the adequate financial resources in turn renders the available funding inaccessible.

4.1.11 Financial Reinvestment

The current level of financial reinvestment does not sufficiently address maintenance and capital rehabilitation requirements to ensure roads remain in an adequate state of repair and achieve. The financial strategy in this report addresses the extent of this underfunding.

4.1.12 Staff Resources & Capacity

The Township's geographic location and limited resource capacity makes it very challenging to manage competing priorities within a very short summer construction season.

4.1.13 Levels of Service

The following figures and tables identify the Township's current level of service for the Road Network. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Figure 1: Road Network Connectivity

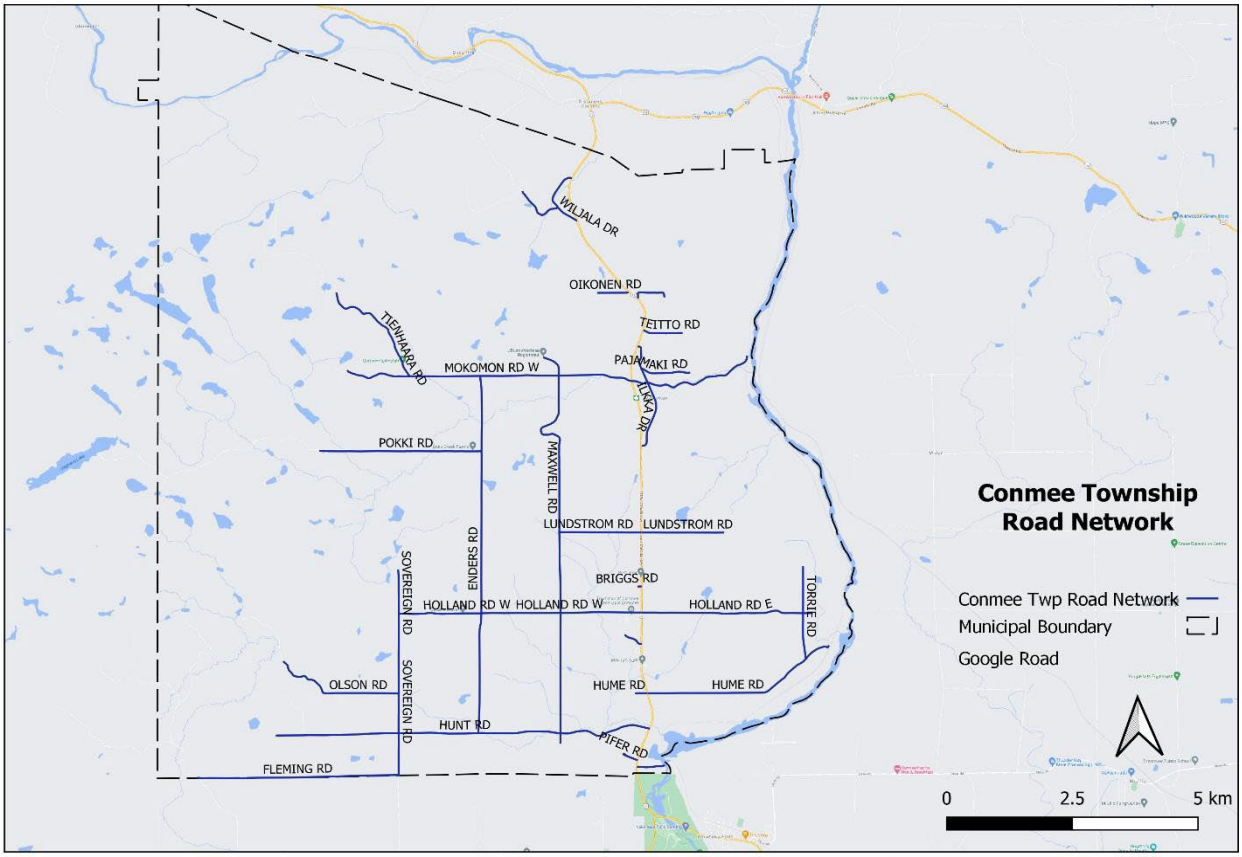


Table 6: Road Network Qualitative & Quantitative Levels of Service Metrics

Service Attribute	Community Levels of Service	
Availability	The road network serving Conmee Township is comprised of MMS Class 5 & 6 Local Roads. These local roads connect residence and business to the Trans Canada Hwy which serve as the Township's lifeline to critical services and supplies from neighbouring centres and the City of Thunder Bay. These roads also provide access to individual properties, natural resources, utilities, and MNR service trails. Refer to **Figure 1** for a map of the Townships Road Network	
	Technical Levels of Service	**2020**
	Number of MMS Class 5 & 6 lane-km of roads / sq. km of land area	2.4 lane-km/km^2
Reliability	**Community Levels of Service**	
	See Section 4.1.2 for a description of the Townships current approach to assessing road condition. **Table 6** below illustrates the condition rating criteria used to assess road condition.	
	Technical Levels of Service	**2020**
	Average condition of all road surfaces (unpaved)	90 (Fair)
Cost-Effectiveness	**Community Levels of Service**	
	See Section 4.1.4 for a description of the lifecycle activities performed on the road network.	
	Technical Levels of Service	**2020**
	O&M costs for all roads/km	$650
Safe and Regulatory	**Community Levels of Service**	
	Minimum Maintenance Standards (MMS) for roads are outlined in Ontario Regulation 239/02. This Regulation sets out the minimum standards or repair for roadways under municipal jurisdiction. The Township's current road maintenance strategies are directly informed by the MMS, and staff make every reasonable effort to meet all outlined standards.	
	Technical Levels of Service	**2020**
	Percent of the complete road network inspected weekly	100%
Sustainability	**Community Levels of Service**	
	The Township is committed to establishing sustainable revenue to ensure the rehabilitation and maintenance of the road network will meet current and future requirements of Ontario Regulation 239/02 while providing a sustainable level of service to the Township's taxpayers.	
	Technical Levels of Service	**2020**
	Annual capital reinvestment rate	2.3%

Table 7: Road Network Condition Assessment Criteria

Very Good	• No surface distress manifestation
Good	• Intermittent to isolated pothole and distorted sections • Generally good travelling road surface
Fair	• Mixture of properly shaped roadway surface and improperly shaped areas • Various surface distress manifestations such as potholes, wash-boarding – in slight to moderate class
Poor	• Majority of roadway improperly shaped • Various roadway surface distress manifestations making travel unpleasant due to potholes, wash-boarding, distortions and poor drainage
Very Poor	• Severe roadway surface distress • Severe distorted areas • Very rough on vehicular traffic

Recommendations

Condition Assessment Strategies

- The last comprehensive assessment of the road network was completed in 2013. Consider completing an updated assessment of all roads within the next 1-2 years.

Lifecycle Management Strategies

- Evaluate the efficacy of the Township's lifecycle management strategies at regular intervals (recommended cycle is two years) to determine the impact cost, condition and risk.

Risk Management Strategies

- Consider risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

4.2 Bridges & Structural Culverts

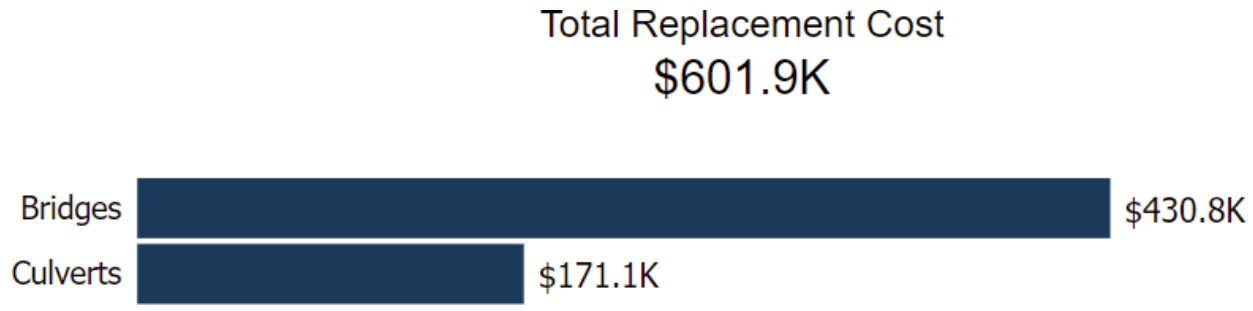
Bridges & Structural Culverts represent a critical portion of the transportation services provided to the community. The Township's bridge and structural culvert portfolio is comprised of bailey bridges and one structural culvert. The Public Works Department is responsible for the maintenance and repair of these assets. All bridge and structural culverts (>=3m in span) are subject to biennial inspections as per the Ontario Bridge Inspection Manual (OSIM).

4.2.1 Asset Inventory & Replacement Cost

Table 8 below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Bridges & Culverts inventory.

Table 8: Bridges & Structural Culverts Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Bridges	5	94% User-Defined Cost 6% CPI Tables	$430,760
Structural Culverts	1	100% User-Defined Cost	$171,139
			$601,899



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

4.2.2 Asset Condition

Table 9 below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Table 9: Bridges & Structural Culverts Asset Condition Summary

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Bridges	62%	Good	100% Assessed
Structural Culverts	59%	Fair	100% Assessed
	62%	**Good**	**100% Assessed**

To ensure that the Township's bridges & structural culverts continues to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation, and replacement activities is required to increase the overall condition.

4.2.3 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 meters are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM)
- Internal staff perform visual bridge inspections on all bridges on a quarterly basis

4.2.4 Estimated Useful Life & Average Age

Table 10 Estimated Useful Life for Bridges & Culverts assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Table 10: Bridges & Structural Culverts Service Life Summary

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Bridges (5)	85 Years	51	49
Structural Culvert (1)	35 Years	38	21
		45	**42**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.2.5 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

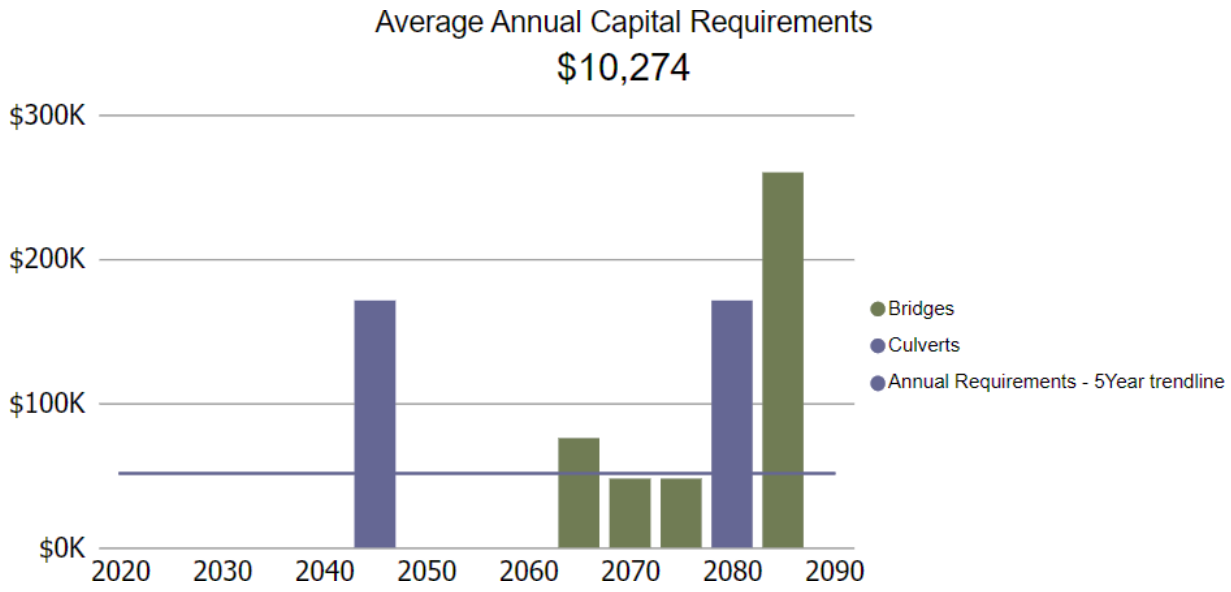
Table 11 below outlines the Township's current lifecycle management strategy.

Table 11: Bridges & Structural Culverts Lifecycle Strategies

Activity Type	Description of Current Strategy
Preventative Maintenance	Township staff perform annual deck surface cleaning, periodic debris removal, annual spring culvert steaming
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2022/2023 by JML Engineering

4.2.6 Forecasted Capital Requirements

The illustration below forecasts the annual capital requirements for bridges & structural culverts in 5-year blocks. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.2.7 Risk Analysis

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2018 inventory data. See Table 12 for the criteria used to determine the quantitative risk rating of each asset.

Table 12: Bridge & Structural Culverts Quantitative Risk Rating Criteria

Asset Category	Criteria & Weight	Value/Range	Probability of Failure Score
Bridges & Structural Culverts	Performance (BCI) 100%	0 - 40	5
		40 - 60	4
		60 - 70	3
		70 - 90	2
		90 - 100	1
			Consequence of Failure Score
	Economic 100%	$200,000 or greater	5
		$150,000 - $200,000	4
		$100,000 - $150,000	3
		$50,000 - $100,000	2
		$0 - $50,000	1

4.2.8 Critical Assets

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. These may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data. Critical assets do not necessarily require immediate renewal or replacement.

4.2.9 Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Township is currently facing in addition to the stated risks in section 1.2.2:

4.2.10 Accessibility to Government Grants and Programs

Similar to managing the road network, government funding and programs are specific to project components leaving the Municipalities to cover other costs (i.e., engineer, contract admin, etc.) which the Township may not have the adequate financial resources in turn renders the available funding inaccessible.

4.2.11 Staff Resources & Capacity

Through biennial bridge inspections staff receive a list of recommended maintenance and rehabilitation activities for bridges. The Township's approach in managing these assets have been proactive in nature but the geographic location and limited resource capacity makes it very challenging to manage competing priorities with other infrastructure needs.

4.2.12 Levels of Service

The following figures and tables identify the Township's current level of service bridges and structural culverts. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Figure 2: Bridges & Structural Culverts Road Network Connectivity

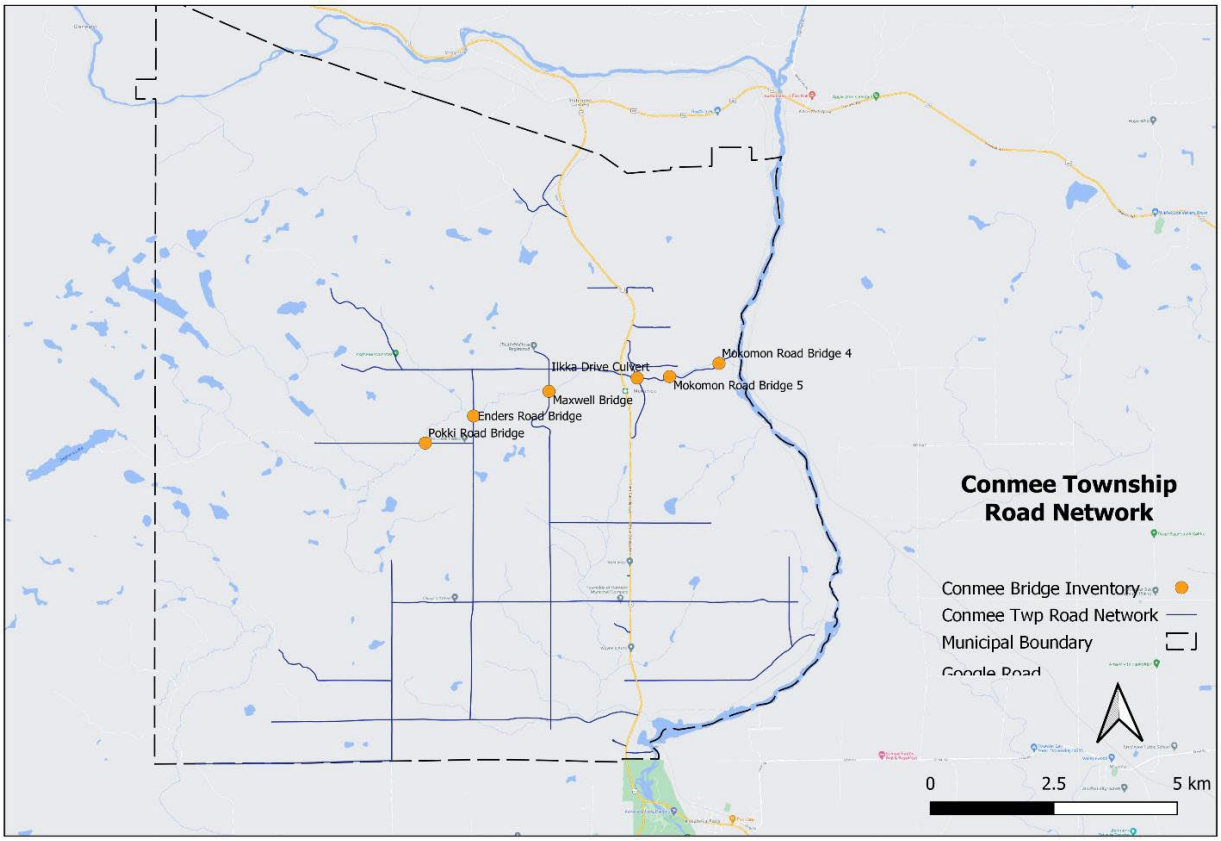


Table 13: Bridges & Structural Culverts Qualitative & Quantitative Levels of Service Metrics

Service Attribute	Community Levels of Service	
Availability	The Township's structures are designed in accordance with the Public Transportation and Highway Improvement Act, R.S.O. 1990, c.P.50, Ontario Regulation 104/97 Standards for Bridges and provide access to different users according to the structure class and crossing over type. The Township's uses of these assets range from farm equipment, heavy commercial, passenger vehicles, emergency vehicles, and recreational off-highway vehicles. Refer to **Figure 2** for a map of the Townships Road Network	
	Technical Levels of Service	**2020**
	% Of bridges that have loading or dimensional restrictions	83%
Reliability	**Community Levels of Service**	
	See Section 4.2.2 for a description of the Townships current approach to assessing bridge and structural culvert condition. **Table 14** illustrates how the BCI Rating is used to assess the condition of bridges and structural culverts.	
	Technical Levels of Service	**2020**
	Average bridge condition index for bridge structures	75 (Good)
	Average bridge condition index for structural culverts	70 (Good)
Cost-Effectiveness	**Community Levels of Service**	
	See Section 4.2.4 for a description of the lifecycle activities performed on bridges & structural culverts	
	Technical Levels of Service	**2020**
	O&M cost for bridges & culverts	$4,691
Safety	**Community Levels of Service**	
	Biennial structure inspections are performed on all bridges and major structures in accordance with Ontario Regulation 104/97 Standards for Bridges to ensure structures are kept safe and in good repair. The detailed visual inspections follow the guidelines in Ontario's Structure Inspection Manual (OSIM) which sets standards for the visual inspection and condition rating of bridges and their elements. Bridge condition is typically reported in terms of a single value called the Bridge Condition Index (BCI).	
	Technical Levels of Service	**2020**
	% Of bridges and structural culverts subjected to condition assessment study	100%
Sustainability	**Community Levels of Service**	
	The Township is committed to establishing sustainable revenue to ensure the rehabilitation and maintenance of the bridges/structural culverts to provide a sustainable level of service to the Township's taxpayers.	
	Technical Levels of Service	**2020**
	Annual capital reinvestment rate	0.5%

Table 14: Bridge Condition Assessment Criteria Example

Condition Grade	Bridge ID	2020 BCI	Bridge Example
Very Good Approaching Good	Maxwell Road Bridge	82	
Fair Approaching Poor	Mokomon Road Bridge No. 4	60	

4.2.13 Recommendations

Data Review/Validation

- Continue to review and validate inventory data, assessed condition data and replacement costs for all bridges and structural culverts upon the completion of OSIM inspections every 2 years.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

Lifecycle Management Strategies

- This AMP only includes capital costs associated with the reconstruction of bridges and culverts. The Township should work towards identifying projected current and future operational and maintenance costs for bridges and culverts and integrating these costs into long-term planning.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believe to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

5 State of Local Infrastructure Other Assets

Key Insights

- Non-core assets are valued at $8.3 million
- 79% of non-core assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for non-core assets is approximately $534 thousand

5.1 Buildings

Conmee Township owns and maintains several facilities that provide key services to the community. These include:

- Administration
- Ambulance
- Fire
- Landfill
- Public works garages and storage sheds
- Recreation

5.1.1 Asset Inventory & Replacement Cost

Table 15 below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Buildings & Facilities inventory.

Table 15: Buildings Portfolio Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Administration	1	Cost/Unit	$3,837,825
Emergency Services	2	Cost/Unit	$1,277,800
Landfill	2	Cost/Unit	$73,325
Public Works	4	Cost/Unit	$1,036,785
			$6,288,735

5.1.2 Asset Condition

Table 16 below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Table 16: Building Condition Summary

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Administration	39%	Poor	100% Assessed
Emergency Services	38%	Poor	100% Assessed
Landfill	30%	Poor	100% Assessed
Public Services	17%	Very Poor	100% Assessed
	33%	**Good**	**100% Assessed**

To ensure that the Township's buildings continue to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the buildings.

5.1.3 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- Detailed building condition assessments were performed by Accent Building Sciences Inc. in 2021. This included a detailed breakdown of building components and assessments of each facility's general condition, required repairs and recommended upgrades.
- Internal visual inspections are performed regularly

5.1.4 Estimated Useful Life & Average Age

Table 17 below illustrates the Estimated Useful Life for buildings assets that have been assigned according to a combination of established industry standards, detailed assessments, and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Table 17: Buildings Service Life Summary

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Administration	50 - 70 Years	7.9	9.8
Emergency Services	50 - 70 Years	16.9	14.9
Landfill	25 - 70 Years	9.0	6.3
Public Services	25 - 70 Years	7.2	1.8
		10.3	**8.11**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

5.1.5 Lifecycle Management Strategy

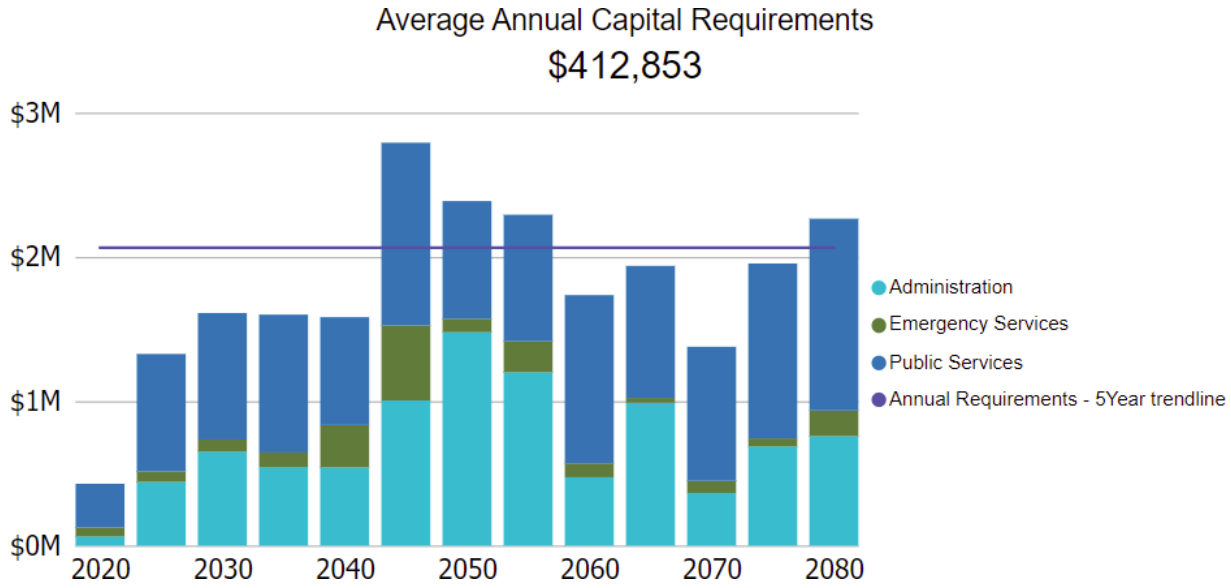
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. **Table 18** outlines the Township's current lifecycle management strategy.

Table 18: Buildings Lifecycle Management Strategies

Activity Type	Description of Current Strategy
Maintenance / Repair / Rehabilitation	Municipal buildings are subject to regular inspections to identify health & safety requirements as well as structural deficiencies that require additional attention
	Critical buildings such as fire stations have a detailed maintenance and rehabilitation schedule, while the maintenance of other facilities are dealt with on a case-by-case basis
Replacement	As a supplement to the knowledge and expertise of municipal staff the Township recently completed a comprehensive assessment of each building to inform replacements, rehabilitation, and repairs over the next 10 years

5.1.6 Forecasted Capital Requirements

The following graph forecasts the annual capital requirements for the buildings in 5-year blocks. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

5.1.7 Risk Analysis

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See **Table 19** for the criteria used to determine the quantitative risk rating of each asset.

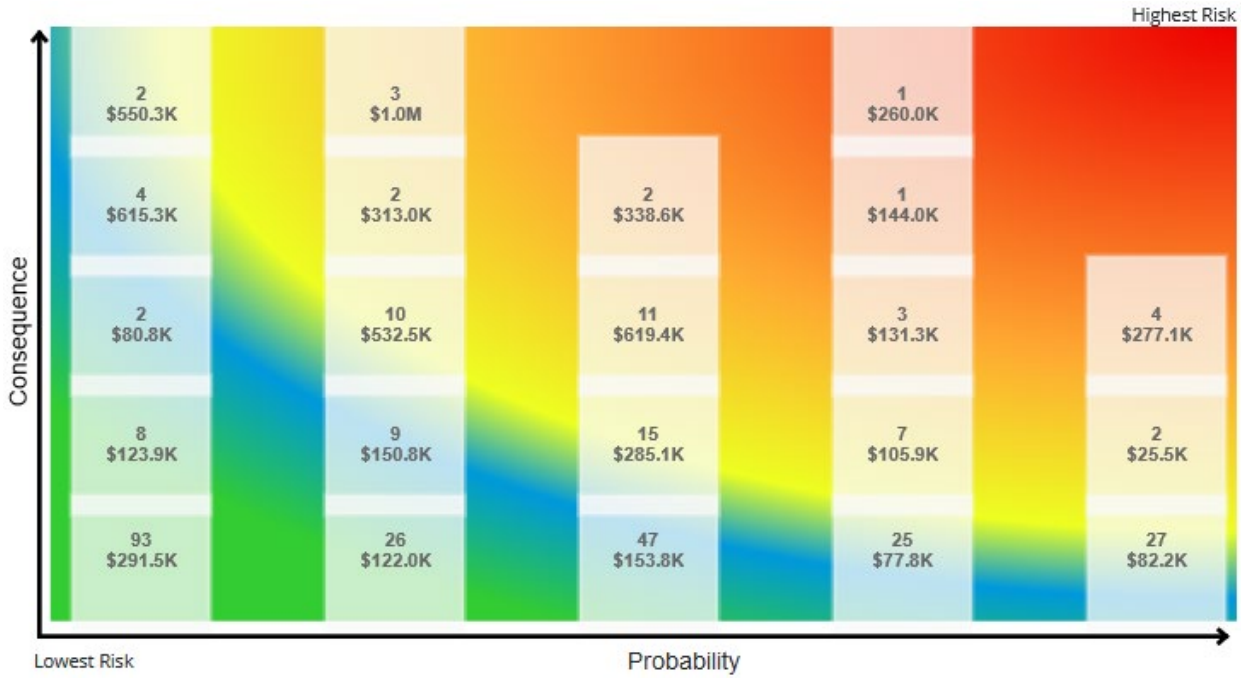


Table 19: Buildings Quantitative Risk Rating Criteria

Asset Category	Criteria & Weight	Value/Range	Probability of Failure Score
Buildings	Performance (BCA) 1 - 5	0 - 1	5
		1 - 2	4
		2 - 3	3
		3 - 4	2
		4 - 5	1
			Consequence of Failure Score
	Economic 100%	$200,000 or greater	5
		$100,000 - $200,000	4
		$30,000 - $100,000	3
		$10,000 - $30,000	2
		$0 - $10,000	1

5.1.8 Risks to Current Asset Management Strategies

In the next Asset Management Plan (2025), the Township should identify key trends, challenges, and risks to service delivery that the Township faces in addition to the stated risks in section 1.2.2.

5.1.9 Levels of Service

By comparing the cost, performance (average condition) and risk year-over-year, the Township will be able to evaluate how their services/assets are trending. The Township will use this data to set a target level of service and determine proposed levels for the regulation by 2025.

Community Levels of Service

The qualitative descriptions that determine the community levels of service provided by municipal facilities are based on the types of facilities outlined below:

- Administrative
- Emergency Services
- Landfill
- Public Works

Technical Levels of Service

The quantitative metrics that determine the technical level of service provided by the Township are going to be the analysis of reinvestment rates, average condition and average asset risk levels.

5.1.10 Recommendations

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- With the new robust buildings inventory, it is recommended the Township further enhance the quantitative risk model to better determine higher risk assets and inform the short- and longer-term budgets

Levels of Service

- Work towards identifying proposed levels of service as per O. Reg. 588/17 (July 2025) and identify the strategies that are required to close any gaps between current and proposed levels of service.

5.2 Machinery & Equipment

In order to maintain the high quality of public infrastructure and support the delivery of core services, Township staff own and employ various types of machinery and equipment. This includes:

- Office and administrative equipment
- Fire equipment to support the delivery of emergency services
- Plows and sand hoppers to provide winter control activities

Keeping machinery & equipment in an adequate state of repair is important to maintain a high level of service.

5.2.1 Asset Inventory & Replacement Cost

Table 20 below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Machinery & Equipment inventory.

Table 20: Machinery & Equipment Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Administration	5	CPI Tables	$197,379
Emergency Services	1	CPI Tables	$9,246
Landfill	1	CPI Tables	$8,619
Public Works	9	CPI Tables	$826,741
			$1,041,985

5.2.2 Asset Condition

Table 21 below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Table 21: Machinery & Equipment Asset Condition Summary

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Administration	0%	Very Poor	Age-Based
Emergency Services	0%	Very Poor	Age-Based
Landfill	76%	Very Good	Age-Based
Public Works	15%	Poor	Age-Based
	40%	**Fair**	**Age-Based**

To ensure that the Township's machinery & equipment continues to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Machinery & Equipment.

5.2.3 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- Staff complete regular visual inspections of machinery & equipment to ensure they are in state of adequate repair
- There are no formal condition assessment programs in place

5.2.4 Estimated Useful Life & Average Age

Table 22 illustrates the Estimated Useful Life for machinery & equipment assets that have been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Table 22: Machinery & Equipment Service Life Summary

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Administration	10 - 25 Years	11.7	2.7
Emergency	5 - 25 Years	15.0	5.0
Landfill	5 – 25 years	6.0	19.0
Public Works	5 - 25 Years	22.7	1.5
		17.8	**0.9**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

5.2.5 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

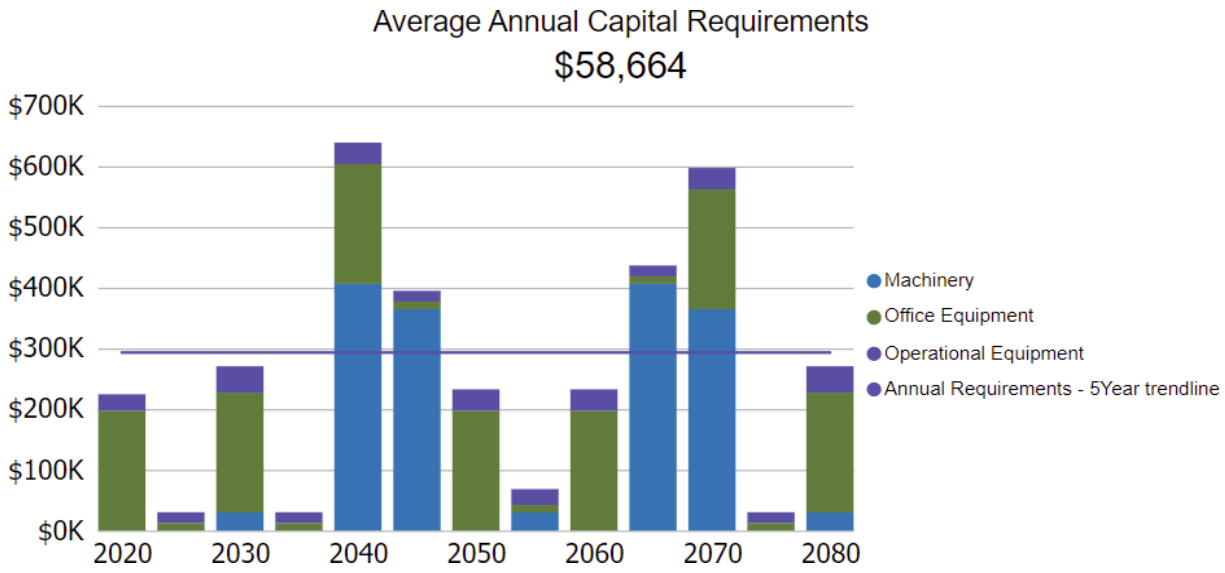
Table 23 outlines the Township's current lifecycle management strategy.

Table 23: Machinery & Equipment Lifecycle Management Strategies

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Maintenance program varies by department
	Fire Protection Services equipment is subject to a much more rigorous inspection and maintenance program compared to most other departments
	Machinery & equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff
Replacement	The replacement of machinery & equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks

5.2.6 Forecasted Capital Requirements

The following graph forecasts the annual capital requirements for machinery & equipment in 5-year blocks. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



5.2.7 Risk Analysis

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Table 24 for the criteria used to determine the quantitative risk rating of each asset.

Table 24: Machinery & Equipment Quantitative Risk Criteria

5.2.8 Risks to Current Asset Management Strategies

Asset Category	Criteria & Weight	Value/Range	Probability of Failure Score
Machinery & Equipment	Performance (Age) 100%	0 - 20	5
		20 - 40	4
		40 - 60	3
		60 - 80	2
		80 - 100	1
			Consequence of Failure Score
	Economic 100%	$60,000 or greater	5
		$20,000 - $60,000	4
		$10,000 - $20,000	3
		$5,000 - $10,000	2
		$0 - $5,000	1

5.2.9 Levels of Service

By comparing the cost, performance (average condition) and risk year-over-year, the Township will be able to evaluate how their services/assets are trending. The Township will use this data to set a target level of service and determine proposed levels for the regulation by 2025.

Community Levels of Service

The qualitative descriptions that determine the community levels of service provided by machinery and equipment are by ensuring that they are reliable, sustainable, and affordable to meet the needs of staff and the community.

Technical Levels of Service

The quantitative metrics that determine the technical level of service provided by the Township are going to be the analysis of reinvestment rates, average condition, and average asset risk levels.

5.2.10 Recommendations

Replacement Costs

- All replacement costs used in this AMP were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk equipment.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.
- Develop a formal condition assessment program that include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

5.3 Vehicles

Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- tandem axle trucks for winter control activities
- fire rescue vehicles to provide emergency services
- pick-up trucks to support the maintenance of critical infrastructure

5.3.1 Asset Inventory & Replacement Cost

Table 25 below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Vehicles.

Table 25: Vehicles Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Emergency Services	2	CPI Tables	$418,995
Public Services	4	CPI Tables	$528,975
			$947,970

5.3.2 Asset Condition

Table 26 below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Table 26: Vehicles Asset Condition Summary

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Emergency Services	0%	Very Poor	Age-Based
Public Services	17%	Poor	Age-Based
	11%	**Very Poor**	**Age-Based**

To ensure that the Township's Vehicles continue to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Vehicles.

5.3.3 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- Staff complete regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation
- The mileage of vehicles is used as a proxy to determine remaining useful life and relative vehicle condition except for the Fire Department

5.3.4 Estimated Useful Life & Average Age

Table 27 illustrates the Estimated Useful Life for Vehicles assets that have been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase

or decrease the average service life remaining.

Table 27: Vehicles Service Life Summary

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Emergency Services	20 Years	23.6	3.6
Public Services	10 - 20 Years	26.6	1.3
		25.6	**2**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

5.3.5 Lifecycle Management Strategy

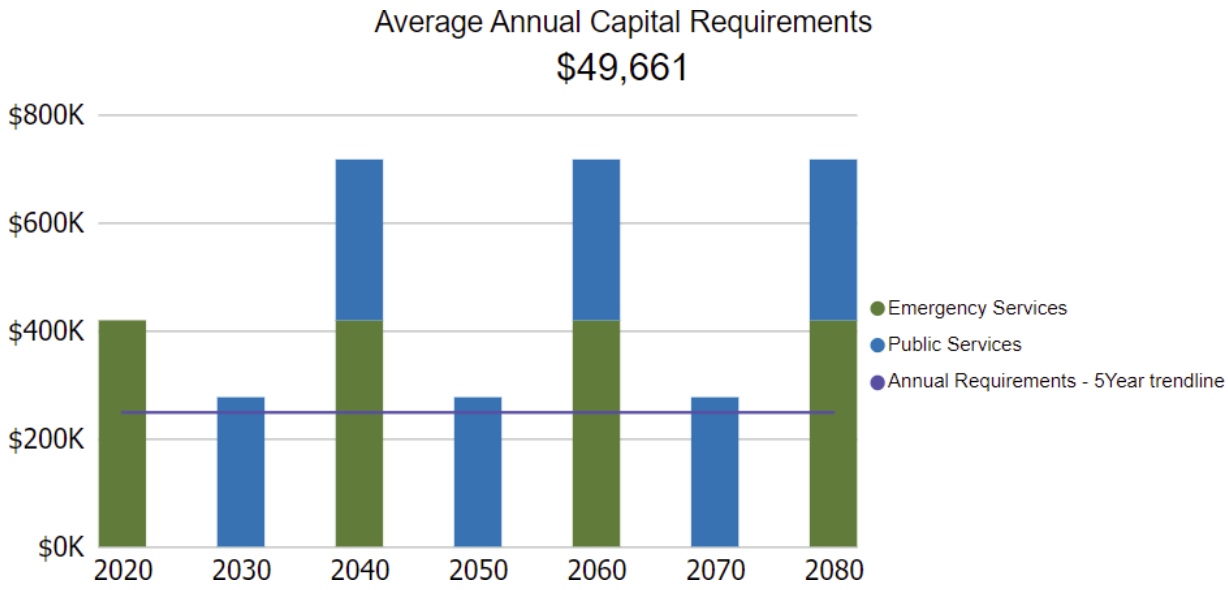
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. **Table 28** outlines the Township's current lifecycle management strategy.

Table 28: Vehicles Lifecycle Management Strategies

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Visual inspections completed and documented daily; fluids inspected at every fuel stop; tires inspected monthly
	Every 4-7000km includes a detailed inspection; tires are rotated and oil changed
	Annual preventative maintenance activities include system components check and additional detailed inspections
Replacement	Vehicle replacements are based on the Township's Capital Asset Policy (Policy No. 34)
	Vehicle age, kilometres and annual repair costs are taken into consideration when determining appropriate replacement options

5.3.6 Forecasted Capital Requirements

The following graph forecasts the annual capital requirements for the Vehicles in 5-year blocks. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



5.3.7 Risk Analysis

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See **Table 29** for the criteria used to determine the quantitative risk rating of each asset.

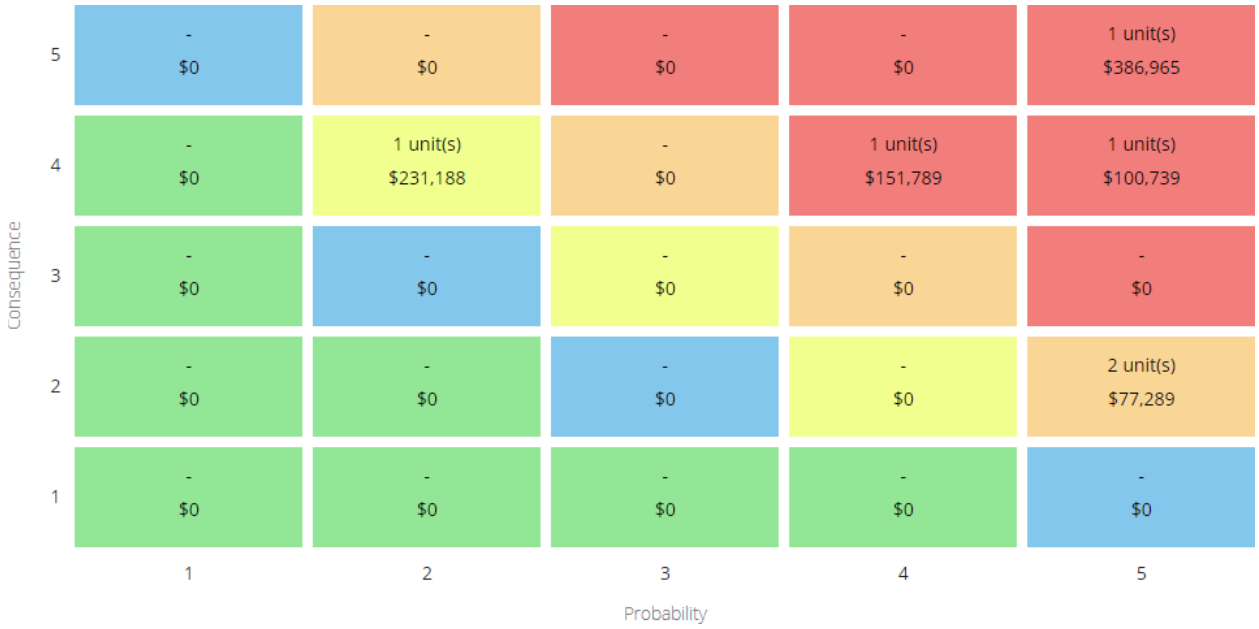


Table 29: Vehicles Quantitative Risk Criteria

Asset Category	Criteria & Weight	Value/Range	Probability of Failure Score
	Performance (Age) 100%	0 - 20	5
		20 - 40	4
		40 - 60	3
		60 - 80	2
		80 - 100	1
Vehicles			Consequence of Failure Score
	Economic 100%	$300,000 or greater	5
		$100,000 - $300,000	4
		$60,000 - $100,000	3
		$25,000 - $60,000	2
		$0 - $25,000	1

5.3.8 Levels of Service

Vehicles are considered a non-core asset category.

The following tables identify the Municipality's current level of service for the vehicles. These metrics include the technical and community level of service metrics that the Municipality has selected for this AMP.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by machinery & equipment assets.

Service Attribute	**Qualitative Description**	**Current LOS**
Scope	Description or images of the types of vehicles (e.g. light, medium and heavy-duty) that the municipality operates and the services that they help to provide to the community	Using assessed condition data as available, and age-based condition otherwise vehicle assets range in condition from very poor to very good and are on average in fair condition. Fleet assets include diverse assets that service the Township's fire, public works, and parks and recreation departments.
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Fleet investments are generally planned several years out and consider the asset's age, condition, utility, and cost-benefit analysis of replacement.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by machinery & equipment assets.

Service Attribute	**Technical Metric**	**Current LOS**
Scope	Average Condition Rating Average Risk Rating	Fair Fair
Quality	Capital reinvestment Rate	Standard

5.3.9 Recommendations

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk vehicles.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.
- Develop a formal condition assessment program that include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

5.4 Land Improvements

Conmee Township owns a small number of assets that are considered Land Improvements. This category includes:

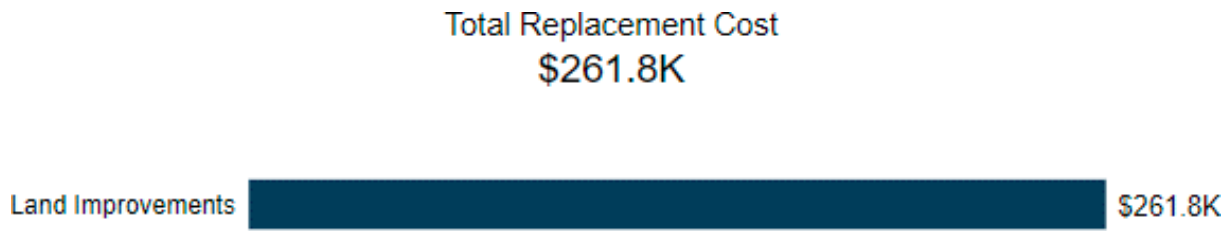
- Parking lots for municipal facilities
- Columbarium
- Fencing and signage
- Playground structures
- Miscellaneous landscaping and other assets

5.4.1 Asset Inventory & Replacement Cost

Table 30 below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Land Improvements inventory.

Table 30: Land Improvements Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Land Improvements	8	CPI Tables	$261,808
			$261,808



5.4.2 Asset Condition

Table 31 below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Table 31: Land Improvements Asset Condition Summary

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Land Improvements	34%	Poor	Age-Based
	50%	**Fair**	**Age-Based**

To ensure that the Township's Land Improvements continues to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Land Improvements.

5.4.3 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- Staff complete regular visual inspections of land improvements assets to ensure they are in state of adequate repair
- There are no formal condition assessment programs in place for land improvements

5.4.4 Estimated Useful Life & Average Age

Table 32 below illustrates the Estimated Useful Life for Land Improvements assets that have been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Table 32: Land Improvements Service Life Summary

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Land Improvements	10 - 75 Years	20.5	12.9
		20.5	**12.9**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

5.4.5 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

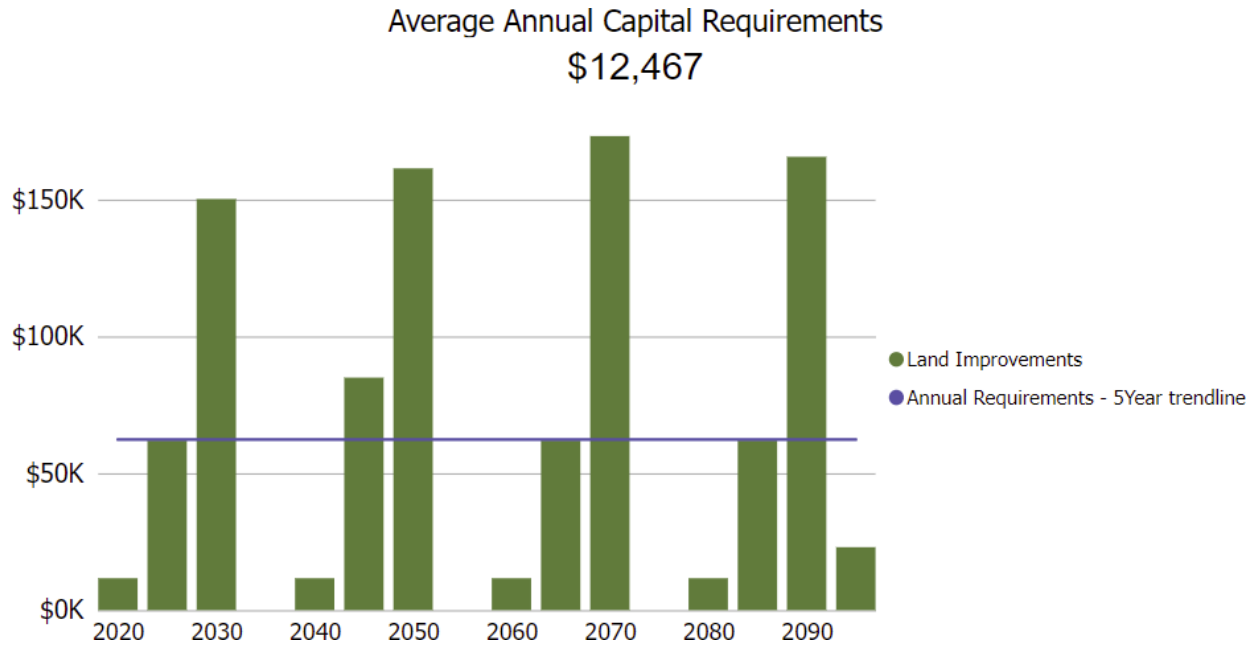
Table 33 outlines the Township's current lifecycle management strategy.

Table 33: Land Improvements Lifecycle Management Strategies

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation & Replacement	The Land Improvements asset category includes several unique asset types and lifecycle requirements are dealt with on a case-by-case basis

5.4.6 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

5.4.7 Risk & Criticality

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2018 inventory data. See **Table 34** for the criteria used to determine the quantitative risk rating of each asset.

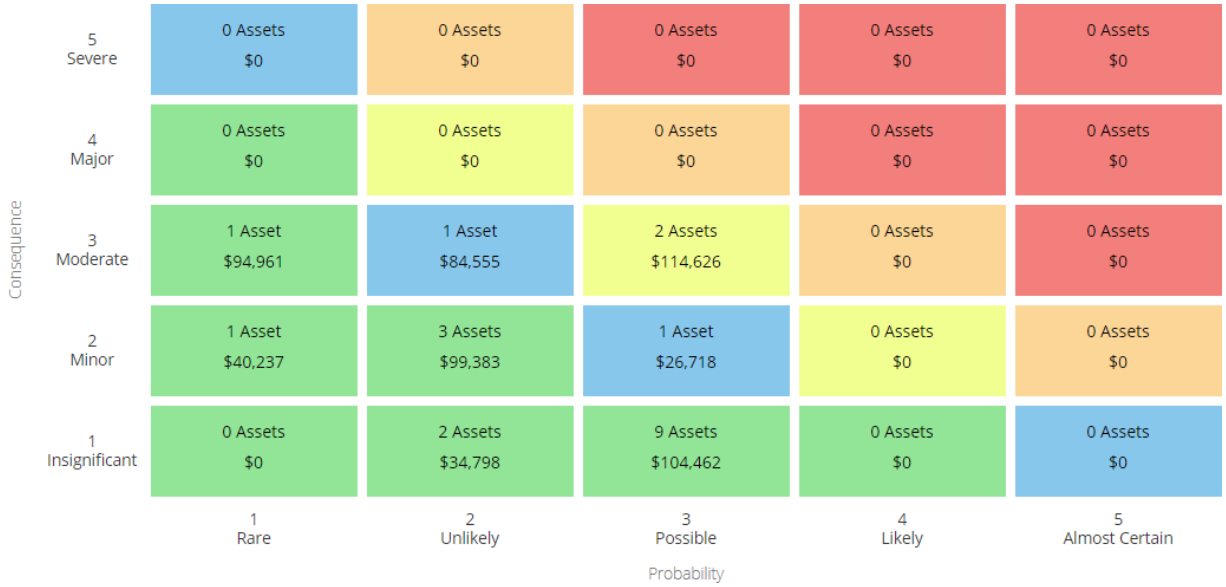


Table 34: Land Improvements Quantitative Risk Criteria

Asset Category	Criteria & Weight	Value/Range	Probability of Failure Score
Land Improvements	Performance (Age) 100%	0 - 20	5
		20 - 40	4
		40 - 60	3
		60 - 80	2
		80 - 100	1
			Consequence of Failure Score
	Economic 100%	$50,000 or greater	5
		$30,000 - $50,000	4
		$20,000 - $30,000	3
		$10,000 - $20,000	2
		$0 - $10,000	1

5.4.8 Levels of Service

The following tables identify the Municipality's current level of service for the vehicles. These metrics include the technical and community level of service metrics that the Municipality has selected for this AMP.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by machinery & equipment assets.

Service Attribute	**Qualitative Description**	**Current LOS**
Scope	Description, which may include maps, of the outdoor recreational facilities that the municipality operates and maintains	Using age-based condition, land improvement assets range in condition from very poor to very good and are in average in fair condition. Land improvement assets include active and passive parkland, waterfront parks, and trails. Wherever possible, assets are designed to serve a wide range of users.
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Land improvement asset investment decisions are predominantly based on asset condition and expected future utility alongside existing rate of use and relevant Master Plan findings. Land improvement capital investment projects are formally and publicly identified one year in advance and internally identified several years in advance.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by machinery & equipment assets.

Service Attribute	**Technical Metric**	**Current LOS**
Quality	Average condition of outdoor recreational facilities in the municipality (e.g. very good, good, fair, poor, very poor)	See 5.4.2

Performance	% of land improvements in good or very good condition % of land improvements in poor or very poor condition	See 5.4.2

5.4.9 Recommendations

Replacement Costs

- All replacement costs used in this AMP were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.
- Develop a formal condition assessment program that include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

Levels of Service

- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between

current and proposed levels of service. Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

6 Impacts of Growth

- Understanding the key drivers of growth and demand will allow the Township to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure

- The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service

6.1 Description of Growth Assumptions

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow the Township to plan for new infrastructure and the upgrade or disposal of existing infrastructure more effectively. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

6.1.1 Conmee's Official Plan (1993)

Conmee Township's current Official Plan was adopted in 1993 and has received amendments to date. The Township is actively reviewing their Official Plan and intend to update it soon. The current plan identifies several infrastructure requirements for new development to ensure it's financially and operationally sustainable. Specifically, it requires that new road construction does not occur solely for the creation of new lots except where new lots can be created through modest extension of an existing dead-end road. It also requires that new development be serviced by private water wells and septic systems and that the new lots are of sufficient size and nature to reasonably accommodate such services.

As well the Official Plan identifies goals for its rural land uses such as maintaining a low-density character, providing flexibility by permitting a variety of land uses, and allowing the development of natural resources and economic activities in a manner that's compatible with other land uses. Accordingly commercial and industrial uses are only permitted in rural areas where they are of a small scale

The plan notes the Township's value for the rural nature of the landscape and stipulates that municipally owned recreational lands shall retain their scenic and natural values while facilitating accessible use for a variety of recreation styles.

6.1.2 Conmee Township Population Patterns

Conmee Township's population is modestly sized but has recently seen more rapid population growth than the province of Ontario. Specifically, between 2011 and 2016 Conmee Township's population grew by 7.2% compared to the Province of Ontario at 4.6%. The Table below outlines historical population levels for Conmee Township.

	1991	1996	2001	2006	2011	2016
Historical Total Population	651	729	740	748	764	819

6.2 Impact of Growth on Lifecycle Activities

By July 1, 2025 the Township's asset management plan must include a discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.

Planning for forecasted population growth may require the expansion of existing infrastructure and services. As growth-related assets are constructed or acquired, they should be integrated into the Township's AMP. While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the Township will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to, at a minimum, maintain the current level of service.

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow the Municipality to plan for new infrastructure more effectively, and the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

7 Financial Strategy

7.1 Financial Strategy Overview

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Township of Conmee to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

This report develops such a financial plan by presenting several scenarios for consideration and culminating with final recommendations. As outlined below, the scenarios presented model different combinations of the following components:

1. The financial requirements for:
    a. Existing assets
    b. Existing service levels
    c. Requirements of contemplated changes in service levels (none identified for this plan)
    d. Requirements of anticipated growth (none identified for this plan)
2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Reserves
    d. Debt
    e. Development charges
3. Use of non-traditional sources of municipal funds:
    a. Reallocated budgets
    b. Partnerships
    c. Procurement methods

4. Use of Senior Government Funds:
    a. Gas tax
    b. Annual grants

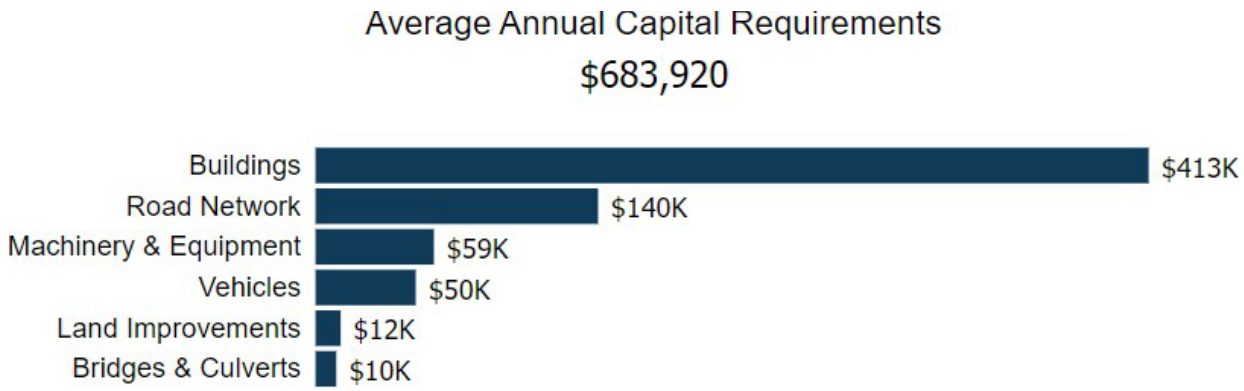
Note: Periodic grants are normally not included due to Provincial requirements for firm commitments. However, if moving a specific project forward is wholly dependent on receiving a one-time grant, the replacement cost included in the financial strategy is the net of such grant being received.

If the financial plan component results in a funding shortfall, the Province requires the inclusion of a specific plan as to how the impact of the shortfall will be managed. In determining the legitimacy of a funding shortfall, the Province may evaluate a Township's approach to the following:

1. In order to reduce financial requirements, consideration has been given to revising service levels downward.
2. All asset management and financial strategies have been considered. For example:
    a. If a zero-debt policy is in place, is it warranted? If not the use of debt should be considered.
    b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.

7.1.1 Annual Requirements & Capital Funding

The annual requirements represent the amount the Township should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Township must allocate approximately $684 thousand annually to address capital requirements for the assets included in this AMP.



For most asset categories the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset.

However, for the Road Network, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Township's Road Network. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table compares two scenarios for the Road Network and Buildings:

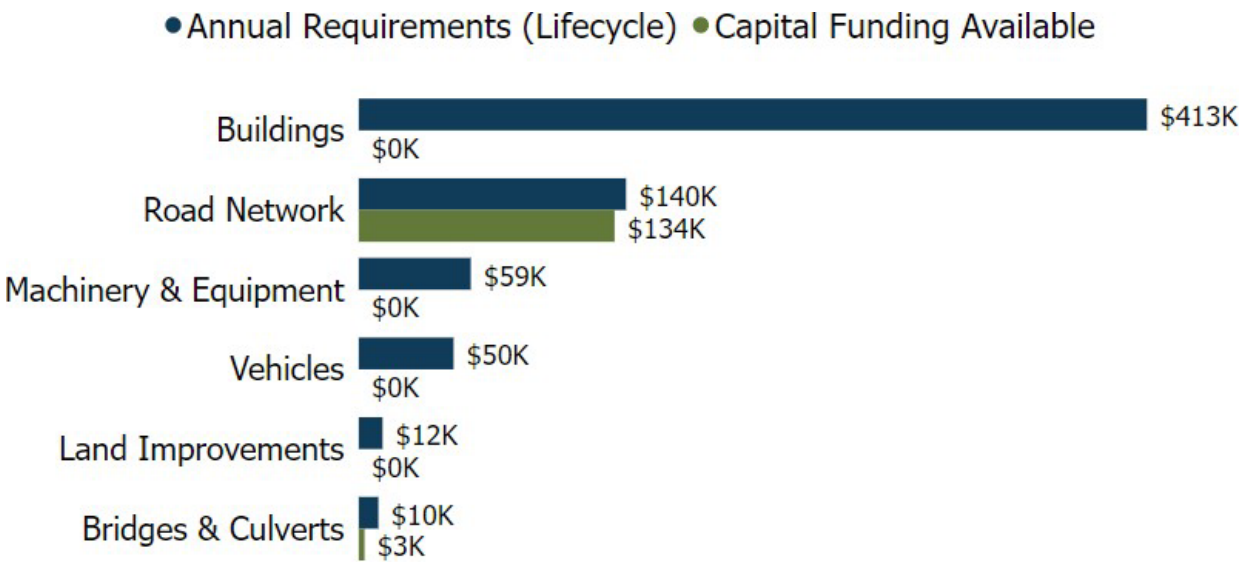
- **Replacement Only Scenario**: Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.
- **Lifecycle Strategy Scenario**: Based on the assumption that lifecycle activities are performed at strategic intervals to extend the service life of assets until replacement is required.

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	$317,000	$140,000	$177,000

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of $177,000 for the Road Network. This represents an overall reduction of the annual requirements for the Road Network by 56%. As the lifecycle strategy scenario represents the lowest cost option available to the Township, we have used these annual requirements in the development of the financial strategy.

7.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $137,000 towards capital projects per year. Given the annual capital requirement of $684,000, there is currently a funding gap of $547,000 annually.



7.2 Funding Objective

A scenario was developed to enable Conmee Township to achieve full funding within 1 to 20 years for the following assets:

Tax Funded Assets: Road Network, Bridges & Culverts, Buildings, Machinery & Equipment, Land Improvements, Vehicles.

Note: For the purposes of this AMP, we have included an annual capital expenditure for gravel roads since they are a perpetual maintenance asset and end of life replacement calculations do not normally apply. If gravel roads are maintained properly, they can theoretically have a limitless service life.

For each scenario developed we have included strategies, where applicable, regarding the use of cost containment and funding opportunities.

7.3 Financial Profile: Tax Funded Assets

7.3.1 Current Funding Position

The following tables show, by asset category, Conmee's average annual capital expenditure (CapEx) requirements, current funding positions, and funding increases required to achieve full funding on assets funded by taxes.

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Taxes	Gas Tax	OCIF	Total Available	
Bridge & Culverts	10,000		3,000		3,000	7,000
Buildings	413,000				0	413,000
Land Improvements	12,000				0	12,000
Machinery & Equipment	59,000				0	59,000
Road Network	140,000		46,000	88,000	134,000	6,000
Vehicles	50,000				0	50,000
	684,000	**0**	**49,000**	**88,000**	**137,000**	**547,000** [2]

The average annual CapEx requirement for the above categories is $684 thousand. Annual revenue currently allocated to these assets for capital purposes is $137 thousand leaving an annual deficit of $547 thousand. Put differently, these infrastructure categories are currently funded at 20% of their long-term requirements.

7.3.2 Full Funding Requirements

In 2024, Township of Conmee has budgeted annual tax revenues of $1.01 million. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

[2] The Totals may be slightly different than the sum of lines due to rounding.

Asset Category	Tax Change Required for Full Funding
Bridge & Culverts	0.6%
Buildings	37.2%
Land Improvements	1.1%
Machinery & Equipment	5.3%
Road Network	0.5%
Vehicles	4.5%
	49.2%

The following changes in costs and/or revenues over the next number of years should also be considered in the financial strategy:

a) Conmee's debt payments for these asset categories will be decreasing by $6,000 over the next 5 and 10 years respectively. Although not shown in the table, debt payment decreases will be $45,000 over the next 15 and 20 years respectively.

Our recommendations include capturing the above changes and allocating them to the infrastructure deficit outlined above. The table below outlines this concept and presents several options:

	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	547,000	547,000	547,000	547,000	547,000	547,000	547,000	547,000
Change in Debt Costs	N/A	N/A	N/A	N/A	-6,000	-6,000	-45,000	-45,000
Change in OCIF Grants	N/A	N/A	N/A	N/A				
Total Tax Increase Required	49.3%	49.3%	49.3%	49.3%	48.8%	48.8%	45.3%	45.3%
Tax Increase Required Annually[3]:	**8.4%**	**4.1%**	**2.8%**	**2.1%**	**8.3%**	**4.1%**	**2.6%**	**1.9%**

[3] The tax increase required annually is calculated as a constant portion of the taxes budgeted for 2024

7.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 15-year option. This involves full CapEx funding being achieved over 15 years by:

a) when realized, reallocating the debt cost reductions of $45,000 to the infrastructure deficit as outlined above.
b) increasing tax revenues by 2.6% each year for the next 15 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
c) allocating the current gas tax and OCIF revenue as outlined previously.
d) allocating the scheduled OCIF grant increases to the infrastructure deficit as they occur.
e) reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
f) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment[4].
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full CapEx funding on an annual basis in 15 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of $3.7 million for the Road Network, $373 thousand for Machinery & Equipment, $146 thousand for Vehicles and $23 thousand for Land Improvements.

Prioritizing future projects will require the current data to be replaced by condition-based data. Although our recommendations include no further use of debt, the results of the condition-based analysis may require otherwise.

[4] The Township should take advantage of all available grant funding programs and transfers from other levels of government. While OCIF has historically been considered a sustainable source of funding, the program is currently undergoing review by the provincial government. Depending on the outcome of this review, there may be changes that impact its availability.

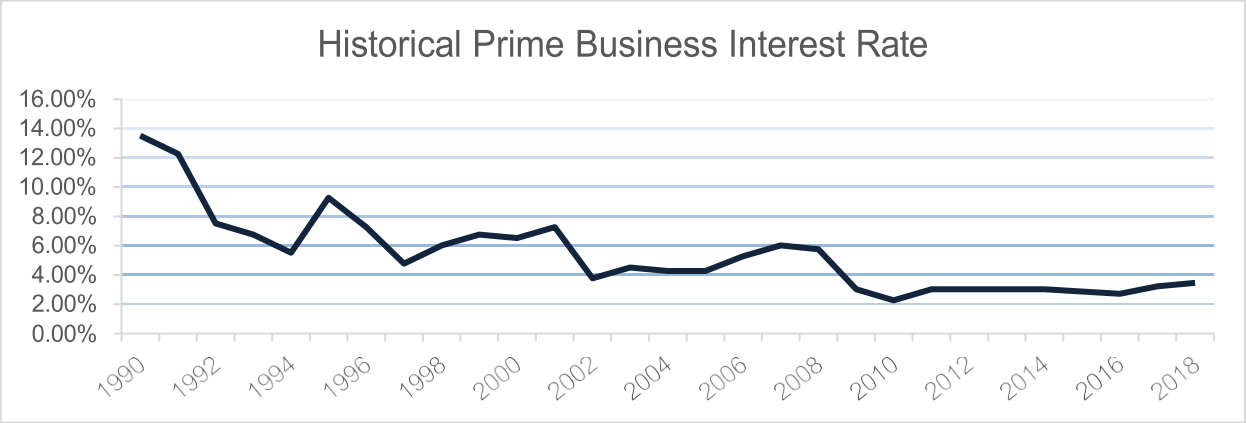
7.4 Use of Debt

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a $1M project financed at 3.0%[5] over 15 years would result in a 26% premium or $260,000 of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
7.0%	22%	42%	65%	89%	115%	142%
6.5%	20%	39%	60%	82%	105%	130%
6.0%	19%	36%	54%	74%	96%	118%
5.5%	17%	33%	49%	67%	86%	106%
5.0%	15%	30%	45%	60%	77%	95%
4.5%	14%	26%	40%	54%	69%	84%
4.0%	12%	23%	35%	47%	60%	73%
3.5%	11%	20%	30%	41%	52%	63%
3.0%	9%	17%	26%	34%	44%	53%
2.5%	8%	14%	21%	28%	36%	43%
2.0%	6%	11%	17%	22%	28%	34%
1.5%	5%	8%	12%	16%	21%	25%
1.0%	3%	6%	8%	11%	14%	16%
0.5%	2%	3%	4%	5%	7%	8%
0.0%	0%	0%	0%	0%	0%	0%

It should be noted that current interest rates are near all-time lows. Sustainable funding models that include debt need to incorporate the risk of rising interest rates. The following graph shows where historical lending rates have been:

[5] Current municipal Infrastructure Ontario rates for 15-year money is 3.2%.



A change in 15-year rates from 3% to 6% would change the premium from 26% to 54%. Such a change would have a significant impact on a financial plan.

The following tables outline how Conmee has historically used debt for investing in the asset categories as listed. There is currently $360K of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $45K, well within its provincially prescribed maximum of $170K.

Asset Category	Current Debt Outstanding	Use of Debt in the Last Five Years				
		2014	2015	2016	2017	2018
Bridge & Culverts						
Buildings	8,000					
Land Improvements						
Machinery & Equipment	352,000				379,000	
Road Network						
Vehicles						
Total Tax Funded:	**360,000**	**0**	**0**	**0**	**0**	**0**

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2020	2021	2022	2023	2024	2025	2030
Bridge & Culverts							
Buildings	6,000	6,000	6,000				
Land Improvements							
Machinery & Equipment	39,000	39,000	39,000	39,000	39,000	39,000	39,000
Road Network							
Vehicles							
Bridge & Culverts							
Total Tax Funded:	**45,000**	**45,000**	**45,000**	**39,000**	**39,000**	**39,000**	**39,000**

The revenue options outlined in this plan allow Conmee to fully fund its long-term infrastructure requirements without further use of debt.

7.5 Use of Reserves

7.5.1 Available Reserves

Reserves play a critical role in long-term financial planning. The benefits of having reserves available for infrastructure planning include:

a) the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
b) financing one-time or short-term investments
c) accumulating the funding for significant future infrastructure investments
d) managing the use of debt
e) normalizing infrastructure funding requirement

There is considerable debate in the municipal sector as to the appropriate level of reserves that a Township should have on hand. There is no clear guideline that has gained wide acceptance. Factors that municipalities should consider when determining their capital reserve requirements include:

a) breadth of services provided
b) age and condition of infrastructure
c) use and level of debt
d) economic conditions and outlook
e) internal reserve and debt policies.

These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with Conmee's judicious use of debt in the past, allows the scenarios to assume that, if required, available reserves and debt capacity can be used for high priority and emergency infrastructure investments in the short- to medium-term.

7.5.2 Recommendation

In 2024, Ontario Regulation 588/17 required the Township of Conmee to integrate proposed levels of service for all asset categories in its asset management plan update. We recommend that future planning should reflect adjustments to service levels and their impacts on reserve balances.

8. Appendices

- Appendix A identifies projected 10-year capital requirements for each asset category

- Appendix B provides additional guidance on the development of a condition assessment program

Appendix A: 10-Year Capital Requirements

Bridges & Culverts											
Segment	**Backlog**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Bridges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Culverts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Buildings											
Segment	**Backlog**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Administration	$0	$0	$3,500	$55,650	$3,500	$167,150	$4,400	$60,170	$34,120	$175,150	$0
Emergency Services	$0	$0	$4,550	$48,660	$9,500	$0	$22,160	$0	$47,350	$2,500	$0
Public Services	$0	$0	$74,230	$139,280	$89,230	$139,280	$81,230	$154,280	$75,430	$364,430	$0
Total:	**$0**	**$0**	**$0**	**$82,280**	**$243,590**	**$102,230**	**$306,430**	**$107,790**	**$214,450**	**$156,900**	**$542,080**

Land Improvements											
Segment	**Backlog**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Land Improvements	$22,994	$0	$0	$0	$11,651	$0	$0	$0	$0	$0	$61,966
Total:	**$22,994**	**$0**	**$0**	**$0**	**$11,651**	**$0**	**$0**	**$0**	**$0**	**$0**	**$61,966**

Machinery & Equipment											
Segment	**Backlog**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Machinery	$364,764	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Office Equipment	$0	$12,278	$0	$0	$185,101	$0	$12,278	$0	$0	$0	$0
Operational Equipment	$8,110	$9,246	$0	$17,955	$0	$0	$0	$0	$17,955	$0	$0
Total:	**$372,874**	**$21,524**	**$0**	**$17,955**	**$185,101**	**$0**	**$12,278**	**$0**	**$17,955**	**$0**	**$0**

Road Network											
Segment	**Backlog**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Road Subsurface	$1,409,360	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Road Surface	$0	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000
Total:	**$1,409,360**	**$140,000**	**$140,000**	**$140,000**	**$140,000**	**$140,000**	**$140,000**	**$140,000**	**$140,000**	**$140,000**	**$140,000**

Vehicles											
Segment	**Backlog**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Emergency Services	$0	$386,965	$0	$0	$32,030	$0	$0	$0	$0	$0	$0
Public Services	$145,998	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total:	**$145,998**	**$386,965**	**$0**	**$0**	**$23,030**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Appendix B: Condition Assessment Guidelines

The foundation of good asset management practice is accurate and reliable data on the current condition of infrastructure. Assessing the condition of an asset at a single point in time allows staff to have a better understanding of the probability of asset failure due to deteriorating condition.

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the Township's condition assessment strategy should outline several key considerations, including:

- The role of asset condition data in decision-making
- Guidelines for the collection of asset condition data
- A schedule for how regularly asset condition data should be collected

Role of Asset Condition Data

The goal of collecting asset condition data is to ensure that data is available to inform maintenance and renewal programs required to meet the desired level of service. Accurate and reliable condition data allows municipal staff to determine the remaining service life of assets, and identify the most cost-effective approach to deterioration, whether it involves extending the life of the asset through remedial efforts or determining that replacement is required to avoid asset failure.

In addition to the optimization of lifecycle management strategies, asset condition data also impacts the Township's risk management and financial strategies. Assessed condition is a key variable in the determination of an asset's probability of failure. With a strong understanding of the probability of failure across the entire asset portfolio, the Township can develop strategies to mitigate both the probability and consequences of asset failure and service disruption. Furthermore, with condition-based determinations of future capital expenditures, the Township can develop long-term financial strategies with higher accuracy and reliability.

Guidelines for Condition Assessment

Whether completed by external consultants or internal staff, condition assessments should be completed in a structured and repeatable fashion, according to consistent and objective assessment criteria. Without proper guidelines for the completion of condition assessments there can be little confidence in the validity of condition data and asset management strategies based on this data.

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project.
There are many options available to the Township to complete condition assessments. In some cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure. In other cases, internal staff may have sufficient expertise or training to complete condition assessments.

Developing a Condition Assessment Schedule

Condition assessments and general data collection can be both time-consuming and resource intensive. It is not necessarily an effective strategy to collect assessed condition data across the entire asset inventory. Instead, the Township should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:

1. **Relevance**: every data item must have a direct influence on the output that is required
2. **Appropriateness**: the volume of data and the frequency of updating should align with the stage in the assets life and the service being provided
3. **Reliability**: the data should be sufficiently accurate, have sufficient spatial coverage and be appropriately complete and current
4. **Affordability**: the data should be affordable to collect and maintain