

# Asset Management Plan

Township of the Archipelago

APRIL 2025



This Asset Management Plan was prepared by:



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

# Key Statistics

<b>\$43.8 m</b>	2023 Replacement Cost of Asset Portfolio
<b>90%</b>	Percentage of Assets in Fair or Better Condition
<b>88%</b>	Percentage of Assets with Assessed Condition Data
<b>\$52,831</b>	Annual Capital Infrastructure Deficit
<b>3.65%</b>	Target Investment Rate
<b>3.53%</b>	Actual Investment Rate
<b>0.1% (\$3.68)</b>	Tax Increase per Household per Year (for 5 Years) to Fully Fund Proposed Levels of Service

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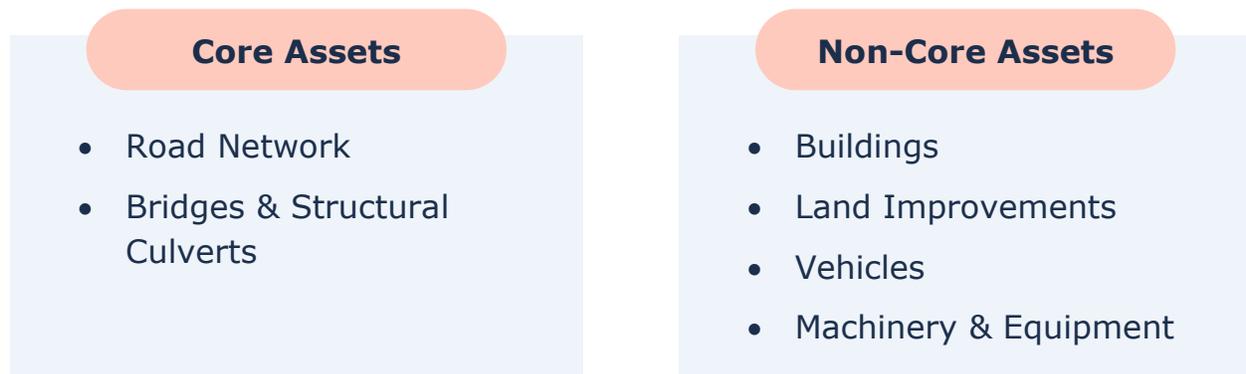
# 1 Executive Summary

Municipal infrastructure delivers critical services that are foundational to the economic, social, and environmental health and growth of a community. The goal of asset management is to enable infrastructure to deliver an adequate level of service in the most cost-effective manner. This involves the ongoing review and update of infrastructure information and data alongside the development and implementation of asset management strategies and long-term financial planning.

## 1.1 Scope

This Asset Management Plan (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 of the Archipelago can ensure that public infrastructure is managed to support the sustainable delivery of municipal services. Figure 1 outlines the asset categories included in this AMP:

Figure 1 Core and Non-Core Asset Categories



## 1.2 Compliance

With the development of this AMP, the Township of the Archipelago has achieved compliance with July 1, 2025, requirements under O. Reg. 588/17. This includes requirements for levels of service and inventory reporting for all asset categories.

## **1.3 Findings**

The overall replacement cost of the asset categories included in this AMP totals \$43.8 million. Weighted by replacement cost, 90% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 88% of assets. For the remaining 12% 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 (HCB and LCB roads) 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 \$1,599,610. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$1,546,779 towards capital projects or reserves per year. As a result, there is currently an annual funding gap of \$52,831.

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.

## 1.4 Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphic shows annual tax change required to eliminate the Township's infrastructure deficit based on a 5-year plan:

Figure 2 Proposed Tax Change



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 strategy with a regular schedule
- ◆ Review and update lifecycle management strategies
- ◆ Develop and regularly review short- and long-term plans to meet capital requirements
- ◆ Continue to measure current levels of service and verify sustainability of proposed levels of service

# 2 Introduction & Context

## 2.1 Community Profile

Table 1 Township of the Archipelago Community Profile

Census Characteristic	Township of the Archipelago <sup>1</sup>	Ontario
Population 2021	979	14,223,942
Population Change 2016-2021	84.4%	5.8%
Total Private Dwellings	2,863	5,929,250
Population Density	1.7 / km <sup>2</sup>	15.9 / km <sup>2</sup>
Land Area	592.14 km <sup>2</sup>	892,411.76 km <sup>2</sup>

The Township of The Archipelago is a small Township of 979 permanent residents (2021 Census) located in Georgian Bay, Ontario. The Township consists of two non-contiguous parts along the coast and was created pursuant to the District of Parry Sound Local Government Act as a result of the Province’s policy to extend, consolidate, and strengthen local governments in the District of Parry Sound. The Township of The Archipelago was incorporated on April 1, 1980, via the amalgamation of the former townships of Georgian Bay South Archipelago and Georgian Bay North Archipelago.

Prior to the incorporation of the Township, the land on which The Archipelago now sits was composed entirely of geographic townships, with almost no prior local government activity. The Township of the Archipelago makes up a large part of the Thirty Thousand Islands, a UNESCO-designated site known for being the largest freshwater archipelago in the world. The Thirty Thousand Islands area has been long acclaimed for its natural beauty, providing inspiration to artists such as those in the Group of Seven.

<sup>1</sup> As per 2021 Census from Statistics Canada.

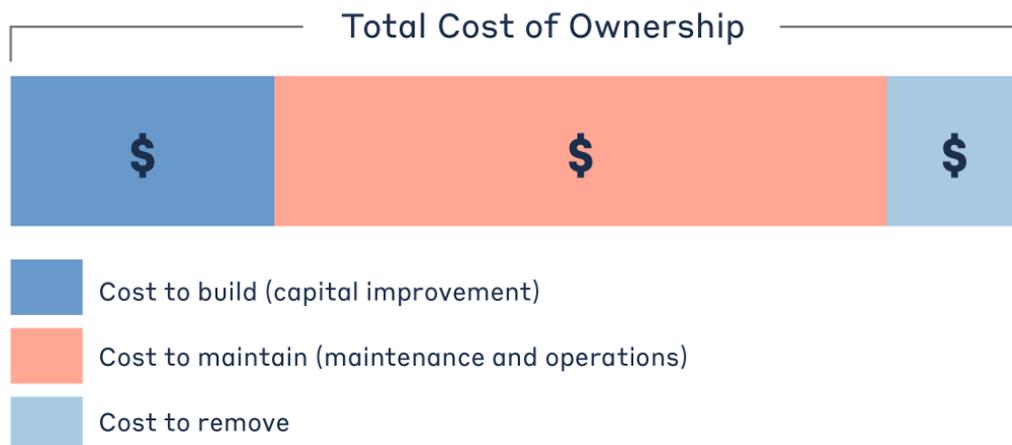
The Township is home to several thousand islands, bays, and lakes that attract a large seasonal population. The Township estimates that there is a seasonal population of approximately 12,800, which would increase the Township's total population to 13,332. The local economy for the Township is based on the natural resources from the area, as well as recreational, and tourism-based businesses. The Township of The Archipelago is self-described as remote, although it is not unreasonably far from urban amenities, with Sudbury about 125km to the North and Toronto about 280km to the South.

## 2.2 Asset Management Overview

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% comes from operations and maintenance. This AMP focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.

Figure 3 Total Cost of Asset Ownership



These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is

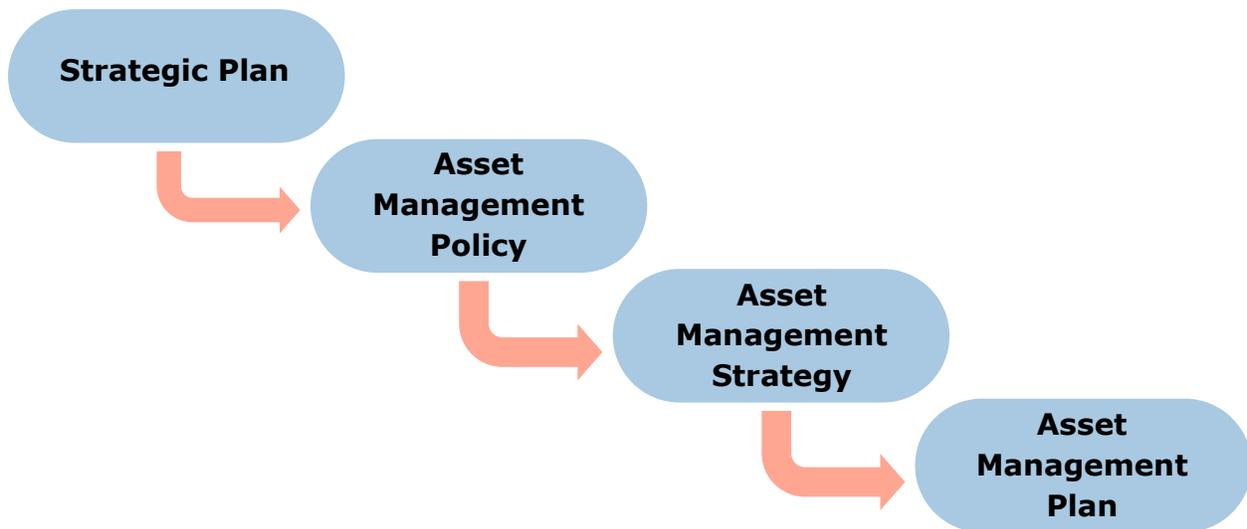
critical to this planning, and an essential element of broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with 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.

### 2.2.1 Foundational Asset Management Documentation

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.

Figure 4 Foundational Asset Management Documents



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.

## ***Asset Management Policy***

An asset management policy represents a statement of the principles guiding the Township'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 of the Archipelago adopted their Strategic Asset Management Policy in June of 2019. The purpose of the policy "is to establish consistent standards and guidelines for management of the Township's assets."

The general policy states that asset management planning will be aligned with the Township's Official Plan, acknowledging projected changes and the resulting impacts within the community. The potential costs of climate change vulnerabilities will balance the impacts of such events and other risk management approaches will also be embedded in local asset management planning methods.

The statutory requirements and key principles the Township strives to incorporate are as follows:

- ◆ Environmentally conscious
- ◆ Forward looking
- ◆ Budgeting and planning
- ◆ Prioritizing
- ◆ Transparency
- ◆ Consistency
- ◆ Health and safety
- ◆ Community focused
- ◆ Innovation
- ◆ Standards

## ***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 Township plans to achieve asset management objectives through planned activities and decision-making criteria.

## **Asset Management Plan**

The asset management plan (AMP) presents the outcomes of the Township’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 Township to re-evaluate the state of infrastructure and identify how the organization’s asset management and financial strategies are progressing.

### **2.2.2 Key Concepts in Asset Management**

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

#### ***Lifecycle Management Strategies***

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including asset 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 be generally placed into one of three categories: maintenance, rehabilitation, and replacement. The following table provides a description of each type of activity and the general difference in cost.

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.

Table 2 Lifecycle Management: Typical Lifecycle Interventions

Lifecycle Activity	Cost	Typical Associated Risks
<p><b>Maintenance</b></p> <p>Activities that prevent defects or deteriorations from occurring</p>	\$	<ul style="list-style-type: none"> <li>◆ Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions;</li> <li>◆ Diminishing returns associated with excessive maintenance activities, despite added costs;</li> <li>◆ Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;</li> </ul>
<p><b>Rehabilitation/ Renewal</b></p> <p>Activities that rectify defects or deficiencies that are already present and may be affecting asset performance</p>	\$\$\$	<ul style="list-style-type: none"> <li>◆ Useful life may not be extended as expected;</li> <li>◆ May be costlier in the long run when assessed against full reconstruction or replacement;</li> <li>◆ Loss or disruption of service, particularly for underground assets;</li> </ul>
<p><b>Replacement/ Reconstruction</b></p> <p>Asset end-of-life activities that often involve the complete replacement of assets</p>	\$\$\$\$\$	<ul style="list-style-type: none"> <li>◆ Incorrect or unsafe disposal of existing asset;</li> <li>◆ Costs associated with asset retirement obligations;</li> <li>◆ Substantial exposure to high inflation and cost overruns;</li> <li>◆ Replacements may not meet capacity needs for a larger population;</li> <li>◆ Loss or disruption of service, particularly for underground assets;</li> </ul>

The Township’s approach to lifecycle management is described within each asset category outlined in this AMP. Staff will continue to evolve and innovate current practices for developing and implementing proactive lifecycle strategies 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.

## **Risk & Criticality**

### **Quantitative Risk**

Asset risk and criticality are essential building blocks of asset management, integral in prioritizing projects and distributing funds where they are needed most based on a variety of factors. Assets in disrepair may fail to perform their intended function, pose substantial risk to the community, lead to unplanned expenditures, and create liability for the Township. In addition, some assets are simply more important to the community than others, based on their financial significance, their role in delivering essential services, the impact of their failure on public health and safety, and the extent to which they support a high quality of life for community stakeholders.

Risk is a product of two variables: the **probability** that an asset will fail, and the resulting **consequences** of that failure event. It can be a qualitative measurement, (i.e. low, medium, high) or quantitative measurement (i.e. 1-5), that can be used to rank assets and projects, identify appropriate lifecycle strategies, optimize short- and long-term budgets, minimize service disruptions, and maintain public health and safety.

Figure 5 Risk Equations



The approach for quantitative risk used in this AMP relies on a calculable measurement of risk associated with each asset. The probability and consequence

of failure are each scored from one to five, producing a minimum risk index of one for the lowest risk assets, and a maximum risk index of 25 for the highest risk assets.

### ***Probability of Failure***

Several factors can help decision-makers estimate the probability or likelihood of an asset's failure, including its condition, age, previous performance history, and exposure to extreme weather events, such as flooding and ice jams—both a growing concern for municipalities in Canada.

Typically, a model is selected for a group of similar assets (e.g. all roads, water distribution system etc.). Often, parameters for estimating probability of failure include asset condition, service life remaining, and/or asset material.

For each risk model, probability of failure (PoF) is determined through the following steps:

1. Identification of *available* attribute data *suitable* for determining the probability of failure for selected assets. In some instances, available asset data may be limited requiring a more simplified PoF model, at least initially.
  - ◆ This process often identifies opportunities for asset data enhancements and/or data collection. Asset enhancement considerations commonly relate to data quality dimensions which are outlined in – Data Quality Dimensions.
2. Determination of the type of risk that applies to the selected attribute.
  - ◆ Condition, Design Capacity, Economic, Environmental, Health and Safety, Operational, Social, Strategic
3. Where there are multiple parameters included in the PoF model, determine suitable weighting of each parameter.
  - ◆ Weighting allows the model to recognize that each factor may impact the probability of failure to a different degree. Where the weight is higher, the impact that factor has on the model increases too.

### ***Consequence of Failure***

Estimating criticality also requires identifying the types of consequences that the organization and community may face from an asset's failure, and the magnitude of those consequences. Consequences of asset failure will vary across the infrastructure portfolio; the failure of some assets may result primarily in high

direct financial cost but may pose limited risk to the community. Other assets may have a relatively minor financial value, but any downtime may pose significant health and safety hazards to residents.

Table 3 illustrates the various types of consequences that can be integrated in developing risk and criticality models for each asset category and segments within. We note that these consequences are common, but not exhaustive.

Table 3 Risk Analysis: Types of Consequences of Failure

<b>Type of Consequence</b>	<b>Description</b>
<b>Direct Financial</b>	Direct financial consequences are typically measured as the replacement costs of the asset(s) affected by the failure event, including interdependent infrastructure.
<b>Economic</b>	Economic impacts of asset failure may include disruption to local economic activity and commerce, business closures, service disruptions, etc. Whereas direct financial impacts can be seen immediately or estimated within hours or days, economic impacts can take weeks, months and years to emerge, and may persist for even longer.
<b>Socio-Political</b>	Socio-political impacts are more difficult to quantify and may include inconvenience to the public and key community stakeholders, adverse media coverage, and reputational damage to the community and the Township.
<b>Environmental</b>	Environmental consequences can include pollution, erosion, sedimentation, habitat damage, etc.
<b>Public Health and Safety</b>	Adverse health and safety impacts may include injury or death, or impeded access to critical services.
<b>Strategic</b>	These include the effects of asset failure on the community’s long-term strategic objectives, including economic development, business attraction, etc.

This AMP includes a preliminary 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.

These models have been built in Citywide for continued review, updates, and refinements.

### **Qualitative Risk**

Qualitative risk assessments in municipal asset management go beyond numbers and statistics to capture the broader picture of potential vulnerabilities. This approach recognizes that not all risks can be easily quantified, especially when dealing with factors that involve human judgment, institutional knowledge, and unpredictable external conditions. Here's a deeper look at how and why qualitative risk is vital:

#### **Understanding the Nuances**

- ◆ **Human Expertise and Experience:** Rather than solely relying on historical data or mathematical models, qualitative risk assessments tap into the insights of experienced staff and stakeholders. Their first-hand knowledge can highlight emerging issues—such as gaps in asset data or unanticipated maintenance challenges—that might be overlooked in quantitative reviews.
- ◆ **Contextual Factors:** Municipalities face a range of unique challenges including aging infrastructure, rapid growth, and climate change impacts. Qualitative assessments take into account the specific context of the community, such as local environmental conditions, regulatory landscapes, and historical performance of assets.

#### **Methodological Approach**

- ◆ **Workshops and Interviews:** Facilitated risk workshops and structured interviews are key methods used in qualitative assessments. These sessions encourage open dialogue among staff from various departments, ensuring that diverse perspectives are considered. Through guided questions—covering topics from asset data confidence to lifecycle management strategies—municipalities can identify risks that are not immediately obvious from a numerical analysis.
- ◆ **Identifying Hidden Vulnerabilities:** The qualitative process allows teams to explore risks that are dynamic and interrelated. For instance, while data might show a certain asset has reached the end of its useful life, qualitative

insights might reveal that a lack of proactive maintenance, compounded by extreme weather conditions, poses a more immediate risk to service delivery.

### **Strategic Benefits**

- ◆ **Informed Decision-Making:** By combining qualitative insights with quantitative data, municipal planners can develop more holistic asset management strategies. This integrated approach enables better prioritization of capital investments, ensuring that both the immediate and long-term needs of the community are addressed.
- ◆ **Proactive Risk Management:** Qualitative risk assessments foster a forward-looking mindset. Rather than simply reacting to failures after they occur, this methodology encourages the development of proactive measures—such as enhanced maintenance programs and updated lifecycle strategies—that can mitigate risks before they escalate.
- ◆ **Adaptability to Change:** As external conditions evolve, qualitative assessments provide the flexibility needed to capture new risks. Whether it's the onset of climate change-related events or shifts in funding availability, qualitative methods allow municipal asset managers to continuously refine their strategies in response to real-world developments.

By grounding the assessment process in real-world expertise and contextual analysis, qualitative risk evaluation becomes an essential tool for developing resilient, adaptive, and well-informed asset management strategies. This ensures that municipalities are not only prepared to handle current challenges but are also equipped to navigate the uncertainties of the future.

### **Levels of Service**

A level of service (LOS) is a measure of the services that the Township is providing to the community and the nature and quality of those services. Within each 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.

The Township measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

#### **Community Levels of Service**

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories as applicable ( , )

the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP.

### ***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 Township's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For core asset categories as applicable the province, through O. Reg. 588/17, has also provided technical metrics that are required to be included in this AMP. For all categories where not already prescribed by the province, the Township has opted to include the average condition, percentage of the category in fair or better condition, percentage of the category in poor or lower condition, and a ratio of the AAR against the amount budgeted towards each category.

### ***Current and Proposed Levels of Service***

Current levels of service are the past performance metrics of an asset category up until present day. In contrast, proposed levels of service look toward the Township's goal for asset performance by a defined future date.

Once current levels of service have been measured, proposed levels of service over a 10-year period should be established, 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 by 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.

It is important to note that O. Reg 588/17 does not dictate which proposed LOS metrics municipalities need to strive for. A proposed level of service will be very specific to each community's resident desires, political goals, and financial capacity. This can range from increasing service levels and costs, to maintaining or even reducing current performance to mitigate future cost increases. Regardless of the proposed LOS chosen, O. Reg 588/17 requires municipalities to demonstrate the achievability of their selected metrics

Both current and proposed levels of service for all included asset categories are outlined in this AMP.

## 2.3 Scope & Methodology

### 2.3.1 Asset Categories for this AMP

This asset management plan for the Township is produced in compliance with O. Reg. 588/17. The July 2025 deadline under the regulation—the third of three AMPs—requires analysis of core and non-core asset categories, as well as proposed service levels and the financial strategy to fund them.

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

Figure 6 Tax Funded Asset Categories



### 2.3.2 Data Effective Date

It is important to note that this plan is based on data as of **December 2023**; therefore, it represents a snapshot in time using the best available processes, data, and information at the Township. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

### 2.3.3 Defining 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 Per 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 costs of the assets are 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.

### 2.3.4 Estimated Service Life & 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:

Figure 7 Service Life Remaining Calculation



### 2.3.5 Average Annual Requirement

The Average Annual Requirement (AAR) is the estimated amount of money the Township would need to set aside each year to ensure sufficient funds are available to carry out major rehabilitation or replacement work when it is due. It is a long-term financial planning tool used to support sustainable asset management and service delivery.

In essence, it treats infrastructure investment like a savings plan: "If we spread the total lifecycle cost of this asset over its useful life, how much do we need to reserve each year to be ready when major costs arise?"

Why the AAR matters:

- ◆ **Long-Term Planning:** Encourages proactive financial planning rather than reactive crisis spending.
- ◆ **Sustainability:** Ensures assets are properly maintained and replaced without burdening future budgets.
- ◆ **Transparency:** Helps identify whether current funding levels are sufficient—or if there is a funding gap.
- ◆ **Optimized Investment:** Supports lifecycle strategies that lower total costs and extend asset life.

Lifecycle interventions (e.g., resurfacing a road, relining a pipe) may require upfront investment, but they can extend the life of the asset, which means the cost is spread out over a longer period. This often results in a lower AAR, because the asset is delivering value for a longer time before needing full replacement.

Table 4 Average Annual Requirement Example

Scenario	Total Lifecycle Cost	Useful Life	AAR
No Rehab	\$2.5M (replace at Year 25)	25 years	\$100,000/year
With Rehab	\$2.5M + \$500K rehab at Year 15	40 years	\$75,000/year

In the example outlined in Table 4, the life of the road would be extended by 15 years if a \$500K mid-life rehabilitation was performed, thus reducing the annual amount that must be reserved. The \$25,000 that would have been put aside for the road can now be reallocated to another project.

### 2.3.6 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:

Figure 8 Target Reinvestment Rate Calculation

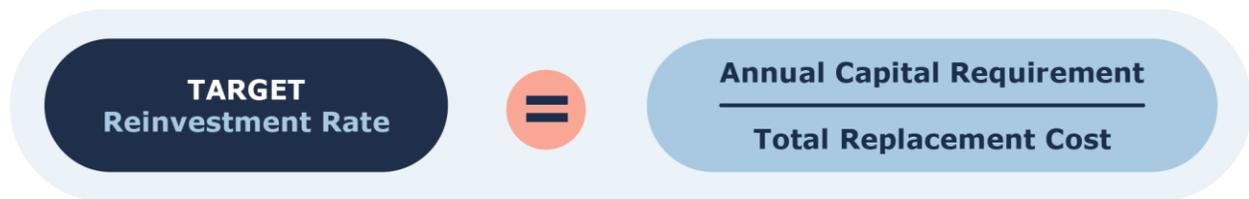
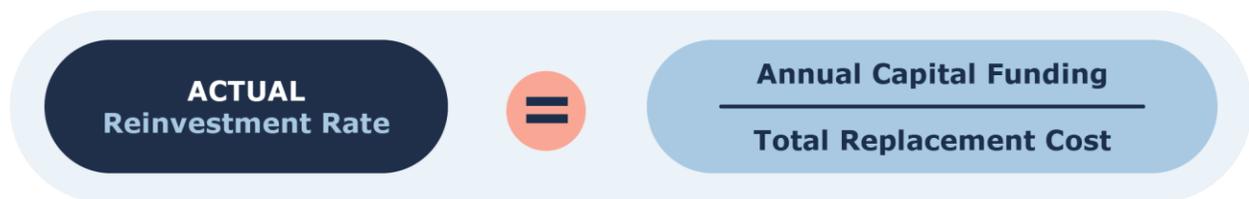


Figure 9 Actual Reinvestment Rate Calculation



### 2.3.7 Establishing 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 outlines the condition rating system used in this AMP 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.

Table 5 Standard Condition Rating Scale

Condition	Description	Criteria	Service Life Remaining (%)
<b>Very Good</b>	Fit for the future	Well maintained, good condition, new or recently rehabilitated	80-100
<b>Good</b>	Adequate for now	Acceptable, generally approaching mid-stage of expected service life	60-80
<b>Fair</b>	Requires attention	Signs of deterioration, some elements exhibit significant deficiencies	40-60
<b>Poor</b>	Increasing potential of affecting service	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20-40
<b>Very Poor</b>	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.

### 2.3.8 Evaluating Quantitative Risk

As outlined in Risk & Criticality, risk ratings are derived from the total probability of failure multiplied by the total consequence of failure. In this model, risk ratings may range from 0-25. The table below provides ranges of Very Low, Low, Moderate, High, and Very High dependent on the risk rating value.

Table 6 Probability of Failure, Consequence of Failure, and Overall Risk Ratings

Probability of Failure	Consequence of Failure	Risk Rating
1 – Rare	1 – Insignificant	1 - 4 – Very Low
2 – Unlikely	2 – Minor	5 - 7 – Low
3 – Possible	3 – Moderate	8 - 9 – Moderate
4 – Likely	4 – Major	10 - 14 – High
5 – Almost Certain	5 – Severe	15 - 25 – Very High

Additionally, risk ratings can be displayed as a matrix with the probability of failure from 1-5 along the bottom and the consequence of failure from 1-5 along the side.

Table 7 Example of Risk Matrix

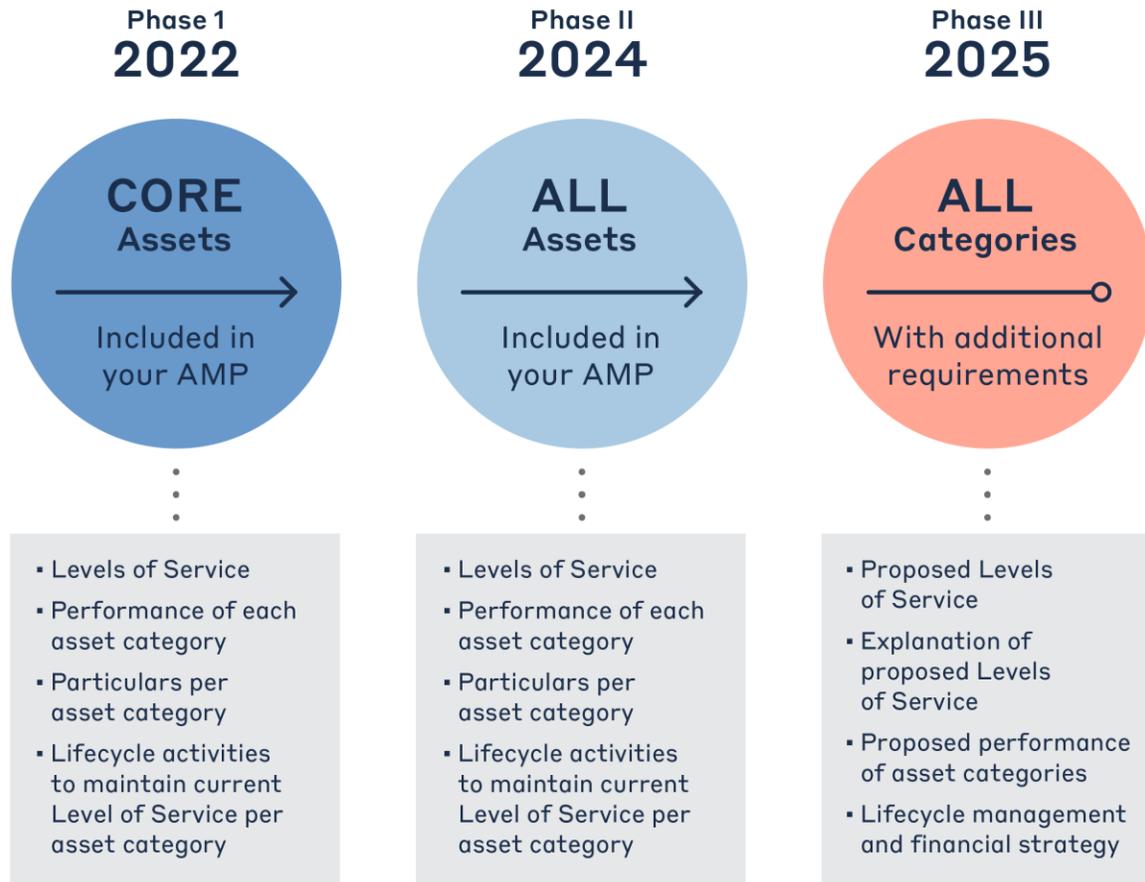
Consequence of Failure	5	# Assets Quantity Cost				
	4	# Assets Quantity Cost				
	3	# Assets Quantity Cost				
	2	# Assets Quantity Cost				
	1	# Assets Quantity Cost				
		1	2	3	4	5
		Probability of Failure				

## 2.4 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)<sup>2</sup>. Along with creating better performing organizations, more livable 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. Figure 10 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

<sup>2</sup> O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure  
<https://www.ontario.ca/laws/regulation/170588>

Figure 10 O. Reg. 588/17 Requirements and Reporting Deadlines



### 2.4.1 O. Reg. 588/17 Compliance Review

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	5.1 – 10.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	5.1 – 10.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	5.3 – 10.3	Complete

<b>Requirement</b>	<b>O. Reg. 588/17 Section</b>	<b>AMP Section Reference</b>	<b>Status</b>
Condition of core assets in each category	S.5(2), 3(iv)	5.2 – 10.2	Complete
Description of municipality’s approach to assessing the condition of assets in each category	S.5(2), 3(v)	5.4 – 10.4	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	5.7 – 10.7	Complete
Current performance measures in each category	S.5(2), 2	5.7 – 10.7	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	5.4 – 10.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix B	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	11.1	Complete

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# **Portfolio Overview**

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# 3 State of the Infrastructure

The state of the infrastructure (SOTI) summarizes the inventory, condition, age profiles, and other key performance indicators for the Township’s infrastructure portfolio. These details are presented for all core and non-core asset categories.

## 3.1 Asset Hierarchy & Data Classification

Asset hierarchy shows how individual assets, and their components, relate to the broader system. The structure influences how data is interpreted. Assets are organized to support clear, efficient reporting, with key details summarized at the segment level.

Figure 11 Asset Hierarchy and Data Classification



## 3.2 Portfolio Overview

### 3.2.1 Total Replacement Cost of Asset Portfolio

The six asset categories analyzed in this Asset Management Plan have a total current replacement cost of \$43.8 million. This estimate was calculated using user-defined costing, as well as inflation of historical or original costs to current date. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today. Table 8 provides a detailed breakdown of replacement cost and average annual requirement<sup>3</sup> by asset category. Figure 12 illustrates the replacement cost of each asset category; at 42% of the total portfolio, buildings form the largest share of the Township’s asset portfolio, followed by closely by the road network at 38%.

Table 8 Detailed Asset Inventory Valuation: Portfolio Overview

Category	Replacement Cost	Replacement Cost Method	% of Total <sup>4</sup>	AAR <sup>3</sup>
Bridges & Structural Culverts	\$2,000,000	User-Defined	5%	\$24,020
Road Network	\$16,463,995	Cost per Unit	38%	\$782,543
Buildings	\$18,405,705	User-Defined	42%	\$289,445
Land Improvements	\$1,858,544	User-Defined	4%	\$69,963
Machinery & Equipment	\$3,330,307	User-Defined	8%	\$285,370
Vehicles	\$1,738,350	User-Defined	4%	\$148,270
<b>TOTAL</b>	<b>\$43,796,901</b>	<b>User-Defined</b>	<b>100%</b>	<b>\$1,599,609</b>

<sup>3</sup>For further clarification on Average Annual Requirement (AAR), see section 2.3.5 Average Annual Requirement.

<sup>4</sup> Weighted by replacement cost.

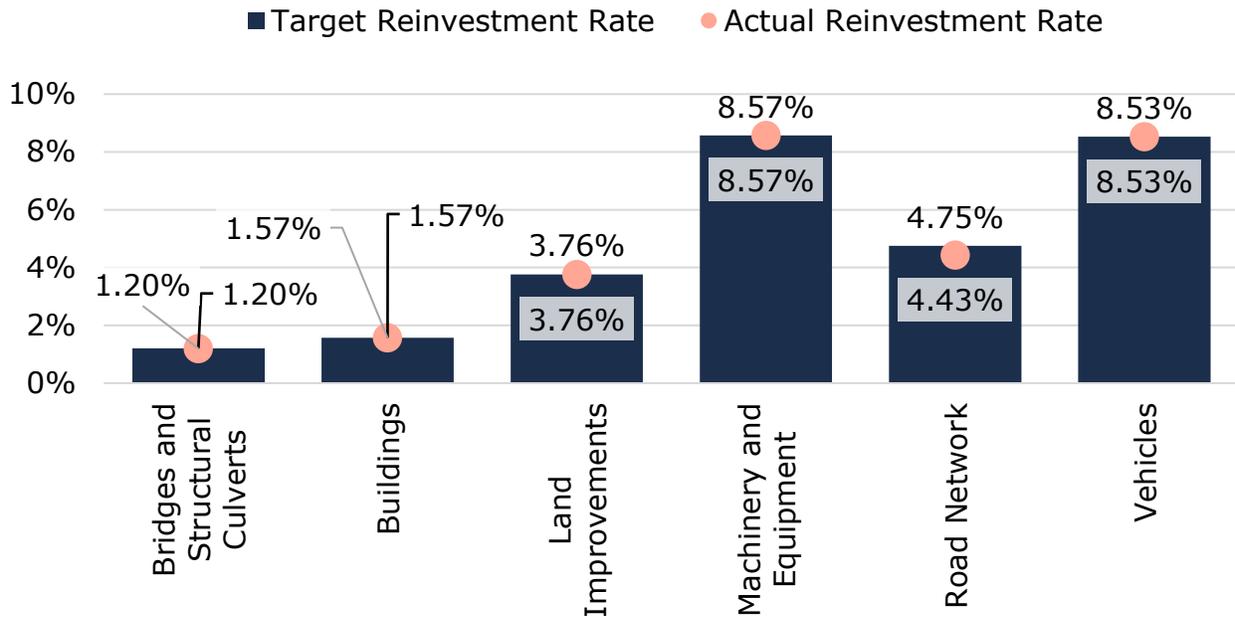
Figure 12 Current Replacement Cost: Portfolio Overview



### 3.2.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps by comparing the target to the current reinvestment rate. To meet the existing long-term capital requirements, the Township requires an annual capital investment of \$1,599,610, for a target portfolio reinvestment rate of 3.65%. Currently, annual investment from sustainable revenue source is \$1,546,779, for a current portfolio reinvestment rate of 3.53%. This leads to an annual infrastructure budget deficit of \$52,831. Target and current re-investment rates by asset category are detailed below.

Figure 13 Current Vs. Target Reinvestment Rate: Portfolio Overview



### 3.2.3 Condition of Asset Portfolio

Figure 14 Asset Condition: Portfolio Overview

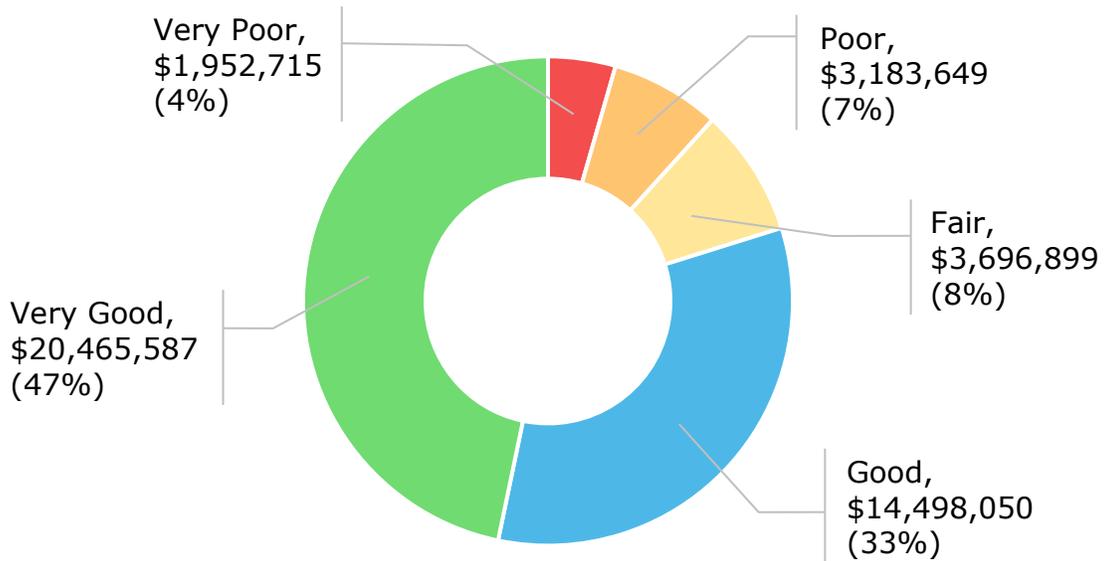
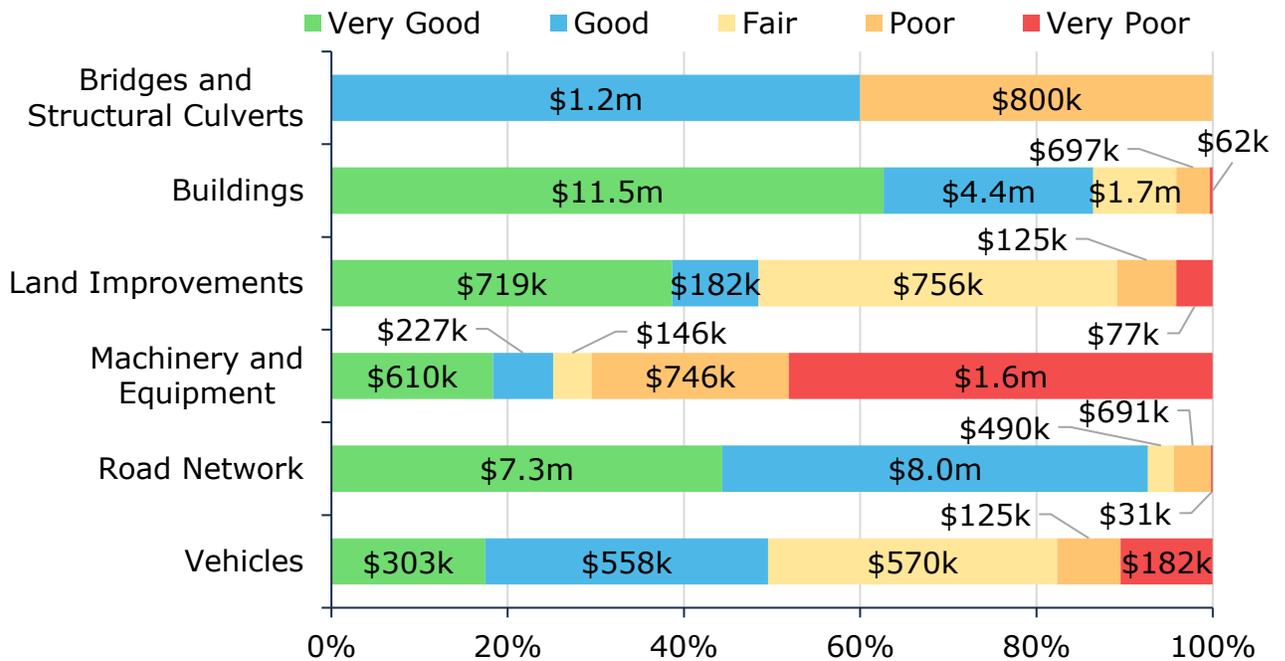


Figure 14 and Figure 15 summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition and age-based analysis,

90%<sup>5</sup> of the Township’s infrastructure portfolio is in fair or better condition, with the remaining 10%<sup>5</sup> in poor or lower condition, and an overall condition rating of 77%<sup>5</sup>. Typically, assets in poor or lower condition may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

Similarly, assets in fair condition should be monitored for disrepair over the medium term. Keeping assets in fair or better condition is typically more cost-effective than addressing assets needs when they enter the latter stages of their lifecycle or decline to a lower condition rating, e.g., poor or lower.

Figure 15 Asset Condition: Portfolio Overview by Category



**Value and Percentage of Asset Segments by Replacement Cost**

Condition data was available for the majority of the bridges and structural culverts, road network, and buildings, and most of the machinery and equipment and vehicles. For all remaining assets, including the majority of the land improvements assets, age was used as an approximation of condition for these assets. Age-based

<sup>5</sup> Average weighted by replacement cost.

condition estimations can skew data and lead to potential under- or overstatement of asset needs.

Further, when assessed condition data was available, it was projected to current year-end (2023). This 'projected condition' can generate lower condition ratings than those established at the time of the condition assessment. The rate of this deterioration will also depend on lifecycle curves used to project condition over time.

As further illustrated in Figure 15 at the category level, the majority of infrastructure categories are in fair or better condition, based primarily on assessed condition. See Table 10 for details on how condition data was derived for each asset segment.

Table 9 Detailed Asset Condition: Portfolio Overview

<b>Asset Category</b>	<b>≤ Poor \$</b>	<b>≤ Poor %</b>	<b>≥ Fair \$</b>	<b>≥ Fair %</b>	<b>Average Condition</b>
Bridges & Structural Culverts	\$800,000	40%	\$1,200,000	60%	Good (74%)
Road Network	\$721,221	4%	\$15,742,774	96%	Good (78%)
Buildings	\$758,972	4%	\$17,646,733	96%	Very Good (87%)
Land Improvements	\$202,000	11%	\$1,656,544	89%	Good (65%)
Machinery & Equipment	\$2,347,171	70%	\$983,136	30%	Poor (36%)
Vehicles	\$307,000	18%	\$1,431,350	82%	Fair (53%)
<b>TOTAL</b>	<b>\$5,136,364</b>	<b>12%</b>	<b>\$38,660,536</b>	<b>88%</b>	<b>Good (77%)</b>

### **Source of Condition Data**

This AMP relies on assessed condition for 88% of assets, based on and weighted by replacement cost. For the remaining assets, 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. Table 10 below identifies the source of condition data used throughout this AMP.

Table 10 Source of Condition Data: Portfolio Overview

Asset Category	% Assessed <sup>6</sup>	Source of Condition Data
Bridges & Structural Culverts	100%	OSIMs Report
Road Network	95%	2021 Project Tenders
Buildings	96%	Township Staff
Land Improvements	7%	Township Staff
Machinery & Equipment	66%	Township Staff
Vehicles	72%	Township Staff

### 3.2.4 Risk & Criticality

Using the risk equation and preliminary risk models, Figure 16 shows how assets across the different asset categories are stratified within the 1-25 risk rating ranges while Table 11 provides a breakdown of the probability of failure, consequence of failure, and risk ratings by asset category.

Figure 16 Risk Ratings: Portfolio Overview

<p><b>1 - 4</b> <b>Very Low</b> \$16,361,000 (37%)</p>	<p><b>5 - 7</b> <b>Low</b> \$14,893,000 (34%)</p>	<p><b>8 - 9</b> <b>Moderate</b> \$3,860,000 (9%)</p>	<p><b>10 - 14</b> <b>High</b> \$6,294,000 (14%)</p>	<p><b>15 - 25</b> <b>Very High</b> \$2,390,000 (5%)</p>
--	---	--	---	---

<sup>6</sup> Percentage of the assets within the category with condition assessment data, weighted by replacement cost.

Table 11 Probability of Failure, Consequence of Failure, and Risk Rating: Portfolio Overview by Category

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Bridges & Structural Culverts	1.8 / 5	3.2 / 5	4.8 / 25
Road Network	1.67 / 5	3.95 / 5	6.2 / 25
Buildings	1.6 / 5	3.6 / 5	5.3 / 25
Land Improvements	2.28 / 5	2.67 / 5	5.95 / 25
Machinery & Equipment	3.75 / 5	3.48 / 5	13.06 / 25
Vehicles	2.61 / 5	3.55 / 5	8.68 / 25
<b>TOTAL</b>	<b>1.85 / 5</b>	<b>3.65 / 5</b>	<b>6.35 / 25</b>

The analysis shows that based on current risk models, approximately 5% of the Township’s assets, with a current replacement cost of approximately \$2.4 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates and were considered to be most essential to the Township.

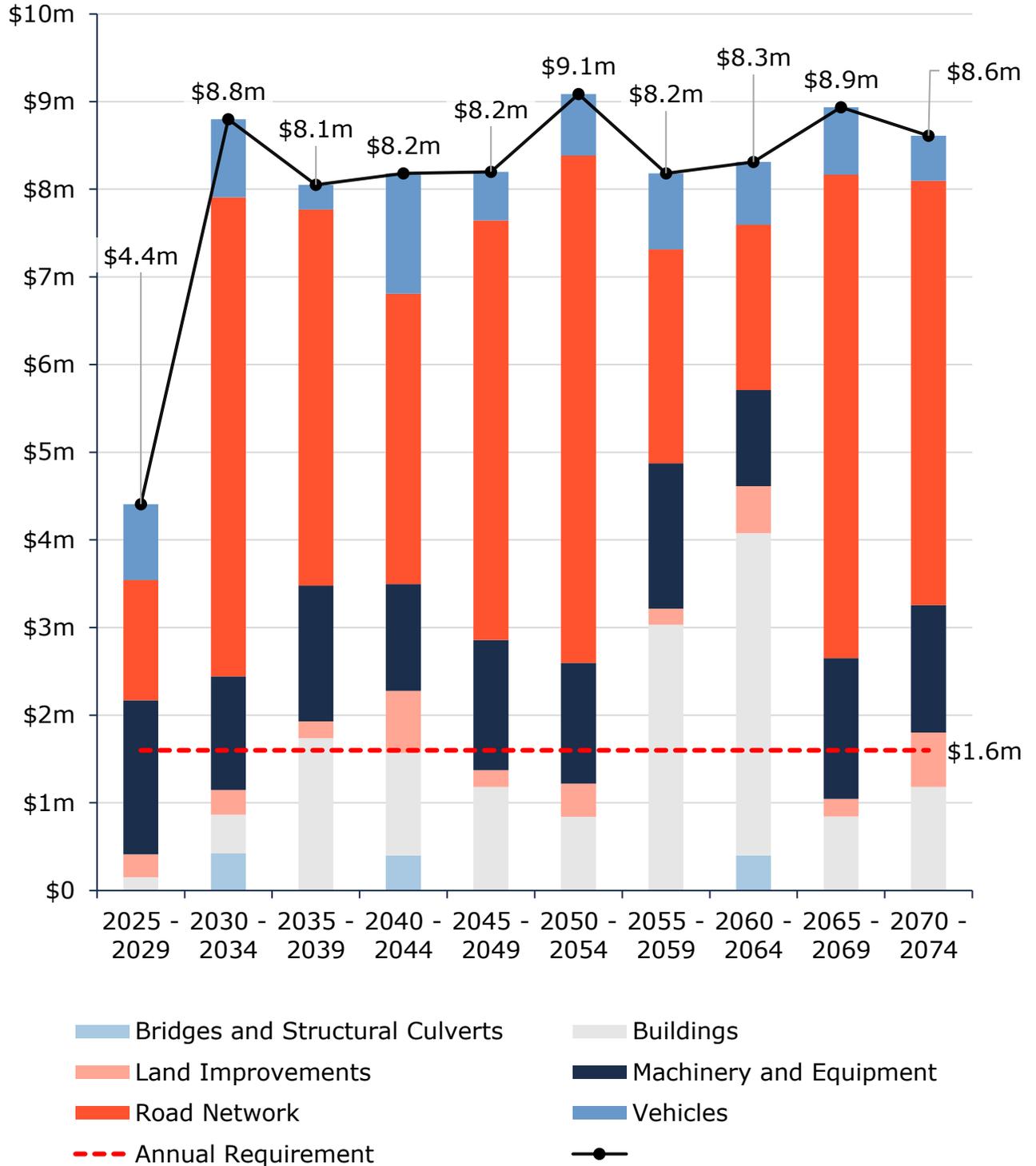
As new asset attribute information and condition assessment data are integrated with the asset register, asset risk ratings will evolve, resulting in a redistribution of assets within the risk ranges. Staff should also continue to calibrate risk models.

We caution that since risk ratings rely on many factors beyond an asset’s physical condition or age, assets in a state of disrepair can sometimes be classified as low-risk, despite their poor condition rating. In such cases, although the probability of failure for these assets may be high, their consequence of failure ratings were determined to be low based on the attributes used and the data available.

Similarly, assets with very high condition ratings can receive a moderate to high-risk rating despite a low probability of failure. These assets may be deemed as highly critical to the Township based on their costs, economic importance, social significance, and other factors. Continued calibration of an asset’s criticality and regular data updates are needed to ensure these models more accurately reflect an asset’s actual risk profile.

### 3.2.5 Forecasted Capital Requirements

Figure 17 Capital Replacement Needs: Portfolio Overview 2025-2074



Aging assets require maintenance, rehabilitation, and replacement. Figure 17 below illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for all asset categories analyzed in this AMP over a 50-year time horizon. To achieve and maintain the capital replacement needs for the proposed levels of service, an average of \$1.6 million is required each year (red dotted line). Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. This figure relies on age and available condition data. Figure 17 illustrates relatively consistent capital requirements for each five-year segment through the forecast period.

Additionally, there is currently an approximate \$890,000 backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service. It is unlikely that all such assets are in a state of disrepair, requiring immediate replacements. This makes continued and expanded targeted and consistent condition assessments integral. Risk frameworks, proactive lifecycle strategies, and levels of service targets should continue to be used to prioritize projects, continuously refining estimates for ongoing capital needs, and helping to select the right treatment for each asset.

# 4 Proposed Levels of Service Analysis

## 4.1 Overview

### 4.1.1 O. Reg. 588/17 Proposed Levels of Service Requirements

The third iteration of municipal Asset Management Plans required under O. Reg. 588/17 requires the evaluation of levels of service (LOS) that includes:

- ◆ Proposed LOS options (i.e. increase, decrease, or maintain current LOS) and the risks associated with these options
- ◆ How the proposed LOS may differ from current LOS.
- ◆ Whether the proposed LOS are achievable; and
- ◆ The municipality's ability to afford proposed LOS.

Additionally, a lifecycle management and financial strategy to support the proposed LOS must be identified for a period of 10 years with specific reporting on:

- ◆ Identification of lifecycle activities needed to provide the proposed LOS.
- ◆ Annual costs over the next 10 years to achieve the proposed LOS; and
- ◆ Identification of proposed funding projected to be available

### 4.1.2 Considerations

Proposed LOS for the Township have been developed through comprehensive engagement with Township staff. In order to achieve any target LOS goal, careful consideration should be given to the following:

#### ***Financial Impact Assessments***

- ◆ Assess historical expenditures/budget patterns to gauge feasibility of increasing budgets to achieve increased service levels
- ◆ Consider implications of LOS adjustments on other services and other infrastructure programs (i.e. trade-offs)

### ***Infrastructure Condition Assessments***

- ◆ Regularly assess the condition of critical infrastructure components
- ◆ Use standardized condition assessment protocols (where possible) to quantify the state of the infrastructure
- ◆ Identify non-critical components where maintenance could potentially be deferred without causing severe degradation
- ◆ Use current condition metrics as benchmarks to gauge feasibility of large adjustments to LOS

### ***Service Metrics***

- ◆ Measure user satisfaction, response times, and other relevant indicators for specific services

### ***Service Impact Assessments***

- ◆ Evaluate potential impacts on user satisfaction and service delivery due to changes in infrastructure condition

### ***Key Lifecycle Activities***

- ◆ Implement routine maintenance and inspections to ensure infrastructure reaches its optimal useful life
- ◆ Monitor and optimize operational processes for efficiency
- ◆ Regularly review and update preventive maintenance schedules
- ◆ Prioritize critical infrastructure components for maintenance
- ◆ Implement cost-saving measures without compromising safety or compliance
- ◆ Develop strategies for managing and communicating service impacts to stakeholders
- ◆ Invest in technology and process improvements to enhance maintenance efficiency
- ◆ Upgrade critical infrastructure components to improve overall reliability
- ◆ Explore opportunities for innovation and efficiency gains

## ***Risk Management***

- ◆ Identify potential risks to infrastructure and service quality resulting from adjusted service levels
- ◆ Develop contingency plans to address unforeseen challenges without compromising service quality
- ◆ Monitor performance closely to ensure that the target investment translates to the desired infrastructure condition

## ***Infrastructure Condition Enhancements***

- ◆ Identify areas for improvement and increased maintenance to enhance overall infrastructure condition

## ***Timelines***

- ◆ Although O. Reg. 588/17 requires evaluation of expenditures for a 10-year period in pursuit of proposed LOS, it does not require municipalities to achieve the LOS within this 10-year timeframe (ex. a municipality may have a goal to reach X% condition by 2050, the AMP is required to review the first 10 years of the strategy to reach this goal)
- ◆ Careful consideration should be given to setting realistic targets for when proposed service levels can be achieved.

## ***Stakeholder Engagement***

- ◆ It is recommended to ensure adjustments to LOS are not made in isolation and without consultation of various stakeholders. This could include, but is not limited to:
  - Department Heads/Infrastructure Managers
  - Residents
  - Service Users
  - Council
- ◆ Efforts should be made to communicate changes to LOS transparently to all affected stakeholders

## ***Flexibility***

- ◆ Priorities may change over time due to a variety of factors, such as:

- Financial state of the municipality
  - Availability of grants
  - Significant increases or decreases in population
  - Changes in political priorities
  - Changes in resident priorities
  - New technologies
  - Changes in legislation
- ◆ Any proposed changes to LOS should be flexible and able to adapt to changes listed above, and other unforeseen circumstances

## 4.2 Proposed Levels of Service Scenarios

The three scenarios outlined in the following section were analyzed as options for proposed service levels for all categories included in this Asset Management Plan.

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**Although all three scenarios were considered, the Township adopted a segment-by-segment approach in determining its path forward. In most cases, the baseline condition was maintained, while a 5% reduction from the baseline was applied to select segments.**

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### 4.2.1 Scenario Development & Selection

The Township adopted a practical and data-informed approach to determine its proposed LOS for each segment within the six asset categories. This process ensures that service delivery remains reliable over the long term while also balancing affordability and infrastructure needs

To begin, the Township used the current average condition of each asset group (such as roads, buildings, and other municipal infrastructure) as a reference point to help determine appropriate baseline condition targets. However, these current conditions were used as a guide rather than a fixed rule. In some cases, a more consistent and strategic target was applied—for instance, setting a 70% condition target for all Township buildings rather than creating a separate target for each facility.

Once these baseline condition targets were confirmed (see Table 12 below), the Township used the Decision Support (DS) module within the Citywide Asset Management software to model different asset management scenarios over a 50-

year period. These scenarios were built to maintain the selected baseline condition as the service level goal and determine the resulting AAR<sup>7</sup>.

Table 12 Baseline Conditions: PLOS

Category	Segment	Baseline Condition
<b>Bridges &amp; Structural Culverts</b>	Bridges	83%
	Structural Culverts	55%
<b>Road Network</b>	HCB + Culverts	70%
	LCB + Culverts	69%
	Signs	17%
<b>Buildings</b>	Community and Culture	70%
	General Government	70%
	Health	70%
	Public Works	70%
	Washrooms	70%
	Waste Management	70%
<b>Land Improvements</b>	Cemetery	59%
	Marine	74%
	Parking Lots	39%
	Recreation	43%
	Towers	82%
	Waste Management	47%
<b>Machinery &amp; Equipment</b>	Furniture and Fixtures	28%
	Public Works	40%
	Waste Management	91%
	Heavy Duty	49%

<sup>7</sup> For further clarification on Average Annual Requirement (AAR), see section 2.3.5 Average Annual Requirement.

Category	Segment	Baseline Condition
Vehicles	Light Duty	50%
	Marine	32%

The DS tool helps predict when assets will need major rehabilitation or replacement. When an asset reaches the point where work is recommended, the software checks whether completing that work would cause the **overall average condition of all assets in the scenario** to fall below the target. If the target would still be met without immediate action, the work is deferred to the following year and reviewed again. This method reduces unnecessary spending by allowing the Township to postpone work that is not yet critical—without lowering the overall quality of service.

To fully explore options and potential impacts, the Township also modeled three alternative scenarios:

- ◆ A 5% reduction in the average condition target to see how a lower standard might reduce costs or affect service quality
- ◆ A 5% increase to explore the cost and benefit of delivering a higher service level
- ◆ A no-target scenario, where assets are replaced immediately once they reach their end-of-life, with no consideration for overall system condition or available budget. This approach results in the highest annual cost and is generally considered less sustainable

These four scenarios—maintaining, lowering, raising, or removing the condition target—were compared side by side. They provided insight into how different strategies would affect long-term costs, asset performance, and service reliability.

Following this analysis, and after receiving feedback from both Township staff and the community, the most suitable proposed LOS were selected. These reflect a balance between public expectations, financial responsibility, and long-term sustainability.

Table 13 provides the AAR for each of the scenarios outlined above. The final selection for each segment is highlighted in green.

Table 13 AAR for Scenarios: PLOS

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
<b>Bridges &amp; Structural Culverts</b>	Bridges	-	-	-	\$16,000
	Structural Culverts	\$24,020	\$24,020	\$24,020	\$30,825
	<b>Total</b>	<b>\$24,020</b>	<b>\$24,020</b>	<b>\$24,020</b>	<b>\$46,825</b>
<b>Road Network</b>	HCB + Culverts	\$331,491	\$361,957	\$365,038	\$432,002
	LCB + Culverts	\$399,490	\$416,806	\$416,806	\$409,274
	Signs	\$2,985	\$3,780	\$4,576	\$4,056
	<b>Total</b>	<b>\$733,966</b>	<b>\$782,544</b>	<b>\$786,420</b>	<b>\$845,332</b>
<b>Buildings</b>	Community and Culture	\$118,919	\$125,685	\$126,285	\$216,452
	General Government	\$66,090	\$68,717	\$68,717	\$102,951
	Health	\$21,852	\$22,058	\$22,058	\$37,203
	Public Works	\$66,285	\$66,505	\$66,593	\$95,903
	Washrooms	\$3,627	\$3,627	\$3,627	\$4,625

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
	Waste Management	\$10,044	\$10,044	\$10,044	\$13,822
	<b>Total</b>	<b>\$286,817</b>	<b>\$296,637</b>	<b>\$297,326</b>	<b>\$470,955</b>
Land Improvements	Cemetery	\$1,510	\$1,510	\$1,510	\$1,540
	Marine	\$25,629	\$25,629	\$25,629	\$26,751
	Parking Lots	\$4,706	\$4,706	\$4,706	\$4,500
	Recreation	\$17,745	\$18,627	\$18,627	\$23,375
	Towers	\$5,294	\$5,294	\$5,294	\$8,083
	Waste Management	\$13,882	\$14,196	\$14,824	\$15,660
	<b>Total</b>	<b>\$68,766</b>	<b>\$69,963</b>	<b>\$70,590</b>	<b>\$79,909</b>
Machinery & Equipment	Furniture and Fixtures	\$48,941	\$60,922	\$72,764	\$120,072
	Public Works	\$195,682	\$221,742	\$244,918	\$249,766
	Waste Management	\$2,706	\$2,706	\$2,706	\$3,067
	<b>Total</b>	<b>\$247,329</b>	<b>\$285,370</b>	<b>\$320,388</b>	<b>\$369,838</b>
Vehicles	Heavy Duty	\$83,662	\$83,662	\$83,662	\$90,372

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
	Light Duty	\$48,745	\$48,745	\$48,745	\$57,250
	Marine	\$14,157	\$15,863	\$18,353	\$25,192
	<b>Total</b>	<b>\$146,564</b>	<b>\$148,270</b>	<b>\$150,760</b>	<b>\$172,814</b>
<b>TOTAL</b>		<b>\$1,507,462</b>	<b>\$1,606,802</b>	<b>\$1,649,503</b>	<b>\$1,988,740</b>

## **4.2.2 Lifecycle Changes**

The current lifecycle strategy remains appropriate, as it is based on the overall average condition of the Township’s assets. No immediate changes to the strategy are necessary.

However, to better align with target condition levels, it is recommended to adjust the timing of specific maintenance and renewal activities to follow the 10-year capital requirements as outlined in Appendix B. By scheduling these interventions during optimal periods—when they are most effective and cost-efficient—the Township can enhance asset performance and extend their service life.

This proactive approach will allow the Township to maintain high service standards and fiscal responsibility while following the existing strategy. Regular monitoring will ensure that these timing adjustments continue to meet the Township’s evolving infrastructure needs.

## **4.2.3 Affordability/Achievability**

As the AAR closely corresponds to the Township’s current capital budget, the selected proposed LOS are achievable.

For a more in-depth breakdown, see Section 12.

## **4.2.4 Changes to Community and Technical Levels of Service**

The Township does not anticipate any changes to qualitative community levels of services for any of the asset categories included within this AMP. All asset categories will see adjustments to their technical levels of service over time, particularly relating to the average condition of assets. Refer to each asset category for more details

## **4.2.5 Proposed LOS Risks**

The majority of the proposed LOS are designed to maintain existing, or baseline, asset conditions. As a result, the implementation of these scenarios does not introduce any new or additional risks to service delivery.

The risk profile associated with each asset category remains unchanged. Previously identified risks—such as those related to aging infrastructure and environmental

factors—continue to apply under the proposed approach. These risks have already been evaluated and documented as part of the Township’s overall asset management planning.

By focusing on maintaining current asset conditions rather than improving or reducing service levels, the Township can continue to deliver consistent service without increasing exposure to unforeseen operational or financial risks. This also allows for more predictable long-term planning and resource allocation.

Ongoing monitoring and regular updates to the risk register will ensure that any changes in asset performance or external conditions are promptly addressed.

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# **Category Analysis: Core Assets**

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# 5 Bridges & Structural Culverts

The Township’s transportation network includes bridges and structural culverts, with a current replacement cost of \$2.0 million.

## 5.1 Inventory & Valuation

Table 14 summarizes the quantity and current replacement cost of bridges and structural culverts. The Township owns and manages one bridge and two structural culverts.

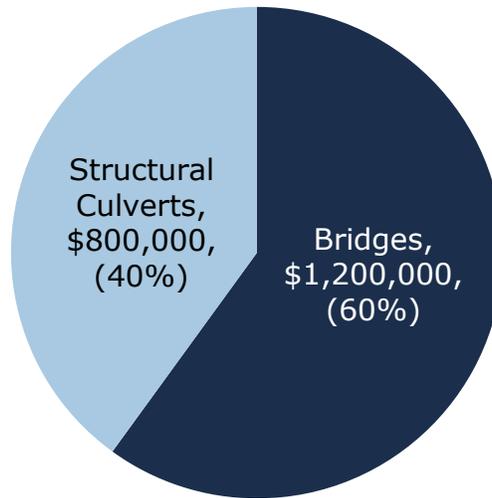
Table 14 Detailed Asset Inventory: Bridges & Structural Culverts

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR <sup>8</sup>
Bridges <sup>9</sup>	1	Assets	\$1,200,000	User-Defined	-
Structural Culverts	2	Assets	\$800,000	User-Defined	\$24,020
<b>TOTAL</b>	<b>3</b>	<b>Assets</b>	<b>\$2,000,000</b>	<b>User-Defined</b>	<b>\$24,020</b>

<sup>8</sup> Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

<sup>9</sup> Bridge replacement is scheduled for 2080, which is outside of the 50-year assessment window used for this AMP.

Figure 18 Portfolio Valuation: Bridges & Structural Culverts



## 5.2 Asset Condition

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

- ◆ Condition assessments of all 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). OSIM reports are completed by external consultants
- ◆ Internal staff conduct monthly drive-by condition assessments to ensure there are no safety hazards

In this AMP, the following rating criteria, in alignment with the industry standard Bridge Condition Index (BCI), is used to determine the current condition of bridge and structural culvert assets and forecast future capital requirements:

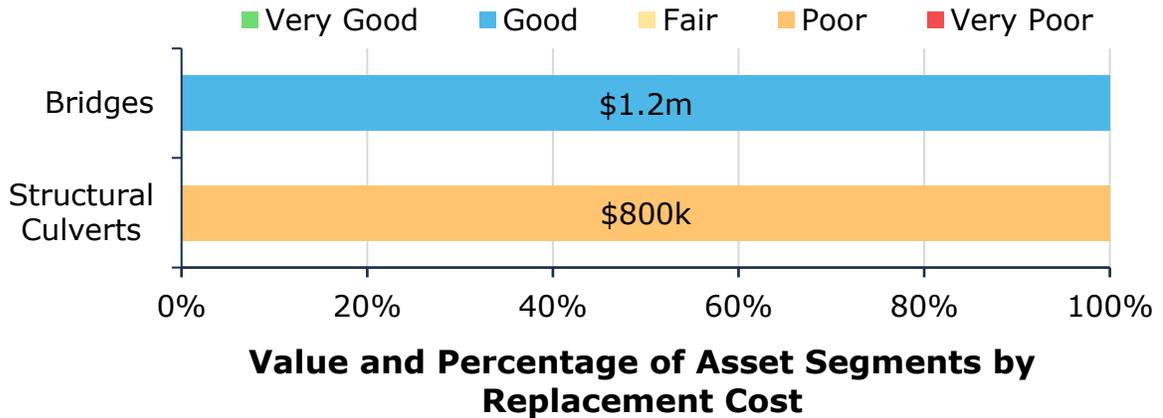
Table 15 Bridge Condition Index (BCI) Ranges

Condition Ranges (BCI)	Description
<p><b>Very Good (90 – 100)</b></p>	<ul style="list-style-type: none"> <li>◆ New or recently rehabilitated structure, with no significant defects.</li> <li>◆ Deck, beams, bearings, and abutments in excellent condition, with no visible wear.</li> <li>◆ Efficient drainage, minimal surface wear, and no corrosion issues.</li> <li>◆ Meets or exceeds all safety and design standards.</li> <li>◆ Minimal maintenance required beyond routine inspections.</li> </ul>
<p><b>Good (70 – 90)</b></p>	<ul style="list-style-type: none"> <li>◆ Minor surface wear and some cosmetic deterioration, such as light scaling or superficial cracking.</li> <li>◆ Deck, joints, and bearings in good working condition, with no major structural concerns.</li> <li>◆ Minimal corrosion or wear on steel and concrete elements.</li> <li>◆ Routine inspections and preventive maintenance needed to extend lifespan.</li> <li>◆ No major rehabilitation required in the near future.</li> </ul>
<p><b>Fair (60 – 70)</b></p>	<ul style="list-style-type: none"> <li>◆ Moderate wear and surface deterioration, including minor cracking, spalling, and some exposed reinforcing steel.</li> <li>◆ Deck and joints in functional condition, but requiring increased maintenance.</li> <li>◆ Bearings, beams, and abutments showing early signs of corrosion or wear.</li> <li>◆ No immediate safety concerns, but planning for future rehabilitation needed.</li> <li>◆ Regular maintenance and potential repairs required to maintain serviceability.</li> </ul>

Condition Ranges (BCI)	Description
<p><b>Poor (40 – 60)</b></p>	<ul style="list-style-type: none"> <li>◆ Advanced deterioration of structural components, with noticeable concrete scaling, cracking, or steel corrosion.</li> <li>◆ Deck, beams, or bearings showing significant wear, affecting bridge performance.</li> <li>◆ Localized section loss on steel or concrete elements, requiring close monitoring.</li> <li>◆ Possible minor load restrictions, but structure remains functional.</li> <li>◆ Major rehabilitation or strengthening required in the near term.</li> </ul>
<p><b>Very Poor (0 – 40)</b></p>	<ul style="list-style-type: none"> <li>◆ Severe structural deterioration, including major section loss, deep cracking, and exposed or corroded reinforcing steel.</li> <li>◆ Significant deck and beam damage, with failing expansion joints, delaminated concrete, and spalling.</li> <li>◆ Major safety concerns, including load restrictions or risk of failure.</li> <li>◆ Frequent water leakage and erosion, undermining abutments or footings.</li> <li>◆ Immediate rehabilitation or full replacement required.</li> </ul>

Figure 19 summarizes the replacement cost-weighted condition of the Township’s bridges and structural culverts. Based on the Township’s recent Ontario Structures Inspection Manual (OSIM) assessments, 100% of bridges and structural culverts are in fair or better condition. Some elements or components of these structures may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition. While none of the bridges and structural culverts portfolio is currently in poor or lower condition, assets components reaching this condition rating in the future may require replacement in the immediate or short term.

Figure 19 Asset Condition: Bridges & Structural Culverts



As further detailed in Table 16, based on in-field condition assessments from the most recent OSIMs report, all assets were identified as being in fair or better condition. Bridges and structures with a poor or lower rating (i.e., a bridge condition index of less than 60) are not necessarily unsafe for regular use. The OSIM ratings are designed to identify repairs needed to elevate condition ratings to a fair or higher.

Table 16 Asset Condition: Bridges & Structural Culverts by Segment

Asset Category	≤ Poor \$	≤ Poor %	≥ Fair \$	≥ Fair %	Average Condition <sup>10</sup>
Bridges	-	0%	\$1,200,000	100%	Good (85%)
Structural Culverts	-	0%	\$800,000	100%	Poor (57%)
<b>TOTAL</b>	<b>-</b>	<b>0%</b>	<b>\$2,000,000</b>	<b>100%</b>	<b>Good (74%)</b>

## 5.3 Age Profile

An asset’s age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and

<sup>10</sup> Weighted by replacement cost.

provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

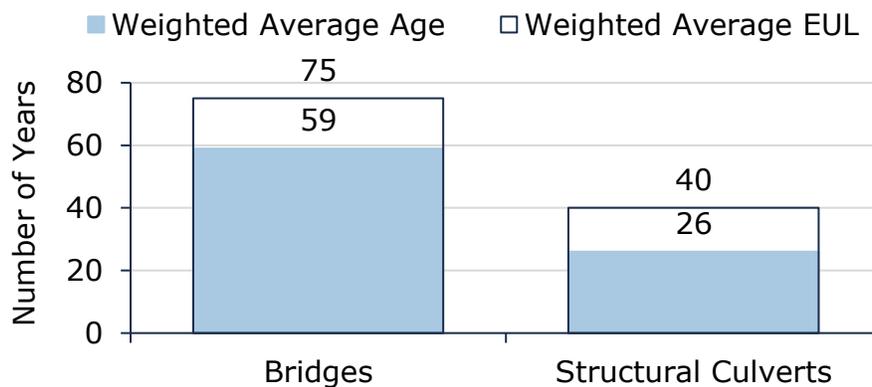
In conjunction with condition data, an asset’s age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Table 17 summarizes and Figure 20 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 17 Detailed Asset Age: Bridges & Structural Culverts

Segment	Weighted Average EUL	Weighted Average Age
Bridges	75	59
Structural Culverts	40	26

Figure 20 Estimated Useful Life vs. Asset Age: Bridges & Structural Culverts



Age analysis reveals that on average, bridges have consumed the majority of their estimated useful life, with an average age of 59 years against an average EUL of 75 years. On average, structural culverts are about three quarters through the latter stages of their lifecycle, with an average age of 26 years, against an average EUL of 40 years.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset

may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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

OSIM assessments should continue to be used in conjunction with age and asset criticality to prioritize capital and maintenance expenditures.

## 5.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that the Township’s bridges and structural culverts 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.

The following table outlines the Township’s current lifecycle management strategy for bridges and structural culverts assets.

Table 18 Lifecycle Management Strategy: Bridges & Structural Culverts

Activity Type	Description of Current Strategy
Maintenance	Biennial OSIM inspection reports include a list of recommended maintenance activities that the Township considers and completes according to cost and urgency.
Rehabilitation / Replacement	All lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM). Major repairs and replacements are subject to budget constraints, condition ratings, health and safety concerns, and other risks to prioritize work.

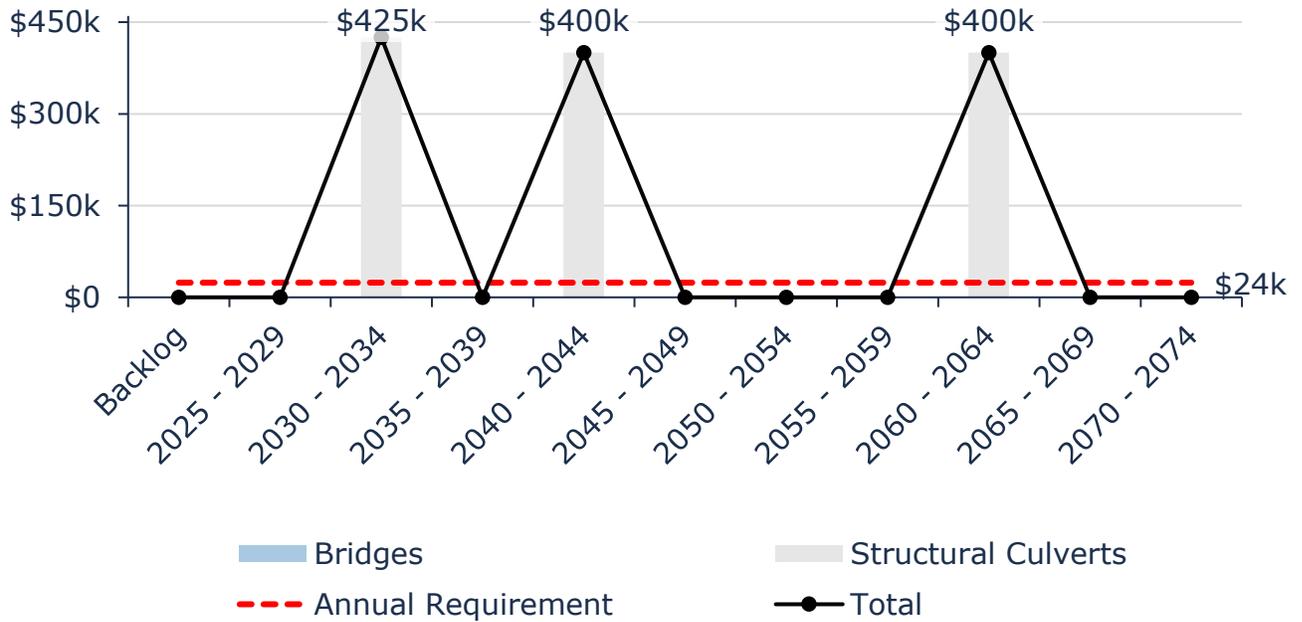
## 5.5 Forecasted Long-Term Replacement Needs

Figure 21 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's bridges and structural culverts. This analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and asset register. As the replacement of the Township's bridge is not scheduled until 2080, it is outside of the date ranges shown in the Figure.

The Township's average annual requirements (red dotted line) for bridges and structural culverts total \$24,020. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Although no major replacements are anticipated for the next 5 years, capital needs spike in 2030-2034, 2040-2044, and 2060-2064 as structural culvert assets reach the end of their useful life. These projections and estimates are based on asset replacement costs, age analysis, and condition data. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 21 Forecasted Capital Replacement Needs: Bridges & Structural Culverts 2025-2074



Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. OSIM condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A summary of the 10-year replacement forecast can be found in Appendix B.

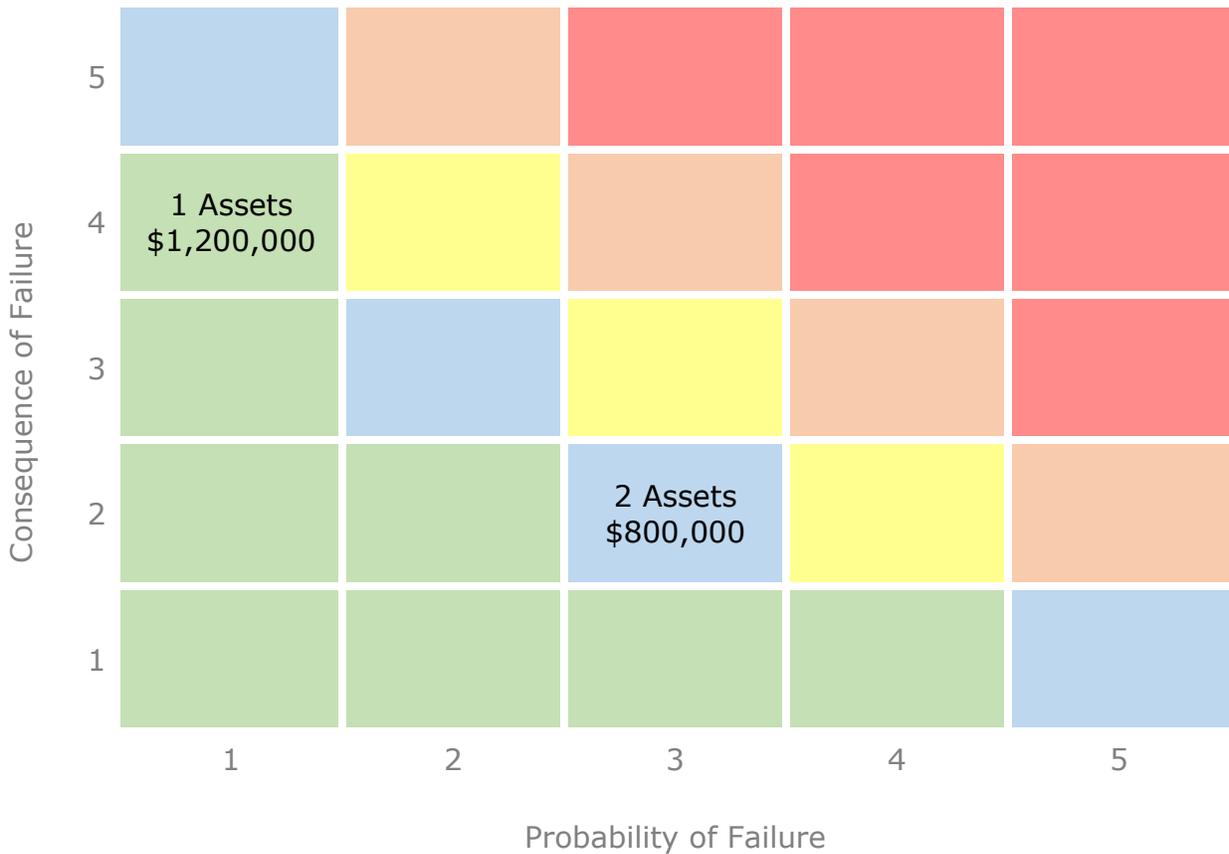
## 5.6 Risk Analysis

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### 5.6.1 Quantitative Risk

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the bridges and structural culverts assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Figure 22 Risk Matrix: Bridges & Structural Culverts



The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Township may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the Township’s Asset Management Database (Citywide Assets). See Quantitative Risk under Section 2.2.2 as well as Section 2.3.8 Evaluating Quantitative Risk for further details on the approach used to determine asset risk ratings and classifications.

The following risk ratings are first shown for the overall category and then by segment for the bridges and structural culverts assets.

Figure 23 Risk Rating Ranges: Bridges & Structural Culverts

<b>1 - 4</b> <b>Very Low</b> \$1,200,000 (60%)	<b>5 - 7</b> <b>Low</b> \$800,000 (40%)	<b>8 - 9</b> <b>Moderate</b> - (0%)	<b>10 - 14</b> <b>High</b> - (0%)	<b>15 - 25</b> <b>Very High</b> - (0%)
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Table 19 Probability of Failure, Consequence of Failure, Risk Ratings: Bridges & Structural Culverts by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Bridges	1 / 5	4 / 5	4 / 25
Structural Culverts	3 / 5	2 / 5	6 / 25
<b>TOTAL</b>	<b>1.8 / 5</b>	<b>3.2 / 5</b>	<b>4.8 / 25</b>

Overall, the average risk rating for bridges and structural culverts is 4.8, which is considered Very Low.

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### 5.6.2 Qualitative Risk

In addition to asset level risk, the Township may also face risk associated with not executing key lifecycle activities, including repairs, rehabilitation, and replacement of critical assets. These include:

- ◆ Missed opportunities for cost savings and increases in lifecycle costs
- ◆ Deferral of vital projects, or further lending and borrowing
- ◆ Accelerated asset deterioration and premature failure, which may lead to public health and safety hazards, and disruption of services to the Township’s residential and commercial base

- ◆ A decline in public satisfaction with the Township’s service standards and the resulting reputational damage
- ◆ Bridges are inherently vital to the Township’s transportation infrastructure, and their failures can disconnect communities, lead to public health and safety incidents, and can impede the efficient flow of residential and commercial traffic

An asset’s criticality rating, determined by the nature and magnitude of the consequences of its potential failure should be used to prioritize projects, particularly lifecycle management strategies. Using risk in conjunction with levels of service, and the recommended workplans in OSIM inspections, can assist in optimizing limited funds.

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



### **Aging Infrastructure and Growth**

The Township recently completed a significant bridge revitalization project, which included the installation of a new bridge deck and associated concrete repairs. This investment reflects the Township’s proactive approach to managing aging infrastructure, particularly structures built prior to municipal incorporation. To support safety and longevity, consultants have been engaged to assess bridge capacities and identify any emerging concerns. With ongoing growth and increased traffic—particularly from heavy-duty vehicles—these structures are being continuously monitored to ensure their continued safe operation.



### **Climate Change & Extreme Weather Events**

Flooding and extreme weather events are becoming increasingly frequent, posing a risk to key structural elements such as culverts. Intense precipitation accelerates the deterioration of these components, reducing their lifespan and effectiveness. The Township continues to apply proactive asset management strategies to address these impacts, integrating climate adaptation considerations into maintenance planning and future capital investments.

## 5.7 Current Levels of Service

The tables that follow summarize the Township’s current levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Township has selected for this AMP.

### 5.7.1 Community Levels of Service

Table 20 O. Reg. 588/17 Community Levels of Service: Bridges & Structural Culverts

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description of the traffic that is supported by Township bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	The traffic supported by municipal bridges is aligned with the dimensional load limits of Class 5/6 roadways. Municipal bridges have no sidewalks.
Quality	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	See Appendix C. Bridges and culverts are in generally fair or better condition and full use is allowed.

### 5.7.2 Technical Levels of Service

Table 21 O. Reg. 588/17 Technical Levels of Service: Bridges & Structural Culverts

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of bridges in the Township with loading or dimensional restrictions	0%
Quality	Average bridge condition index value for bridges in the Township	Good (85%)

Service Attribute	Technical Metric	Current LOS (2023)
	Average bridge condition index value for structural culverts in the Township	Poor (57%)
Performance	% of assets in fair or better condition	60%
	% of assets in poor or lower condition	40%
	Actual annual capital budget : average required annual capital requirements	\$24,020 : \$24,020 (1 : 1)

## 5.8 Proposed Levels of Service

As per O. Reg. 588/17, by July 1, 2025, municipalities are required to consider proposed levels of service (LOS), discuss the associated risks and long-term sustainability of these service levels, and explain the Township’s ability to afford the proposed LOS.

Table 22 outlines the proposed LOS scenarios that were analyzed for bridges and structural culverts. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 22 Proposed LOS: Bridges & Structural Culverts

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Bridges	78%	83%	88%	-	Maintain
	-	-	-	\$16,000.00	
Structural Culverts	50%	55%	60%	-	Maintain
	\$24,020	\$24,020	\$24,020	\$20,000	
<b>TOTAL</b>	<b>\$24,020</b>	<b>\$24,020</b>	<b>\$24,020</b>	<b>\$36,000</b>	<b>\$24,020</b>

# 6 Road Network

The Township’s road network has a current replacement cost of \$16.5 million, distributed primarily between HCB<sup>11</sup> and LCB<sup>12</sup> roads. The Township also owns and manages other supporting infrastructure and capital assets, including small culverts and signage.

## 6.1 Inventory & Valuation

Table 23 summarizes the quantity and current replacement cost of the Township’s various road network assets as managed in its primary asset management register, Citywide.

Table 23 Detailed Asset Inventory: Road Network

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR <sup>13</sup>
HCB	26.3	KM	\$9,775,980	Cost per Unit	\$361,957
LCB	30.6	KM	\$5,916,732	Cost per Unit	\$416,806
Signs	3	Assets	\$40,560	CPI	\$3,780
Small Culverts <sup>14</sup>	4,605	Feet	\$730,722	Cost per Unit	-
<b>TOTAL</b>			<b>\$16,463,995</b>	<b>Cost per Unit</b>	<b>\$782,544</b>

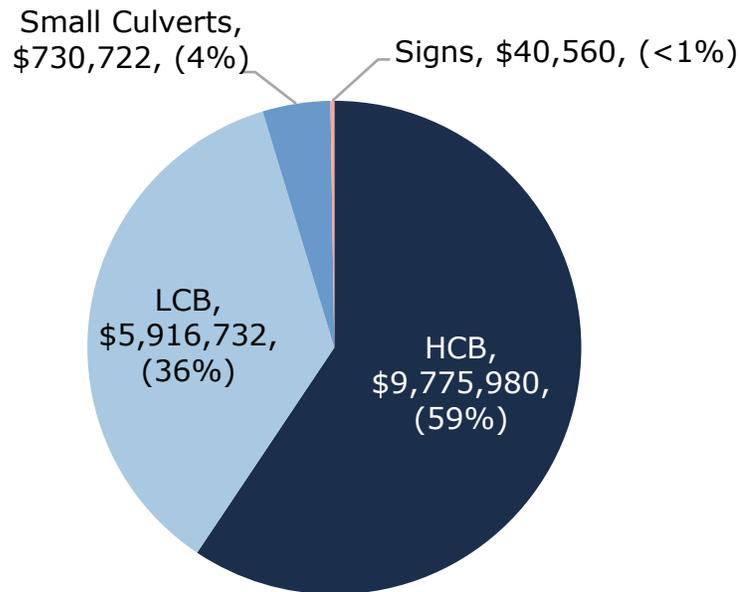
<sup>11</sup> HCB refers to High Class Bituminous paved surfaced, meaning asphalt.

<sup>12</sup> LCB refers to Low Class Bituminous paved surface, meaning asphalt emulsion and chip—commonly known as tar and chip.

<sup>13</sup> Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

<sup>14</sup> The AAR for small culverts has been distributed between HCB and LCB roads dependent upon location.

Figure 24 Portfolio Valuation: Road Network



## 6.2 Asset Condition

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

- ◆ A street scan was completed by external consultants in 2018-2019 that included a detailed assessment of the condition of each road segment
- ◆ Municipal staff conduct bi-weekly visual inspections to assess the overall condition and presence of defects for all road assets including asphalt, surface treated, and gravel roads
- ◆ In the winter months, municipal staff complete additional road patrols based on their Winter Maintenance Policy and legal requirements
- ◆ Mostly, road patrols are used to gauge the condition of the roads and determine whether mid-life activities or replacement are required. If there is nearby work taking place, then the Township may capitalize to complete road repairs while the area is closed

In this AMP, the following rating criteria is used to determine the current condition of road network assets and forecast future capital requirements:

Table 24 Condition Ranges: Paved Roads – Road Network

Condition Ranges	Description
<p><b>Very Good (80% – 100%)</b></p>	<ul style="list-style-type: none"> <li>◆ New or recently rehabilitated pavement, with no significant defects.</li> <li>◆ Smooth surface with no visible cracks, rutting, or deterioration.</li> <li>◆ Excellent drainage and stable shoulders.</li> <li>◆ Minimal maintenance required beyond routine inspections.</li> <li>◆ Long expected service life with preventive maintenance.</li> </ul>
<p><b>Good (70% – 80%)</b></p>	<ul style="list-style-type: none"> <li>◆ Minor cracking and minimal surface distress, with good ride quality.</li> <li>◆ No significant rutting or potholes.</li> <li>◆ Drainage functioning well, with stable shoulders and ditches.</li> <li>◆ Periodic crack sealing or surface treatment can maintain condition.</li> <li>◆ No major rehabilitation required in the near future.</li> </ul>
<p><b>Fair (65% – 70%)</b></p>	<ul style="list-style-type: none"> <li>◆ Moderate cracking, surface wear, and minor rutting, but road remains serviceable.</li> <li>◆ Some patched areas and minor potholes, but no immediate safety risks.</li> <li>◆ Drainage mostly functional, with some minor erosion or edge distress.</li> <li>◆ Surface treatments or overlays needed to extend pavement life.</li> <li>◆ Routine maintenance required to slow further deterioration.</li> </ul>

Condition Ranges	Description
<p><b>Poor</b>  <b>(45% – 65%)</b></p>	<ul style="list-style-type: none"> <li>◆ Major cracking and moderate to severe rutting, affecting ride quality.</li> <li>◆ Widespread patching and pothole formation, requiring frequent repairs.</li> <li>◆ Drainage issues and edge failures, leading to erosion and shoulder deterioration.</li> <li>◆ Structural integrity weakened, with potential load restrictions.</li> <li>◆ Requires resurfacing or deep rehabilitation to restore function.</li> </ul>
<p><b>Very Poor</b>  <b>(0% –45%)</b></p>	<ul style="list-style-type: none"> <li>◆ Severe pavement failures, including large potholes, deep rutting, and widespread alligator cracking.</li> <li>◆ Significant surface distortion and heaving, making travel unsafe.</li> <li>◆ Extensive base failure, with visible pumping, settlement, and subgrade exposure.</li> <li>◆ Frequent maintenance required, but rehabilitation is no longer cost-effective.</li> <li>◆ Requires full-depth reconstruction or major rehabilitation.</li> </ul>

As illustrated in Figure 25, the majority of the Township’s road network asset categories are in fair or better condition; however, the majority of the signs are in very poor condition.

Figure 25 Asset Condition: Road Network

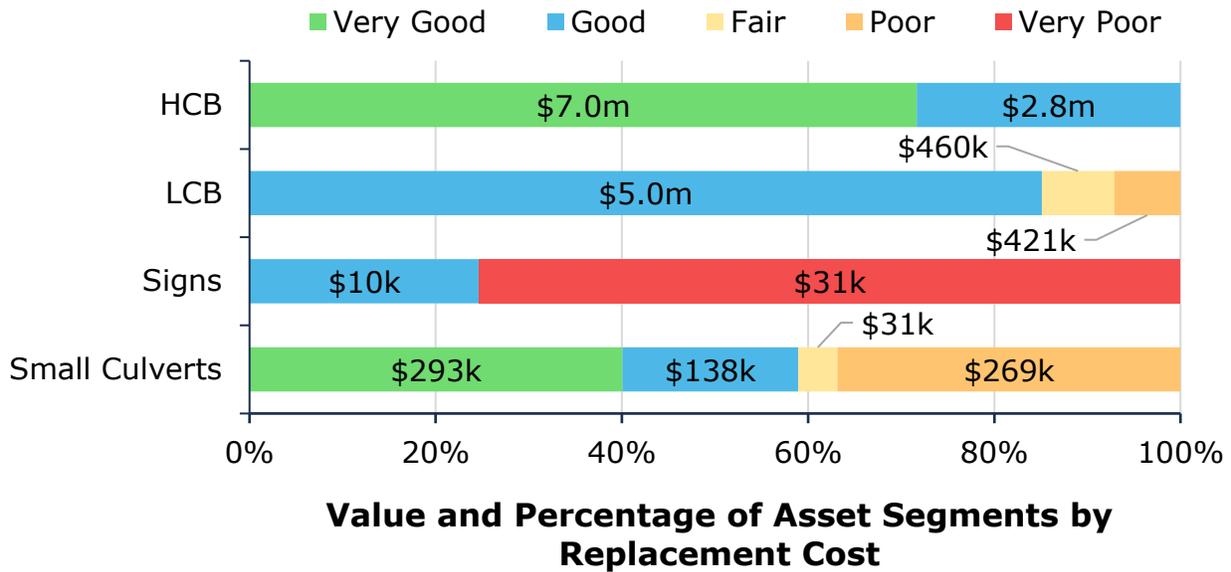


Table 63 summarizes the replacement cost-weighted condition of the Township’s road network portfolio. Based primarily on assessed condition data, 93% of road network portfolio is in good or better condition, with the remaining 7% in fair or lower condition. However, the majority of the signs are in very poor condition (less than 1% of the total road network portfolio). These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Table 25 Asset Condition: Road Network by Segment

Asset Category	≤ Poor \$	≤ Poor %	≥ Fair \$	≥ Fair %	Average Condition <sup>15</sup>
HCB	-	0%	\$9,775,980	100%	Very Good (81%)
LCB	\$421,420	7%	\$5,495,312	93%	Good (76%)
Signs	\$30,560	75%	\$10,000	25%	Very Poor (19%)
Small Culverts	\$269,241	37%	\$461,482	63%	Good (62%)
<b>TOTAL</b>	<b>\$721,221</b>	<b>4%</b>	<b>\$15,742,774</b>	<b>96%</b>	<b>Good (78%)</b>

<sup>15</sup> Weighted by replacement cost.

Condition data was available for 95% of road network, based on replacement costs; age was used to estimate condition for the remaining 5% of assets.

### 6.3 Age Profile

An asset’s age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

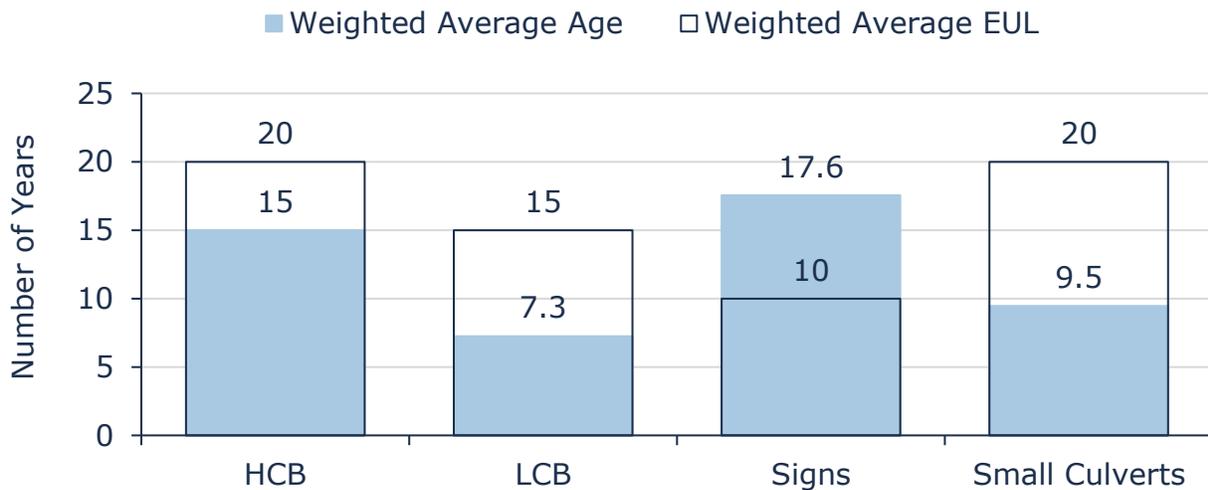
In conjunction with condition data, an asset’s age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential long-term replacement spikes.

Table 26 summarizes and Figure 26 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 26 Detailed Asset Age: Road Network

Segment	Weighted Average EUL	Weighted Average Age
HCB	20	15
LCB	15	7.3
Signs	10	17.6
Small Culverts	20	9.5

Figure 26 Estimated Useful Life vs. Asset Age: Road Network



Age analysis shows that the majority of HCB roads have entered the latter stages of their expected useful life, with an average age of 15 years against a design life of 20 years. LCB roads and small culverts are around the midpoint of their design lives while signs continue to remain in service well beyond their expected useful life.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset's estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

## 6.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including asset characteristics, location, utilization, maintenance history and environment.

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of HCB and LCB roads. Instead of allowing the roads to

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

Table 27 Lifecycle Management Strategy: Road Network (HCB Roads)

<b>Asphalt Roads (HCB)</b>		
<b>Event Name</b>	<b>Event Class</b>	<b>Event Trigger</b>
Crack Sealing	Preventative Maintenance	Every 2 Years, 4 times
Patching	Maintenance	Every 5 Years, 4 times
Full Reconstruction	Replacement	40 Condition

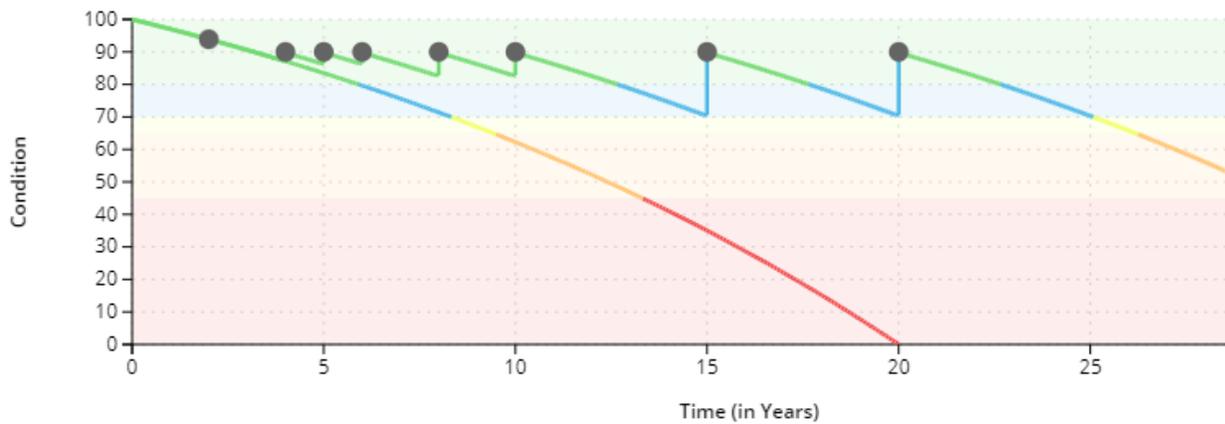
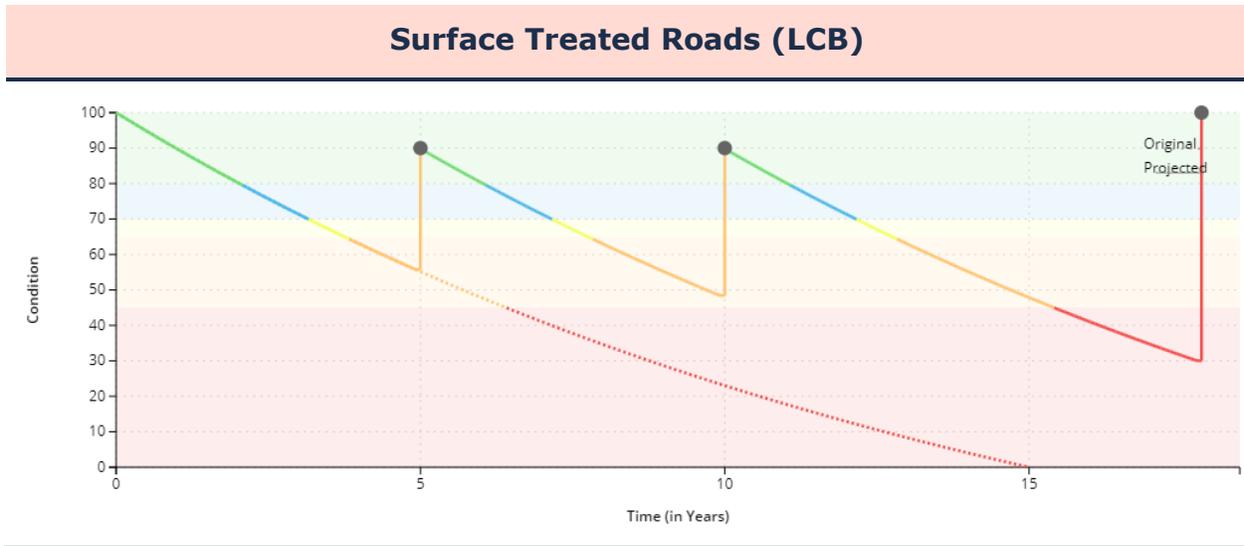


Table 28 Lifecycle Management Strategy: Road Network (LCB Roads)

<b>Surface Treated Roads (LCB)</b>		
<b>Event Name</b>	<b>Event Class</b>	<b>Event Trigger</b>
Cold Patch & Slurry Seal	Preventative Maintenance	Every 5 Years, 2 times
Full Reconstruction	Replacement	30 to 40 Condition



Note that it is assumed approximately 15% of the road asset will be patched or sealed during maintenance activities.

The following table outlines the Township’s current lifecycle management strategy for road network assets.

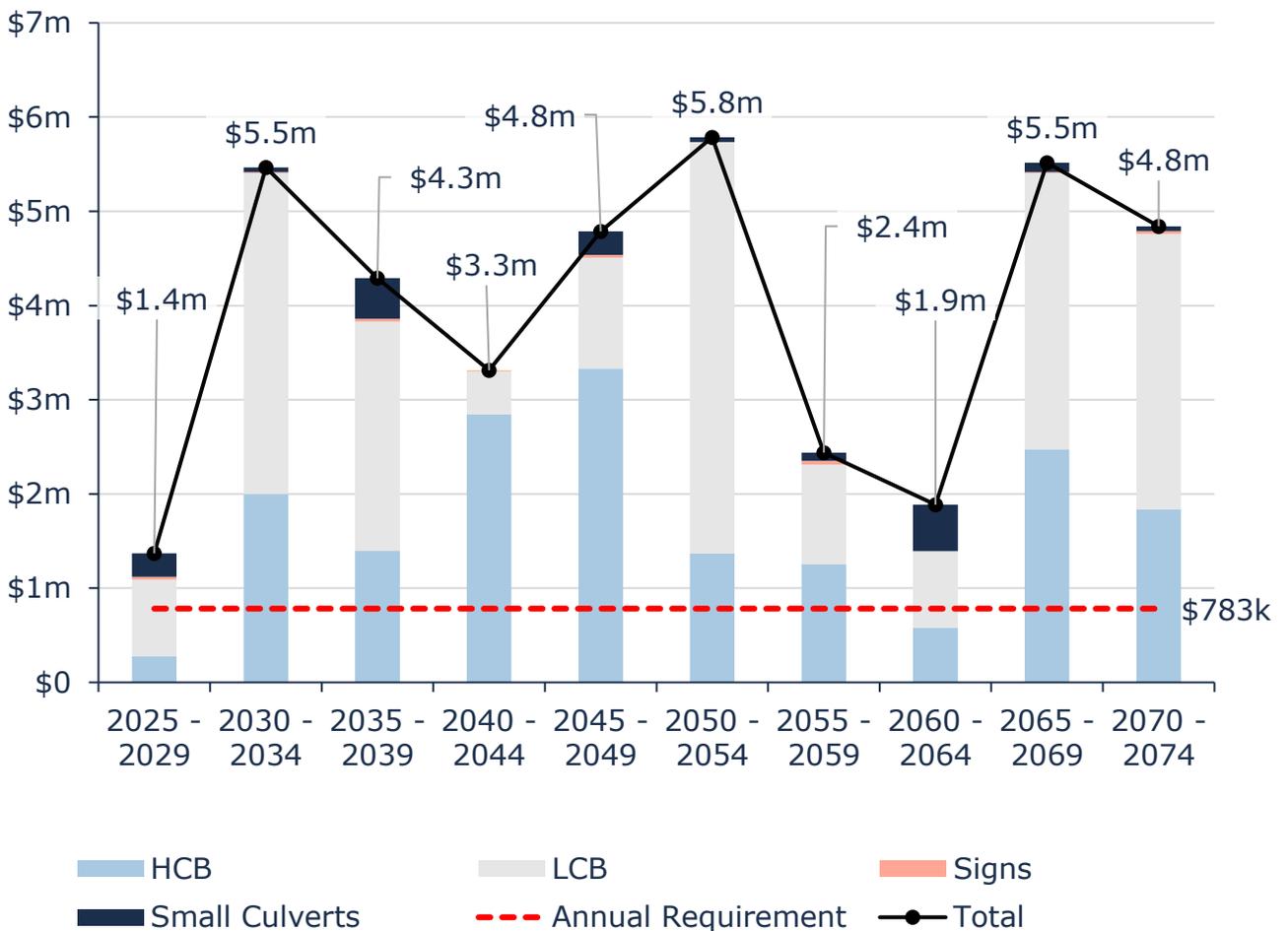
Table 29 Lifecycle Management Strategy: Road Network

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities for roads include winter maintenance such as snow removal and salt/sand for ice removal as needed. Frost heave excavations take place when needed on a planned basis.
	Gravel roads are graded annually and dust suppressant is applied during the spring. Re-gravelling occurs as-needed, approximately every 3-5 years.
	Pothole patching, shoulder grading, shoulder breakage resurfacing, line painting, and crack sealing are all carried out according to the conditions determined by internal route patrols.
Rehabilitation	Rehabilitation activities are not carried out.
Replacement	Replacement activities are prioritized based on condition assessments. Currently, the Township’s approach is proactive.

## 6.5 Forecasted Long-Term Replacement Needs

Figure 13 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township’s road network. This analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) total \$782,543 for all assets in the road network category. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Figure 27 Forecasted Capital Replacement Needs: Road Network 2025-2074



The chart illustrates substantial capital needs through the forecast period with fluctuations ranging from \$1.4 million to \$5.8 million capital requirements for each five-year segment.

Additionally, there is currently an approximate \$30,560 backlog for sign assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

These projections are based on asset replacement costs, age analysis, and condition data when available, as well as lifecycle modeling (roads only). They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. Regular pavement condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A summary of the 10-year replacement forecast can be found in Appendix B.

## **6.6 Risk Analysis**

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### **6.6.1 Quantitative Risk**

The following risk matrices provides a visual representation of the relationship between the probability of failure and the consequence of failure for the road network assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Figure 28 Risk Matrix: Road Network (HCB Roads)

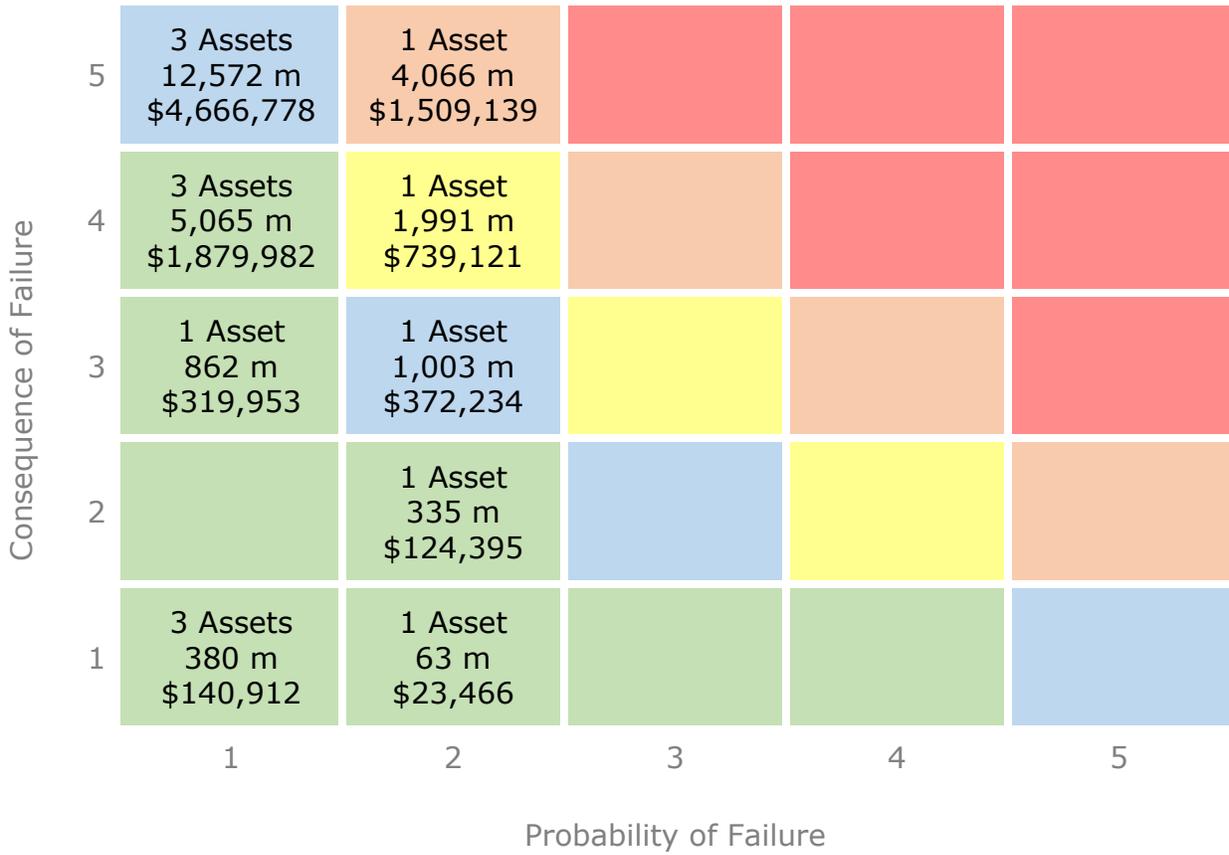


Figure 29 Risk Matrix: Road Network (LCB Roads)

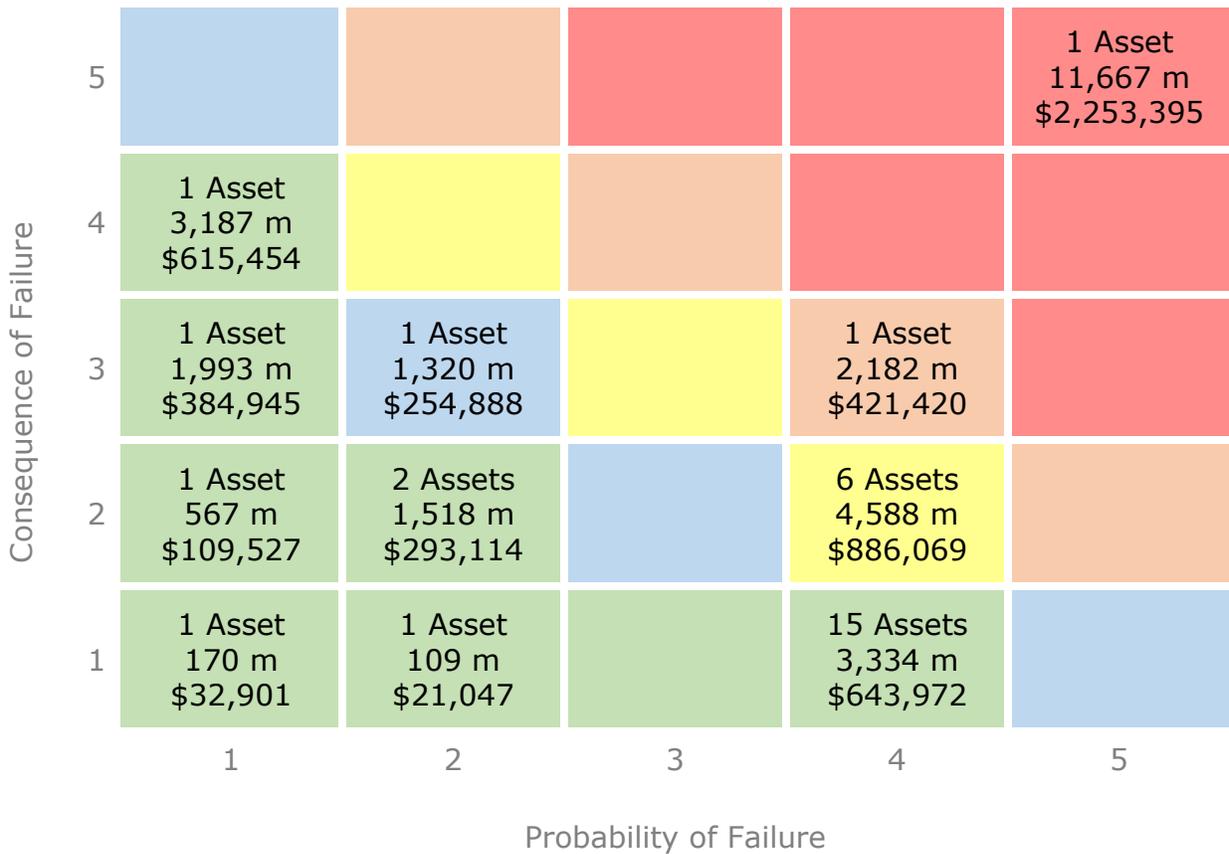
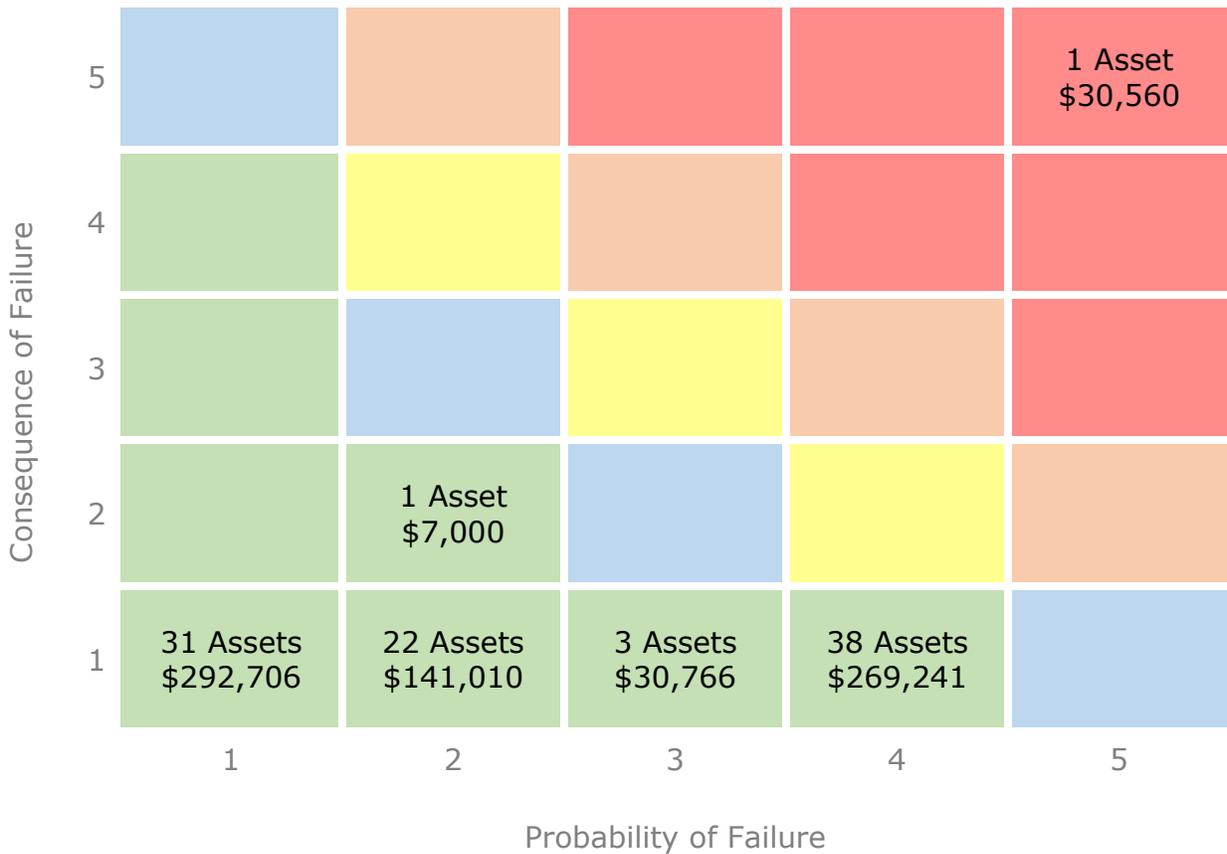


Figure 30 Risk Matrix: Road Network (Remaining Assets)



The matrices stratify assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Township may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the Township’s Asset Management Database (Citywide Assets). See Quantitative Risk under Section 2.2.2 as well as Section 2.3.8 Evaluating Quantitative Risk for further details on the approach used to determine asset risk ratings and classifications.

The following risk ratings are first shown for the overall category and then by segment for the road network assets.

Figure 31 Risk Rating Ranges: Road Network

<b>1 - 4</b> <b>Very Low</b> \$4,756,452 (29%)	<b>5 - 7</b> <b>Low</b> \$6,138,454 (37%)	<b>8 - 9</b> <b>Moderate</b> \$1,354,575 (8%)	<b>10 - 14</b> <b>High</b> \$4,183,955 (25%)	<b>15 - 25</b> <b>Very High</b> \$30,560 (<1%)
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Table 30 Probability of Failure, Consequence of Failure, Risk Ratings: Road Network by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
HCB	1.28 / 5	4.49 / 5	5.7 / 25
LCB	2.22 / 5	3.41 / 5	7.41 / 25
Signs	4.26 / 5	4.19 / 5	19.67 / 25
Small Culverts	2.38 / 5	1 / 5	2.38 / 25
<b>TOTAL</b>	<b>1.67 / 5</b>	<b>3.95 / 5</b>	<b>6.2 / 25</b>

Overall, the average risk rating for road network assets is 6.2, which is considered Low.

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### 6.6.2 Qualitative Risk

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



#### Climate Change

In recent years, Township staff have observed a noticeable increase in frost heaving, which is affecting the condition of the road

network. Winter weather has also resulted in more frequent snow plowing, which places additional stress on road surfaces. Heavy rainfall events have caused issues such as shoulder washouts and sections of roadway being undermined. In some cases, water levels during extreme storms have risen above road surfaces. Given the Township's location near Georgian Bay, it is important to consider the increasing impact of climate-related events when planning for road maintenance and infrastructure upgrades.



### **Past Design Concerns and Aging Infrastructure**

Some parts of the road network are reaching the end of their expected service life, which means the Township may face higher costs for replacements over the coming years. That said, there is a replacement and rehabilitation schedule in place that spreads out this work over time. Township staff are confident they can manage these infrastructure needs effectively with the current plan.



### **Growth**

Growth in the Township has led to more vehicles on the road, which is especially challenging for narrower roads that were not originally designed for high traffic volumes. Staff have also noticed an increase in heavy vehicles such as delivery trucks and concrete mixers, which are contributing to deeper rutting and faster wear on certain roads. This type of traffic often exceeds what the roads were built to handle and may require future upgrades or reinforcements.



### **Infrastructure Reinvestment**

The Township's current reinvestment in infrastructure is generally sufficient to meet ongoing maintenance needs and keep roads in good condition. However, some road improvement projects rely on external grant funding. This means that the timing and completion of certain projects may be affected by the availability of these funds.



### **Other**

In past incidents, the Township has been held financially responsible for damages, even when only partially liable. As a result, staff

remain cautious and proactive when planning road maintenance and rehabilitation, taking potential legal and financial risks into account.

## 6.7 Current Levels of Service

The tables that follow summarize the Township’s current levels of service with respect to prescribed KPIs under Ontario Regulation 588/17, as well as any additional performance measures that the Township selected for this AMP.

### 6.7.1 Community Levels of Service

Table 31 O. Reg. 588/17 Community Levels of Service: Road Network

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the road network in the Township and its level of connectivity	See Appendix C for maps.
Quality	Description or images that illustrate the different levels of road class pavement condition	<p>The Township completes a Road Needs Study annually with internal staff. Every road section received a pavement condition index, rating the condition of the surface of the road on a scale of 0-100.</p> <p>Different condition ranges can indicate the following:</p> <ul style="list-style-type: none"> <li>0 to &lt;45 = Very Poor</li> <li>45 to &lt;65 = Poor</li> <li>65 to &lt;70 = Fair</li> <li>70 to &lt;80 = Good</li> <li>80 to 100 = Excellent</li> </ul> <p>The above scale is based on the PCI Decision Matrix found in Appendix C.</p>

## 6.7.2 Technical Levels of Service

Table 32 O. Reg. 588/17 Technical Levels of Service: Road Network

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km <sup>2</sup> )	0 km/km <sup>2</sup>
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km <sup>2</sup> )	0 km/km <sup>2</sup>
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km <sup>2</sup> )	0.2756 km/km <sup>2</sup>
Quality	Average pavement condition index for paved roads in the Township	HCB: 81% LCB: 76%
	Average surface condition for unpaved roads in the Township (e.g. excellent, good, fair, poor)	Very Good
Performance	% of road network assets in fair or better condition	96%
	% of road network assets in poor or lower condition	4%
	Actual annual capital budget : average required annual capital requirements	(\$729,713 : \$782,543) (0.93 : 1)

## 6.8 Proposed Levels of Service

As per O. Reg. 588/17, by July 1, 2025, municipalities are required to consider proposed levels of service (LOS), discuss the associated risks and long-term sustainability of these service levels, and explain the Township's ability to afford the proposed LOS.

Table 33 outlines the proposed LOS scenarios that were analyzed for the road network. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 33 Proposed LOS: Road Network

Segment	Average Annual Requirement					Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target (With LC <sup>16</sup> )	No Target (Without LC)	
HCB + Small Culverts	65%	70%	75%	-	-	Maintain
	\$331,491	\$361,957	\$365,038	\$442,320	\$512,270	
LCB + Small Culverts	64%	69%	74%	-	-	Maintain
	\$399,490	\$416,806	\$416,806	\$398,956	\$407,514	
Signs	12%	17%	22%	-	-	Maintain
	\$2,985	\$3,780	\$4,576	\$4,056	\$4,056	
<b>TOTAL</b>	<b>\$733,966</b>	<b>\$782,544</b>	<b>\$786,420</b>	<b>\$845,332</b>	<b>\$923,840</b>	<b>\$782,544</b>

<sup>16</sup> Lifecycle strategies as outlined in Section 6.4.

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# **Category Analysis: Non-Core Assets**

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# 7 Buildings

The Township owns and maintains several buildings and recreation centers that provide key services to the community. These include administrative offices, healthcare facilities, a community center, Public Works shop and sheds, as well as wharfs. The total current replacement of buildings is \$18.4 million.

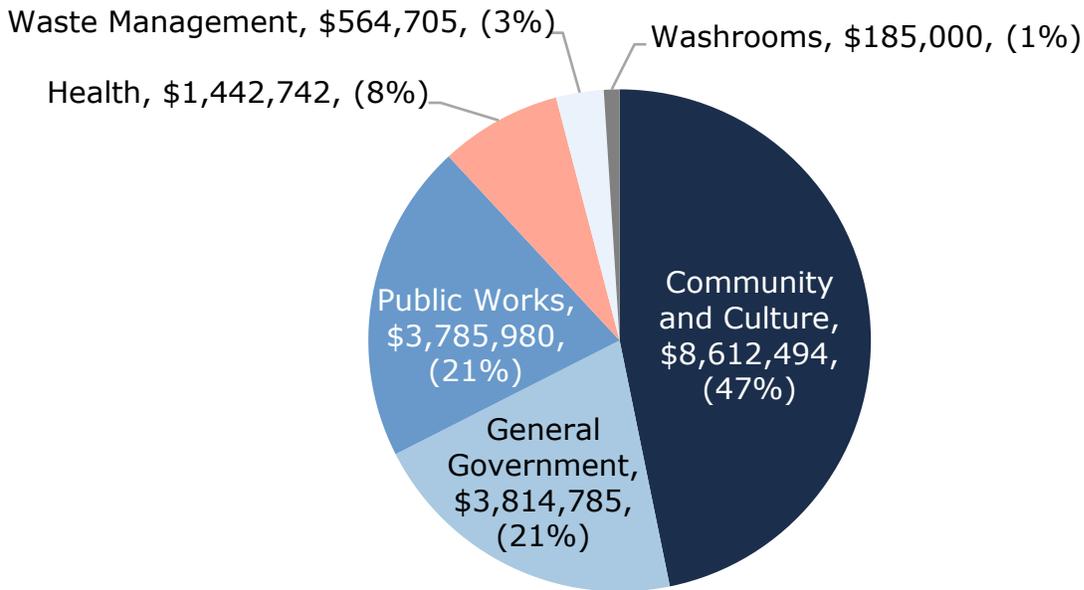
## 7.1 Inventory & Valuation

Table 34 Detailed Asset Inventory: Buildings

Segment	Quantity (Assets)	Unit of Measure	Replacement Cost	Primary RC Method	AAR <sup>17</sup>
Community and Culture	170	Assets	\$8,612,494	User-Defined	\$118,919
General Government	138	Assets	\$3,814,785	User-Defined	\$68,717
Health	73	Assets	\$1,442,742	User-Defined	\$21,852
Public Works	101	Assets	\$3,785,980	User-Defined	\$66,285
Washrooms	1	Assets	\$185,000	User-Defined	\$3,627
Waste Management	57	Assets	\$564,705	User-Defined	\$10,044
<b>TOTAL</b>			<b>\$18,405,705</b>	<b>User-Defined</b>	<b>\$289,445</b>

<sup>17</sup> Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Figure 32 Portfolio Valuation: Buildings



## 7.2 Asset Condition

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

- ◆ A Building Condition Assessment study was completed on Township buildings by ABSI in 2023. This included an assessment of each facility's general condition, required repairs and recommended upgrades
- ◆ Township staff conduct visual inspections of all buildings on an annual basis
- ◆ Health and safety walkthroughs are completed by Township staff on a monthly basis

In this AMP, the following rating criteria is used to determine the current condition of buildings assets and forecast future capital requirements:

Table 35 Condition Ranges: Buildings

Condition Ranges	Description
<p><b>Very Good</b>  <b>(80% – 100%)</b></p>	<ul style="list-style-type: none"> <li>◆ Newly built or recently renovated with no visible defects.</li> <li>◆ Modern, efficient, and fully functional mechanical, electrical, and plumbing systems.</li> <li>◆ Well-maintained structural elements, finishes, and overall aesthetic.</li> <li>◆ Minimal maintenance required beyond routine inspections and minor upkeep.</li> </ul>
<p><b>Good</b>  <b>(60% – 80%)</b></p>	<ul style="list-style-type: none"> <li>◆ Structurally sound with no major defects; minor wear and tear on finishes.</li> <li>◆ Functional and well-maintained mechanical, electrical, and plumbing systems.</li> <li>◆ Up-to-date aesthetics, with only minor improvements needed for modernization.</li> <li>◆ Requires only regular maintenance to keep in good condition.</li> </ul>
<p><b>Fair</b>  <b>(40% – 60%)</b></p>	<ul style="list-style-type: none"> <li>◆ Some visible signs of aging, such as minor wall cracks, roof wear, or uneven flooring.</li> <li>◆ Mechanical, electrical, and plumbing systems function but may require repairs or efficiency upgrades.</li> <li>◆ Cosmetic issues like faded paint, worn flooring, or outdated interior elements.</li> <li>◆ Routine maintenance and moderate renovations can extend the building's service life.</li> </ul>
<p><b>Poor</b>  <b>(20% – 40%)</b></p>	<ul style="list-style-type: none"> <li>◆ Noticeable structural issues, such as sagging floors, cracked walls, or roof leaks.</li> </ul>

Condition Ranges	Description
	<ul style="list-style-type: none"> <li>◆ Frequent repairs needed for electrical, plumbing, or HVAC systems due to aging components.</li> <li>◆ Significant cosmetic wear, including peeling paint, damaged finishes, and outdated fixtures.</li> <li>◆ Requires major repairs or system upgrades to maintain functionality.</li> </ul>
<p><b>Very Poor (0% – 20%)</b></p>	<ul style="list-style-type: none"> <li>◆ Severe structural deterioration, with major foundation issues, roof failures, or extensive wall cracking.</li> <li>◆ Significant water damage, mold growth, or rot affecting habitability.</li> <li>◆ Outdated or failing mechanical, electrical, and plumbing (MEP) systems, posing safety risks.</li> <li>◆ Building is unsafe for occupancy without extensive rehabilitation or potential demolition.</li> </ul>

As illustrated in Figure 33 below, the majority of the Township’s buildings are in good or better condition.

Table 36 summarizes the replacement cost-weighted condition of the Township’s buildings portfolio. Based primarily on assessed condition data, 96% of buildings are in fair or better condition, with the remaining 4% in poor or lower condition.

Condition data was available for 96% of buildings, based on replacement costs; age was used to estimate condition for the remaining 4% of assets.

Figure 33 Asset Condition: Buildings

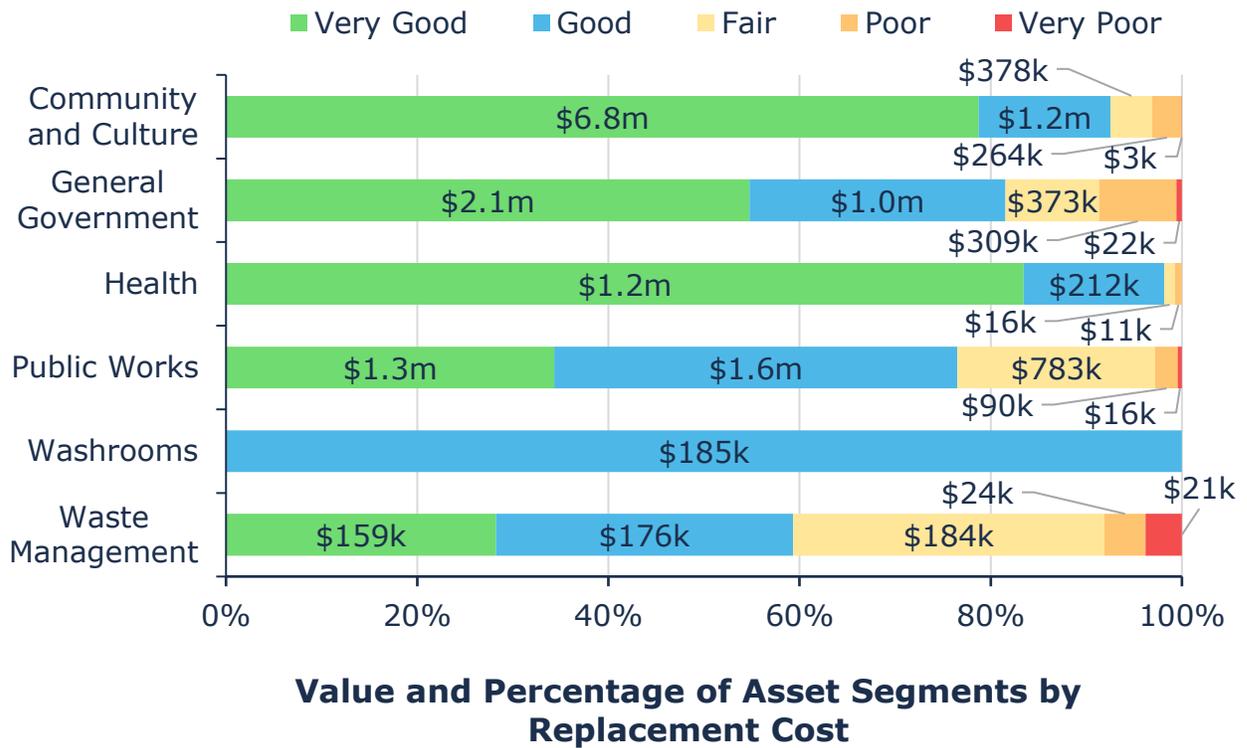


Table 36 Asset Condition: Buildings by Segment

Asset Category	≤ Poor \$	≤ Poor %	≥ Fair \$	≥ Fair %	Average Condition <sup>18</sup>
Community and Culture	\$266,192	3%	\$8,346,302	97%	Very Good (92%)
General Government	\$330,690	9%	\$3,484,095	91%	Very Good (83%)
Health	\$10,550	1%	\$1,432,192	99%	Very Good (94%)
Public Works	\$105,750	3%	\$3,680,230	97%	Very Good (80%)
Washrooms	-	0%	\$185,000	100%	Good (72%)
Waste Management	\$45,790	8%	\$518,915	92%	Good (74%)
<b>TOTAL</b>	<b>\$758,972</b>	<b>4%</b>	<b>\$17,646,733</b>	<b>96%</b>	<b>Very Good (87%)</b>

<sup>18</sup> Weighted by replacement cost.

## 7.3 Age Profile

An asset’s age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset’s age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Table 37 summarizes and Age analysis reveals that, on average, buildings assets are in the early to mid-stages of their serviceable life. It is important to note that meaningful and accurate age analysis of building assets relies heavily on effective componentization. Buildings are complex structures made up of many parts (e.g., roofs, HVAC systems, windows, and foundations), each with its own expected lifespan and maintenance needs.

Figure 34 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

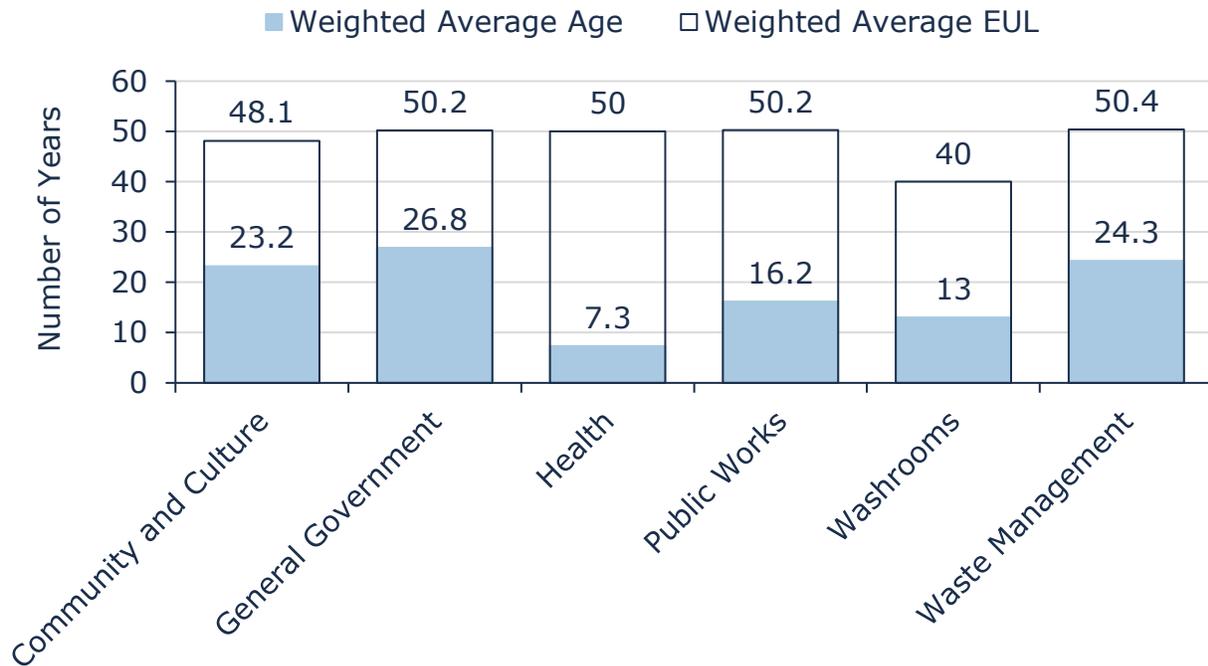
Table 37 Detailed Asset Age: Buildings

Segment	Weighted Average EUL	Weighted Average Age
Community and Culture	48.1	23.2
General Government	50.2	26.8
Health	50	7.3
Public Works	50.2	16.2
Washrooms	40	13
Waste Management	50.4	24.3

Age analysis reveals that, on average, buildings assets are in the early to mid-stages of their serviceable life. It is important to note that meaningful and accurate

age analysis of building assets relies heavily on effective componentization. Buildings are complex structures made up of many parts (e.g., roofs, HVAC systems, windows, and foundations), each with its own expected lifespan and maintenance needs.

Figure 34 Estimated Useful Life vs. Asset Age: Buildings



A building’s overall age does not always reflect the condition or serviceability of its individual components. By breaking down each building into its key components and tracking the age and condition of each one separately, staff can more accurately assess where investment is needed and avoid premature or unnecessary expenditures.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

## 7.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that the Township’s buildings 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 38 outlines the Township’s current lifecycle management strategy for buildings assets.

Table 38 Lifecycle Management Strategy: Buildings

Activity Type	Description of Current Strategy
	Municipal buildings are subject to regular inspections to identify health & safety requirements as well as structural deficiencies that require additional attention
Maintenance / Rehabilitation	Preventative maintenance activities are carried out, such as changing pipe material to PEX from copper or cast iron so that pipes are easier to maintain, longer lasting, and better functioning. HVAC systems have been updated to be more efficient and reliable in recent years.
Replacement	Assessments for replacement are completed proactively according to the BCA. Replacement activities are planned for in the year prior to the activity occurring.

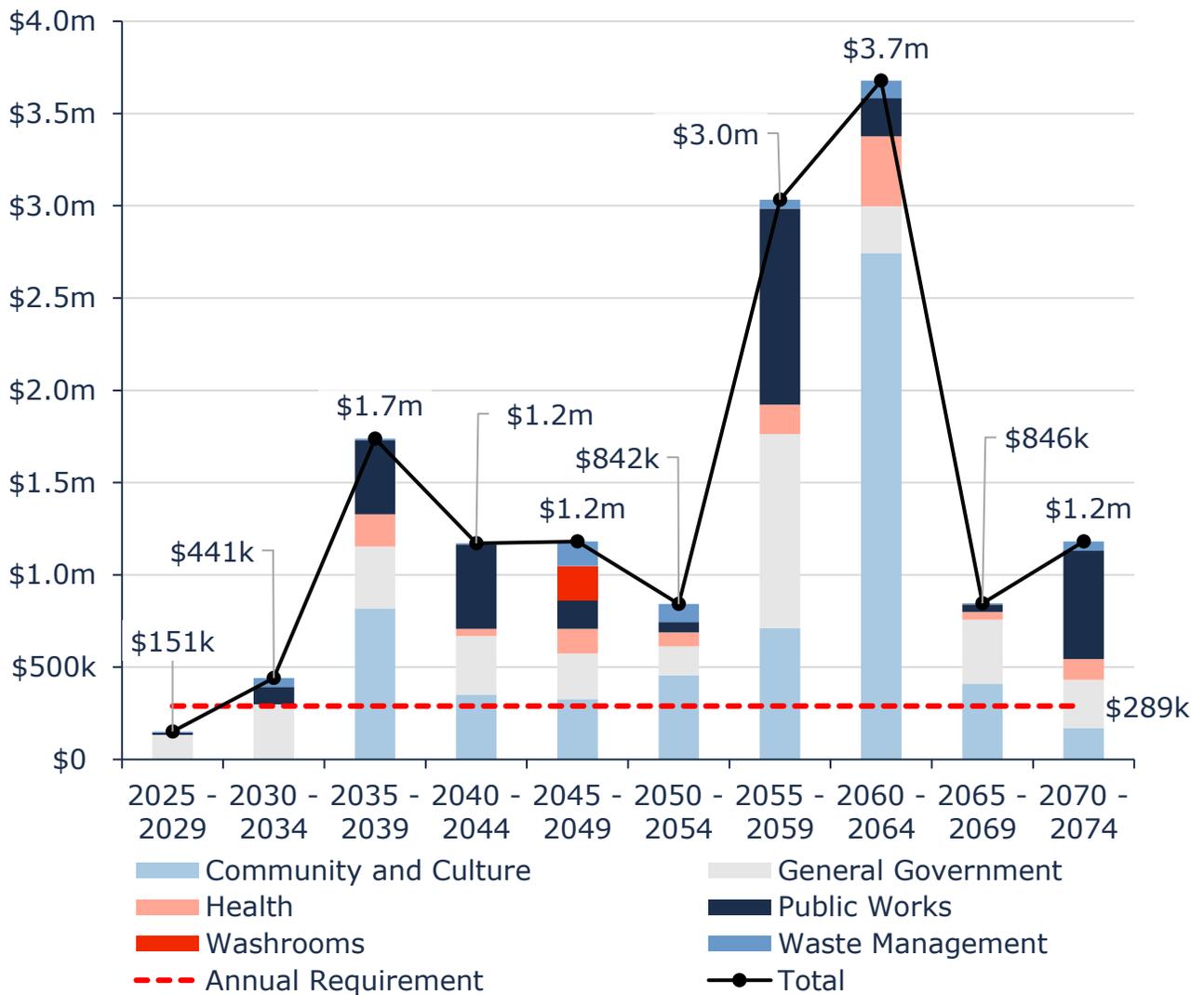
## 7.5 Forecasted Long-Term Replacement Needs

Figure 35 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s buildings portfolio. This analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) total \$289,445 for all buildings. Although actual spending may fluctuate substantially from year to year,

this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Forecasted requirements align with the selected proposed levels of service. Replacement needs are forecasted to rise consistently hitting peaks during 2035-2039, 2055-2059, and 2060-2064. These projections and estimates are based on current asset records, their replacement costs, and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 35 Forecasted Capital Replacement Needs Buildings 2025-2074



Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be

replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements. In the case of buildings, detailed componentization is necessary to develop reliable lifecycle forecasts that reflect the needs of individual elements and components.

A summary of the 10-year replacement forecast can be found in Appendix B.

## 7.6 Risk Analysis

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

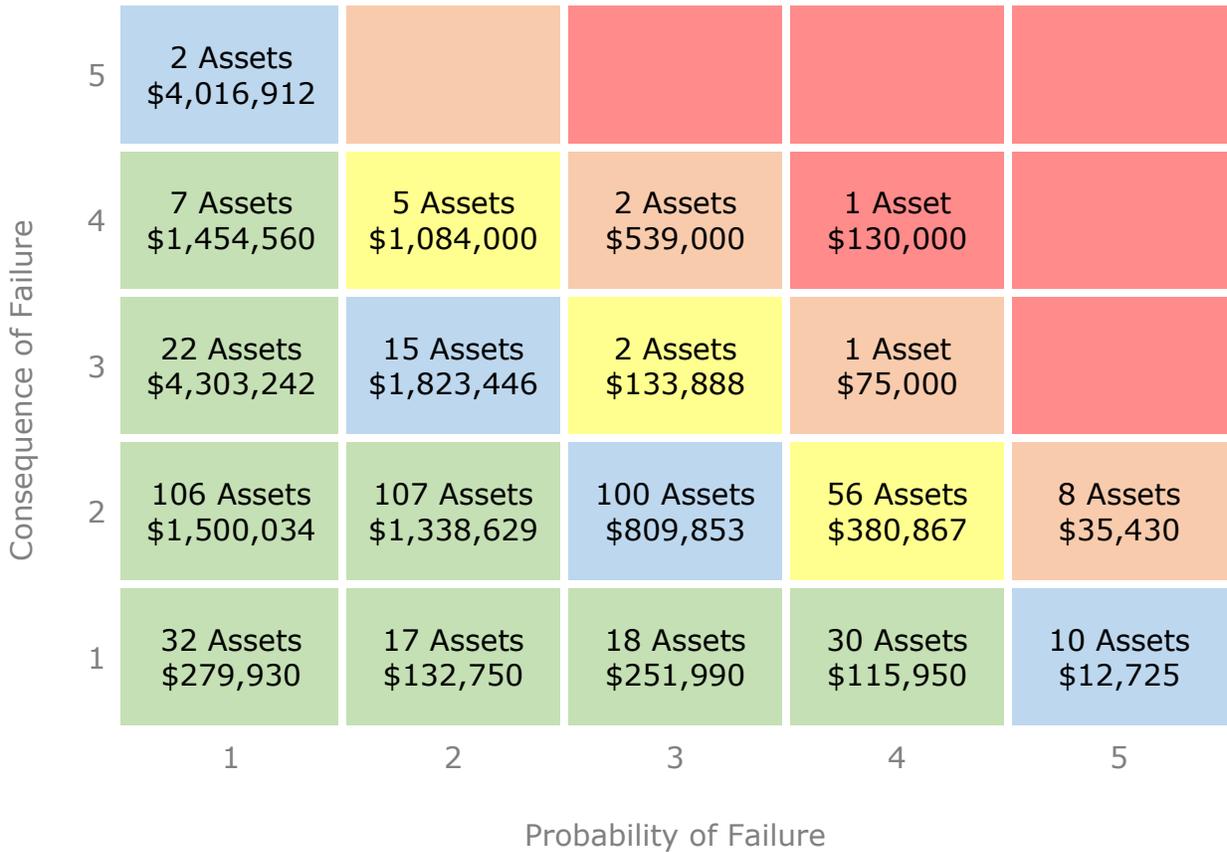
### 7.6.1 Quantitative Risk

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the buildings assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Township may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See Quantitative Risk under Section 2.2.2 as well as Section 2.3.8 Evaluating Quantitative Risk for further details on the approach used to determine asset risk ratings and classifications.

Figure 36 Risk Matrix: Buildings



The following risk ratings are first shown for the overall category and then by segment for the buildings assets.

Figure 37 Risk Rating Ranges: Buildings

<b>1 - 4</b> <b>Very Low</b> \$8,217,202 (45%)	<b>5 - 7</b> <b>Low</b> \$7,322,328 (40%)	<b>8 - 9</b> <b>Moderate</b> \$1,871,055 (10%)	<b>10 - 14</b> <b>High</b> \$865,121 (5%)	<b>15 - 25</b> <b>Very High</b> \$130,000 (<1%)
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Overall, the average risk rating for buildings assets is 5.3, which is considered Low.

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Table 39 Probability of Failure, Consequence of Failure, Risk Ratings: Buildings by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Community and Culture	1.3 / 5	4.0 / 5	4.9 / 25
General Government	1.7 / 5	3.1 / 5	5.3 / 25
Health	1.2 / 5	2.9 / 5	3.4 / 25
Public Works	1.9 / 5	3.3 / 5	6.5 / 25
Washrooms	2.0 / 5	4.0 / 5	8.0 / 25
Waste Management	2.2 / 5	2.6 / 5	5.5 / 25
<b>TOTAL</b>	<b>1.6 / 5</b>	<b>3.6 / 5</b>	<b>5.3 / 25</b>

### 7.6.2 Qualitative Risk

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



#### **Organizational Cognizance/Capacity**

Historically, knowledge related to Township-owned buildings has varied depending on the frequency of use by staff. This created challenges in maintaining a comprehensive understanding of the full facility portfolio. The recent completion of a Building Condition Assessment has significantly improved organizational awareness, providing staff with a holistic view of facility needs and enabling more effective participation in evidence-based asset management planning.



#### **Climate Change**

Climate change continues to impact municipal buildings, particularly through prolonged heat waves and more frequent freeze/thaw

cycles. These conditions can stress building systems, especially HVAC equipment, and contribute to foundational wear. These risks are being actively monitored and considered in long-term maintenance and renewal plans.



**Other**

The Township continues to work toward compliance with the Accessibility for Ontarians with Disabilities Act (AODA). While some buildings have accessible entrances, structural limitations—such as ramp steepness—have prevented full compliance in certain cases. Additional building modifications will be required to meet accessibility standards, which may involve capital investment. Staff remain committed to improving accessibility across all public facilities as part of ongoing planning efforts.

## 7.7 Current Levels of Service

The tables that follow summarize the Township’s current levels of service. There are no specifically prescribed KPIs under Ontario Regulation 588/17 for non-core assets, therefore the KPIs below represent performance measures that the Township has selected for this AMP.

### 7.7.1 Community Levels of Service

Table 40 Community Levels of Service: Buildings

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description of the availability of the recreational and cultural services supported by municipal buildings to residents	See Appendix C

## 7.7.2 Technical Levels of Service

Table 41 Technical Levels of Service: Buildings

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Square meters of indoor recreation facilities	300 m <sup>2</sup>
Quality & Performance	Average condition of buildings assets in the Township	Very Good (87%)
	% of buildings that are in fair or better condition	96%
	% of buildings that are in poor or lower condition	4%
	Actual annual capital budget : average required annual capital requirements	\$289,445 : \$289,445 (1 : 1)

## 7.8 Proposed Levels of Service

As per O. Reg. 588/17, by July 1, 2025, municipalities are required to consider proposed levels of service (LOS), discuss the associated risks and long-term sustainability of these service levels, and explain the Township’s ability to afford the proposed LOS.

Table 42 outlines the proposed LOS scenarios that were analyzed for buildings. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 42 Proposed LOS: Buildings

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Community and Culture	65%	70%	75%	-	-5% Condition
	\$118,919	\$125,685	\$126,285	\$213,564	
General Government	65%	70%	75%	-	Maintain
	\$66,090	\$68,717	\$68,717	\$100,223	
Health	65%	70%	75%	-	-5% Condition
	\$21,852	\$22,058	\$22,058	\$36,953	
Public Works	65%	70%	75%	-	-5% Condition
	\$66,285	\$66,505	\$66,593	\$93,922	
Washrooms	65%	70%	75%	-	Maintain
	\$3,627	\$3,627	\$3,627	\$4,625	
Waste Management	65%	70%	75%	-	Maintain
	\$10,044	\$10,044	\$10,044	\$13,722	
<b>TOTAL</b>	<b>\$286,817</b>	<b>\$296,637</b>	<b>\$297,326</b>	<b>\$463,009</b>	<b>\$289,445</b>

# 8 Land Improvements

The Township’s land improvements portfolio includes parking lots, retaining walls, and fencing. The total current replacement cost of land improvements assets is \$1.9 million.

## 8.1 Inventory & Valuation

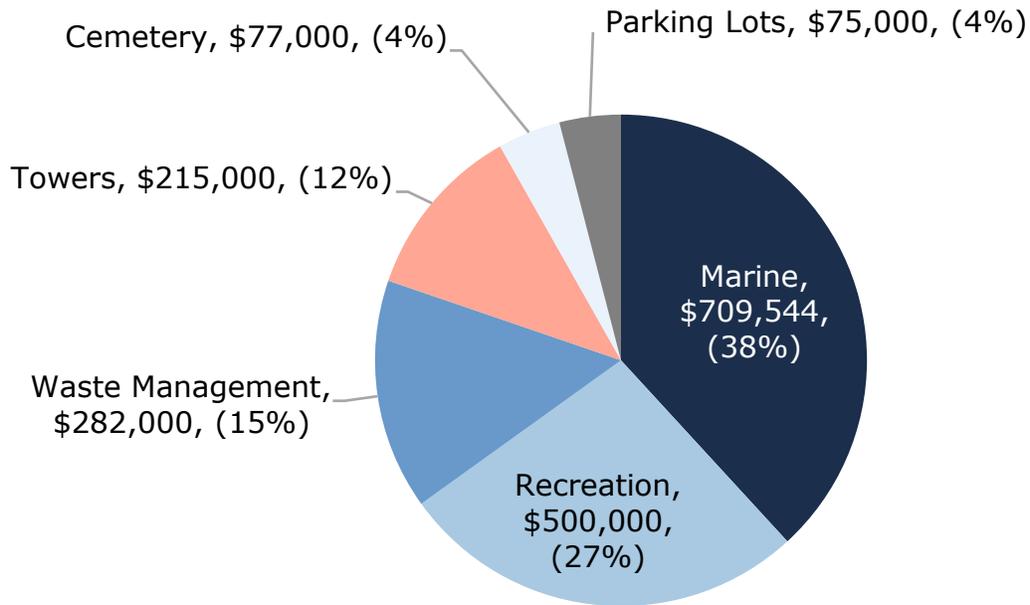
Table 43 summarizes the quantity and current replacement cost of all land improvements assets available in the Township’s asset register.

Table 43 Detailed Asset Inventory: Land Improvements

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR <sup>19</sup>
Cemetery	2	Assets	\$77,000	User-Defined	\$1,510
Marine	19	Assets	\$709,544	User-Defined	\$25,629
Parking Lots	2	Assets	\$75,000	User-Defined	\$4,706
Recreation	4	Assets	\$500,000	User-Defined	\$18,627
Towers	2	Assets	\$215,000	User-Defined	\$5,294
Waste Management	8	Assets	\$282,000	User-Defined	\$14,196
<b>TOTAL</b>			<b>\$1,858,544</b>	<b>User-Defined</b>	<b>\$69,963</b>

<sup>19</sup> Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Figure 38 Portfolio Valuation: Land Improvements



## 8.2 Asset Condition

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

- ◆ Staff complete regular visual inspections of land improvements assets to ensure they are in state of adequate repair
- ◆ Cemetery assets are inspected monthly to monitor the area and determine cleaning priorities
- ◆ Regular inspection and maintenance for playground equipment are performed on an annual basis by external contractors to abide by the regulations. The rubber mat surfaces of playground assets are drop tested to ensure they are in compliance with safety regulations
- ◆ Inspections for land improvements are done according to Canadian Standard Association (CSA) guidelines

In this AMP, the following rating criteria is used to determine the current condition of land improvements assets and forecast future capital requirements:

Table 44 Condition Ranges: Land Improvements

Condition Ranges	Description
<p><b>Very Good</b> (80% – 100%)</p>	<ul style="list-style-type: none"> <li>◆ The asset is new, recently rehabilitated, or very well maintained.</li> <li>◆ It functions as intended with no significant signs of deterioration.</li> <li>◆ No immediate maintenance or repair needs are present.</li> <li>◆ Examples: A newly installed playground, freshly resurfaced trail, or pristine fencing and landscaping in a public park.</li> </ul>
<p><b>Good</b> (60% – 80%)</p>	<ul style="list-style-type: none"> <li>◆ The asset is in overall good condition, showing minor wear from regular use.</li> <li>◆ It is fully operational and meets community expectations for use, safety, and appearance.</li> <li>◆ Only routine or preventative maintenance is needed.</li> <li>◆ Examples: A well-maintained sports field, a dock with slight wear on surface materials, or a parking lot with minor surface cracking.</li> </ul>
<p><b>Fair</b> (40% – 60%)</p>	<ul style="list-style-type: none"> <li>◆ The asset is functional but aging, with noticeable wear and some minor safety or usability concerns.</li> <li>◆ It meets basic performance standards but may require minor repairs or surface improvements to avoid accelerated decline.</li> <li>◆ Examples: A trail with minor erosion, faded playground surfacing, or a parking lot with cracked pavement and early signs of edge failure.</li> </ul>
<p><b>Poor</b> (20% – 40%)</p>	<ul style="list-style-type: none"> <li>◆ The asset has serious signs of deterioration and frequent functional issues.</li> <li>◆ It may still be partially usable but fails to meet service expectations.</li> </ul>

Condition Ranges	Description
	<ul style="list-style-type: none"> <li>◆ Corrective maintenance or planning for replacement should be prioritized.</li> <li>◆ Examples: A dock with unstable decking, fencing with missing sections, or sports fields with bare patches and poor drainage.</li> </ul>
<p><b>Very Poor (0% – 20%)</b></p>	<ul style="list-style-type: none"> <li>◆ The asset is in critical condition with extensive structural or surface deterioration.</li> <li>◆ It is unsafe, unusable, or completely non-functional, posing a risk to public safety or the environment.</li> <li>◆ Immediate action is required, including potential closure, major rehabilitation, or full replacement.</li> <li>◆ Examples: A playground with broken equipment, a trail washed out or impassable, or a parking lot with large potholes and failing subbase.</li> </ul>

As illustrated in Figure 39, the majority of the Township’s land improvements are in fair or better condition.

Table 45 summarizes the replacement cost-weighted condition of the Township’s land improvements portfolio. Using primarily age-based condition, 89% of land improvements are in fair or better condition, with the remaining 11% in poor or lower condition.

While most assets average a fair or better condition, this does not apply to parking lots where only 40% of assets fall within that range. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Condition data was available for 7% of land improvements, based on replacement costs; age was used to estimate condition for the remaining 93% of assets.

Figure 39 Asset Condition: Land Improvements by Segment

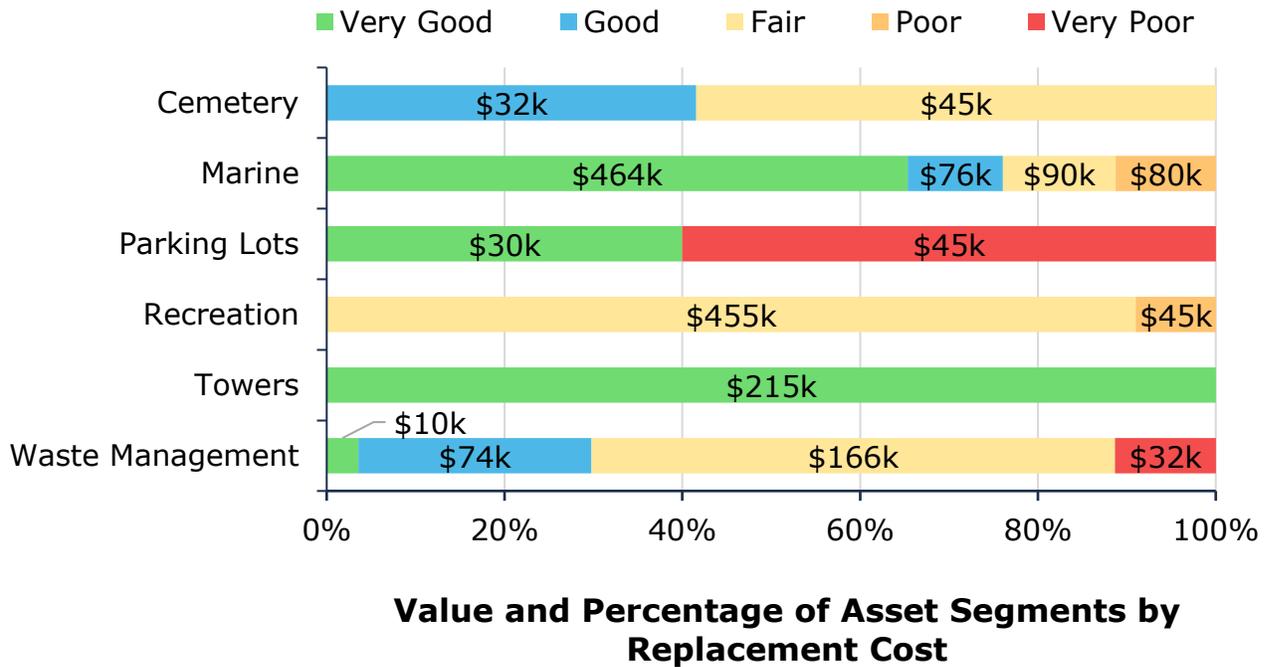


Table 45 Asset Condition: Land Improvements by Segment

Asset Category	≤ Poor \$	≤ Poor %	≥ Fair \$	≥ Fair %	Average Condition <sup>20</sup>
Cemetery	-	0%	\$77,000	100%	Good (61%)
Marine	\$80,000	11%	\$629,544	89%	Good (78%)
Parking Lots	\$45,000	60%	\$30,000	40%	Fair (45%)
Recreation	\$45,000	9%	\$455,000	91%	Fair (47%)
Towers	-	0%	\$215,000	100%	Very Good (86%)
Waste Management	\$32,000	11%	\$250,000	89%	Fair (52%)
<b>TOTAL</b>	<b>\$202,000</b>	<b>11%</b>	<b>\$1,656,544</b>	<b>89%</b>	<b>Good (65%)</b>

<sup>20</sup> Weighted by replacement cost.

## 8.3 Age Profile

An asset’s age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset’s age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Table 46 summarizes and Age analysis reveals that, on average, parking lots and recreation assets are in the latter stages of their expected life. Cemetery, and waste management assets are in the mid-stages of their expected design life.

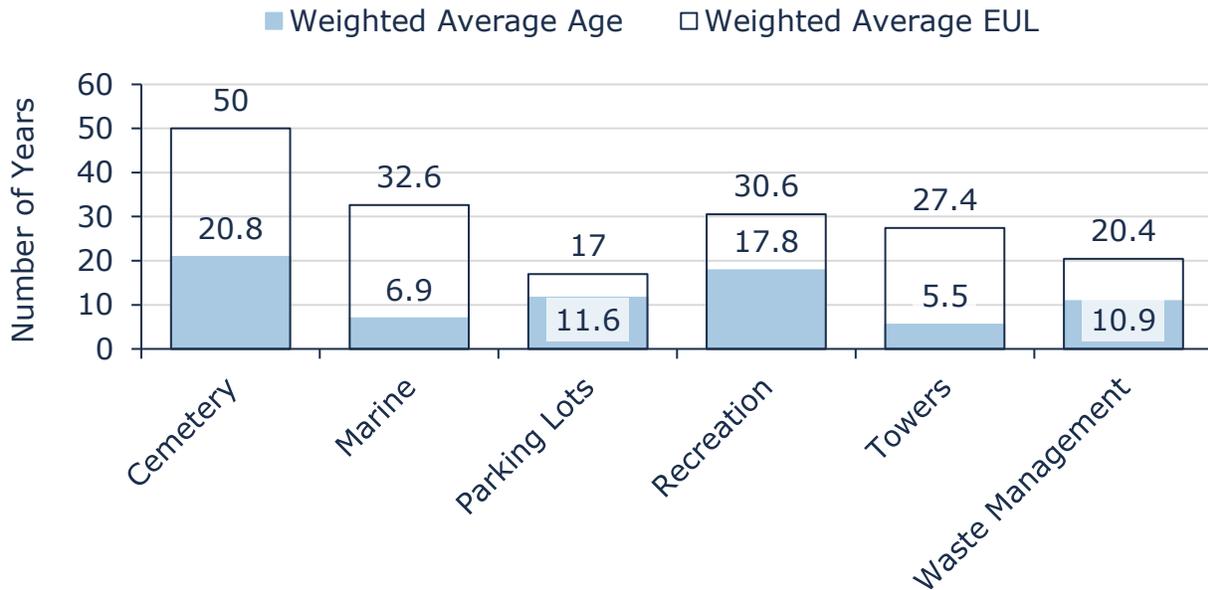
Figure 40 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 46 Detailed Asset Age: Land Improvements

Segment	Weighted Average EUL	Weighted Average Age
Cemetery	50	20.8
Marine	32.6	6.9
Parking Lots	17	11.6
Recreation	30.6	17.8
Towers	27.4	5.5
Waste Management	20.4	10.9

Age analysis reveals that, on average, parking lots and recreation assets are in the latter stages of their expected life. Cemetery, and waste management assets are in the mid-stages of their expected design life.

Figure 40 Estimated Useful Life vs. Asset Age: Land Improvements



Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

## 8.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that the Township’s land improvements 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 47 outlines the Township’s current lifecycle management strategy for land improvements assets.

Table 47 Lifecycle Management Strategy: Land Improvements

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.
	Dock assets are repaired and replaced on an as-needed basis.
	Regular inspections are carried out according to Canadian Standards Association (CSA) guidelines.

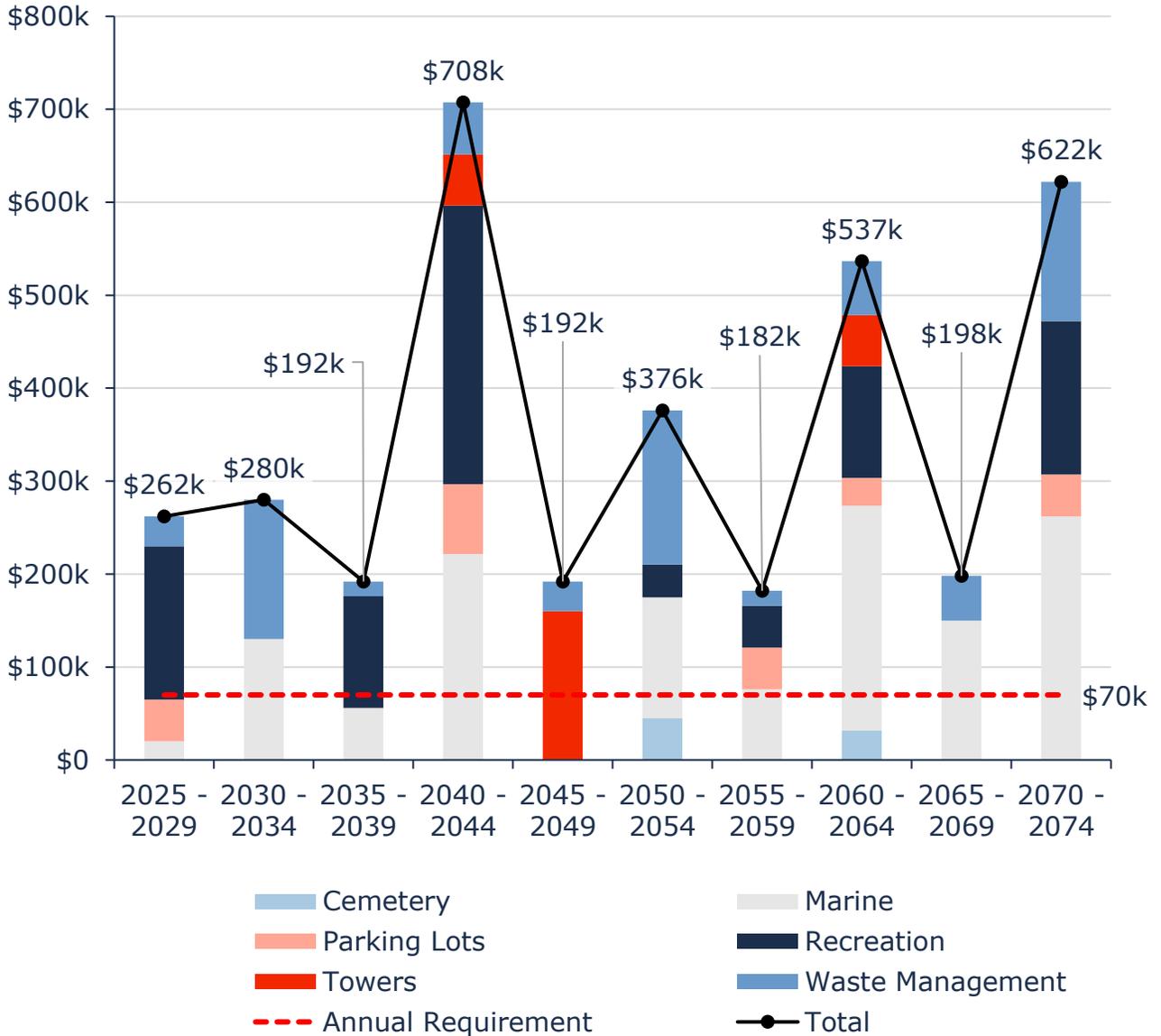
## 8.5 Forecasted Long-Term Replacement Needs

Figure 41 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s land improvements portfolio. This analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) total \$69,963 for all land improvements. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. Replacement needs are forecasted to fluctuate with spikes occurring in 2040-2044, 2060-2064, and 2070-2074 as assets reach the end of their useful life.

Additionally, there is currently an approximate \$32,000 backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 41 Forecasted Capital Replacement Needs: Land Improvements 2025-2074



Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A summary of the 10-year replacement forecast can be found in Appendix B.

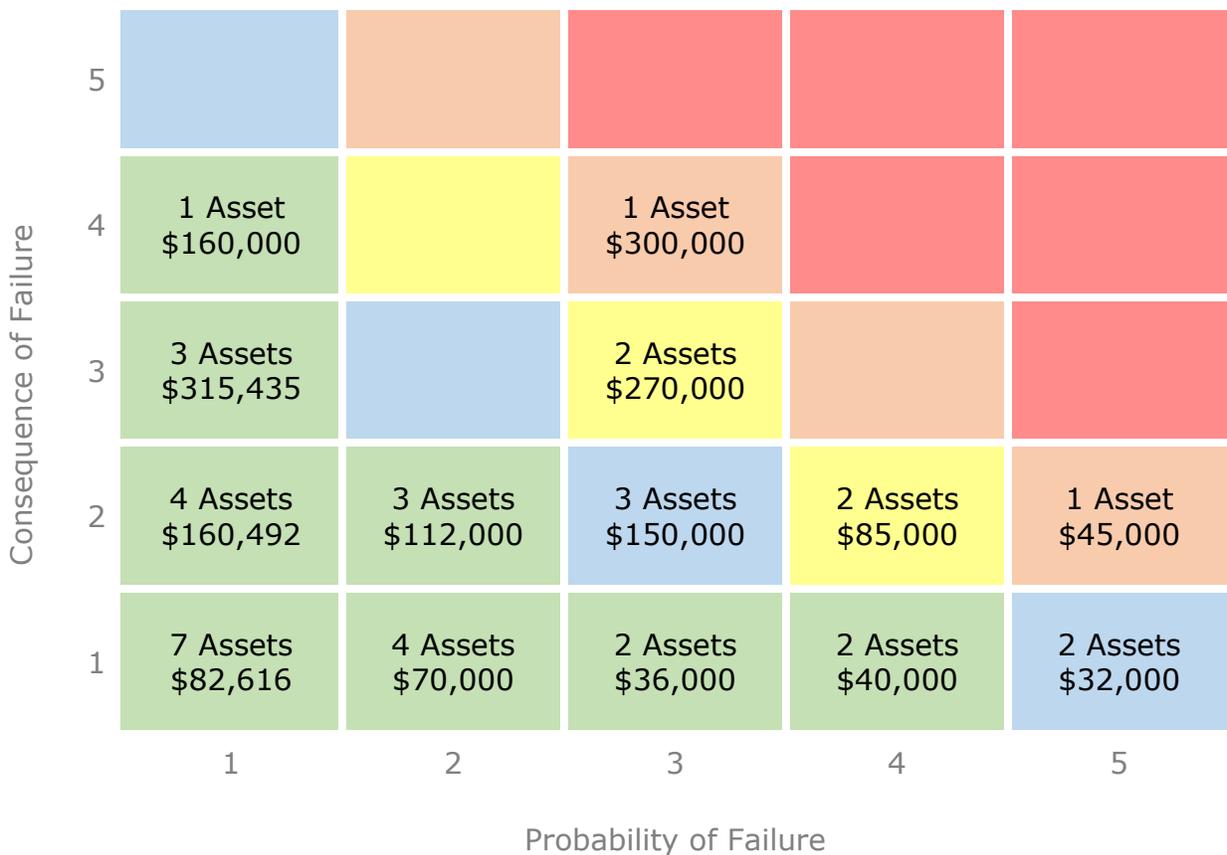
## 8.6 Risk Analysis

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### 8.6.1 Quantitative Risk

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the land improvements assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Figure 42 Risk Matrix: Land Improvements



The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk

rating of 1. As new data and information is gathered, the Township may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the Township’s Asset Management Database (Citywide Assets). See Quantitative Risk under Section 2.2.2 as well as Section 2.3.8 Evaluating Quantitative Risk for further details on the approach used to determine asset risk ratings and classifications.

The following risk ratings are first shown for the overall category and then by segment for the land improvements assets.

Figure 43 Risk Rating Ranges: Land Improvements

<b>1 - 4</b> <b>Very Low</b> \$976,544 (53%)	<b>5 - 7</b> <b>Low</b> \$182,000 (10%)	<b>8 - 9</b> <b>Moderate</b> \$355,000 (19%)	<b>10 - 14</b> <b>High</b> \$345,000 (19%)	<b>15 - 25</b> <b>Very High</b> - (0%)
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Table 48 Probability of Failure, Consequence of Failure, Risk Ratings: Land Improvements by Segment

<b>Asset Category</b>	<b>Probability of Failure</b>	<b>Consequence of Failure</b>	<b>Risk Rating</b>
Cemetery	2.58 / 5	2 / 5	5.17 / 25
Marine	1.7 / 5	2.21 / 5	3.33 / 25
Parking Lots	3.4 / 5	2 / 5	6.8 / 25
Recreation	3.09 / 5	3.44 / 5	10.5 / 25
Towers	1 / 5	3.49 / 5	3.49 / 25
Waste Management	2.89 / 5	2.21 / 5	6.37 / 25
<b>TOTAL</b>	<b>2.28 / 5</b>	<b>2.67 / 5</b>	<b>5.95 / 25</b>

Overall, the average risk rating for land improvements assets is 5.95, which is considered Low.

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

## 8.6.2 Qualitative Risk

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



### Aging Infrastructure

Some recreational assets, such as the outdoor rink's hockey boards, have reached the end of their useful service life. Due to the significant cost of replacement, the Township is currently engaging the community to gather feedback and establish priorities. This approach supports a broader focus on community development, where residents play an active role in identifying and shaping future capital projects and service improvements.

## 8.7 Current Levels of Service

The tables that follow summarize the Township's current levels of service. There are no specifically prescribed KPIs under Ontario Regulation 588/17 for non-core assets, therefore the KPIs below represent performance measures that the Township has selected for this AMP.

### 8.7.1 Community Levels of Service

Table 49 Community Levels of Service: Land Improvements

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the outdoor recreational buildings that the Township operates and maintains	The Township owns and operates the Wharf Seawall in The Archipelago, as well as the outdoor rink connected to the Pointe Au Baril Community Centre. See Appendix C.

## 8.7.2 Technical Levels of Service

Table 50 Technical Levels of Service: Land Improvements

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Square meters of outdoor recreation facility space per 1,000 households	0.5
Quality	Average condition of municipal land improvements	Good (65%)
Performance	% of assets that are in fair or better condition	89%
	% of assets that are in poor or lower condition	11%
	Actual annual capital budget : average required annual capital requirements	\$69,963 : \$63,963 (1 : 1)

## 8.8 Proposed Levels of Service

As per O. Reg. 588/17, by July 1, 2025, municipalities are required to consider proposed levels of service (LOS), discuss the associated risks and long-term sustainability of these service levels, and explain the Township’s ability to afford the proposed LOS.

Table 51 outlines the proposed LOS scenarios that were analyzed for land improvements. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 51 Proposed LOS: Land Improvements

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Cemetery	54%	59%	64%	-	Maintain
	\$1,510	\$1,510	\$1,510	\$1,540	
Marine	69%	74%	79%	-	Maintain
	\$25,629	\$25,629	\$25,629	\$26,751	
Parking Lots	34%	39%	44%	-	Maintain
	\$4,706	\$4,706	\$4,706	\$4,500	
Recreation	38%	43%	48%	-	Maintain
	\$17,745	\$18,627	\$18,627	\$23,375	
Towers	77%	82%	87%	-	Maintain
	\$5,294	\$5,294	\$5,294	\$8,083	
Waste Management	42%	47%	52%	-	Maintain
	\$13,882	\$14,196	\$14,824	\$15,660	
<b>TOTAL</b>	<b>\$68,766</b>	<b>\$69,963</b>	<b>\$70,590</b>	<b>\$79,909</b>	<b>\$69,963</b>

# 9 Machinery & Equipment

The Township’s machinery and equipment portfolio includes landscaping equipment to maintain public parks as well as miscellaneous equipment such as generators and compactors to facilitate activities by the Public Works department. The total current replacement of machinery and equipment is estimated at approximately \$3.3 million.

## 9.1 Inventory & Valuation

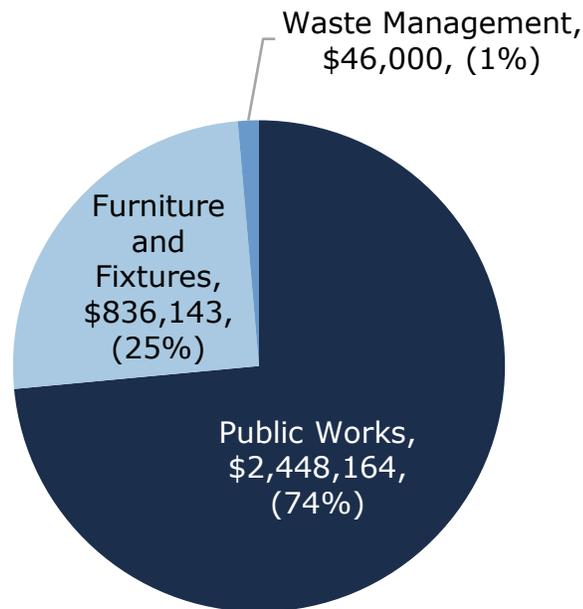
Table 52 summarizes the quantity and current replacement cost of all machinery and equipment assets available in the Township’s asset register.

Table 52 Detailed Asset Inventory: Machinery & Equipment

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR <sup>21</sup>
Furniture and Fixtures	43	Assets	\$836,143	User-Defined	\$60,922
Public Works	37	Assets	\$2,448,164	User-Defined	\$221,742
Waste Management	1	Assets	\$46,000	User-Defined	\$2,706
			<b>\$3,330,307</b>	<b>User-Defined</b>	<b>\$285,370</b>

<sup>21</sup> Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Figure 44 Portfolio Valuation: Machinery & Equipment



## 9.2 Asset Condition

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

- ◆ Staff complete regular visual inspections of machinery & equipment to ensure they are in state of adequate repair
- ◆ Operators complete daily circle checks for safety before use of equipment and machinery
- ◆ There are no formal condition assessment programs in place

In this AMP, the following rating criteria is used to determine the current condition of machinery and equipment assets and forecast future capital requirements:

Table 53 Condition Ranges: Machinery & Equipment

Condition Ranges	Description
<p><b>Very Good (80% – 100%)</b></p>	<ul style="list-style-type: none"> <li>◆ New or like-new condition, with no defects or performance issues.</li> <li>◆ Highly efficient and reliable, operating at peak performance.</li> <li>◆ No mechanical wear or cosmetic damage.</li> <li>◆ All systems fully functional, with minimal maintenance required beyond routine servicing.</li> <li>◆ Expected to provide years of service without major interventions.</li> </ul>
<p><b>Good (60% – 80%)</b></p>	<ul style="list-style-type: none"> <li>◆ Fully functional with minimal wear and tear.</li> <li>◆ All major components in good condition, with only minor maintenance needed (e.g., oil changes, filter replacements).</li> <li>◆ Efficient operation with no significant performance issues.</li> <li>◆ Regular servicing keeps the equipment in optimal working condition.</li> <li>◆ Only minor repairs or adjustments required.</li> </ul>
<p><b>Fair (40% – 60%)</b></p>	<ul style="list-style-type: none"> <li>◆ Occasional mechanical issues but still operational with regular maintenance.</li> <li>◆ Some worn components affecting efficiency, such as aging hydraulics, belts, or electrical wiring.</li> <li>◆ Moderate cosmetic wear (scratches, dents, faded paint), but no major structural damage.</li> <li>◆ Requires proactive maintenance and some parts replacement to extend lifespan.</li> </ul>

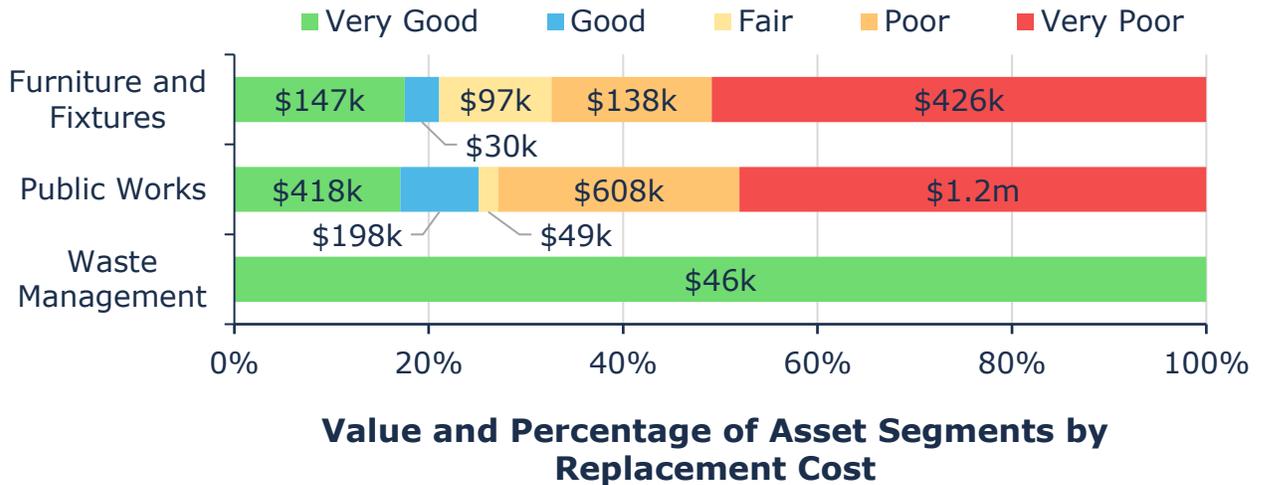
Condition Ranges	Description
<p><b>Poor</b> (20% – 40%)</p>	<ul style="list-style-type: none"> <li>◆ Regular breakdowns and performance issues requiring frequent repairs.</li> <li>◆ Noticeable mechanical wear, including worn-out bearings, belts, hydraulic leaks, or electrical malfunctions.</li> <li>◆ Reduced efficiency and output, causing operational delays or increased costs.</li> <li>◆ Aging components and visible deterioration, such as rust, cracks, or faded controls.</li> <li>◆ Significant repairs or partial replacements needed to maintain functionality.</li> </ul>
<p><b>Very Poor</b> (0% – 20%)</p>	<ul style="list-style-type: none"> <li>◆ Frequent mechanical failures making the equipment unreliable and unsafe to use.</li> <li>◆ Severe wear and tear with major structural damage, corrosion, or missing components.</li> <li>◆ High operating costs due to excessive fuel consumption, breakdowns, and inefficient performance.</li> <li>◆ Parts are difficult to source or no longer available, making repairs impractical.</li> <li>◆ Requires immediate replacement as repairs would not be cost-effective.</li> </ul>

As illustrated in Figure 45, all of the waste management assets are in fair or better condition while the majority of furniture and fixtures and public works assets are in poor or lower.

Table 54 summarizes the replacement cost-weighted condition of the Township’s machinery and equipment portfolio. Based mostly on assessed condition data, 30% of machinery and equipment are in fair or better condition, with the remaining 70% in poor or lower condition.

These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Figure 45 Asset Condition: Machinery & Equipment by Segment



Condition data was available for 66% of machinery and equipment, based on replacement costs; age was used to estimate condition for the remaining 34% of assets.

Table 54 Asset Condition: Machinery & Equipment by Segment

Asset Category	≤ Poor \$	≤ Poor %	≥ Fair \$	≥ Fair %	Average Condition <sup>22</sup>
Furniture and Fixtures	\$563,171	67%	\$272,972	33%	Poor (33%)
Public Works	\$1,784,000	73%	\$664,164	27%	Poor (36%)
Waste Management	-	0%	\$46,000	100%	Very Good (97%)
<b>TOTAL</b>	<b>\$2,347,171</b>	<b>70%</b>	<b>\$983,136</b>	<b>30%</b>	<b>Poor (36%)</b>

<sup>22</sup> Weighted by replacement cost.

## 9.3 Age Profile

An asset’s age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset’s age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Table 55 summarizes and Age analysis reveals that, on average, with the exception of waste management assets, most machinery and equipment assets remain in service beyond their expected useful life.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

Figure 46 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 55 Detailed Asset Age: Machinery & Equipment

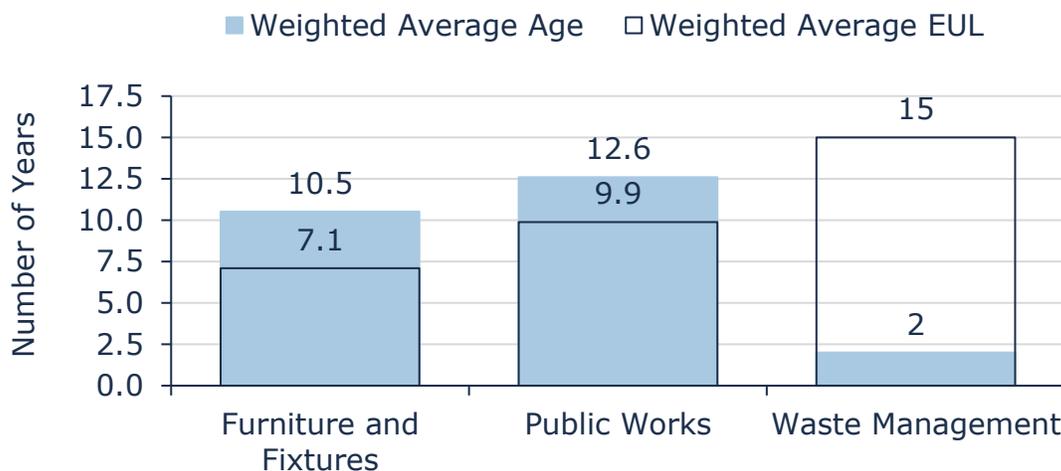
Segment	Weighted Average EUL	Weighted Average Age
Furniture and Fixtures	7.1	10.5
Public Works	9.9	12.6
Waste Management	15	2

Age analysis reveals that, on average, with the exception of waste management assets, most machinery and equipment assets remain in service beyond their expected useful life.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

Figure 46 Estimated Useful Life vs. Asset Age: Machinery & Equipment



## 9.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that the Township’s machinery and equipment 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.

The following table outlines the Township’s current lifecycle management strategy for machinery and equipment assets.

Table 56 Lifecycle Management Strategy: Machinery & Equipment

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Machinery and equipment is inspected before use to identify any maintenance or rehabilitation needs
Rehabilitation	Machinery and equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff
Replacement	The replacement of machinery and equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks

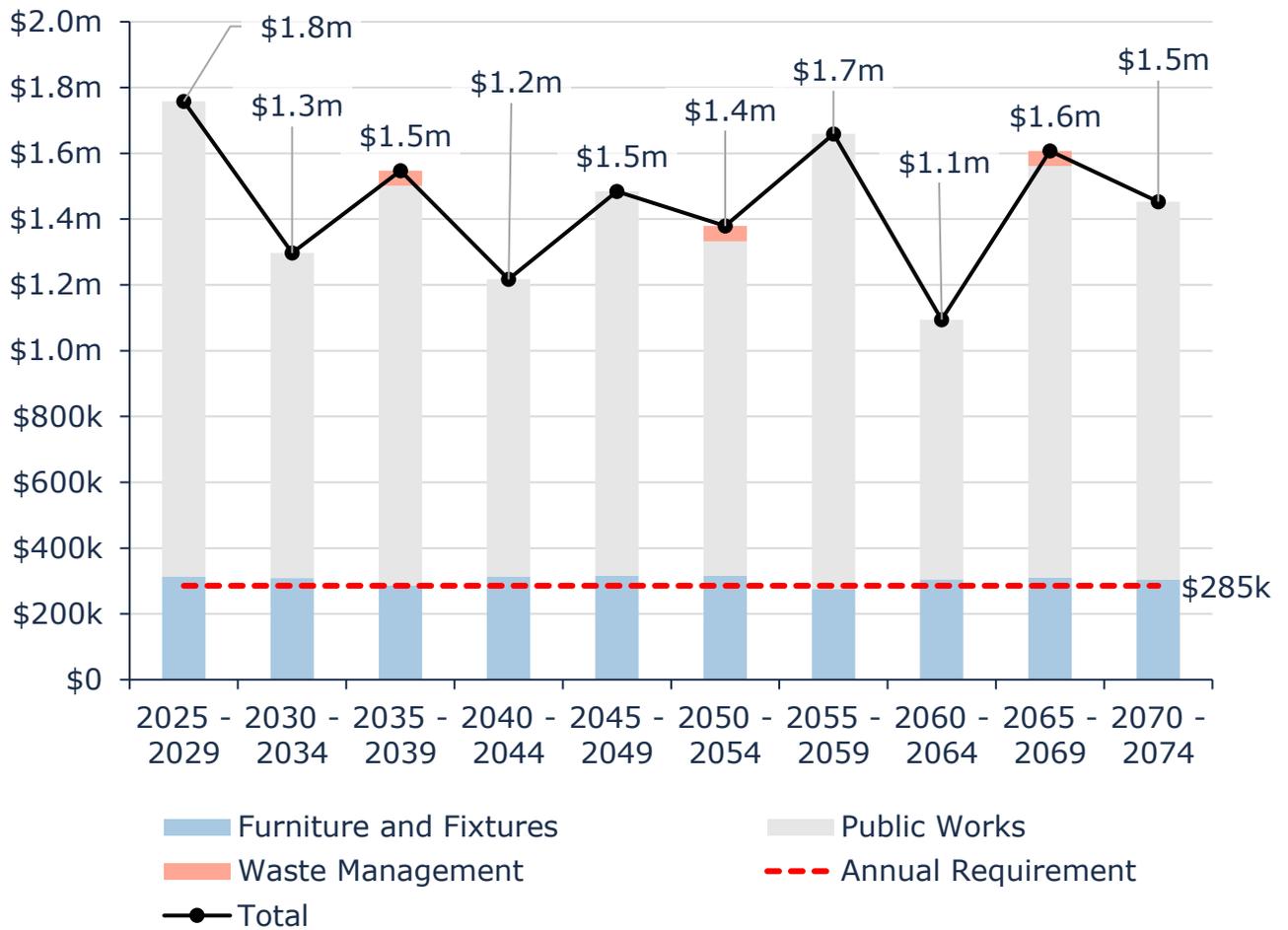
## 9.5 Forecasted Long-Term Replacement Needs

Figure 47 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s machinery and equipment portfolio. This analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) total \$285,370 for all machinery and equipment. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. Replacement needs are forecasted to remain relatively consistent over the 50-year projection period, ranging from \$1.1-\$1.8 million within each five-year segment.

Additionally, there is currently an approximate \$708,500 backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 47 Forecasted Capital Replacement Needs: Machinery & Equipment 2025-2074



Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A summary of the 10-year replacement forecast can be found in Appendix B.

## 9.6 Risk Analysis

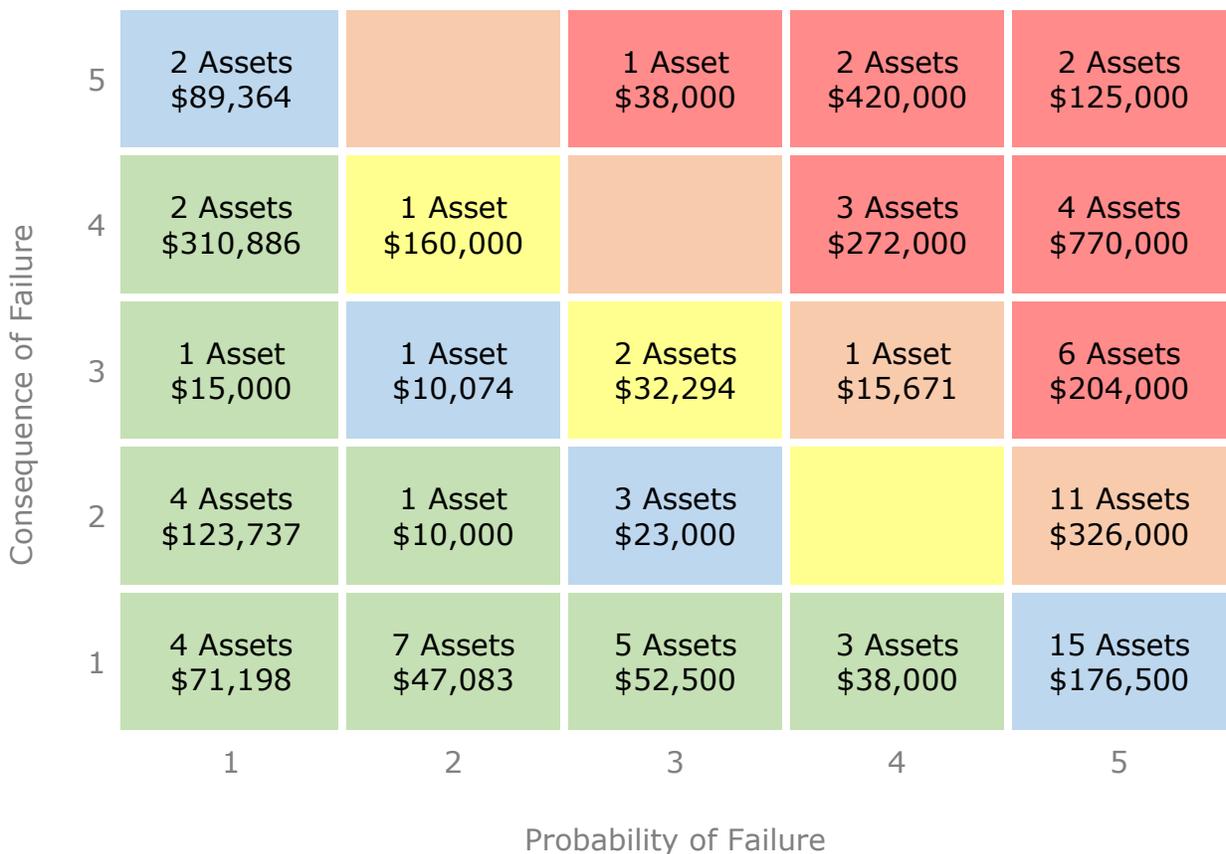
The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-

specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### 9.6.1 Quantitative Risk

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for machinery and equipment assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Figure 48 Risk Matrix: Machinery & Equipment



The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Township may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the Township’s Asset Management Database (Citywide Assets). See Quantitative Risk under Section 2.2.2 as well as Section 2.3.8 Evaluating Quantitative Risk for further details on the approach used to determine asset risk ratings and classifications.

The following risk ratings are first shown for the overall category and then by segment for the machinery and equipment assets.

Figure 49 Risk Rating Ranges: Machinery & Equipment

<b>1 - 4</b> <b>Very Low</b> \$668,404 (20%)	<b>5 - 7</b> <b>Low</b> \$298,938 (9%)	<b>8 - 9</b> <b>Moderate</b> \$192,294 (6%)	<b>10 - 14</b> <b>High</b> \$341,671 (10%)	<b>15 - 25</b> <b>Very High</b> \$1,829,000 (55%)
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Table 57 Probability of Failure, Consequence of Failure, Risk Ratings: Machinery & Equipment by Segment

<b>Asset Category</b>	<b>Probability of Failure</b>	<b>Consequence of Failure</b>	<b>Risk Rating</b>
Furniture and Fixtures	3.8 / 5	3.41 / 5	12.31 / 25
Public Works	3.79 / 5	3.53 / 5	13.53 / 25
Waste Management	1 / 5	2 / 5	2 / 25
<b>TOTAL</b>	<b>3.75 / 5</b>	<b>3.48 / 5</b>	<b>13.06 / 25</b>

Overall, the average risk rating for machinery and equipment assets is 13.06, which is considered High.

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

## 9.7 Current Levels of Service

The tables that follow summarize the Township’s current levels of service. There are no specifically prescribed KPIs under Ontario Regulation 588/17 for non-core assets, therefore the KPIs below represent performance measures that the Township has selected for this AMP.

### 9.7.1 Community Levels of Service

Table 58 Community Levels of Service: Machinery & Equipment

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description or images of the types of equipment that the Township operates and the services that they help to provide to the community	See Appendix C. Machinery and equipment assets allow the public works department and municipal staff to deliver safe and efficient services to the residents, such as road maintenance and winter maintenance activities like snow removal.

### 9.7.2 Technical Levels of Service

Table 59 Technical Levels of Service: Machinery & Equipment

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of municipal machinery and equipment	Poor (36%)
	% of assets in fair or better condition	30%
Performance	% of assets in poor or lower condition	70%
	Actual annual capital budget: average required annual capital requirements	\$285,370 : \$285,370 (1 : 1)

## 9.8 Proposed Levels of Service

As per O. Reg. 588/17, by July 1, 2025, municipalities are required to consider proposed levels of service (LOS), discuss the associated risks and long-term sustainability of these service levels, and explain the Township’s ability to afford the proposed LOS.

Table 60 outlines the proposed LOS scenarios that were analyzed for machinery and equipment. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 60 Proposed LOS: Machinery & Equipment

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Furniture and Fixtures	23%	28%	33%	-	Maintain
	\$48,941	\$60,922	\$72,764	\$120,072	
Public Works	35%	40%	45%	-	Maintain
	\$195,682	\$221,742	\$244,918	\$249,766	
Waste Management	86%	91%	96%	-	-5% Condition
	\$2,706	\$2,706	\$2,706	\$3,067	
<b>TOTAL</b>	<b>\$247,329</b>	<b>\$285,370</b>	<b>\$320,388</b>	<b>\$372,905</b>	<b>\$285,370</b>

# 10 Vehicles

The Township’s vehicles portfolio includes boats, pick-up trucks, dump trucks, and various other vehicles used to maintain the transportation network and respond to Public Works service requests, including winter control operations. The total current replacement of vehicles is \$1.7 million.

## 10.1 Inventory & Valuation

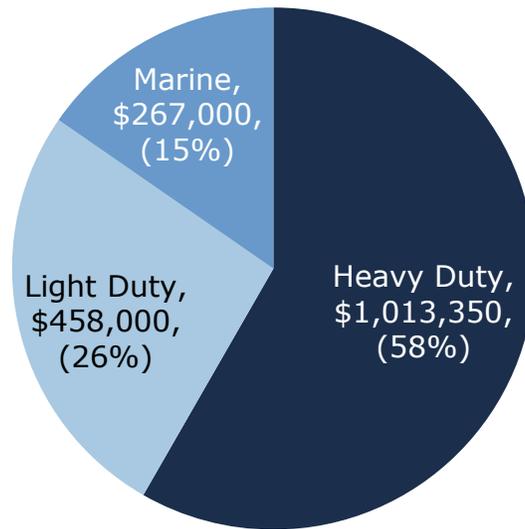
Table 61 summarizes the quantity and current replacement cost of all vehicles assets available in the Township’s asset register.

Table 61 Detailed Asset Inventory: Vehicles

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR <sup>23</sup>
Heavy Duty	3	Assets	\$1,013,350	User-Defined	\$83,662
Light Duty	9	Assets	\$458,000	User-Defined	\$48,745
Marine	10	Assets	\$267,000	User-Defined	\$15,863
<b>TOTAL</b>			<b>\$1,738,350</b>	<b>User-Defined</b>	<b>\$148,270</b>

<sup>23</sup> Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Figure 50 Portfolio Valuation: Vehicles



## 10.2 Asset Condition

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

- ◆ Staff complete regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation
- ◆ Detailed vehicle inspections are carried out annually by internal staff. Factors like number of kilometers, number of hours used, and age are recorded during inspections

In this AMP, the following rating criteria is used to determine the current condition of vehicles assets and forecast future capital requirements:

Table 62 Condition Ranges: Vehicles

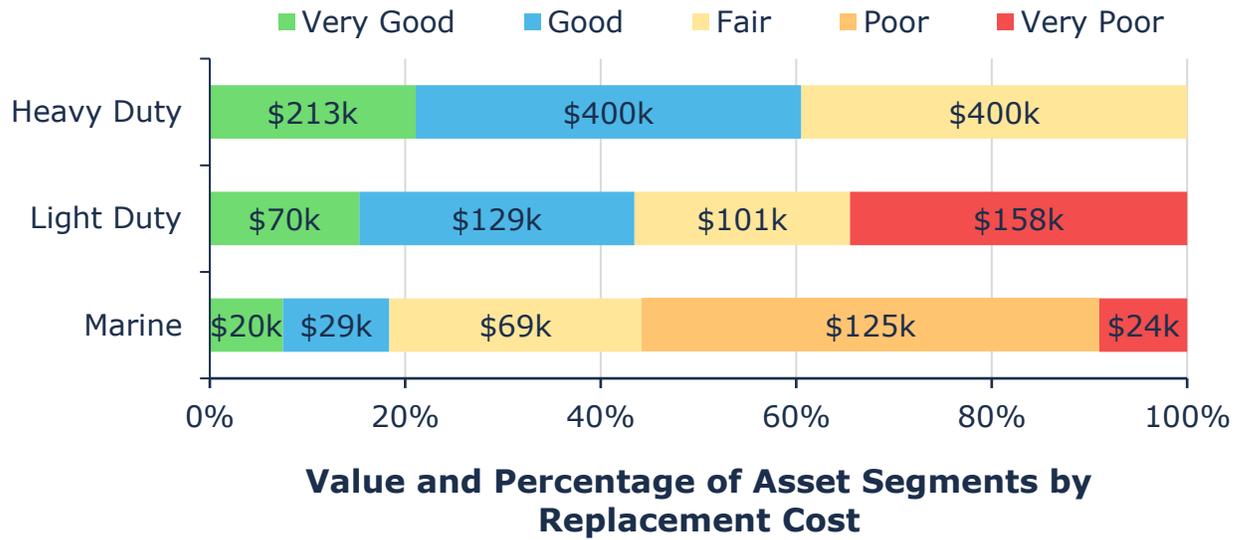
Condition Ranges	Description
<p><b>Very Good (80% – 100%)</b></p>	<ul style="list-style-type: none"> <li>◆ Like-new condition—mechanically excellent with no defects or major wear.</li> <li>◆ No visible exterior damage—paint, body, and glass are in near-perfect condition.</li> <li>◆ Interior is clean and well-maintained, with no significant wear on seats, controls, or dashboard.</li> <li>◆ Optimal performance and fuel efficiency, with all systems (engine, brakes, electronics) fully functional.</li> <li>◆ Minimal maintenance required beyond standard servicing.</li> </ul>
<p><b>Good (60% – 80%)</b></p>	<ul style="list-style-type: none"> <li>◆ Mechanically sound with no major issues—engine, transmission, and brakes function well.</li> <li>◆ Minor cosmetic wear (small scratches or slight fading), but no major damage.</li> <li>◆ Interior is in good condition, with all controls, seats, and features fully operational.</li> <li>◆ Fuel efficiency and performance remain close to original specifications.</li> <li>◆ Routine maintenance needed to keep it in top condition.</li> </ul>
<p><b>Fair (40% – 60%)</b></p>	<ul style="list-style-type: none"> <li>◆ Some mechanical wear and tear, but still operational with occasional minor repairs needed.</li> <li>◆ Body has some cosmetic flaws, such as scratches, small dents, or light rust.</li> <li>◆ Interior is intact but shows signs of aging, such as worn upholstery or faded controls.</li> <li>◆ All major systems functional, but performance is slightly reduced compared to new.</li> </ul>

Condition Ranges	Description
	<ul style="list-style-type: none"> <li>◆ Regular maintenance required to prevent further decline.</li> </ul>
<p><b>Poor</b> <b>(20% – 40%)</b></p>	<ul style="list-style-type: none"> <li>◆ Noticeable mechanical problems, such as engine misfires, transmission slipping, or weak brakes.</li> <li>◆ Frequent minor repairs needed (e.g., battery issues, fluid leaks, suspension wear).</li> <li>◆ Significant body wear including rust spots, fading paint, or moderate dents.</li> <li>◆ Aging interior with visible wear on seats, dashboard, and controls.</li> <li>◆ Decreased fuel efficiency and performance issues becoming more noticeable.</li> </ul>
<p><b>Very Poor</b> <b>(0% – 20%)</b></p>	<ul style="list-style-type: none"> <li>◆ Severe mechanical and structural issues—engine, transmission, or braking system may be failing or unreliable.</li> <li>◆ Frequent breakdowns making the vehicle unsafe or impractical for regular use.</li> <li>◆ Extensive body damage such as severe rust, dents, or missing panels.</li> <li>◆ Worn-out interior with torn seats, broken controls, or non-functional components (e.g., HVAC, lights, windows).</li> <li>◆ High repair costs often exceeding the vehicle’s remaining value. Near end-of-life.</li> </ul>

As illustrated in Figure 51, the majority of the Township’s vehicles are in fair or better condition.

Table 63 summarizes the replacement cost-weighted condition of the Township’s vehicles portfolio. Based primarily on assessed condition data, 82% of vehicles are in fair or better condition, with the remaining 18% in poor or lower condition.

Figure 51 Asset Condition: Vehicles by Segment



All of heavy duty vehicles and the majority of light duty vehicles are in fair or better condition while only 44% of marine assets fall within that range. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Condition data was available for 72% of vehicles, based on replacement costs; age was used to estimate condition for the remaining 28% of assets.

Table 63 Asset Condition: Vehicles by Segment

Asset Category	≤ Poor \$	≤ Poor %	≥ Fair \$	≥ Fair %	Average Condition <sup>24</sup>
Heavy Duty	-	0%	\$1,013,350	100%	Fair (57%)
Light Duty	\$158,000	34%	\$300,000	66%	Fair (48%)
Marine	\$149,000	56%	\$118,000	44%	Fair (44%)
<b>TOTAL</b>	<b>\$307,000</b>	<b>18%</b>	<b>\$1,431,350</b>	<b>82%</b>	<b>Fair (53%)</b>

<sup>24</sup> Weighted by replacement cost.

## 10.3 Age Profile

An asset’s age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset’s age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Table 64 summarizes and Age analysis reveals that, on average, most vehicles are reaching or have surpassed their established useful life.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

Figure 52 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 64 Detailed Asset Age: Vehicles

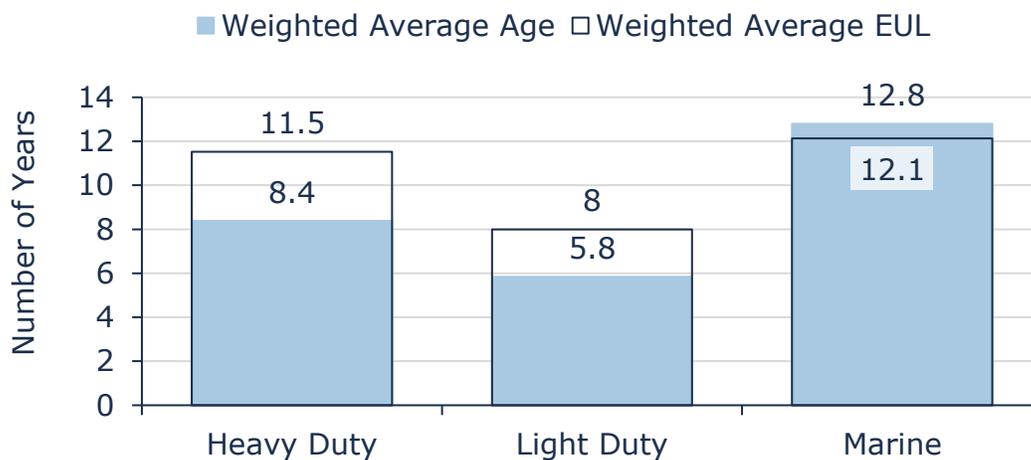
Segment	Weighted Average EUL	Weighted Average Age
Heavy Duty	11.5	8.4
Light Duty	8	5.8
Marine	12.1	12.8

Age analysis reveals that, on average, most vehicles are reaching or have surpassed their established useful life.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. An asset may perform past the established useful life if it has been maintained and kept in good condition. Therefore, it is important to consider asset condition when comparing asset age to its serviceable lifespan.

However, each asset’s estimated useful life should also 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. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

Figure 52 Estimated Useful Life vs. Asset Age: Vehicles



## 10.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that the Township’s vehicles 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.

The following table outlines the Township’s current lifecycle management strategy for vehicles assets.

Table 65 Lifecycle Management Strategy: Vehicles

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Visual inspections completed and documented daily by staff
	Every 4-7000 km includes a detailed inspection; tires are rotated and oil is changed
	Annual preventative maintenance activities include system components check and additional detailed inspections
	Inspections are compliant with the Ontario Commercial Vehicle Safety Requirements
Replacement	Vehicle replacements are based on the budget available for that asset. The Township is moving towards strategic selling practices based on value, as well as engine hours as opposed to age.
	Vehicle age, kilometers and annual repair costs are taken into consideration when determining appropriate treatment options

## 10.5 Forecasted Long-Term Replacement Needs

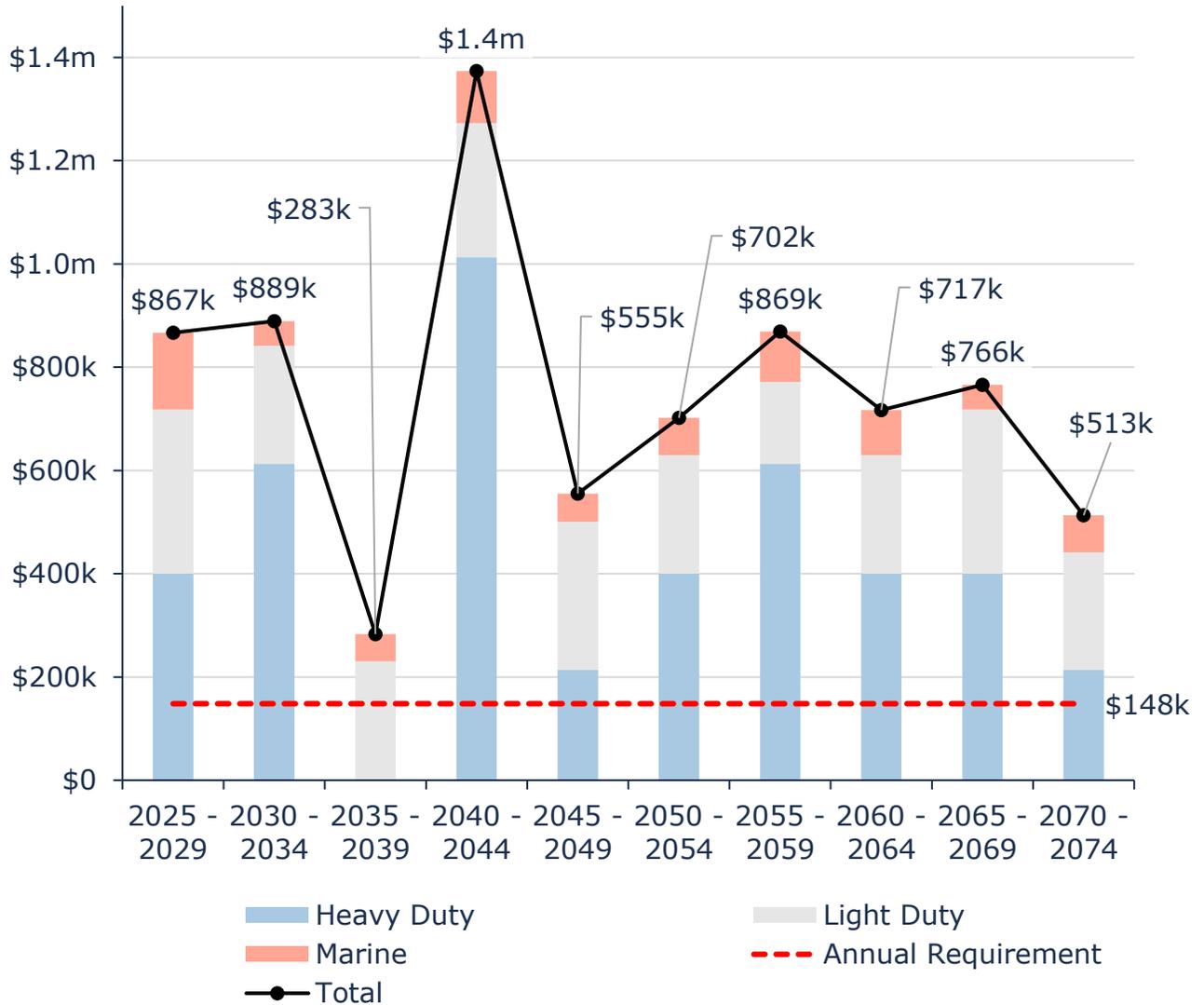
Figure 53 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s vehicles portfolio. This analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) total \$148,270 for all vehicles. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Replacement needs are forecasted to remain relatively steady aside from a valley in 2035-2039 and a peak in 2040-2044, which could be balanced in future capital planning.

Additionally, there is currently an approximate \$119,000 backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 53 Forecasted Capital Replacement Needs: Vehicles 2025-2074



Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A summary of the 10-year replacement forecast can be found in Appendix B.

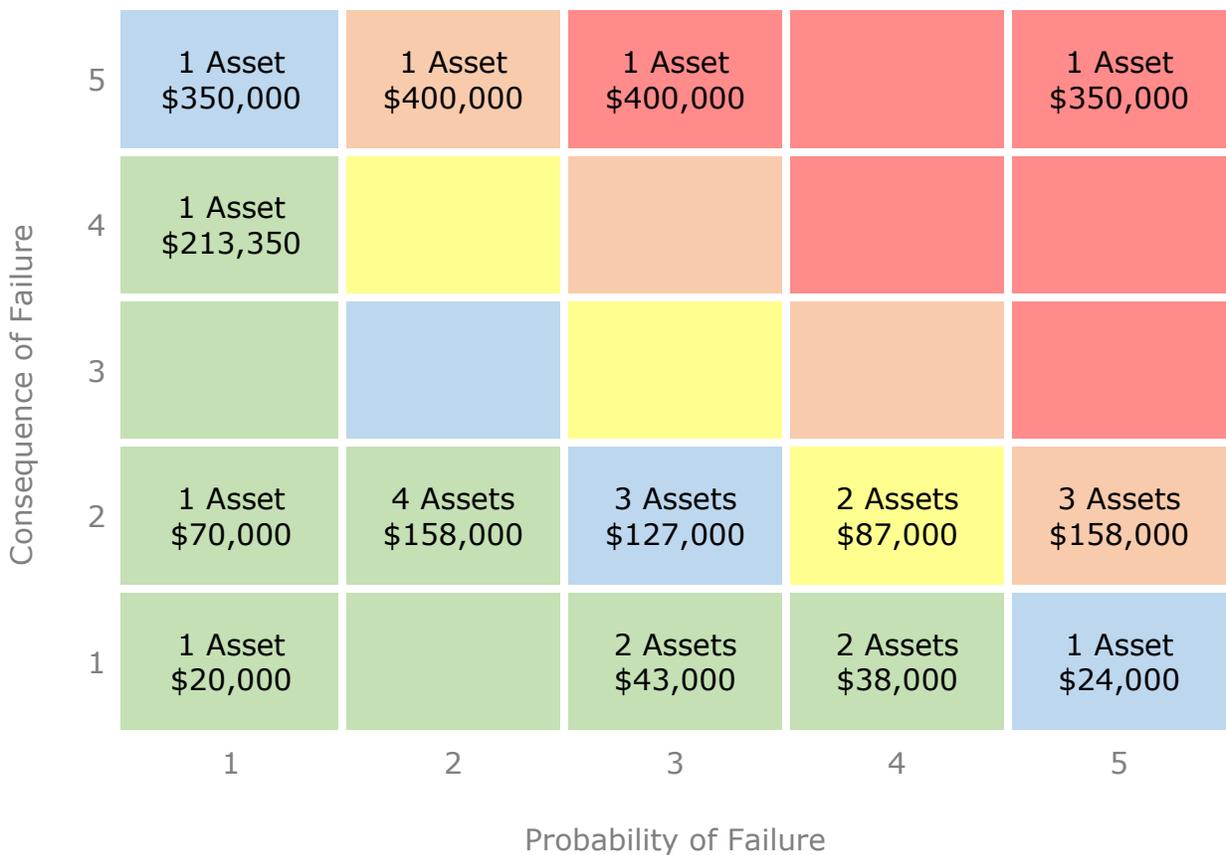
## 10.6 Risk Analysis

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

### 10.6.1 Quantitative Risk

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for vehicles assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Figure 54 Risk Matrix: Vehicles



The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk

rating of 1. As new data and information is gathered, the Township may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the Township’s Asset Management Database (Citywide Assets). See Quantitative Risk under Section 2.2.2 as well as Section 2.3.8 Evaluating Quantitative Risk for further details on the approach used to determine asset risk ratings and classifications.

The following risk ratings are first shown for the overall category and then by segment for the vehicles assets.

Figure 55 Risk Rating Ranges: Vehicles

<p><b>1 - 4</b> <b>Very Low</b> \$542,350 (31%)</p>	<p><b>5 - 7</b> <b>Low</b> \$151,000 (9%)</p>	<p><b>8 - 9</b> <b>Moderate</b> \$87,000 (5%)</p>	<p><b>10 - 14</b> <b>High</b> \$558,000 (32%)</p>	<p><b>15 - 25</b> <b>Very High</b> \$400,000 (23%)</p>
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Table 66 Probability of Failure, Consequence of Failure, Risk Ratings: Vehicles by Segment

<b>Asset Category</b>	<b>Probability of Failure</b>	<b>Consequence of Failure</b>	<b>Risk Rating</b>
Heavy Duty	2.18 / 5	4.79 / 5	10.71 / 25
Light Duty	3.1 / 5	2 / 5	6.21 / 25
Marine	3.39 / 5	1.53 / 5	5.2 / 25
<b>TOTAL</b>	<b>2.61 / 5</b>	<b>3.55 / 5</b>	<b>8.68 / 25</b>

Overall, the average risk rating for vehicles assets is 8.68, which is considered Moderate.

The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

## 10.6.2 Qualitative Risk

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



### Climate Change

The Township’s vehicle fleet is increasingly affected by the impacts of climate change. More frequent freeze/thaw cycles and extreme weather conditions have increased the demand for road maintenance activities such as salting and sanding, which in turn lead to faster wear and tear on municipal vehicles. To address this, the Township has implemented a fleet replacement strategy to ensure timely renewal of assets reaching the end of their service life. However, recent supply chain disruptions have resulted in longer lead times for new vehicle acquisitions, which has presented operational challenges.

## 10.7 Current Levels of Service

The tables that follow summarize the Township’s current levels of service. There are no specifically prescribed KPIs under Ontario Regulation 588/17 for non-core assets, therefore the KPIs below represent performance measures that the Township has selected for this AMP.

### 10.7.1 Community Levels of Service

Table 67 Community Levels of Service: Vehicles

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description or images of the types of vehicles (e.g. light, medium, and heavy-duty) that the Township operates and the services that they help to provide to the community	The Township operates light duty, heavy duty, and marine vehicles to provide public works services to the residents of The Archipelago. These services include general maintenance of Municipal assets as well as winter maintenance such as snow removal. See Appendix C.

## 10.7.2 Technical Levels of Service

Table 68 Technical Levels of Service: Vehicles

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Average condition of municipal vehicles	Fair (53%)
Performance	% of vehicles in fair or better condition	82%
	% of vehicles in poor or worse condition	18%
	Actual annual capital budget: average required annual capital requirements	\$148,270 : \$148,270 (1 : 1)

## 10.8 Proposed Levels of Service

Table 69 Proposed LOS: Vehicles

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Heavy Duty	44%	49%	54%	-	Maintain
	\$83,662	\$83,662	\$83,662	\$90,372	
Light Duty	45%	50%	55%	-	Maintain
	\$48,745	\$48,745	\$48,745	\$57,250	
Marine	27%	32%	37%	-	Maintain
	\$14,157	\$15,863	\$18,353	\$25,192	
<b>TOTAL</b>	<b>\$146,564</b>	<b>\$148,270</b>	<b>\$150,760</b>	<b>\$172,814</b>	<b>\$148,270</b>

As per O. Reg. 588/17, by July 1, 2025, municipalities are required to consider proposed levels of service (LOS), discuss the associated risks and long-term sustainability of these service levels, and explain the Township's ability to afford the proposed LOS.

Table 69 outlines the proposed LOS scenarios that were analyzed for vehicles. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

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# **Strategies**

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# 11 Growth

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 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.

## 11.1 Growth Assumptions

### 11.1.1 Township of the Archipelago Official Plan (Consolidated 2019)

The Township of The Archipelago Official Plan was approved by the Minister of Municipal Affairs and Housing on June 1, 1983. There have been continuous amendments adopted by Council since, with the latest version being consolidated as of January 1, 2019. The purpose of the Official Plan is to establish land use policies which will guide development for the whole of The Archipelago Township, and which will provide for the long-term use of land and water for public and private recreation in accordance with the goals and objective set out for the Township. The Official Plan conforms to the 2011 Growth Plan for Northern Ontario (GPNO).

The Official Plan places an importance on preserving The Archipelago's high quality recreational character and natural environment. The Archipelago is a highly seasonal Township. Year-round residents comprise a small proportion of the total population of the Township and generally fulfil a service function to the recreational users of The Archipelago or are retired. The year-round residents are concentrated in the communities of Pointe au Baril Station, the Woods Bay Neighborhood, and the inland Lake Neighborhoods.

The year-round population is expected to remain stable or increase marginally in the foreseeable future. However, improvements in communication technology are providing more people with the ability to live in remote areas. Several year-round residents are operating professional business from dwellings originally used as cottages. It is expected that some growth in the year-round component of the population may be attributed to this phenomenon.

Relative to other small Townships in the province, The Archipelago is not expected to experience a lot of growth. The Archipelago aims to preserve the integrity of the natural features of its landscape, first and foremost.

### **11.1.2 Growth Plan for Northern Ontario (2011)**

The Growth Plan for Northern Ontario was released on March 3, 2011 and is a 25-year plan that provides guidance for municipalities in Northern Ontario to align provincial decision-making and investment for economic and population growth.

The growth management goals for the Growth Plan for Northern Ontario are as follows:

- ◆ Diversifying of traditional resource-based industries
- ◆ Workforce education and training
- ◆ Integration of infrastructure investments and planning
- ◆ Tools for Indigenous peoples' participation in the economy

The Official Plan of the Township of The Archipelago incorporates the above growth management goals of the Growth Plan for Northern Ontario, focusing particularly on sustainability (economic, social, and environmental), accommodating the diverse needs of all residents, optimizing existing infrastructure, quality of place, and a welcoming and inclusive community that emphasizes unique local features.

## **11.2 Impact of Growth on Lifecycle Activities**

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.

For the near- to mid-term, the projected population growth in the Township is not expected to significantly impact the current portfolio of assets required by the Township to maintain acceptable service levels.

# 12 Financial Strategy

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 the Archipelago 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:

- ◆ The financial requirements for:
  - Existing assets
  - Existing service levels
  - Requirements of contemplated changes in service levels (none identified for this plan)
  - Requirements of anticipated growth (none identified for this plan)
- ◆ Use of traditional sources of municipal funds:
  - Tax levies
  - User fees
  - Debt
  - Development charges
- ◆ Use of non-traditional sources of municipal funds:
  - Reallocated budgets
  - Partnerships
  - Procurement methods
- ◆ Use of Senior Government Funds:
  - Canada Community-Building Fund (CCBF)
  - 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:

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

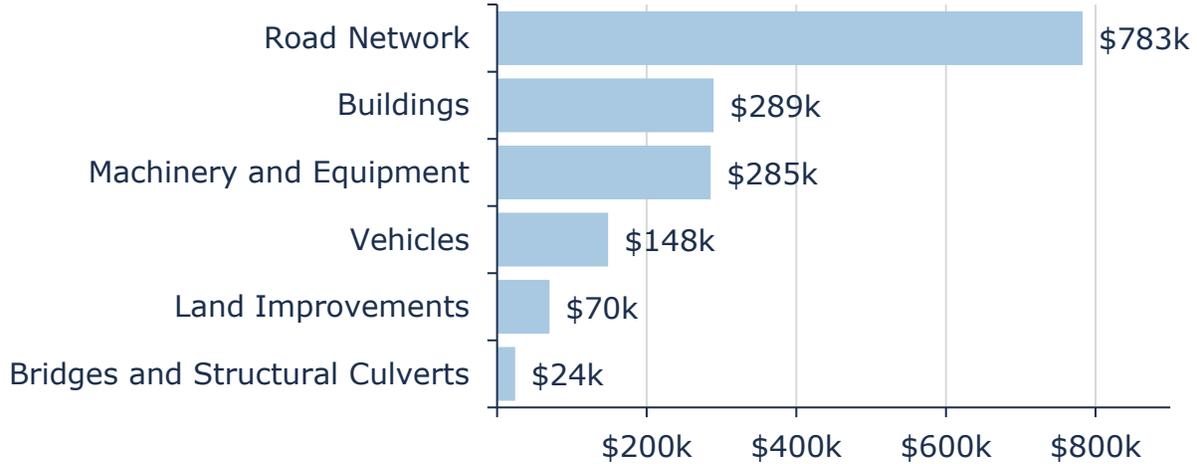
## **12.1 Annual Requirements & Capital Funding**

### **12.1.1 Annual Requirements**

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 \$1,599,610 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.

Figure 56 Annual Capital Funding Requirements by Asset Category



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 roads. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table compares scenarios for the Road Network:

- ◆ **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.

Table 70 Lifecycle Strategies Annual Savings

Asset Category	Average Annual Requirements			Difference
	Proposed LOS Scenario	No Target (with LC <sup>25</sup> )	No Target (without LC)	
Road Network	\$782,544	\$845,332	\$923,840	\$141,296

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of \$141,296. As the proposed LOS scenario including the

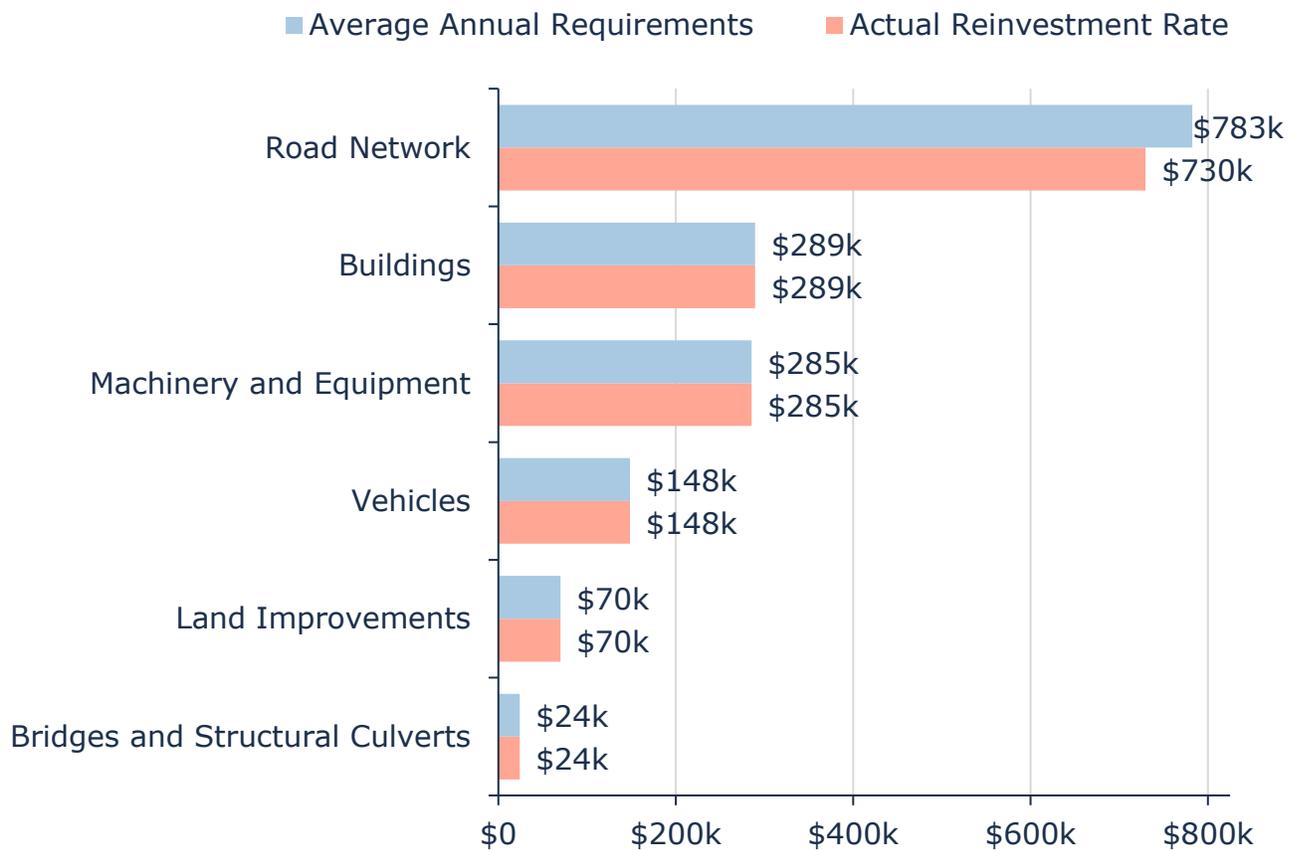
<sup>25</sup> LC = Lifecycle strategy

lifecycle strategy represents the lowest cost option available to the Township, we have used these annual requirements in the development of the financial strategy.

### 12.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$1,546,779 towards capital projects per year. Given the annual capital requirement of \$1,599,610, there is currently a funding gap of \$52,831 annually.

Figure 57 Annual Requirements vs. Capital Funding Available



### 12.2 Funding Objective

We have developed a scenario that would enable Township of the Archipelago to achieve full funding within 5 years for the following assets:

- ◆ **Tax Funded Assets:** Road Network, Bridges & Structural Culverts, Buildings, Land Improvements, Machinery & Equipment, Vehicles

Note: For the purposes of this AMP, we have excluded 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.

## 12.3 Financial Profile: Tax Funded Assets

### 12.3.1 Current Funding Position

The following tables show, by asset category, The Archipelago’s average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by taxes.

Table 71 Annual Available Funding for Tax Funded Assets

Asset Category	AAR	Annual Funding Available				Annual Deficit
		Taxes	CCBF	OCIF	Total	
Bridges and Structural Culverts	\$24k	\$24k			\$24k	-
Buildings	\$289k	\$289k			\$289k	-
Land Improvements	\$70k	\$70k			\$70k	-
Machinery and Equipment	\$285k	\$285k			\$285k	-
Road Network	\$783k	\$483k	\$34k	\$213k	\$730k	\$53k
Vehicles	\$148k	\$148k			\$148k	-
<b>TOTAL</b>	<b>\$1.6m</b>	<b>\$1.3m</b>	<b>\$34k</b>	<b>\$213k</b>	<b>\$1.5m</b>	<b>\$53k</b>

The average annual investment requirement for the above categories is \$1,599,610. Annual revenue currently allocated to these assets for capital purposes is \$1,546,779 leaving an annual deficit of \$52,831. Put differently, these infrastructure categories are currently funded at 97% of their long-term requirements.

### 12.3.2 Full Funding Requirements

In 2022, the Township of the Archipelago had budgeted annual tax revenues of approximately \$1,300,000. 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:

Table 72 Tax Increase Requirements for Full Funding

Asset Category	Tax Change Required for Full Funding
Bridges and Structural Culverts	-
Buildings	-
Land Improvements	-
Machinery and Equipment	-
Road Network	0.6%
Vehicles	-
<b>TOTAL</b>	<b>0.6%</b>

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

- ◆ The Archipelago’s debt payments for these asset categories will be decreasing \$140,315 by 2044.

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

Table 73 Tax Increase Options 5-20 Years

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	\$52,830	\$52,830	\$52,830	\$52,830
Change in Debt Costs	N/A	N/A	\$100,553	\$140,315
<b>Resulting Infrastructure Deficit:</b>	\$52,830	\$52,830	-\$47,723	-\$87,485
Tax Increase Required	0.6%	0.6%	0.6%	0.6%
<b>Annually:</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>

### 12.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 5-year option. This involves full funding being achieved over five years by:

- ◆ Increasing tax revenues by 0.1% each year for the next five years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP in alignment with the targets set out in the proposed levels of service.
  - A 0.1% property tax increase calculates to an approximate \$3.70 annual increase per household per year for five years.
  - Full sustainability will be achieved with an overall 0.6% property tax increase resulting in an approximate \$18.50 per household within the Township.
- ◆ Allocating the current CCBF and OCIF revenue as outlined previously.
- ◆ Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- ◆ 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<sup>26</sup>.
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 funding on an annual basis in 5 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available.

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.

## **12.4 Use of Debt**

Debt can be strategically utilized as a funding source within the long-term financial plan. The benefits of leveraging debt for infrastructure planning include:

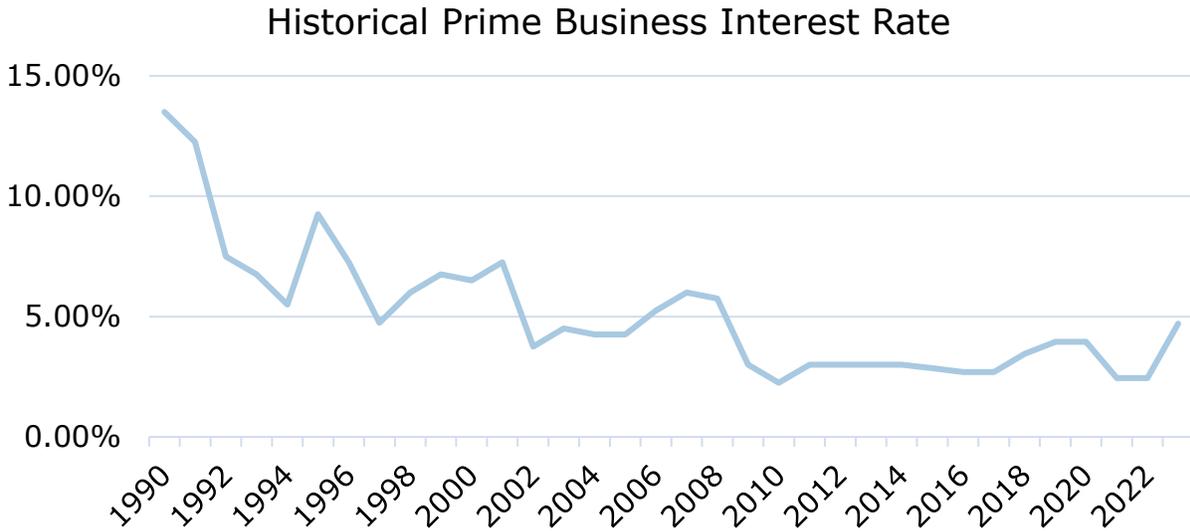
- ◆ The ability to stabilize tax & user rates when dealing with variable and sometimes uncontrollable factors
- ◆ Equitable distribution of the cost/benefits of infrastructure over its useful life
- ◆ A secure source of funding
- ◆ Flexibility in cash flow management

Debt management policies and procedures with limitations and monitoring practices should be considered when reviewing debt as a funding option. In efforts to mitigate increasing commodity prices and inflation, interest rates have been rising. Sustainable funding models that include debt need to incorporate the now current realized risk of rising interest rates. The following graph shows the historical changes to the lending rates:

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<sup>26</sup> 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.

Figure 58 Historical Prime Rate



A change in 15-year rates from 5% to 7% would change the premium from 45% to 65%. Such a change would have a significant impact on a financial plan.

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a \$1 million project financed at 3.0%<sup>27</sup> over 15 years would result in a 26% premium or \$260 thousand 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.

Table 74 Interest Premiums Paid

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
<b>7.0%</b>	22%	42%	65%	89%	115%	142%
<b>6.5%</b>	20%	39%	60%	82%	105%	130%
<b>6.0%</b>	19%	36%	54%	74%	96%	118%
<b>5.5%</b>	17%	33%	49%	67%	86%	106%
<b>5.0%</b>	15%	30%	45%	60%	77%	95%

<sup>27</sup> Current municipal Infrastructure Ontario rates for 15-year money is 4.03%.

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
<b>4.5%</b>	14%	26%	40%	54%	69%	84%
<b>4.0%</b>	12%	23%	35%	47%	60%	73%
<b>3.5%</b>	11%	20%	30%	41%	52%	63%
<b>3.0%</b>	9%	17%	26%	34%	44%	53%
<b>2.5%</b>	8%	14%	21%	28%	36%	43%
<b>2.0%</b>	6%	11%	17%	22%	28%	34%
<b>1.5%</b>	5%	8%	12%	16%	21%	25%
<b>1.0%</b>	3%	6%	8%	11%	14%	16%
<b>0.5%</b>	2%	3%	4%	5%	7%	8%
<b>0.0%</b>	0%	0%	0%	0%	0%	0%

The following tables outline how The Archipelago has historically used debt for investing in the asset categories as listed. As of year-end 2023, there is currently \$1.6 million of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of \$140,315, well within its provincially prescribed maximum of \$2.7 million.

Table 75 The Archipelago Use of Debt 2020-2024

Asset Category	Current Debt Outstanding	Use of Debt in the Last Five Years				
		2020	2021	2022	2023	2024
Road Network	\$753,275	-	-	-	\$789,498	-
Buildings	\$878,525	-	-	-	\$924,410	-
<b>TOTAL</b>	<b>\$1,631,799</b>	-	-	-	<b>\$1,713,908</b>	-

Table 76 The Archipelago Principal and Interest Payments

Asset Category	Principal & Interest Payments in the Next Ten Years					
	2025	2026	2027	2028	2029	2034
Road Network	\$63k	\$63k	\$63k	\$63k	\$63k	\$63k
Buildings	\$78k	\$78k	\$78k	\$78k	\$78k	\$78k
<b>TOTAL</b>	<b>\$140k</b>	<b>\$140k</b>	<b>\$140k</b>	<b>\$140k</b>	<b>\$140k</b>	<b>\$140k</b>

The revenue options outlined in this plan allow the Township of the Archipelago to fully fund its long-term infrastructure requirements for the selected proposed levels of service without further use of debt.

## 12.5 Use of Reserves

### 12.5.1 Available Reserves

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

- ◆ The ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
- ◆ Financing one-time or short-term investments
- ◆ Accumulating the funding for significant future infrastructure investments
- ◆ Managing the use of debt
- ◆ 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 take into account when determining their capital reserve requirements include:

- ◆ Breadth of services provided
- ◆ Age and condition of infrastructure
- ◆ Use and level of debt

- ◆ Economic conditions and outlook
- ◆ Internal reserve and debt policies.

As of December 31, 2021, the Township's reserves totaled an approximate \$17.7 million. These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with The Archipelago'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.

### **12.5.2 Recommendation**

In 2025, Ontario Regulation 588/17 requires The Archipelago 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.

The funding strategy outlined above aligns with achieving and maintaining the proposed levels of service outlined in Section 4.

# 13 Recommendations & Key Considerations

## 13.1 Financial Strategies

- ◆ Review the feasibility of adopting a full-funding scenario to achieve 100% of average annual funding requirements necessary for the proposed levels of service outlined in Section 4. This includes increasing taxes by 0.1% per year over a period of five years.
- ◆ Continued allocation of OCIF and CCBF funding as previously outlined.
- ◆ Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- ◆ Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
- ◆ Continue to apply for project specific grant funding to supplement sustainable funding sources.

## 13.2 Asset Data

- ◆ Continuously review, refine, and calibrate lifecycle and risk profiles to better reflect actual practices and improve capital projections. In particular:
  - The timing of various lifecycle events, the triggers for treatment, anticipated impacts of each treatment, and costs
  - The various attributes used to estimate the likelihood and consequence of asset failures, and their respective weightings
- ◆ Asset management planning is highly sensitive to replacement costs. Periodically update replacement costs based on recent projects, invoices, or estimates, as well as condition assessments, or any other technical reports and studies. Material and labor costs can fluctuate due to local, regional, and broader market trends, and substantially so during major world events. Accurately estimating the replacement cost of like-for-like assets can be challenging. Ideally, several recent projects over multiple years should be used. Staff judgement and historical data can help attenuate extreme and temporary fluctuations in cost estimates and keep them realistic.

- ◆ Like replacement costs, an asset’s established serviceable life can have dramatic impacts on all projections and analyses, including condition, long-range forecasting, and financial recommendations. Periodically reviewing and updating these values to better reflect in-field performance and staff judgement is recommended.
- ◆ Continue with condition assessments to maintain an updated inventory. Consider collecting any additional attributes that you may find useful to track in the future.
  - The Township should implement regular condition assessments for all buildings to better inform short- and long-term capital requirements, such as the recently completed BCA.
- ◆ Componentize assets where possible to assess their condition, maintenance needs, and replacement costs accurately.

### **13.3 Lifecycle Management Strategies**

- ◆ This AMP includes capital costs associated with the reconstruction of bridges and culverts as well as projected capital rehabilitation and renewal costs. Continue to execute OSIM inspections every 2 years and keep projected capital rehabilitation and renewal costs up to date.
- ◆ Continue implementing the identified lifecycle management strategies for HCB and LCB roads to maintain cost avoidance and sustain a high quality of road pavement condition.
- ◆ Evaluate the efficacy of the Township’s lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk. This could be done by updating the condition assessment data whenever new data becomes available and rerunning the capital projections and risk reports.

### **13.4 Risk & Levels of Service**

- ◆ Risk models and matrices can play an important role in identifying high-value assets, and developing an action plan which may include repair, rehabilitation, replacement, or further evaluation through condition assessments. As a result, project selection and the development of multi-year capital plans can become more strategic and objective. Initial models have been built into Citywide for all asset groups. These models reflect

current data, which was limited. As the data evolves and new attribute information is obtained, these models should also be refined and updated.

- ◆ Available data on current performance should be centralized and tracked to support any calibration of service levels on proposed levels of service in the future.
- ◆ Staff should monitor evolving local, regional, and environmental trends to identify factors that may shape the demand and delivery of infrastructure programs. These can include population growth, and the nature of population growth; climate change and extreme weather events; and economic conditions and the local tax base. This data can also be used to review service level targets.
- ◆ Consider developing a plan to address accessibility deficits for buildings assets. Future considerations may involve retrofitting projects to address these issues comprehensively.

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# **Appendices**

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# Appendix A – Infrastructure Report Card

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Bridges & Structural Culverts	\$2.0 m	Good (74%)	Annual Requirement:	\$24,020
			Funding Available:	\$24,020
			<b>Annual Deficit:</b>	-
Road Network	\$16.5 m	Good (78%)	Annual Requirement:	\$782,543
			Funding Available:	\$729,713
			<b>Annual Deficit:</b>	<b>\$52,830</b>
Buildings	\$18.4 m	Very Good (87%)	Annual Requirement:	\$289,445
			Funding Available:	\$289,445
			<b>Annual Deficit:</b>	-
Land Improvements	\$1.9 m	Good (65%)	Annual Requirement:	\$69,963
			Funding Available:	\$69,963
			<b>Annual Deficit:</b>	-
Machinery & Equipment	\$3.3 m	Poor (36%)	Annual Requirement:	\$285,370
			Funding Available:	\$285,370
			<b>Annual Deficit:</b>	-
Vehicles	\$1.7 m	Fair (53%)	Annual Requirement:	\$148,270
			Funding Available:	\$148,270
			<b>Annual Deficit:</b>	-

# Appendix B – 10-Year Capital Requirements

Bridges & Structural Culverts										
Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Bridges	-	-	-	-	-	-	-	-	-	-
Structural Culverts	-	-	-	-	-	-	\$425k	-	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$425k</b>	<b>-</b>	<b>-</b>	<b>-</b>

Road Network										
Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
HCB	-	\$47k	\$103k	\$53k	\$74k	\$54k	\$116k	\$127k	\$192k	\$1.5m
LCB	\$184k	\$43k	\$524k	\$62k	-	-	\$592k	\$34k	\$2.3m	\$527k
Signs	\$31k	-	-	-	-	-	-	\$3k	\$7k	-
Small Culverts	-	-	-	\$208k	\$42k	-	-	-	\$50k	-
<b>TOTAL</b>	<b>\$214k</b>	<b>\$90k</b>	<b>\$627k</b>	<b>\$323k</b>	<b>\$115k</b>	<b>\$54k</b>	<b>\$709k</b>	<b>\$164k</b>	<b>\$2.5m</b>	<b>\$2.0m</b>

**Buildings**

<b>Segment</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>
Community and Culture	-	-	-	-	-	-	-	-	-	-
General Government	-	-	-	-	\$134k	\$98k	\$67k	\$77k	\$43k	\$14k
Health	-	-	-	-	-	-	-	-	-	-
Public Works	-	-	-	-	\$10k	\$57k	\$35k	\$1k	\$3k	-
Washrooms	-	-	-	-	-	-	-	-	-	-
Waste Management	-	-	-	\$5k	\$3k	\$22k	\$9k	\$14k	\$3k	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$5k</b>	<b>\$147k</b>	<b>\$177k</b>	<b>\$111k</b>	<b>\$92k</b>	<b>\$48k</b>	<b>\$14k</b>

**Land Improvements**

<b>Segment</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>
Cemetery	-	-	-	-	-	-	-	-	-	-
Marine	-	-	-	\$20k	-	\$40k	\$20k	\$70k	-	-
Parking Lots	-	\$45k	-	-	-	-	-	-	-	-
Recreation	-	-	-	\$45k	\$120k	-	-	-	-	-
Towers	-	-	-	-	-	-	-	-	-	-
Waste Management	\$16k	\$16k	-	-	-	-	-	-	-	\$150k
<b>TOTAL</b>	<b>\$16k</b>	<b>\$61k</b>	<b>-</b>	<b>\$65k</b>	<b>\$120k</b>	<b>\$40k</b>	<b>\$20k</b>	<b>\$70k</b>	<b>-</b>	<b>\$150k</b>

**Machinery and Equipment**

<b>Segment</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>
Furniture and Fixtures	\$115k	\$60k	\$32k	\$79k	\$28k	\$57k	\$90k	\$37k	\$54k	\$71k
Public Works	\$566k	\$240k	\$388k	-	\$250k	\$284k	-	\$257k	\$166k	\$281k
Waste Management	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>\$681k</b>	<b>\$300k</b>	<b>\$420k</b>	<b>\$79k</b>	<b>\$278k</b>	<b>\$341k</b>	<b>\$90k</b>	<b>\$294k</b>	<b>\$220k</b>	<b>\$352k</b>

**Vehicles**

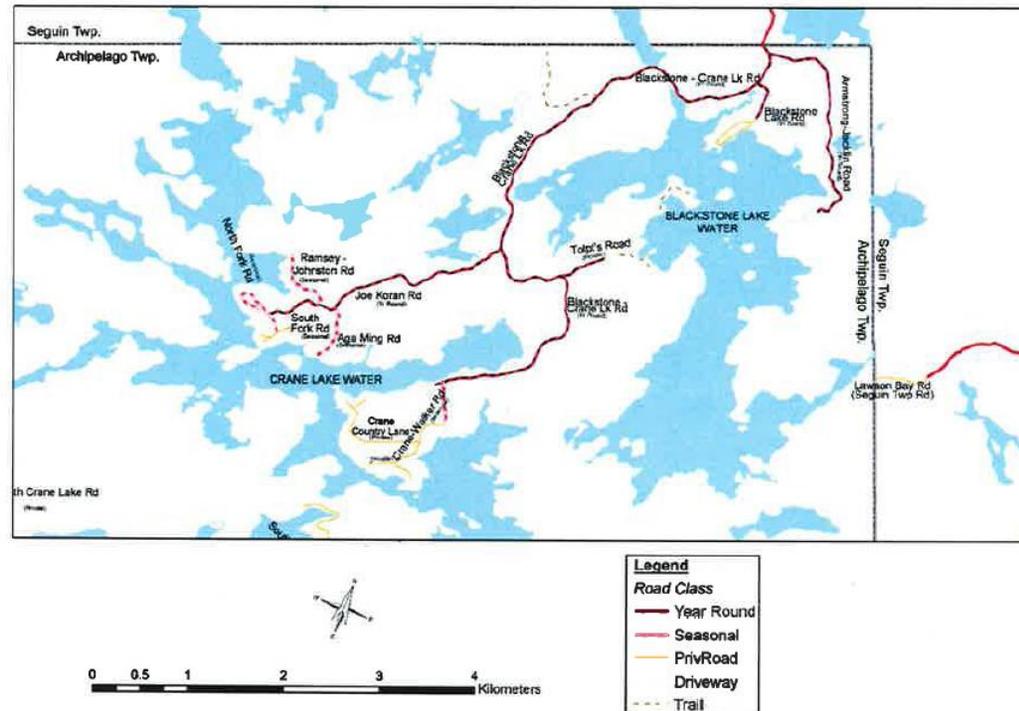
<b>Segment</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>
Heavy Duty	-	-	-	\$400k	-	-	\$613k	-	-	-
Light Duty	\$158k	-	-	\$101k	\$59k	\$70k	-	-	\$158k	-
Marine	\$24k	\$38k	\$32k	-	\$55k	-	-	\$24k	-	\$24k
<b>TOTAL</b>	<b>\$182k</b>	<b>\$38k</b>	<b>\$32k</b>	<b>\$501k</b>	<b>\$114k</b>	<b>\$70k</b>	<b>\$613k</b>	<b>\$24k</b>	<b>\$158k</b>	<b>\$24k</b>

# Appendix C – Level of Service Maps & Photos

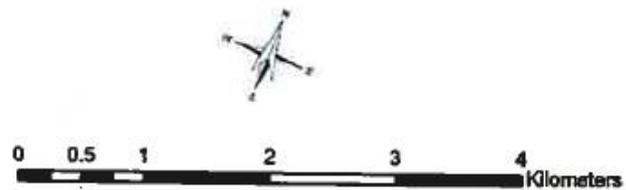
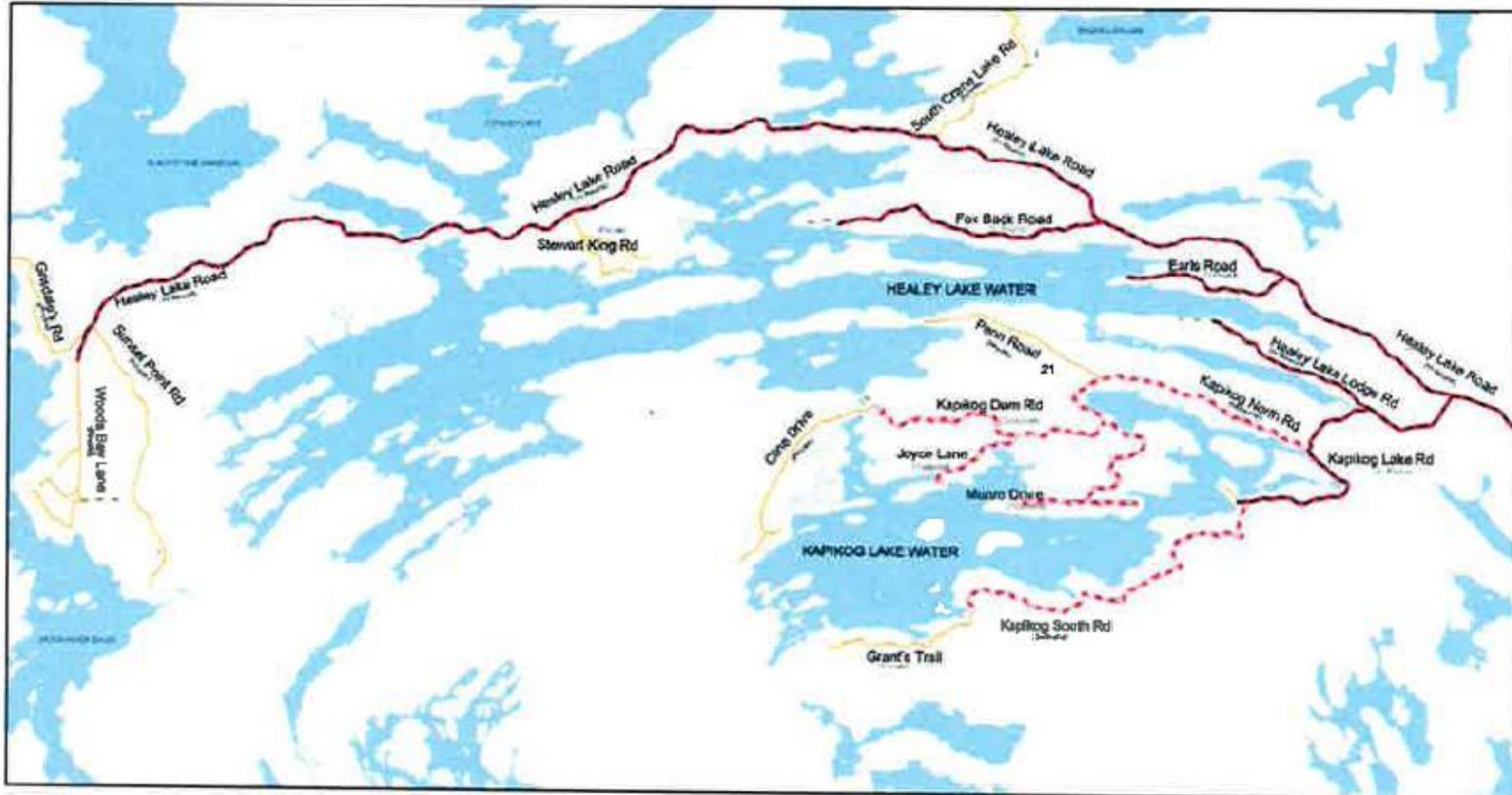
## Road Network Maps

**MAP SHOWING TOWNSHIP'S  
YEAR ROUND AND SEASONAL ROADS  
in the South Archipelago**

**Crane Lake and Blackstone Lake Area**

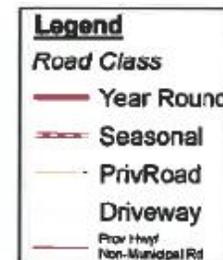
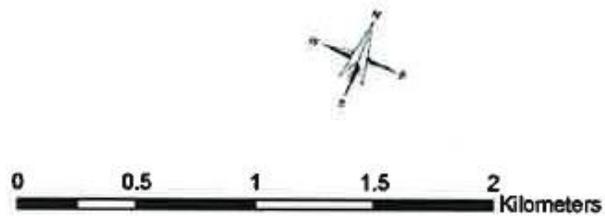
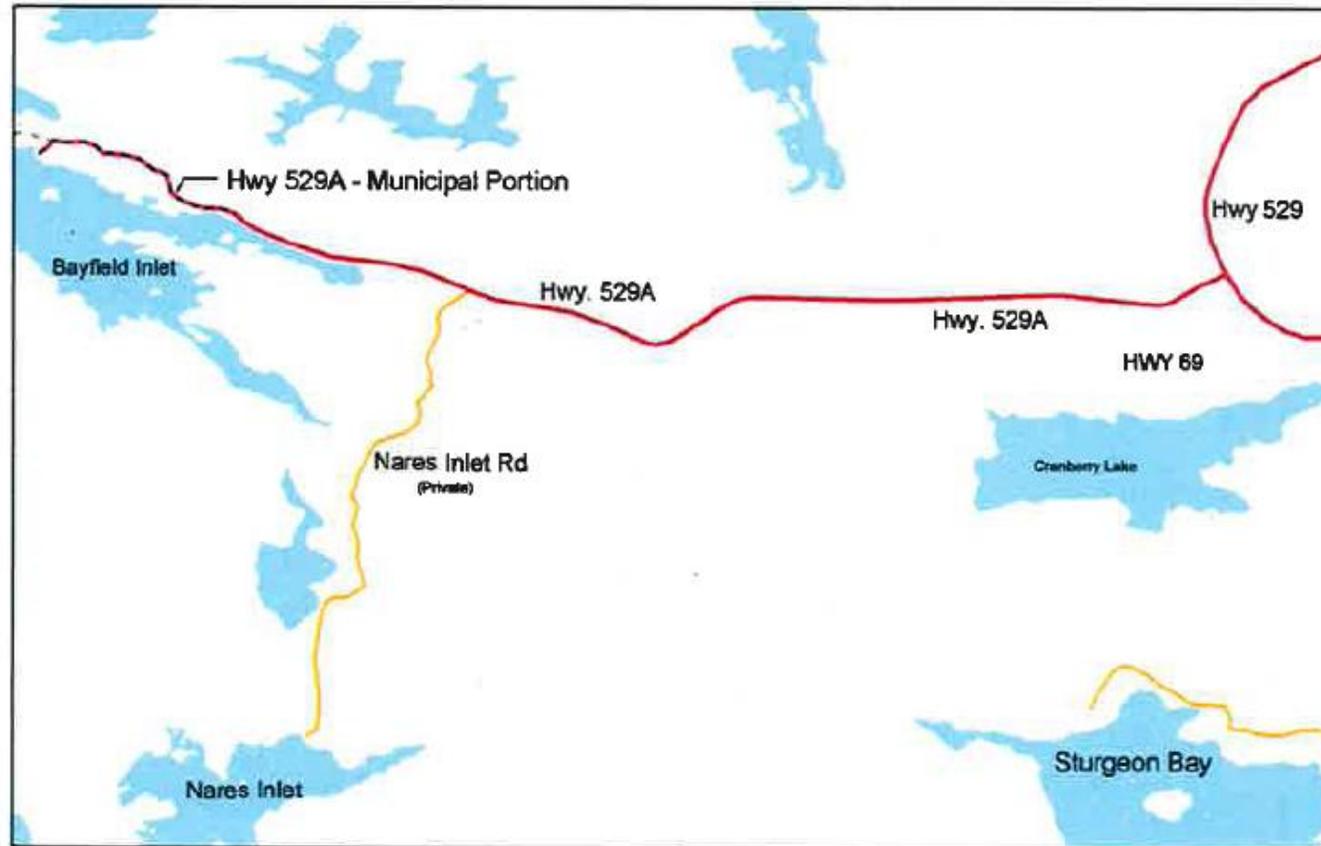


### Healey Lake and Kapikog Lake Area

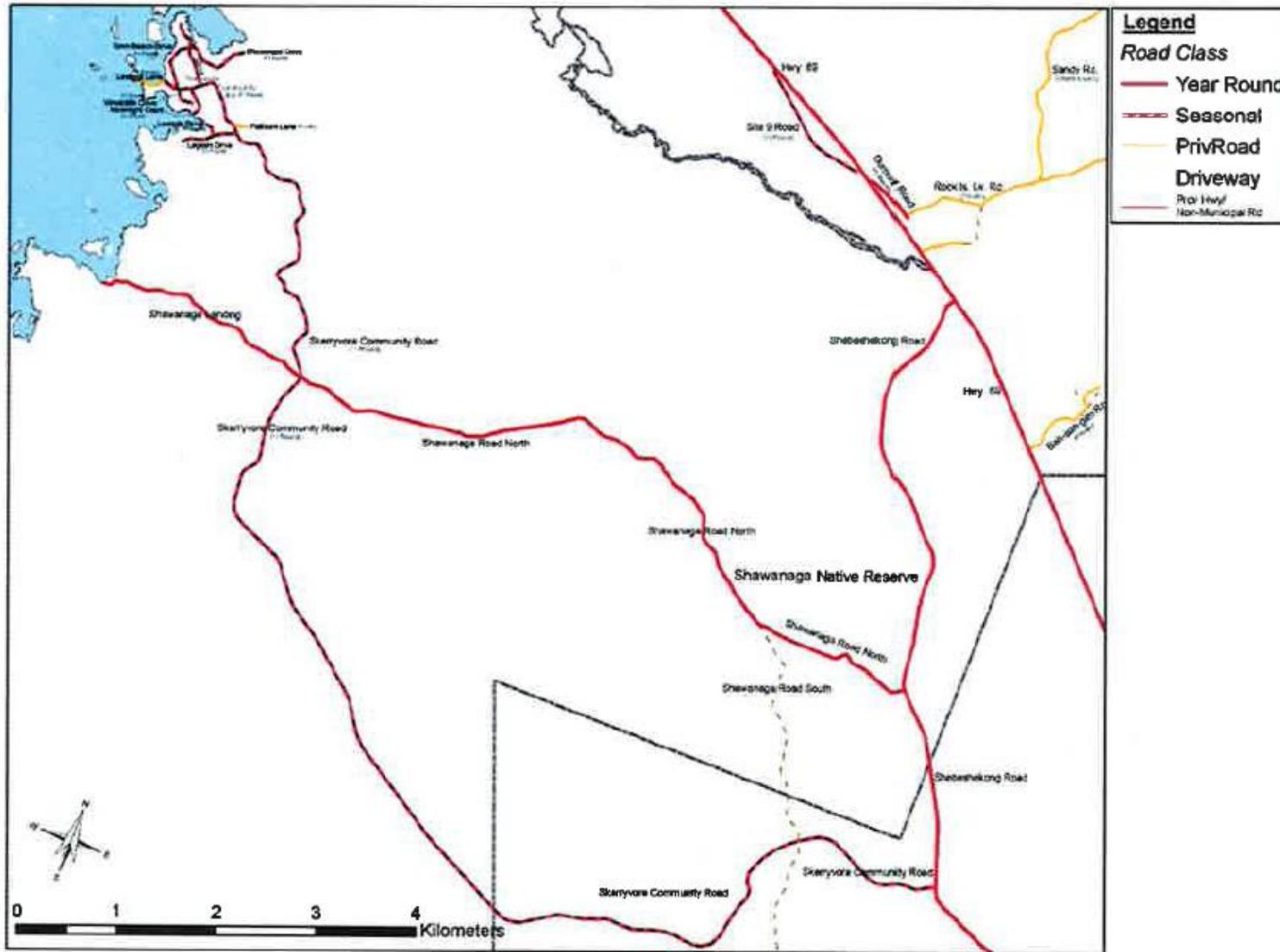


Legend	
Road Class	
	Year Round
	Seasonal
	PrivRoad
	Driveway
	Trail

### Hwy. 529A Road - Municipal Portion



### Skerryvore Community Road and Site 9 Road



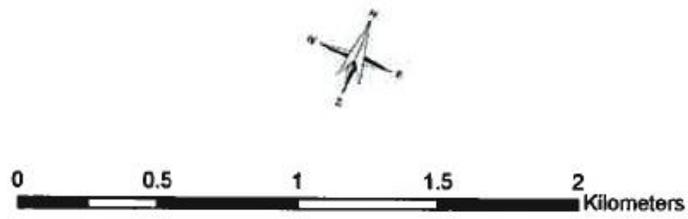
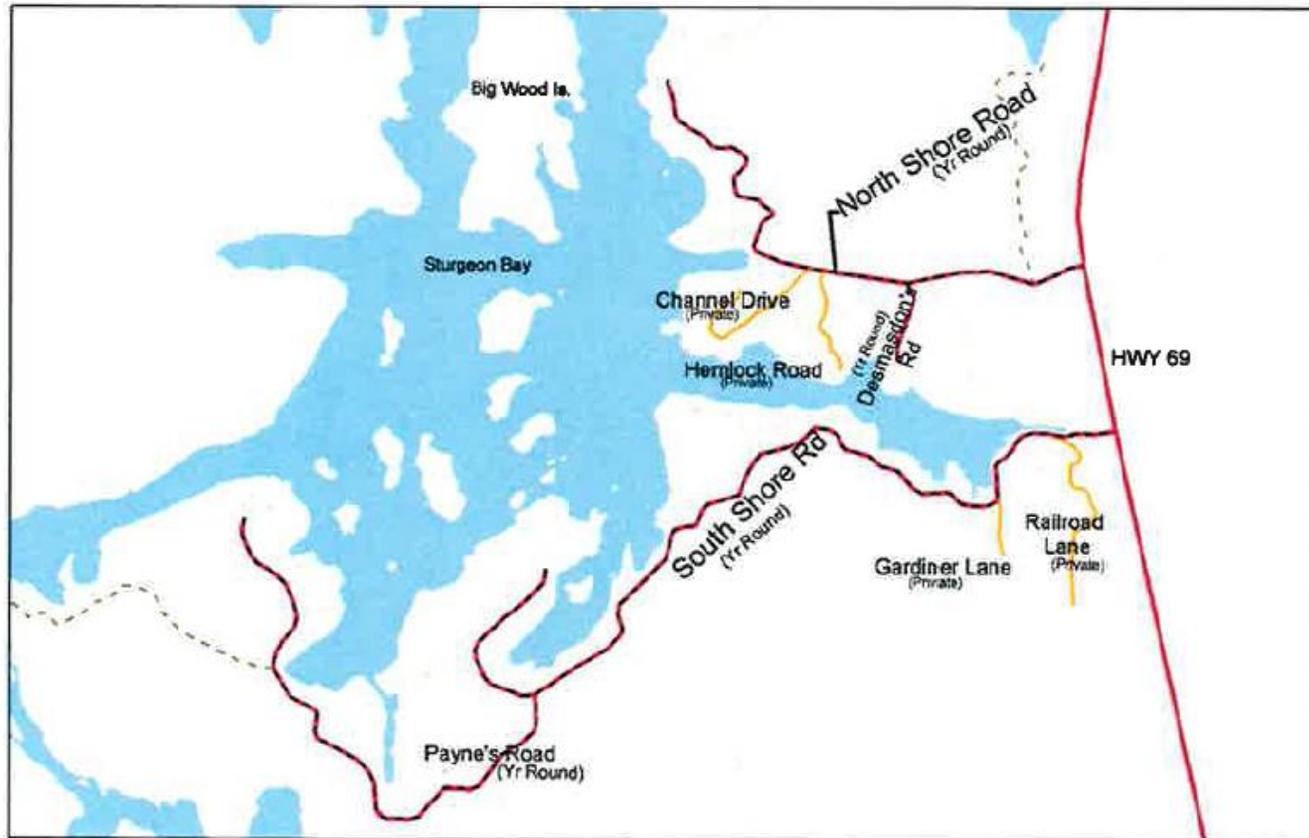
### Skerryvore Community



Georgian Bay



### Pointe au Baril Station Area Roads



**PCI Decision Matrix**

<b>TIME OF IMPROVEMENT</b>	<b>FREEWAY</b>	<b>ARTERIAL</b>	<b>COLLECTOR</b>	<b>LOCAL</b>
Adequate	>85	>85	>80	>80
6 to 10 years	76 to 85	76 to 85	71 to 80	66 to 80
1 to 5 years	66 to 75	56 to 75	51 to 70	46 to 65
NOW Rehabilitate	60 to 65	50 to 55	45 to 50	40 to 45
NOW Reconstruct	<60	<50	<45	<40

## **Images of Bridges and Structural Culverts**

### **Blackstone Lake Road Bridge**





**Kapikog Lake Culvert**



***Skerryvore Road Culvert***



## Buildings

Name	Type	Address	Location
Holiday Cove Marina	Marina		Rose Point Road
Township Boat Launch	Boat Ramp		Woods Bay
Fox Back Road Boat Launch	Boat Ramp		Fox Back Road
Healey Lake Boat Launch	Boat Ramp		Healey Lake Road
Pine Bay Landing	Boat Ramp		Healey Lake Road
Crane Lake Boat Launch	Boat Ramp		Crane Lake Road
Kapikog Lake Boat Launch	Boat Ramp		Kapikog Lk
Bayfield Landing	Boat Ramp		Bayfield Harbour
Naiscoot Public Launch	Boat Ramp		Naiscoot Lk
Pointe au Baril Community Centre	Community Centre	70 South Shore Road	
Georgian Cliffs Memorial Park Cemetery	Cemetery		South Shore Road
Archipelago Township Office	Office	9 James St	
Pointe Au Baril Boat Ramp	Boat Ramp	38 South Shore Road	
Pointe au Baril Nursing Station	Nursing Station	70 South Shore Road	

<b>Name</b>	<b>Type</b>	<b>Address</b>	<b>Location</b>
Archipelago Public Works	Public Works	45 James Bay Junction Road	
Healey Lake Transfer Station	Waste Transfer Station	169 Healey Lake Rd	
Bayfield Transfer Station	Waste Transfer Station	100 Highway 529A	
Woods Bay Transfer Station	Waste Transfer Station	718 Healey Lake Rd	
Skerryvore Transfer Station	Waste Transfer Station	449 Skerryvore Road	
Pointe au Baril Lighthouse	POI	1734 Georgian Bay Water	
Crane Lake Transfer Station	Waste Transfer Station	346 Blackstone-Crane Lake Rd	
Pointe au Baril Transfer Station	Waste Transfer Station	27 South Shore Road	
Site 9 Landfill Site	Waste Transfer Station	10 Site 9 Road	
Sheep Head Transfer Station	Waste Transfer Station	378 Georgian Bay Water	
Devils Elbow Transfer Station	Waste Transfer Station	137 B704 Island	
Pointe Au Baril Public Library	Library	70 South Shore Road	

## Land Improvements

### Pointe au Baril Wharf and Seawall







## Vehicles











## Machinery & Equipment



























# Appendix D – Risk Rating Criteria

## Probability of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score
HCB/LCB Roads	Economic (100%)	Condition	80-100	1
			70-79	2
			65-69	3
			45-64	4
			0-44	5
All (Excluding HCB/LCB Roads)	Economic (100%)	Condition	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5

**Consequence of Failure**

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Bridges & Culverts	Economic (100%)	Replacement Cost	\$0-\$250,000	1
			\$250,001-\$500,000	2
			\$500,001-\$1,000,000	3
			\$1,000,001-\$2,000,000	4
			\$2,000,000+	5
Buildings	Economic (100%)	Replacement Cost	\$0-\$20,000	1
			\$20,001-\$50,000	2
			\$350,001-\$100,000	3
			\$100,001-\$250,000	4
			\$250,000+	5
HCB/LCB Roads	Economic (100%)	Replacement Cost	\$0-\$100,000	1
			\$100,001-\$250,000	2
			\$250,001-\$500,000	3
			\$500,001-\$1,000,000	4

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
			\$1,000,000+	5
Machinery & Equipment, Vehicles	Economic (100%)	Replacement Cost	\$0-\$25,000	1
			\$25,001-\$75,000	2
			\$75,001-\$150,000	3
			\$150,001-\$300,000	4
			\$300,000+	5
Small Equipment	Economic (100%)	Replacement Cost	\$0-\$5,000	1
			\$5,001-\$10,000	2
			\$10,001-\$20,000	3
			\$20,001-\$30,000	4
			\$30,000+	5

# Appendix E – Data Quality Dimensions

The quality of data affects the reliability of its outputs, and the trust organizations have in those outputs, especially when used to inform decisions. As a best practice, the quality of data can be evaluated based on the six data quality dimensions. These quality dimensions are as follows:

1. **Accuracy:** The information collected reflects reality and can be confirmed with a verifiable source (i.e., VIN information). An example of accuracy not being met is the in-service year on record is 1950 and the asset model indicates a service year of 1980. Accurate reporting assists in powerful and trusted reporting.
2. **Completeness:** Data is comprehensively collected so that it can deliver meaningful inferences and effectively inform decisions. For example, required fields are populated for all assets.
3. **Consistency:** Data on the same asset is consistent across multiple sources if applicable. For example, information in the Asset Management System matches information in the finance system.
4. **Timeliness:** Data is available when it is needed. This often requires limited lag time between the event that generates the asset data (i.e., condition assessment) and the updates to the system to reflect the event.
5. **Validity:** Consistent data format that is supported by any associated standards or structures. For example, the asset in service date is consistently formatted YYYY-MM-DD and not sometimes YYYY-DD-MM and month value is never greater than 12.
6. **Uniqueness:** Each asset appears only once in the system and there is no data duplication or overlaps. For example, each asset has a unique asset ID, no duplication of asset information.

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