

Asset Management Plan 2025

Township of Burpee and Mills

April 2025



This Asset Management Plan was prepared by:



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

Key Statistics

\$34m 2023 Replacement Cost of Asset Portfolio

\$116k Replacement Cost of Infrastructure Per Household

90% Percentage of Assets in Fair or Better Condition

86% Percentage of Assets with Assessed Condition Data

\$489k Annual Capital Infrastructure Deficit

20 Years Recommended Timeframe for Eliminating Annual Infrastructure Deficit

1.96% Target Reinvestment Rate

0.53% Actual Reinvestment Rate

Table of Contents

1. Executive Summary.....	4
2. Introduction & Context.....	7
3. Portfolio Overview – State of the Infrastructure	25
4. Road Network.....	33
5. Culverts	43
6. Buildings	51
7. Land Improvements	59
8. Vehicles	66
9. Machinery & Equipment	74
10. Growth	82
11. Financial Strategy	86
12. Recommendations & Key Considerations	95
1. Appendix A – Infrastructure Report Card.....	98
2. Appendix B – 10-Year Capital Requirements	99
3. Appendix C – Level of Service Maps & Photos	103
4. Appendix D – Risk Rating Criteria.....	104

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

This AMP includes the following asset categories:

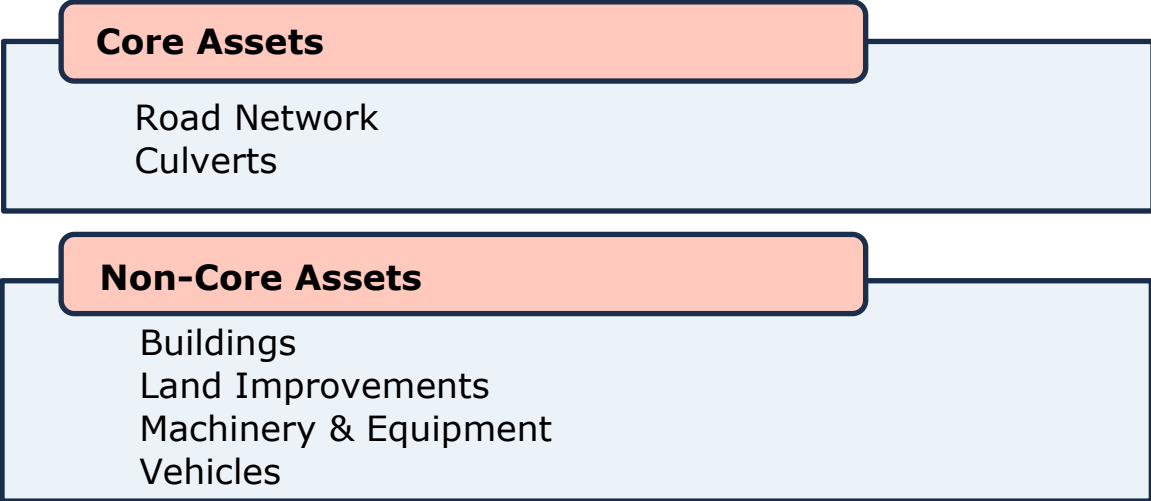


Figure 1 Core and Non-Core Asset Categories

1.2 O. Reg. 588/17 Compliance

With the development of this AMP the Municipality has achieved compliance with July 1, 2025, requirements under O. Reg. 588/17. This includes requirements for current and proposed levels of service and inventory reporting for all asset categories. More details on compliance can be found in section 2.5.1 O. Reg. 588/17 Compliance Review.

1.3 Findings

The overall replacement cost of the asset categories included in this AMP totals \$34 million. 90% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 86% of assets. For the remaining 14% 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 (LCB roads and gravel roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current/proposed 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 \$668,000. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$179,000 towards capital projects or reserves per year. As a result, there is currently an annual funding gap of \$489,000.

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 graphics shows annual tax change required to eliminate the Township’s infrastructure deficit based on a 20-year plan:

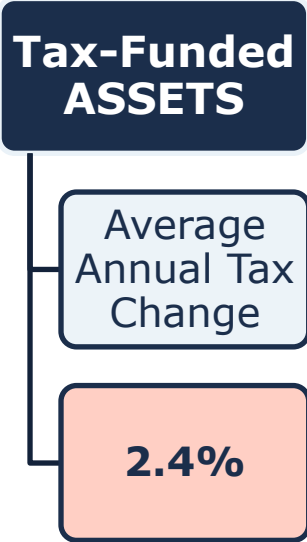


Figure 2 Proposed Tax Changes

2. Introduction & Context

2.1 Community Profile

Census Characteristic	Township of Burpee and Mills	Ontario
Population 2021	382	14,223,942
Population Change 2016-2021	11.4%	5.8
Total Private Dwellings	191	5,929,250
Population Density	1.8/km ²	15.9/km ²
Land Area	217.33 km ²	892,411.76 km ²

Table 1 Township of Burpee and Mills Community Profile

The Township of Burpee and Mills is a single-tier township municipality on Manitoulin Island. The Township is comprised of the communities of Burpee, Elizabeth Bay, Evansville and Poplar.

Burpee and Mills offers a tranquil blend of rural and cottage living on the western end of Manitoulin Island. The township's vast landscapes feature forests, lakes, and hills, ideal for outdoor activities like fishing, hiking, and hunting. Agriculture and forestry drive the local economy, with numerous farms contributing to sustainable food production. Governed by a municipal council, the community enjoys a close-knit, rural lifestyle enriched by Indigenous and European cultural heritage. Essential services such as road maintenance, waste management, and community facilities support the residents. Accessible by road and ferry, Burpee and Mills provides a peaceful retreat with necessary amenities and a strong connection to nature.

The township has experienced significant growth between the past two census years (2016-2021). During this period, the Municipality saw an 11.4% increase in population, resulting in 39 new residents. The demographic profile of the Municipality reveals an older population, with the 65+ age group constituting a significant 36.4% of the population, which is roughly double the provincial average of 18.5%.

In conclusion, the Township of Burpee and Mills stands out as a picturesque and tranquil community on Manitoulin Island. With its scenic landscapes, vibrant agricultural economy, and essential services, it offers an ideal blend of rural and cottage living.

The significant population growth in recent years, particularly among older adults, highlights its appeal as a peaceful and supportive environment. Burpee and Mills remains a welcoming retreat, deeply connected to nature and enriched by its cultural heritage.

2.2 Climate Change

Climate change can cause severe impacts on human and natural systems around the world. The effects of climate change include increasing temperatures, higher levels of precipitation, droughts, and extreme weather events. In 2019, Canada's Changing Climate Report (CCCR 2019) was released by Environment and Climate Change Canada (ECCC).

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this time period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012. By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

The changing climate poses a significant risk to the Canadian economy, society, environment, and infrastructure. The impacts on infrastructure are often a result of climate-related extremes such as droughts, floods, higher frequency of freeze-thaw cycles, extended periods of high temperatures, high winds, and wildfires. Physical infrastructure is vulnerable to damage and increased wear when exposed to these extreme events and climate variabilities. Canadian Municipalities are faced with the responsibility to protect their local economy, citizens, environment, and physical assets.

2.2.1 Township of Burpee and Mills Climate Profile

Burpee and Mills is located on Manitoulin Island along Lake Huron and Georgian Bay. The County is expected to experience notable effects of climate change which include higher average annual temperatures, an increase in total annual precipitation, and an increase in the frequency and severity of extreme events. According to Climatedata.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – the Township of Burpee and Mills may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1971 and 2000 the annual average temperature was 5.4 °C
- Under a high emissions scenario, the annual average temperatures are projected to increase to 8.1 °C by the year 2050 and over 12.0°C by the end of the century.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, the Township is projected to experience a 14% increase in precipitation by the year 2050 and a 17% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

- It is expected that the frequency and severity of extreme weather events will change.

2.2.2 Integration of Climate Change and Asset Management

Asset management practices aim to deliver sustainable service delivery - the delivery of services to residents today without compromising the services and well-being of future residents. Climate change threatens sustainable service delivery by reducing the useful life of an asset and increasing the risk of asset failure. Desired levels of service can be more difficult to achieve as a result of climate change impacts such as flooding, high heat, drought, and more frequent and intense storms.

In order to achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices. The integration of asset management and climate change adaptation observes industry best practices and enables the development of a holistic approach to risk management.

2.3 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.

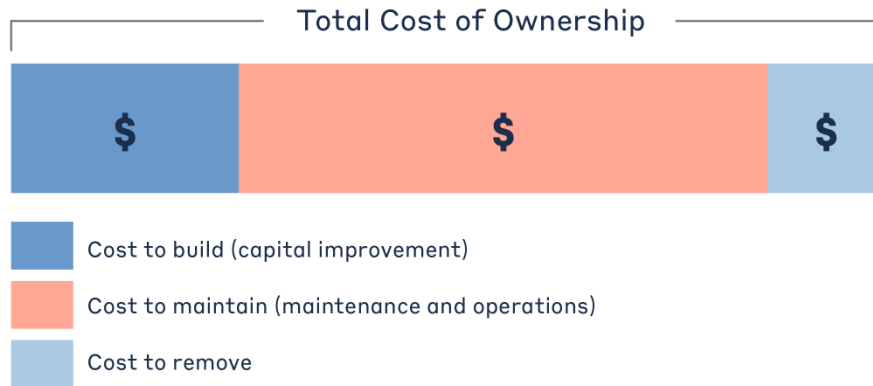


Figure 3 Total Cost of Asset Ownership

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.

2.3.1 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.

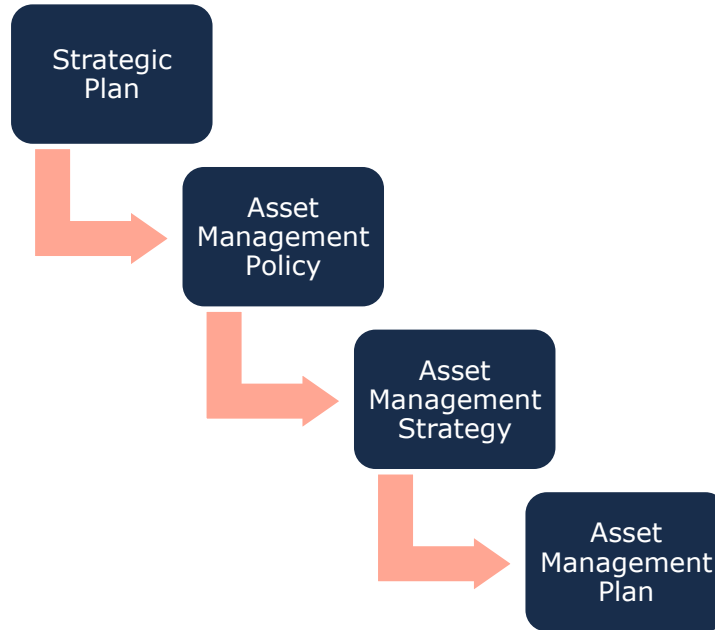


Figure 4 Foundational Asset Management Documents

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 commitment to the development and implementation of the Township of Burpee and Mills' asset management program. It guides the organization-wide asset management activities, facilitates logical and evidence-based decision making for the management of municipal infrastructure assets and to support the delivery of sustainable community services.

The Township adopted the Asset Management Policy in accordance with Ontario Regulation 588/17 in August 2020.

The approval of this policy is important to integrate the Township's strategic mission, vision and goals with its asset management program, and ensuring the critical municipal infrastructure assets and vital services are maintained and provided to the community in a reliable, sustainable manner. The essential services include transportation networks, facilities and parks and other infrastructure.

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.

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

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.

The Township's previous iteration of the AMP was prepared in 2022 by PSD Citywide.

This document is an AMP that uses the most recent asset inventory and has been prepared in accordance with O.Reg 588/17.

2.3.2 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 an asset’s characteristics, location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its intended function, and may be characterized by increased cost, risk and even service disruption.

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

There are several field intervention activities that are available to extend the life of an asset. These activities can 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.

Lifecycle Activity	Cost	Typical Associated Risks
<p>Maintenance</p> <p>Activities that prevent defects or deteriorations from occurring</p>	\$	<ul style="list-style-type: none"> • Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions; • Diminishing returns associated with excessive maintenance activities, despite added costs; • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
<p>Rehabilitation/ Renewal</p>	\$\$\$	<ul style="list-style-type: none"> • Useful life may not be extended as expected;

Lifecycle Activity	Cost	Typical Associated Risks
<p>Activities that rectify defects or deficiencies that are already present and may be affecting asset performance</p>		<ul style="list-style-type: none"> • May be costlier in the long run when assessed against full reconstruction or replacement; • Loss or disruption of service, particularly for underground assets;
<p>Replacement/ Reconstruction Asset end-of-life activities that often involve the complete replacement of assets</p>	<p>\$\$\$\$ \$</p>	<ul style="list-style-type: none"> • Incorrect or unsafe disposal of existing asset; • Costs associated with asset retirement obligations; • Substantial exposure to high inflation and cost overruns; • Replacements may not meet capacity needs for a larger population; • Loss or disruption of service, particularly for underground assets;

Table 2 Lifecycle Management: Typical Lifecycle Interventions

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

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 municipality. 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.

Formula to Assess Risk of Assets

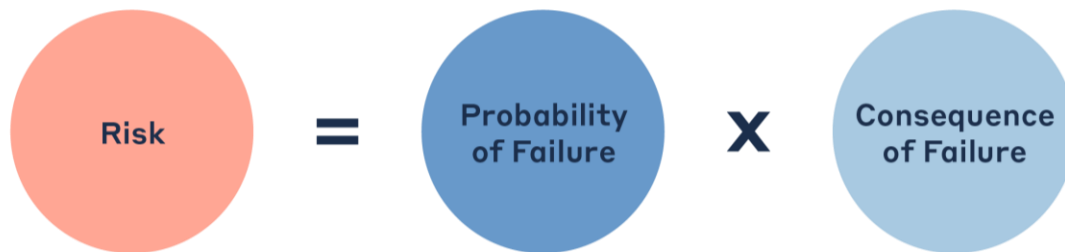


Figure 5 Risk Equations

The approach used in this AMP relies on a quantitative measurement of risk associated with each asset. The probability and consequence of failure are each scored from 1 to 5, producing a minimum risk index of 1 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.

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.

Type of Consequence	Description
<i>Direct Financial</i>	Direct financial consequences are typically measured as the replacement costs of the asset(s) affected by the failure event, including interdependent infrastructure.
<i>Economic</i>	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.
<i>Socio-political</i>	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 Municipality.
<i>Environmental</i>	Environmental consequences can include pollution, erosion, sedimentation, habitat damage, etc.
<i>Public Health and Safety</i>	Adverse health and safety impacts may include injury or death, or impeded access to critical services.
<i>Strategic</i>	These include the effects of an asset’s failure on the community’s long-term strategic objectives, including economic development, business attraction, etc.

Table 3 Risk Analysis: Types of Consequences of Failure

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.

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. This AMP includes those LOS that are required under O. Reg. 588/17 as well as any additional metrics the Township wishes to track.

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 (Roads and Culverts) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core asset categories, the Township has determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

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 (Roads and Culverts) the province, through O. Reg. 588/17, has also provided technical metrics that are required to be included in this AMP. For non-core asset categories, the Township has determined the technical metrics that will be used to determine the technical level of service provided. These metrics can be found in the Levels of Service subsection within each asset category.

Proposed Levels of Service

This AMP focuses on both the current and proposed level of service provided to the community, in accordance with O. Reg. 588/17.

Proposed levels of service should be realistic and achievable within the timeframe outlined by the Township. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals and long-term sustainability.

As per O. Reg. 588/17, the Township's proposed level of service must:

- i. Explain why the proposed levels of service are appropriate:
 - a. Discuss associated risks
 - b. How they differ from current levels of service
 - c. Whether the proposed levels of service are achievable
 - d. Discuss the Township's ability to afford the proposed level of service
- ii. Have a proposed performance metric
- iii. Have a lifecycle management and financial strategy
- iv. Discuss how assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy

2.4 Scope & Methodology

2.4.1 Asset Categories for this AMP

This asset management plan for the Township of Burpee and Mills 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.

The AMP summarizes the state of the infrastructure for the Township's asset portfolio, establishes current levels of service, proposed 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.

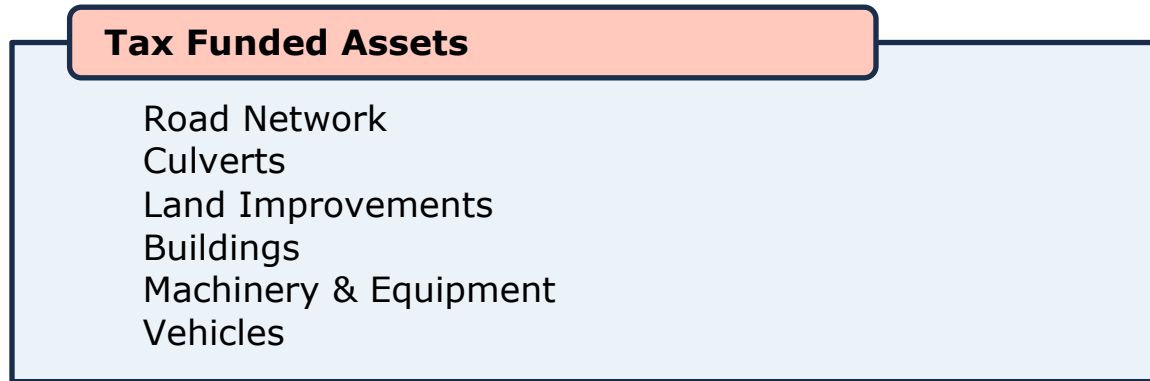


Figure 6 Tax Funded Asset Categories

2.4.2 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 Municipality. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.4.3 Deriving Replacement Costs

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

User-Defined Cost and Cost 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.

2.4.4 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

2.4.5 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

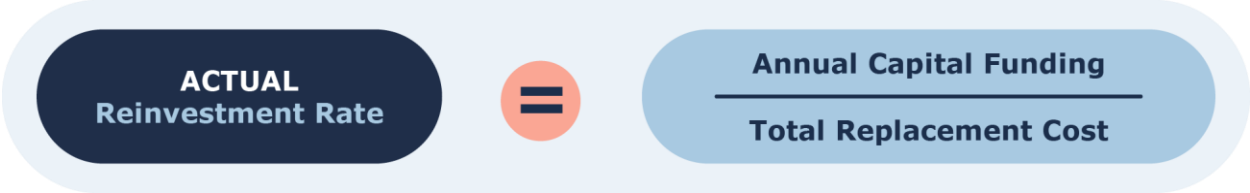


Figure 9 Actual Reinvestment Rate Calculation

2.4.6 Deriving Asset Condition

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

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the Township’s asset portfolio. The table below 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.

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

Table 4 Standard Condition Rating Scale

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.

Condition vs. Suitability

It is important to note that condition is only one aspect of determining an asset's suitability to providing the service intended. Other factors, such as capacity, should be considered on a category level.

For example, a Township Hall Office Facility may be in good condition with sufficient service life remaining, but only has office space for 20 employees. If the municipality requires office space for 30 employees, solutions should be considered which may include replacement amongst other alternatives such as secondary office space, remote work options, etc. As these considerations are nuanced for the specific asset, suitability factors may not be directly addressed as part of this Asset Management Plan.

2.5 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)¹. 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.

¹ O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure
<https://www.ontario.ca/laws/regulation/170588>

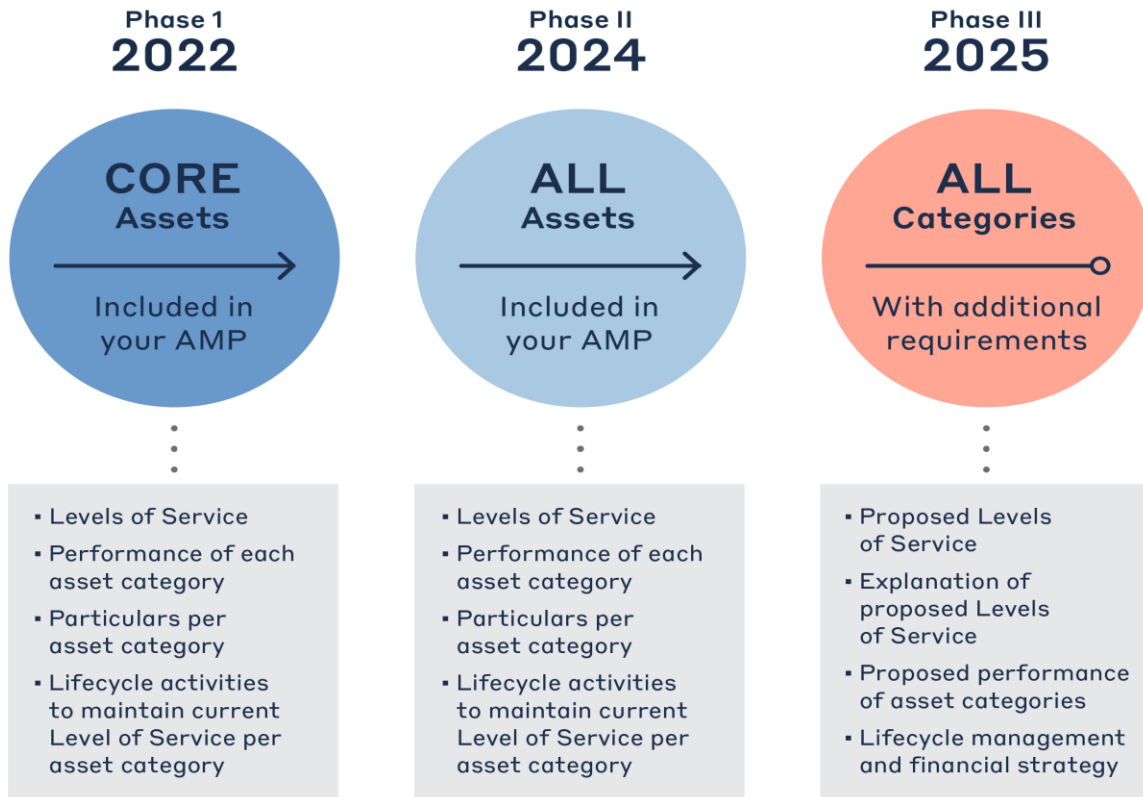


Figure 10 O. Reg. 588/17 Requirements and Reporting Deadlines

2.5.1 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)	4.1 – 9.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1 – 9.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.3 – 9.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.2 – 9.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.4 – 9.4	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.7 – 9.7	Complete
Current performance measures in each category	S.5(2), 2	4.7 – 9.7	Complete
Proposed levels of service in each category	S.6	4.8 – 9.8	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.4 – 9.4	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)	10.1 – 10.2	Complete

Table 5 O. Reg. 588/17 Compliance Review

3. Portfolio Overview – 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 Portfolio Overview

3.1.1 Total Replacement Cost of Asset Portfolio

The nine asset categories analyzed in this Asset Management Plan have a total current replacement cost of \$34 million. This estimate was calculated using user-defined costing, as well as inflation of historical or original costs to current date. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today. Figure 11 illustrates the replacement cost of each asset category; at 91% of the total portfolio, the road network forms the largest share of the Township’s asset portfolio.

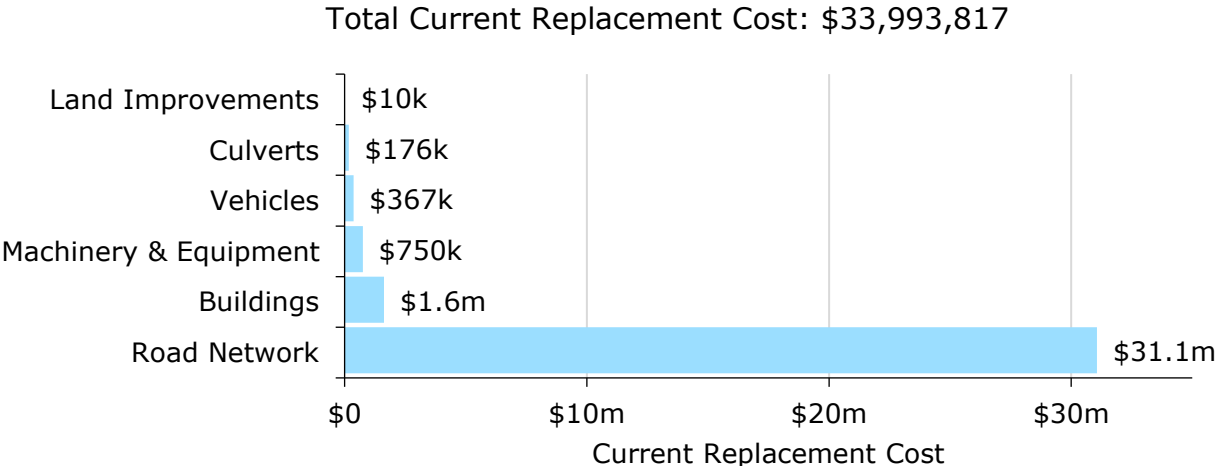


Figure 11 Current Replacement Cost by Asset Category

3.1.2 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 \$668,000, for a target portfolio reinvestment rate of 1.96%. Currently, the annual investment from sustainable revenue sources is \$179,000, for a current portfolio reinvestment rate of 0.53%. Target and current re-investment rates by asset category are detailed below.

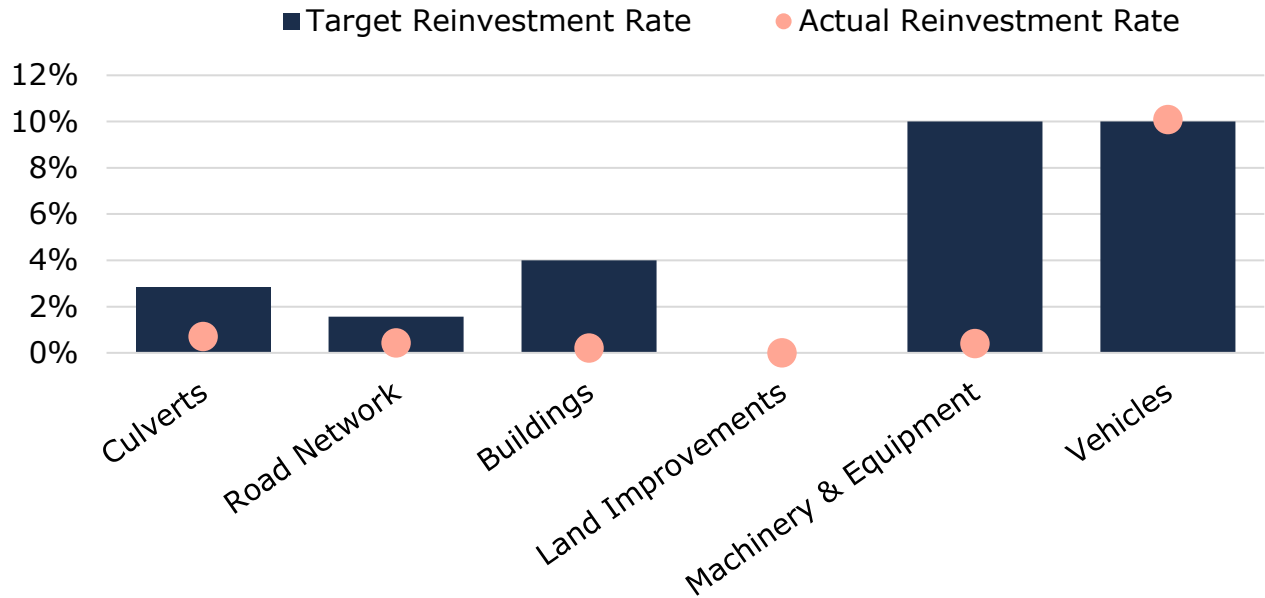


Figure 12 Current Vs. Target Reinvestment Rate

3.1.3 Condition of Asset Portfolio

Figure 13 and Figure 14 summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition and age-based analysis, 90% of the Township’s infrastructure portfolio is in fair or better condition, with the remaining 10% in poor or worse condition. Typically, assets in poor or worse 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 worse.

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

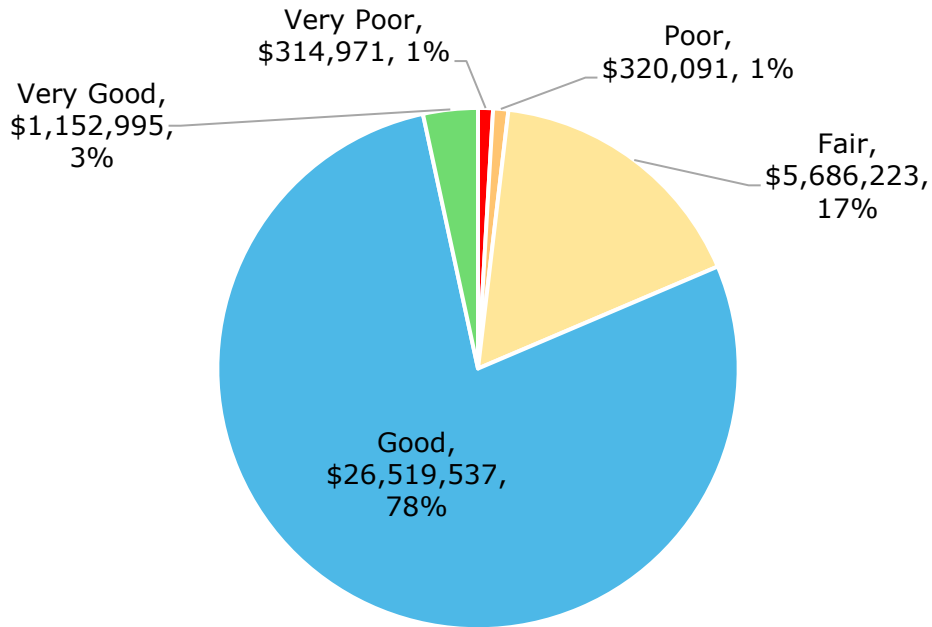


Figure 13 Asset Condition: Portfolio Overview

As further illustrated in Figure 14 at the category level, the majority of major, core infrastructure including the road network and culverts are in fair or better condition, based on in-field condition assessment data and age-based condition projections. See Table 6 for details on how condition data was derived for each asset segment.

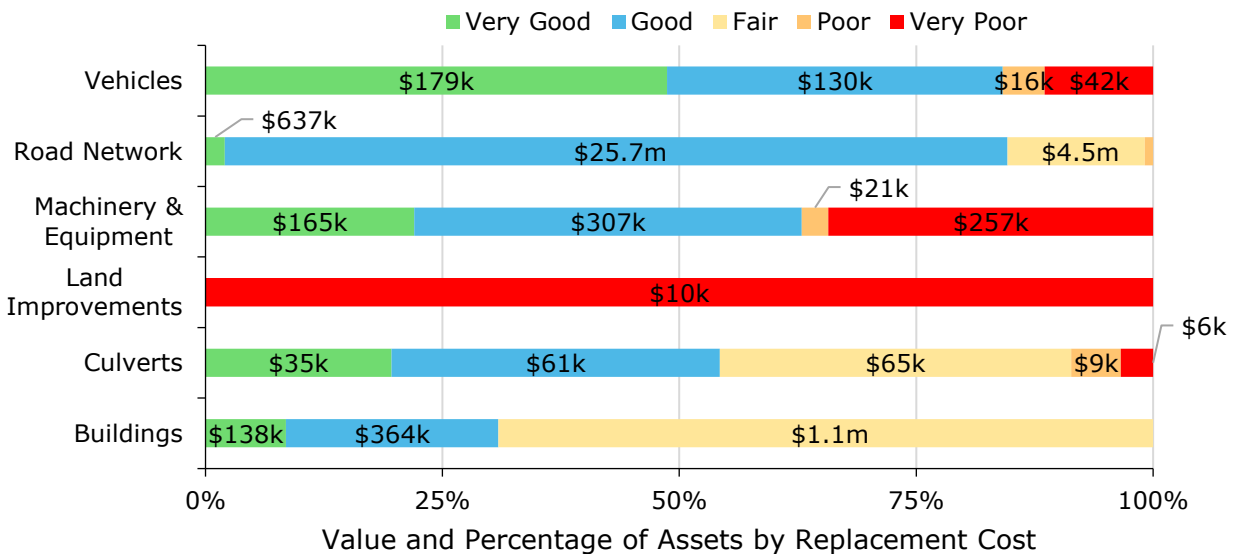


Figure 14 Asset Condition by Asset Category

Buildings and facilities are not componentized into their individual major elements and components. This limits the validity of current condition estimates as they are presented only at the 'parent' asset level, such as 'Municipal Office'.

Source of Condition Data

This AMP relies on assessed condition for 86% 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. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment(s)	% of Assets with Assessed Conditions	Source of Condition Data
Road Network	All	91%	Staff Assessments
Culverts	All	100%	Staff Assessments
Buildings	All	0%	Age-Based
Land Improvements	All	100%	Staff Assessments
Vehicles	All	100%	Staff Assessments
Machinery & Equipment	All	63%	Staff Assessments

Table 6 Source of Condition Data

3.1.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 3% of the Township's assets will require replacement within the next 10 years (not accounting for asset replacement backlog). Details of the capital requirements are identified in each asset section.

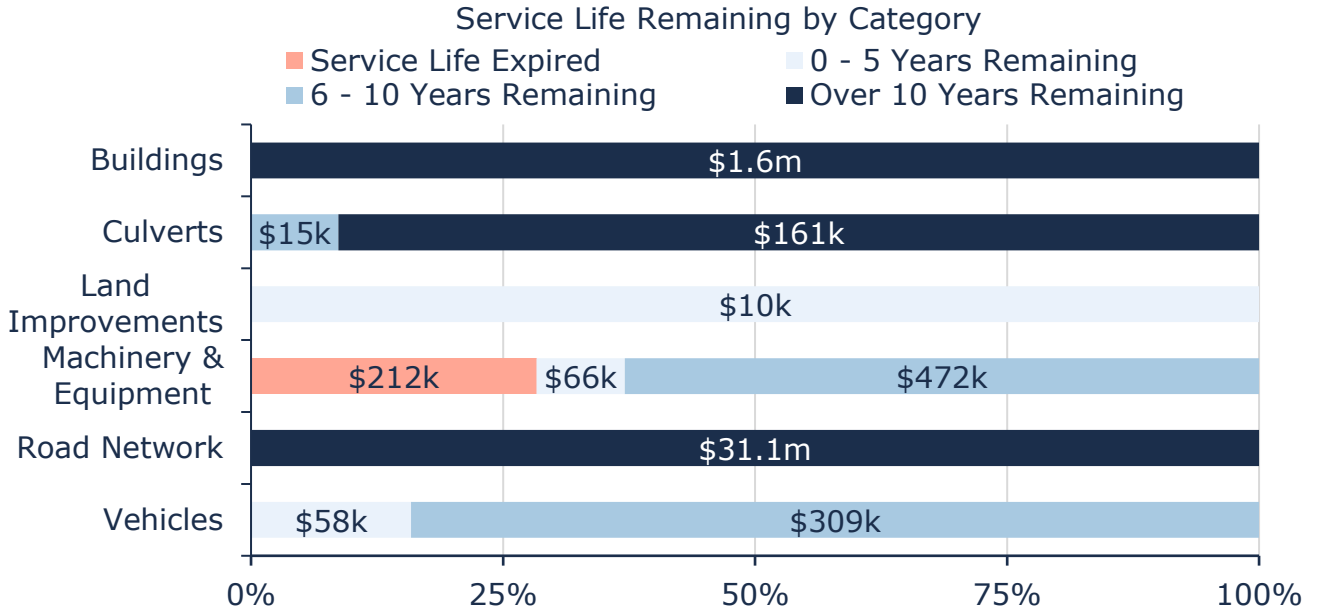


Figure 15: Service Life Remaining by Asset Category

3.1.5 Risk Matrix

Using the risk equation and preliminary risk models, Figure 16 shows how assets across the different asset categories are stratified within a risk matrix.

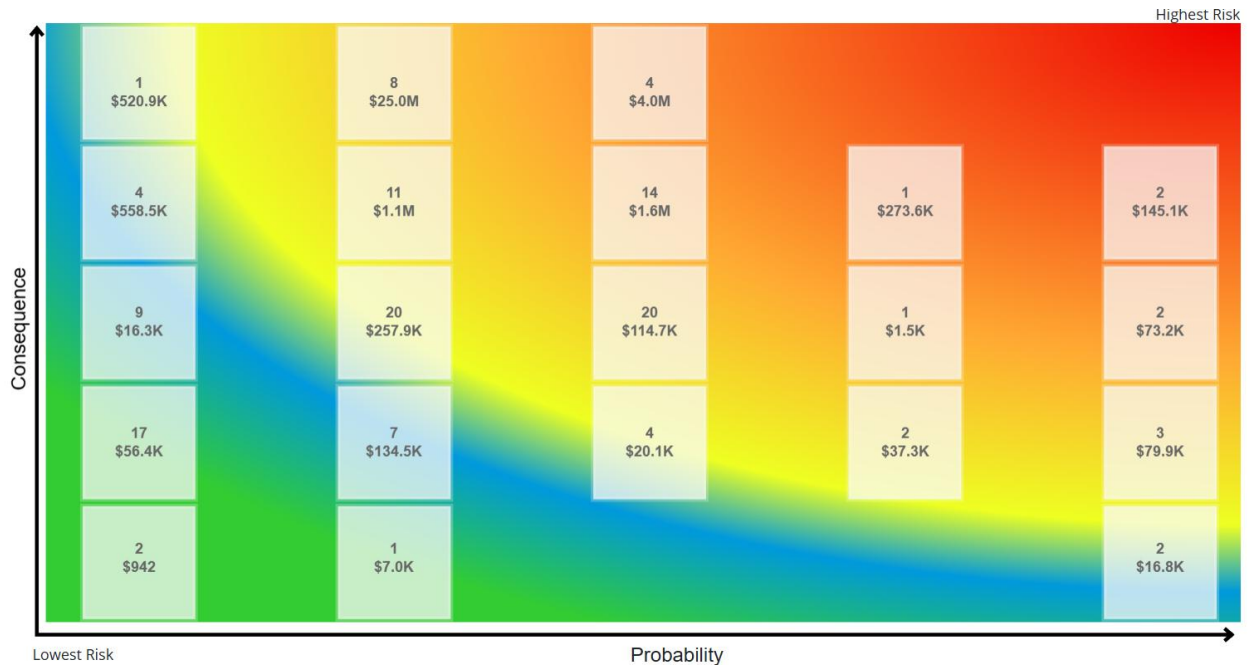


Figure 16 Risk Matrix: All Assets

The analysis shows that based on current risk models, approximately 3% of the Township's assets, with a current replacement cost of approximately \$1.1 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 matrix. 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.

3.1.6 Forecasted Capital Requirements

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 65-year time horizon. On average, \$668,000 is required each year (\$3.3m for 5 years) to remain current with capital replacement needs for the Township's asset portfolio, represented by the 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.

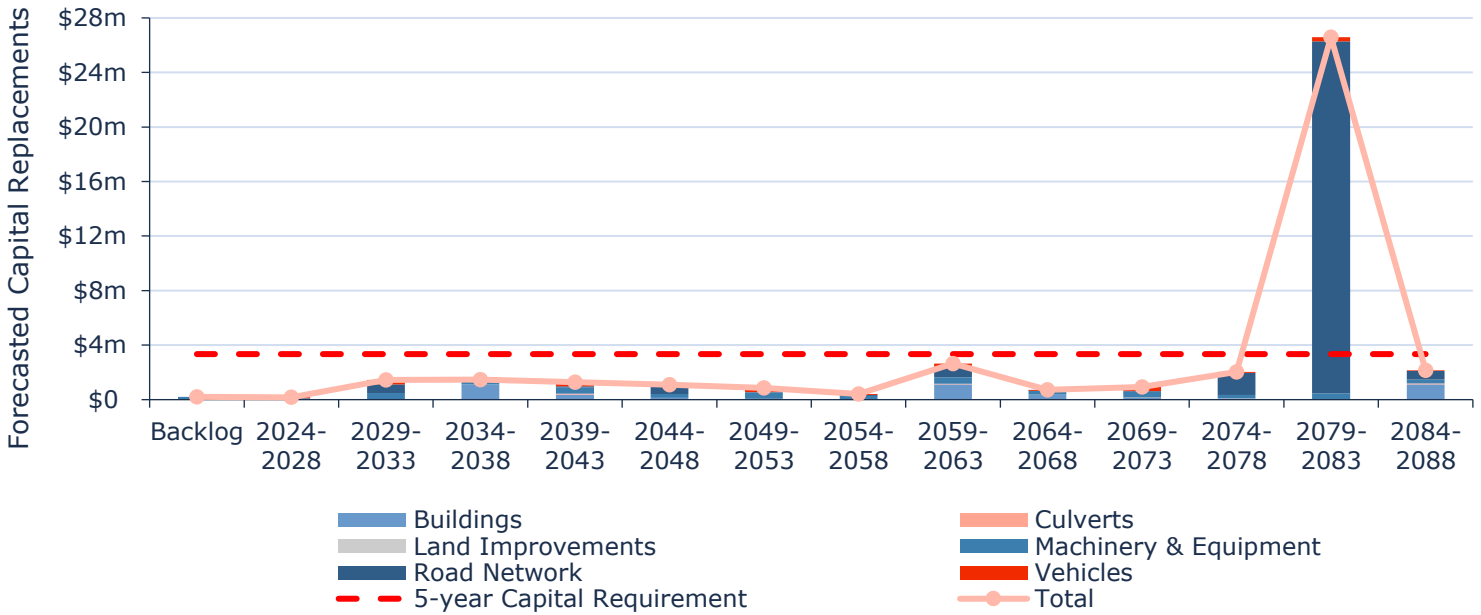


Figure 17 Capital Replacement Needs: Portfolio Overview 2024-2088

The chart also illustrates a backlog of \$212,000, comprising assets that remain in service beyond their estimated useful life. 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 can then be used to prioritize projects, continuously refine estimates for both backlogs and ongoing capital needs and help select the right treatment for each asset. In addition, more effective componentization of buildings will improve these projections, including backlog estimates.

Core Assets

Road Network



Replacement Cost	Average Condition	Financial Capacity	
\$31 m	Good	Annual Requirement:	\$486,000
		Funding Available:	\$134,000
		Annual Deficit:	\$352,000

Culverts



Replacement Cost	Average Condition	Financial Capacity	
\$176 k	Good	Annual Requirement:	\$5,000
		Funding Available:	\$1,200
		Annual Deficit:	\$3,800

4. Road Network

The Township’s road network comprises the largest share of its infrastructure portfolio, with a current replacement cost of more than \$31 million. The Township also owns and manages other supporting infrastructure and capital assets, including signs.

4.1 Inventory & Valuation

Table 7 summarizes the quantity and current replacement cost of the Township’s various road network assets as managed in its primary asset management register, Citywide.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Gravel Roads	13	Length (km)	\$2,895,000	CPI
LCB Roads	49	Length (km)	\$28,072,000	CPI
Signs	91	Quantity	\$99,000	CPI
TOTAL			\$31,067,000	

Table 7 Detailed Asset Inventory: Road Network

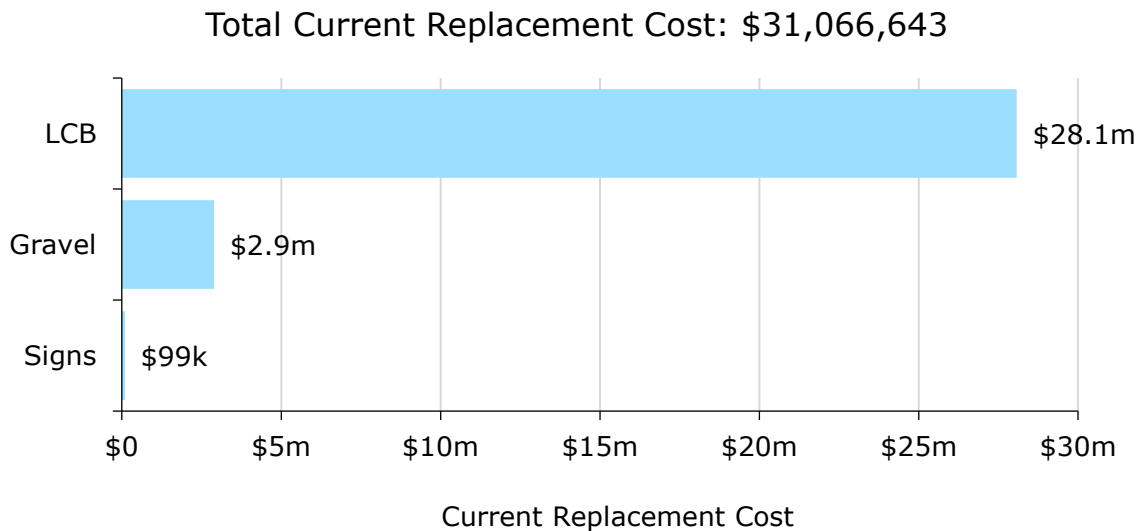


Figure 18 Portfolio Valuation: Road Network

4.2 Asset Condition

Figure 19 summarizes the replacement cost-weighted condition of the Township’s road network. Based on age, 91% of assets are in fair or better condition; the remaining 9% of assets are in poor to very poor condition.

Assets in poor or worse condition 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. As illustrated in Figure 20, the majority of the Township’s road network assets are in good condition.

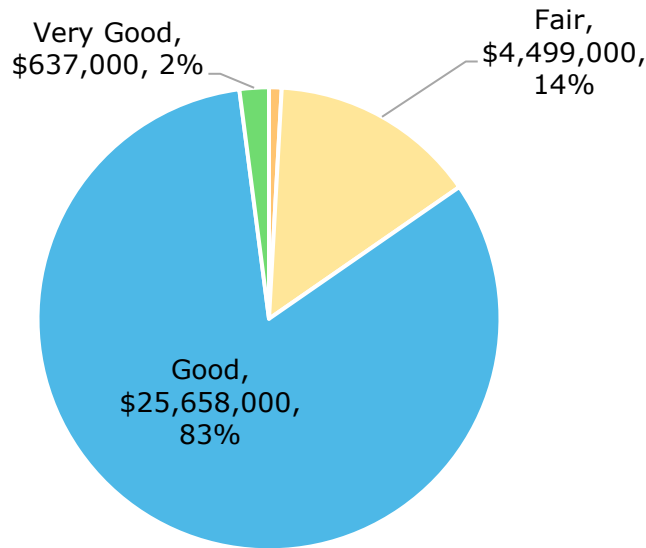


Figure 19 Asset Condition: Road Network Overall

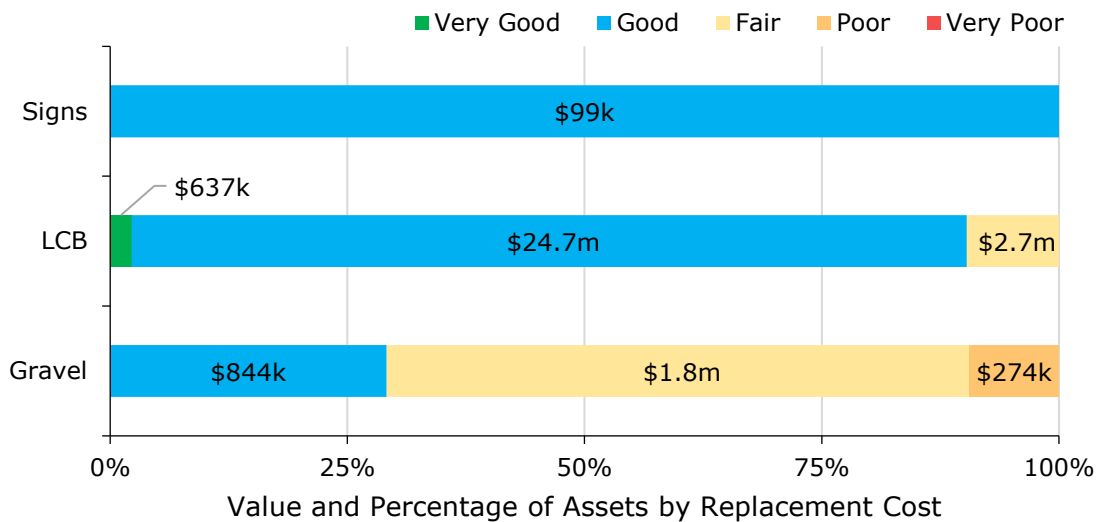


Figure 20 Asset Condition: Road Network by Segment

4.3 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.

Figure 21 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.

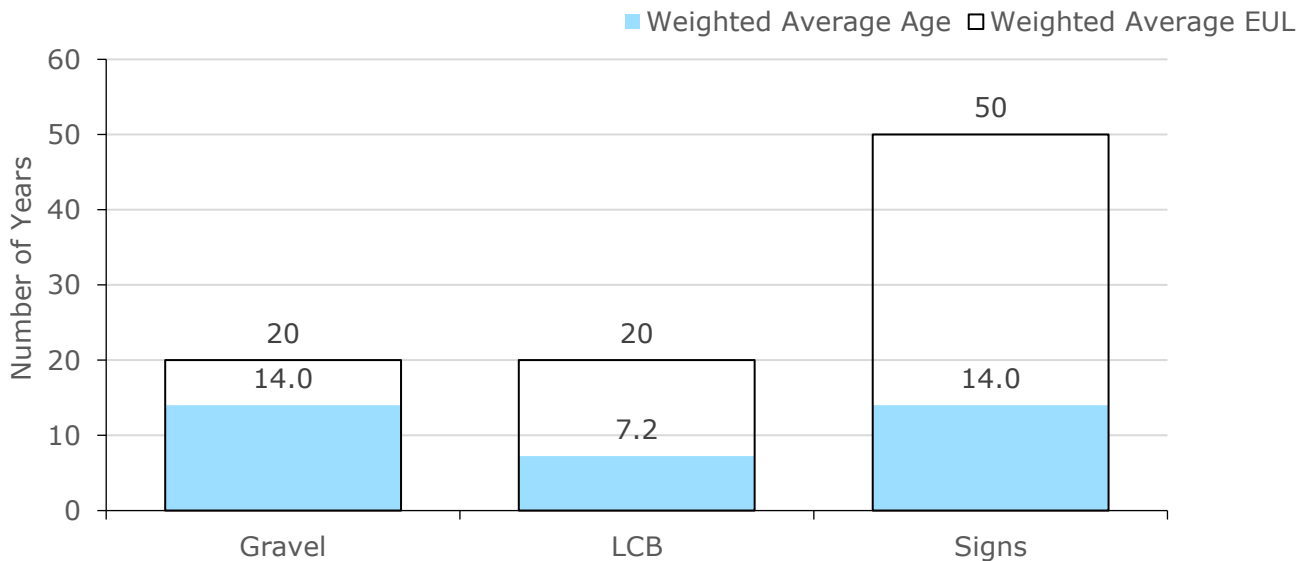


Figure 21 Estimated Useful Life vs. Asset Age: Road Network

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

4.4 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 an asset’s 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 Gravel 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.

LCB Roads		
Event Name	Event Class	Event Trigger
Patching	Maintenance	Repeat annually
Resurfacing	Rehabilitation	1 Condition, repeat 3 times
Reconstruction	Replacement	0 Condition

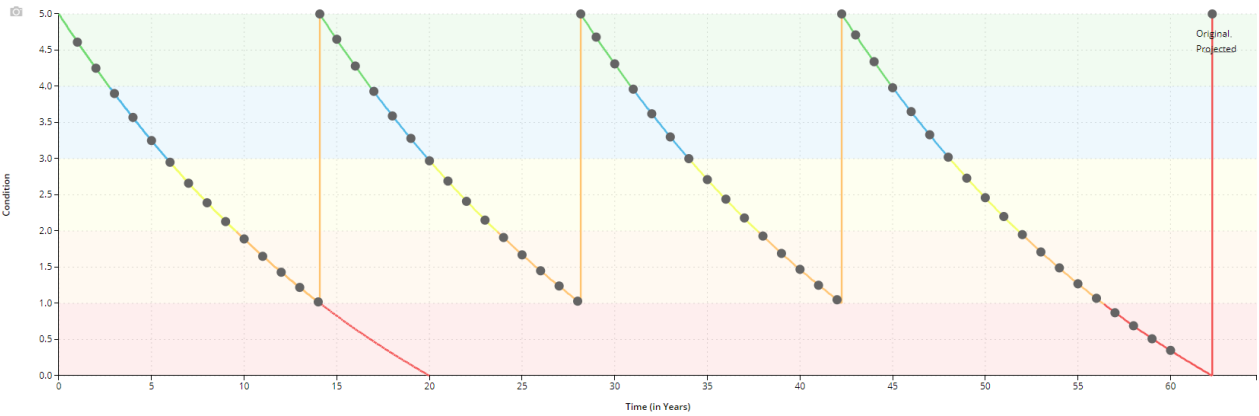


Table 8 Lifecycle Management Strategy: Road Network (LCB Roads)

Gravel Roads		
Event Name	Event Class	Event Trigger
Grading	Maintenance	Repeat annually
Gravelling – Adding Material	Preventative Maintenance	Repeat every 6 years 3 times
Reconstruction	Replacement	0 Condition

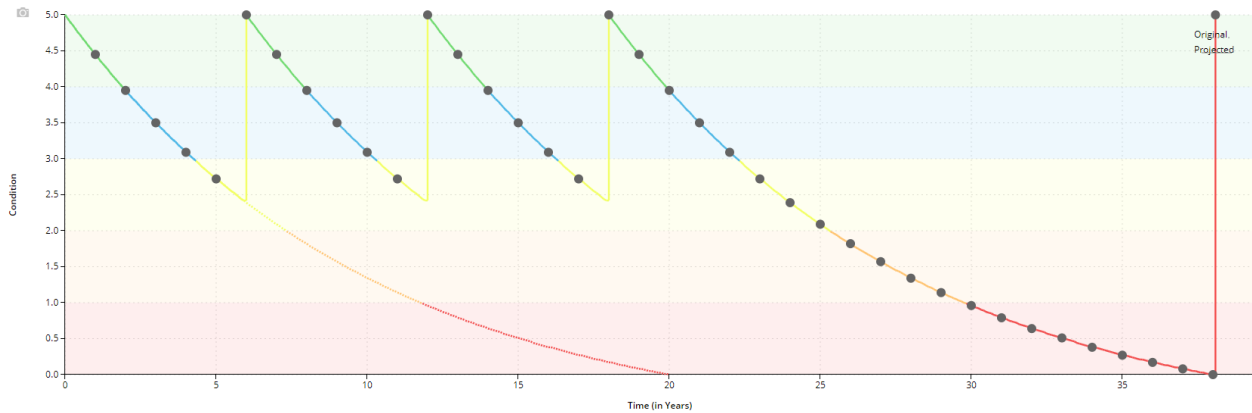


Table 9 Lifecycle Management Strategy: Road Network (Gravel Roads)

4.5 Forecasted Long-Term Replacement Needs

Figure 22 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township’s road network. This analysis was run until 2088 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) total \$486,000 (\$2.4 million per 5-year bucket) for all assets in the road network. 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.

The chart illustrates substantial capital needs throughout the forecast period. These projections are based on asset replacement costs, age analysis, 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.

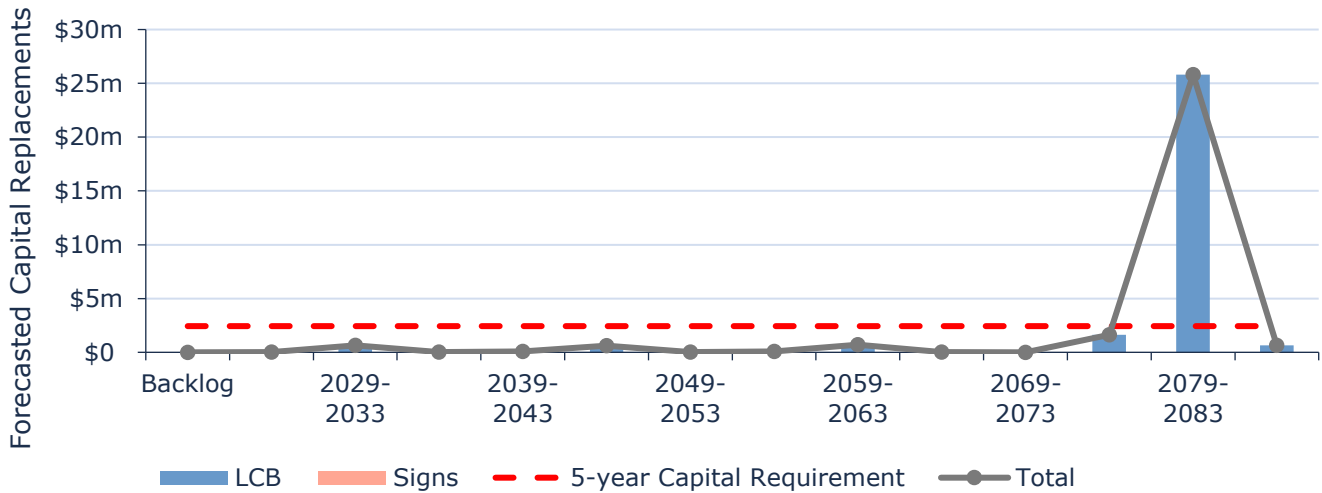


Figure 22 Forecasted Capital Replacement Needs: Road Network 2024-2088

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 detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

4.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition and replacement costs.

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 *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.



Figure 23 Risk Matrix: Road Network

4.7 Current Levels of Service

The tables that follow summarize the Municipality’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.

4.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	<p>Very Poor: Widespread signs of deterioration. Requires remedial work to bring road up to standard. Service is affected severely. (0-20% life remaining)</p> <p>Poor: Large portions of road exhibiting deterioration with rutting, potholes, distortions, longitude and lateral cracking. Road is mostly below standard. (20-40% life remaining)</p>

Service Attribute	Qualitative Description	Current LOS (2023)
		<p>Fair: Some sections of road starting to deteriorate. Requires some remedial work and surface upgrade in near future. (40-60% life remaining)</p> <p>Good: Road is in overall good condition. Few sections are starting to show signs of minimal deterioration. (60-80% life remaining)</p> <p>Very Good: Surface was newly or recently upgraded. No signs of deterioration or remedial work required. (80-100% life remaining)</p>

Table 10 O. Reg. 588/17 Community Levels of Service: Road Network

4.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km ²)	0 km/km ²
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km ²)	0 km/km ²
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km ²) ²	0.56 km/km ²
Quality	Average pavement condition index for paved roads in the Township	62%
	Average surface condition for unpaved roads in the Township (e.g. excellent, good, fair, poor)	Fair

Table 11 O. Reg. 588/17 Technical Levels of Service: Road Network

4.8 Proposed Levels of Service

As per O. Reg. 588/17, Burpee and Mills is mandated to document its proposed levels of service for the Road Network. The table that follows summarizes the Municipality’s proposed levels of service for the Road Network, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km ²)	0 km/km ²	0 km/km ²	
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km ²)	0 km/km ²	0 km/km ²	↔
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km ²)	0.56 km/km ²	0.56 km/km ²	
Scope	Average pavement condition index for paved roads in the Township	62%	62%	↔
	Average surface condition for unpaved roads in the Township (e.g. excellent, good, fair, poor)	Fair	Fair	

Table 12 O. Reg. 588/17 Proposed Levels of Service: Road Network

4.8.1 Background

Burpee and Mills roads consist solely of local roads (MMs classes 5 and 6). The current number of local roads in the community provide sufficient connectivity for the residents. The paved roads are in Good (62%) condition, and the unpaved roads have an average surface condition of fair.

Rehabilitation/replacement events for the road network are expensive. The target level of service reflects the fact that Burpee and Mills has a small taxpayer base, along with the necessary reliance on grants to conduct major rehabilitation events.

4.8.2 Achievability

The lifecycle management strategies currently in place for the road network have been successful in ensuring that the road network remains in an adequate state of repair. Continuing to follow the defined lifecycle management strategy should allow Burpee and Mills to achieve its target level of service.

4.8.3 Affordability

The Township will continue to follow its current lifecycle management/ financial strategy to achieve its target level of service. Operating efficiency is expected to decrease as the assets age, and operation and maintenance associated costs increase.

For more information, refer to the financial strategy portion of this AMP in Section 11. A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

4.8.4 Growth

Please refer to section 10 of this AMP for information on the effects of growth on proposed levels of service.

4.8.5 Risks

The following risks are associated with the defined proposed levels of service:

- Increase in operation and maintenance costs
- Increased likelihood of unforeseen road closures
- Negative impact on the community (financial, safety, etc.)

5. Culverts

The Township does not own any bridges or culverts with span more than 3 meters. The assets in this category are drainage culverts with a span of less than 3 meters. Staff are working towards improving the accuracy and reliability of their drainage culverts to assist with long-term asset management planning.

5.1 Inventory & Valuation

Table 12 summarizes the quantity and current replacement cost of culverts. The Township owns and manages 179 culverts.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Culverts	179	Quantity	\$176,000	CPI
TOTAL			\$176,000	

Table 13 Detailed Asset Inventory: Culverts

Total Current Replacement Cost: \$175,771

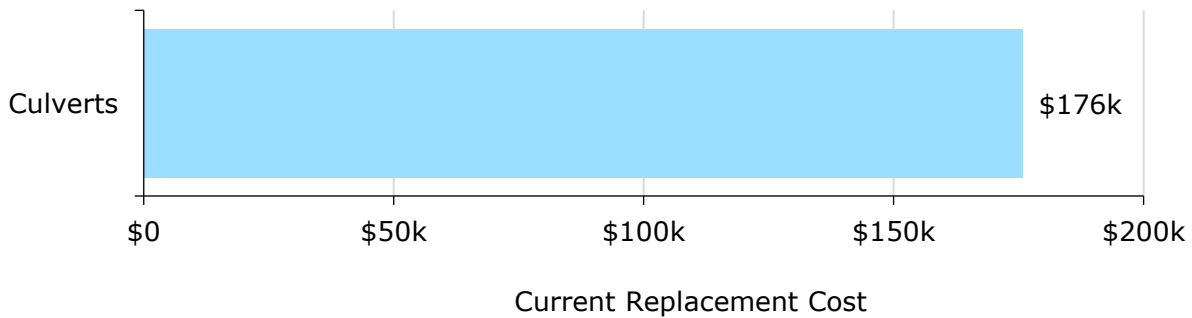


Figure 24 Portfolio Valuation: Bridges & Culverts

5.2 Asset Condition

Figure 25 summarizes the replacement cost-weighted condition of the Township’s culverts. Based on the staff assessments, 91% of 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. At 9% of the total culverts portfolio, assets in poor or worse condition may require replacement in the immediate or short term.

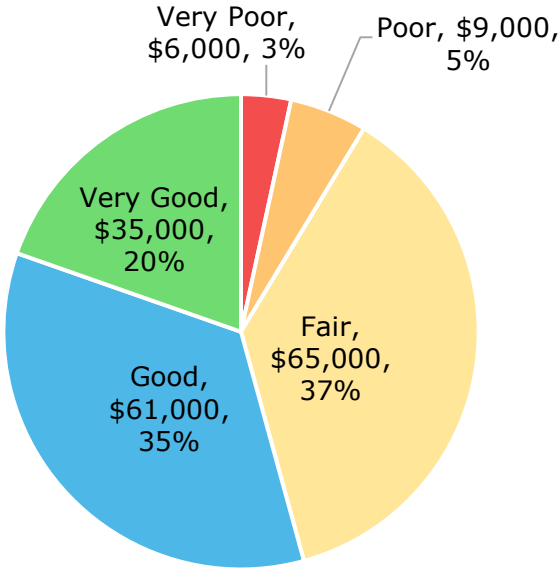


Figure 25 Asset Condition: Culverts Overall

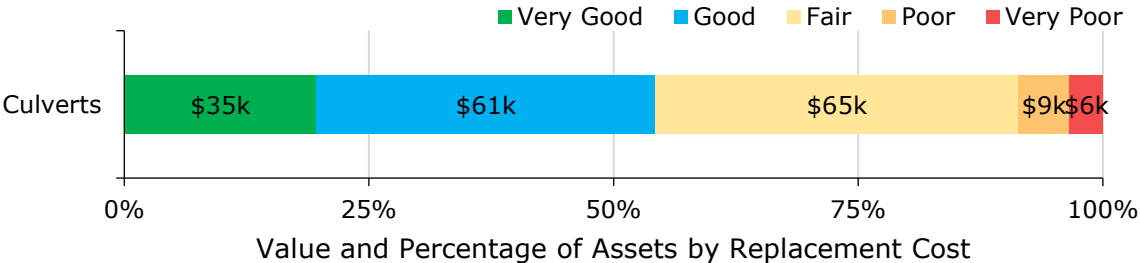


Figure 26 Asset Condition: Culverts by Segment

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 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.

Figure 27 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.

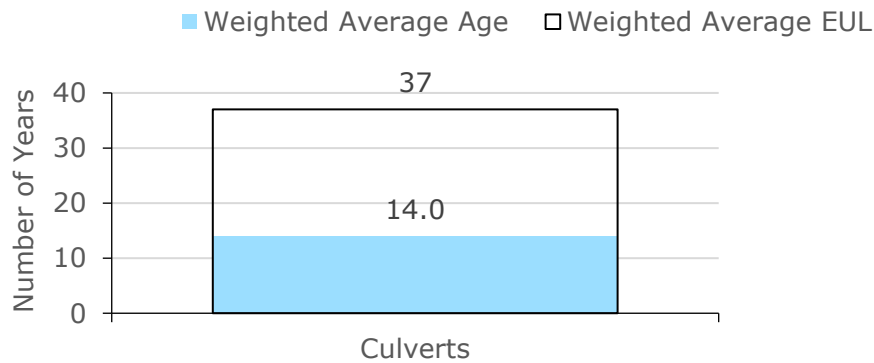


Figure 27 Estimated Useful Life vs. Asset Age: Culverts

5.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	Visual inspections are performed by municipal staff on a weekly basis to identify rust, cracks or the existence of obstruction.
	Maintenance and cleaning are completed yearly to remove obstruction, maintain efficient drainage, and avoid flooding.
	Full replacement is undertaken when break or rust are identified during inspection.

Table 14 Lifecycle Management Strategy: Culverts

5.5 Forecasted Long-Term Replacement Needs

Figure 28 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township’s culverts. This analysis was run until 2063 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township’s primary asset management system and asset register. The Township’s average annual requirements (red dotted line) for culverts total \$5,000 (\$23,000 per 5-year bucket). 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.

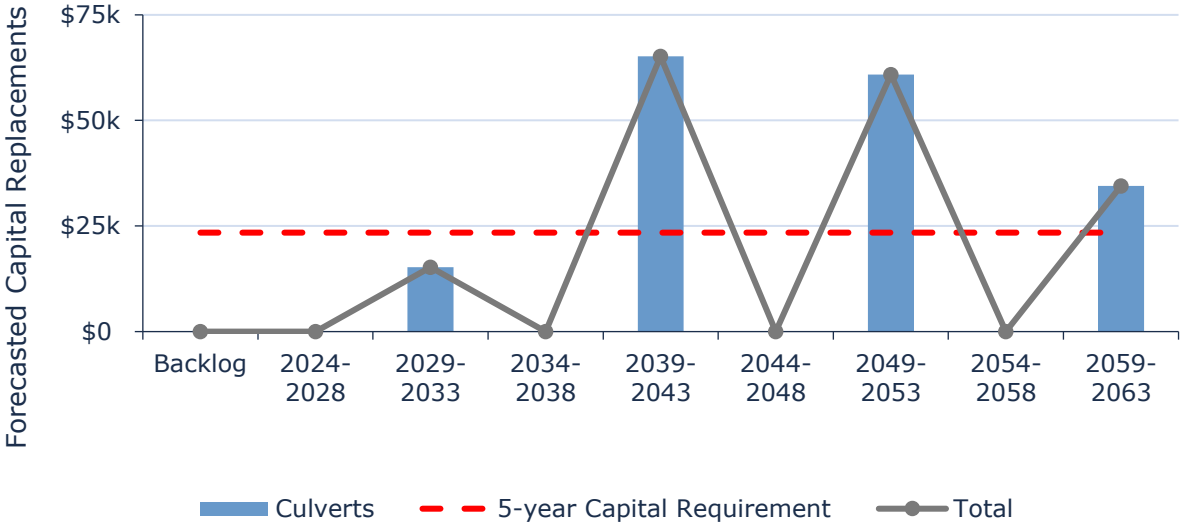


Figure 28 Forecasted Capital Replacement Needs: Culverts 2024-2063

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 detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

5.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, replacement costs, and material.

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 *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

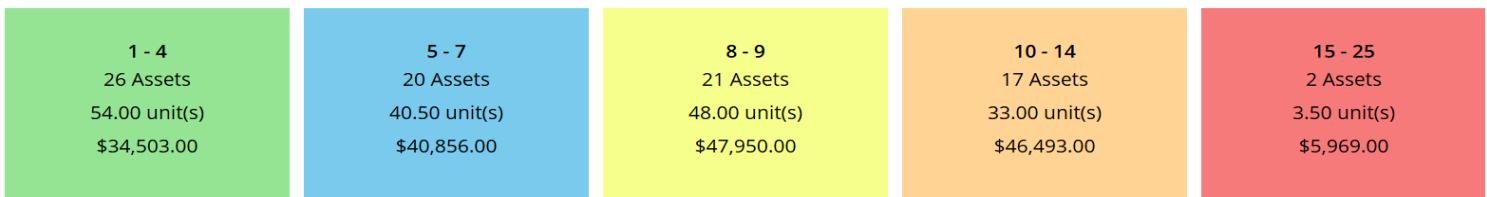


Figure 29 Risk Matrix: Culverts

5.7 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

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	The municipality does not own any bridges.

Service Attribute	Qualitative Description	Current LOS (2023)
Quality	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	The municipality does not own any bridges. The drainage culverts in the Township are overall in good condition.

Table 15 O. Reg. 588/17 Community Levels of Service: Culverts

5.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of bridges in the Township with loading or dimensional restrictions	N/A
Quality	Average bridge condition index value for bridges in the Township	N/A
	Average bridge condition index value for culverts in the Township	62%

Table 16 O. Reg. 588/17 Technical Levels of Service: Culverts

5.8 Proposed Levels of Service

As per O. Reg. 588/17, Burpee and Mills is mandated to document its proposed levels of service for Culverts. The table that follows summarizes the Municipality's proposed levels of service for Culverts, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Average bridge condition index value for culverts in the Township	62%	40-59%	↓

Table 17 O. Reg. 588/17 Proposed Levels of Service: Culverts

5.8.1 Background

Burpee and Mills culverts are in good (BCI > 60) condition. Rehabilitation/replacement events for culverts are expensive. The target level of service reflects the fact that Burpee and Mills has a small taxpayer base, along with the necessary reliance on grants to conduct major rehabilitation events.

5.8.2 Achievability

Culverts in Burpee and Mills have long estimated useful lives (35-40 years). With the asset class deteriorating at an acceptable rate, Burpee and Mills should achieve its target level of service.

5.8.3 Affordability

The Township will continue to follow its current lifecycle management/financial strategy to achieve its target level of service. Operating efficiency is expected to decrease as the assets age, and operation and maintenance associated costs increase.

For more information, refer to the financial strategy portion of this AMP in Section 11. A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

5.8.4 Growth

Please refer to section 10 of this AMP for information on the effects of growth on proposed levels of service.

5.8.5 Risks

The following risks are associated with the defined proposed levels of service:

- Increase in operation and maintenance costs
- Increased likelihood of unforeseen road closure to repair culverts
- Public liability
- Detours (which can impact critical services)

Non-Core Assets

Buildings



Replacement Cost	Average Condition	Financial Capacity	
\$1.6 m	Fair	Annual Requirement:	\$65,000
		Funding Available:	\$3,000
		Annual Deficit:	\$62,000

Land Improvements



Replacement Cost	Average Condition	Financial Capacity	
\$10k	Very Poor	Annual Requirement:	\$0
		Funding Available:	\$0
		Annual Deficit:	\$0

Vehicles



Replacement Cost	Average Condition	Financial Capacity	
\$367k	Good	Annual Requirement:	\$37,000
		Funding Available:	\$37,000
		Annual Deficit:	\$0

Machinery & Equipment



Replacement Cost	Average Condition	Financial Capacity	
\$750k	Fair	Annual Requirement:	\$75,000
		Funding Available:	\$3,000
		Annual Deficit:	\$72,000

6. Buildings

The Township’s buildings portfolio includes the municipal office, public works garage, sand shed, transfer station and cemetery storage facility. The total current replacement of buildings is estimated at approximately \$1.6 million.

6.1 Inventory & Valuation

Table 16 summarizes the quantity and current replacement cost of all buildings assets available in the Municipality’s asset register. Buildings assets are not componentized. The quantity listed represents the number of asset records currently available for each department.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Cemetery Storage	100	Area (sq ft)	\$16,000	CPI
Municipal Office	10,000	Area (sq ft)	\$1,030,000	CPI
Public Works Garage	1,600	Area (sq ft)	\$364,000	CPI
Sand Shed	5,000	Area (sq ft)	\$138,000	CPI
Transfer Station	1,600	Area (sq ft)	\$76,000	CPI
TOTAL			\$1,625,000	

Table 18 Detailed Asset Inventory: Buildings

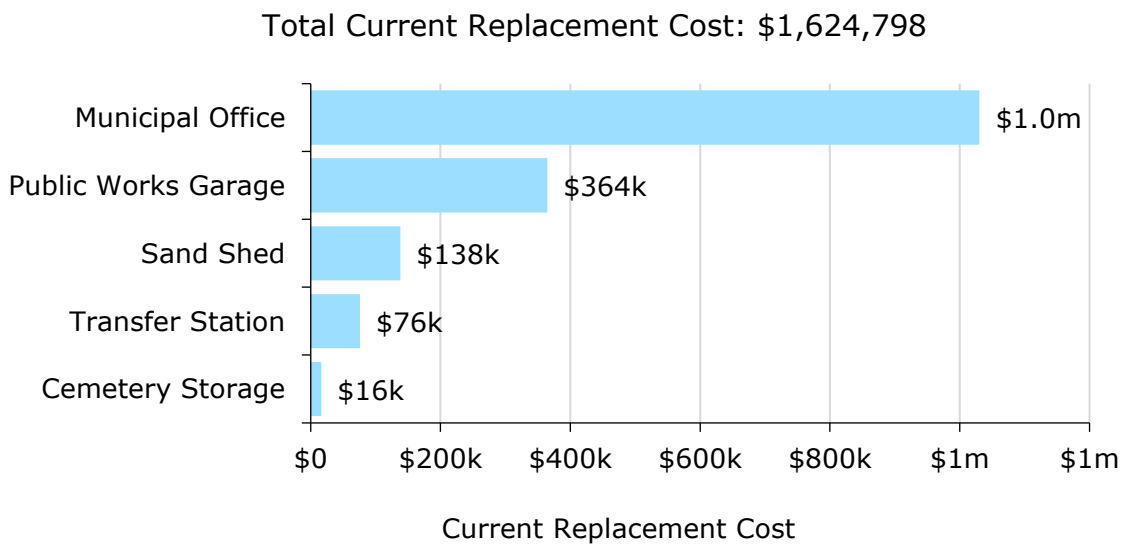


Figure 30 Portfolio Valuation: Buildings

6.2 Asset Condition

Figure 31 summarizes the replacement cost-weighted condition of the Township’s buildings portfolio. Based mostly on age-based data, 100% of buildings assets are in fair or better condition. Assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As buildings are not componentized, condition data is presented only at the site level, rather than at the individual element or component level within each building. This drawback is further compounded by the lack of assessed condition data, requiring the use of age-based estimates only.

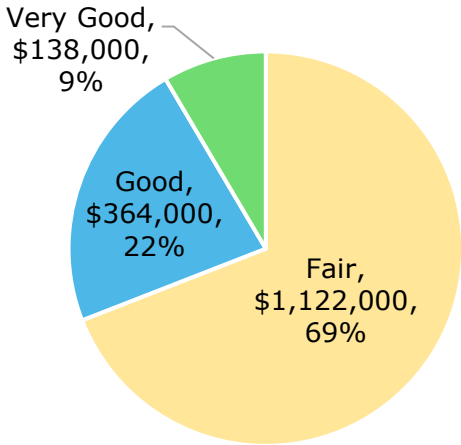


Figure 31 Asset Condition: Buildings Overall

Figure 32 summarizes the age-based condition of buildings by each department. Componentization of assets and integration of condition assessments will provide a more accurate and reliable estimation of the condition of various facilities.

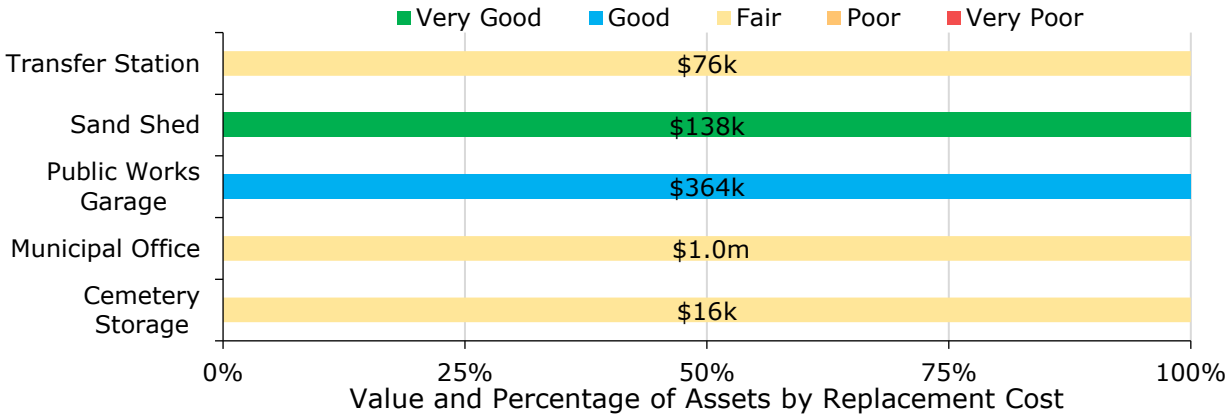


Figure 32 Asset Condition: Buildings by Segment

Buildings assets are unique in that they rarely require the need for replacement based solely on condition. It is typical that, in addition to condition, other factors, such as capacity, will impact the asset’s ability to serve the purpose originally intended.

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 replacement spikes.

Figure 33 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.

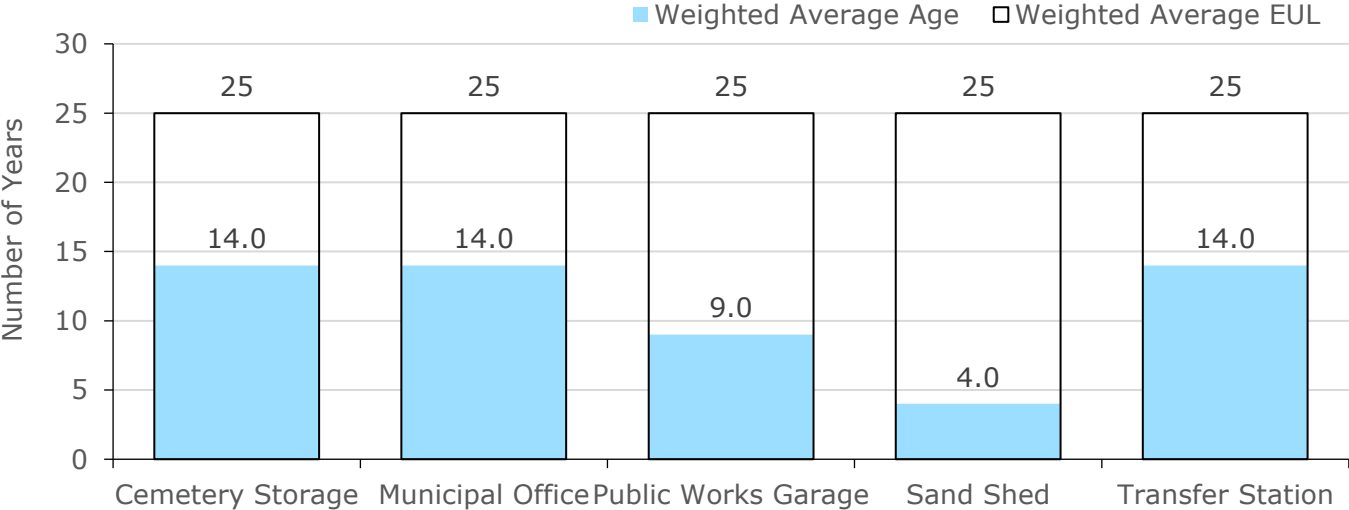


Figure 33 Estimated Useful Life vs. Asset Age: Buildings

6.4 Current Approach to Lifecycle Management

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

Table 17 outlines the Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Maintenance is triggered by inspections identifying safety, accessibility, functionality, and structural issues.
Rehabilitation/ Replacement	Rehabilitations are considered on an as needed basis The primary considerations for asset replacement are asset failure, availability or grant funding.
Inspection	Internal inspections are conducted as needed to identify any maintenance concerns

Table 19 Lifecycle Management Strategy: Buildings

6.5 Forecasted Long-Term Replacement Needs

Figure 34 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s buildings portfolio. This analysis was run until 2048 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Township’s average annual requirements (red dotted line) total \$65,000 (\$325,000 per 5-year bucket) 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.

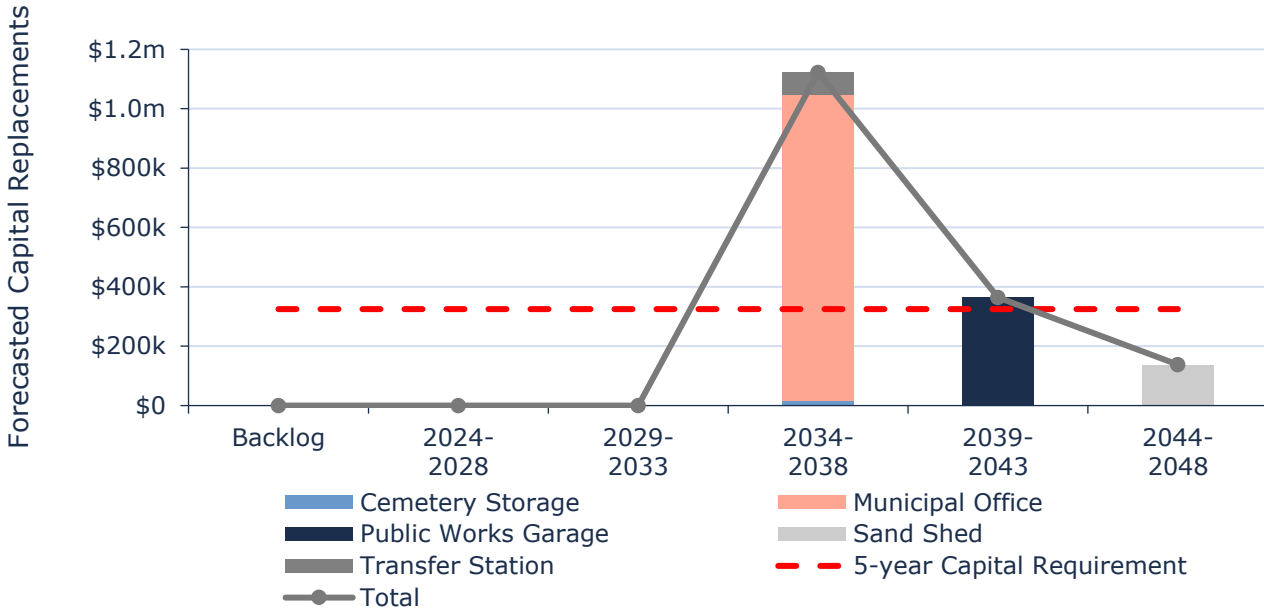


Figure 34 Forecasted Capital Replacement Needs Buildings 2024-2048

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 and facilities, detailed componentization is necessary to develop more reliable lifecycle forecasts that reflect the needs of individual elements and components.

A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

6.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition and replacement costs.

The matrix classifies 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 *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

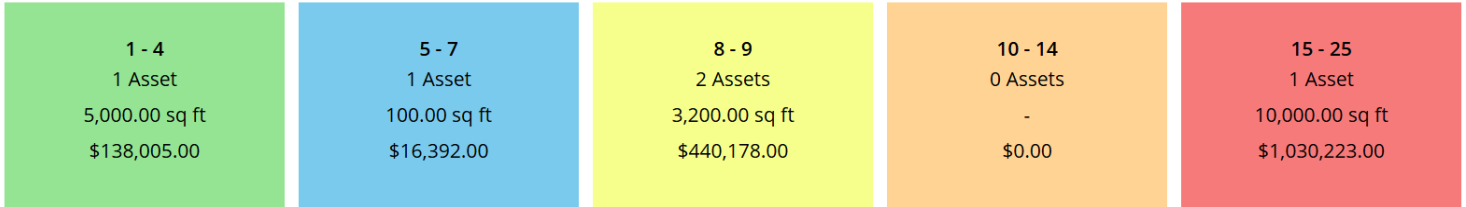


Figure 35 Risk Matrix: Buildings

6.7 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.

6.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the types of facilities that the municipality operates and maintains	Facilities within Burpee and Mills include those dedicated to administration, such as the Municipal Office. Public works is supported by the public works garage, sand shed, and transfer station.

Table 20 Community Levels of Service: Buildings

6.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of buildings (e.g. very good, good, fair, poor or very poor)	50%

Table 21 Technical Levels of Service: Buildings

6.8 Proposed Levels of Service

As per O. Reg. 588/17, Burpee and Mills is mandated to document its proposed levels of service for Buildings. The table that follows summarizes the Municipality’s proposed levels of service for Buildings, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Average condition of buildings (e.g. very good, good, fair, poor or very poor)	50%	50%	↔

Table 22 O. Reg. 588/17 Proposed Levels of Service: Buildings

6.8.1 Background

The current approach to rehabilitation/replacement for buildings has been successful in ensuring that the buildings remain in an adequate state of repair.

The target level of service reflects the fact that Burpee and Mills has a small taxpayer base, along with the necessary reliance on grants to conduct major rehabilitation events.

6.8.2 Achievability

The lifecycle management strategies currently in place for buildings have been successful in ensuring that buildings remain in an adequate state of repair. Continuing to follow the defined lifecycle management strategy should allow Burpee and Mills to achieve its target level of service.

6.8.3 Affordability

Considering the Township’s buildings are in adequate condition, the Township will continue to follow its current lifecycle management/ financial strategy to achieve its target level of service. Operating efficiency is expected to decrease as the assets age, and operation and maintenance associated costs increase.

For more information, refer to the financial strategy portion of this AMP in Section 11. A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

6.8.4 Growth

Please refer to section 10 of this AMP for information on the effects of growth on proposed levels of service.

6.8.5 Risks

The following risks are associated with the defined proposed levels of service:

- Increase in operation and maintenance costs
- Increased likelihood of unforeseen facility closures

7. Land Improvements

The Township’s land improvements portfolio consists of the outdoor rink. The total current replacement of land improvements is estimated at approximately \$10,000.

7.1 Inventory & Valuation

Table 20 summarizes the quantity and current replacement cost of all land improvements assets available in the Township’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Outdoor Rink	1	Quantity	\$10,000	CPI
TOTAL			\$10,000	

Table 23 Detailed Asset Inventory: Land Improvements

Total Current Replacement Cost: \$10,073

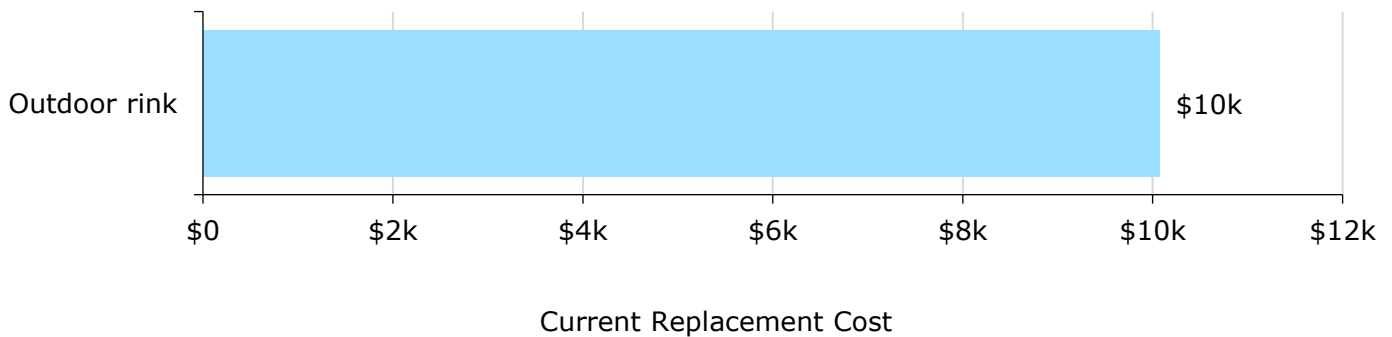


Figure 36 Portfolio Valuation: Land Improvements

7.2 Asset Condition

Figure 37 summarizes the replacement cost-weighted condition of the Municipality's land improvement portfolio. Based on staff assessments, 100% of assets are in poor or worse condition. These assets may be candidates for replacement in the short term.

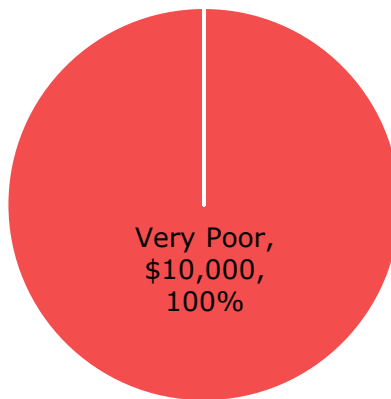


Figure 37 Asset Condition: Land Improvements Overall

Figure 38 summarizes the age-based condition of land improvements by each department.

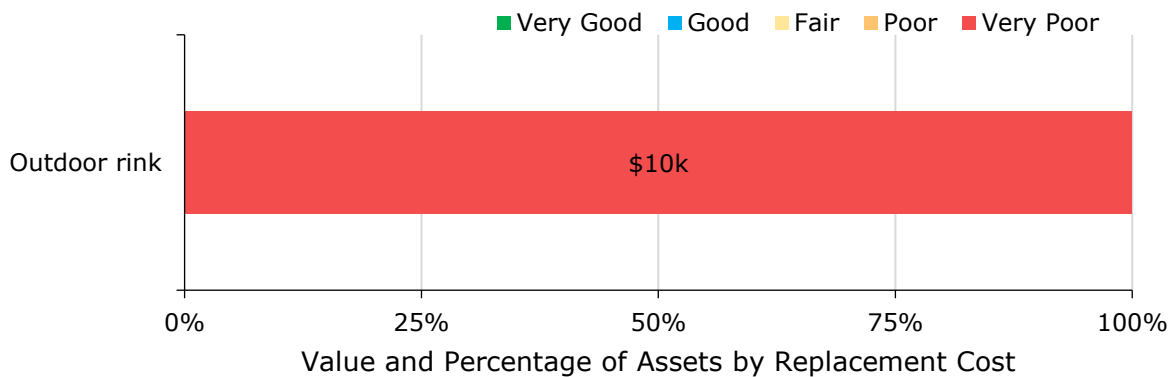


Figure 38 Asset Condition: Land Improvements by Segment

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.

Figure 39 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.

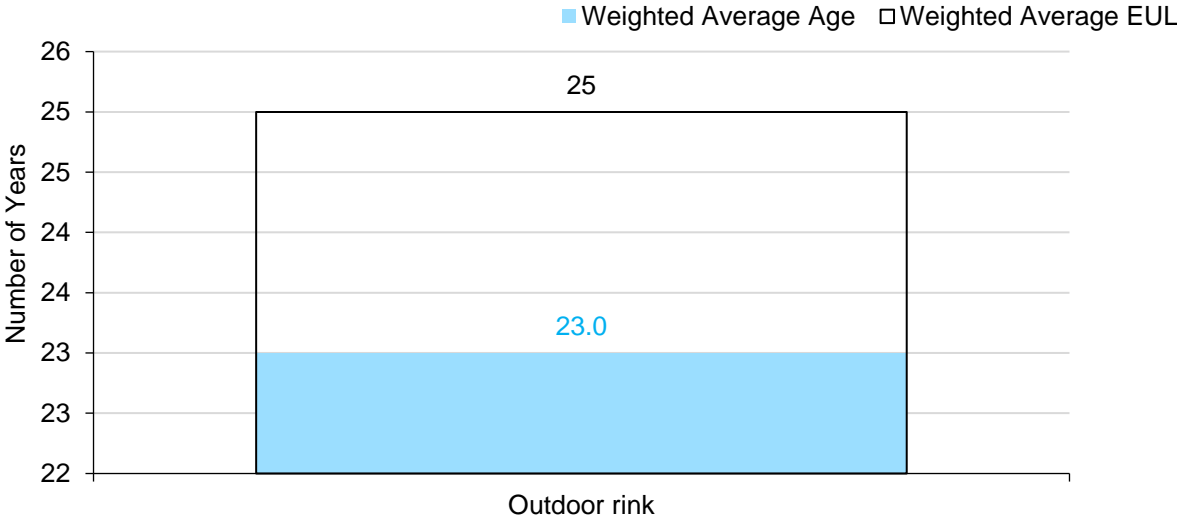


Figure 39 Estimated Useful Life vs. Asset Age: Land Improvements

7.4 Current Approach to Lifecycle Management

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

Table 21 outlines the Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities are completed on a reactive basis when operational issues are identified, through complaints, service requests, or ad-hoc inspections
Rehabilitation / Replacement	Without the availability of up-to-date condition assessment information replacement activities are purely reactive in nature
Inspections	Inspections are conducted on an ad-hoc basis

Table 24 Lifecycle Management Strategy: Land Improvements

7.5 Forecasted Long-Term Replacement Needs

Figure 40 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s land improvements portfolio. This analysis was run until 2028 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Township’s average annual requirements (red dotted line) total \$0 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.

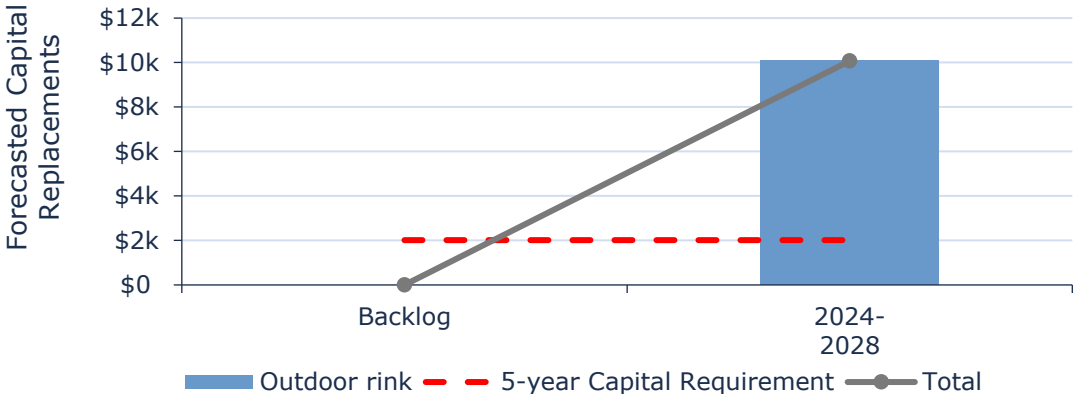


Figure 40 Forecasted Capital Replacement Needs: Land Improvements 2024-2048

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 detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

7.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, and replacement costs.

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 *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

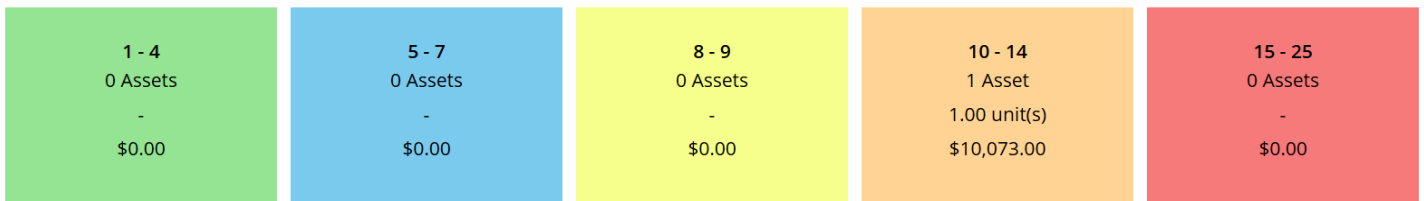


Figure 41 Risk Matrix: Land Improvements

7.7 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

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the outdoor recreational facilities that the municipality operates and maintains	The Township’s outdoor rink compromises their land improvement assets.

Table 25 Community Levels of Service: Land Improvements

7.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of outdoor recreation facilities and land improvements in the municipality	Very Poor

Table 26 Technical Levels of Service: Land Improvements

7.8 Proposed Levels of Service

As per O. Reg. 588/17, Burpee and Mills is mandated to document its proposed levels of service for Land Improvements. The table that follows summarizes the Municipality’s proposed levels of service for Land Improvements, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Average condition of outdoor recreation facilities and land improvements in the municipality	Very Poor	Fair	↑

Table 27 O. Reg. 588/17 Proposed Levels of Service: Land Improvements

7.8.1 Background

The land improvements category consists of solely the outdoor rink. The rink is approaching the end of its useful life, based on the defined estimated useful life of 25 years, in the next two years. The most recent condition assessment was applied in 2022, when staff indicated the rink was in poor condition.

The target level of service reflects the fact that the rink replacement has been scheduled for 2028 in the 10-year capital forecast developed by Citywide.

7.8.2 Achievability

The 10-year capital forecast developed by Citywide indicates that replacement of the outdoor rink should occur in 2028, and this has been accounted for in the financial strategy. This will allow the Township to achieve the target level of service.

Alternatively, if the outdoor rink is still in adequate operating condition, the Township can review the applied condition assessment and update it to accurately reflect the condition of the rink. This will allow the Township to achieve the target level of service.

7.8.3 Affordability

If the Township implements the recommendations provided by the financial strategy developed for this AMP, they will have sufficient funds to achieve this target level of service.

For more information, refer to the financial strategy portion of this AMP in Section 11. A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

7.8.4 Growth

Please refer to section 10 of this AMP for information on the effects of growth on proposed levels of service.

7.8.5 Risks

The following risks are associated with the defined proposed levels of service:

- Increase in operation and maintenance costs
- Deteriorating rink features

8. Vehicles

The Township’s vehicles portfolio includes 5 assets that support a variety of general and essential services, including public works and the fire department. The total current replacement of vehicles is estimated at approximately \$367,000.

8.1 Inventory & Valuation

Table 24 summarizes the quantity and current replacement cost of all vehicle assets available in the Township’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire Department	2	Quantity	\$154,000	CPI
Road Department	3	Quantity	\$213,000	CPI
TOTAL			\$367,000	

Table 28 Detailed Asset Inventory: Vehicles

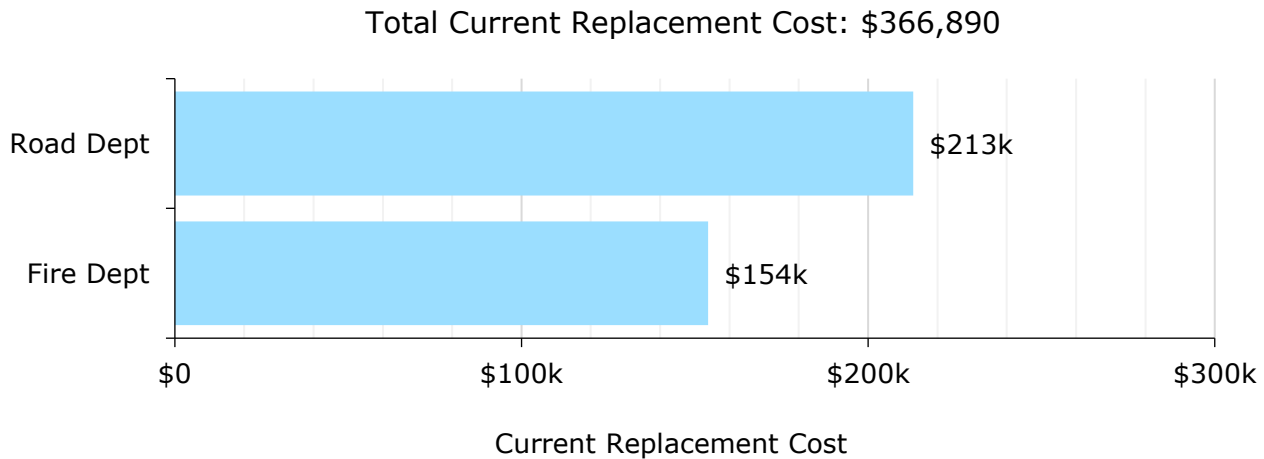


Figure 42 Portfolio Valuation: Vehicles

8.2 Asset Condition

Figure 43 summarizes the replacement cost-weighted condition of the Township’s vehicles portfolio. Based on staff assessments, 84% of vehicles are in fair or better condition, with the remaining 16% are in poor or worse 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.

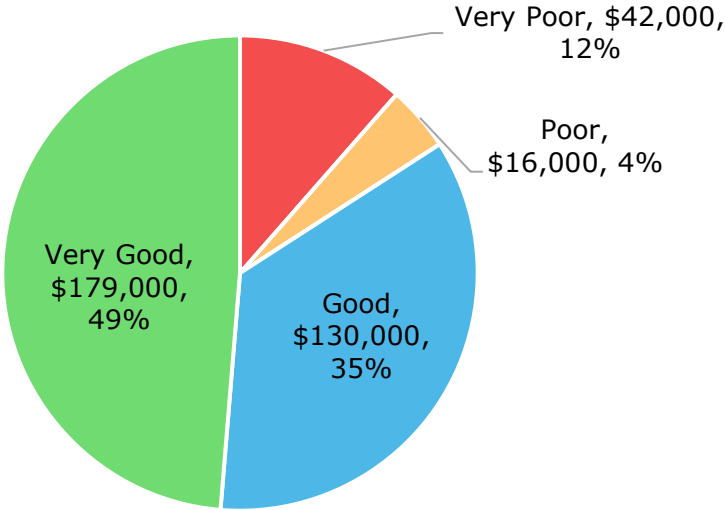


Figure 43 Asset Condition: Vehicles Overall

Figure 44 summarizes the condition of vehicles by each department. The majority of all vehicles across all asset segments are in poor or worse condition.

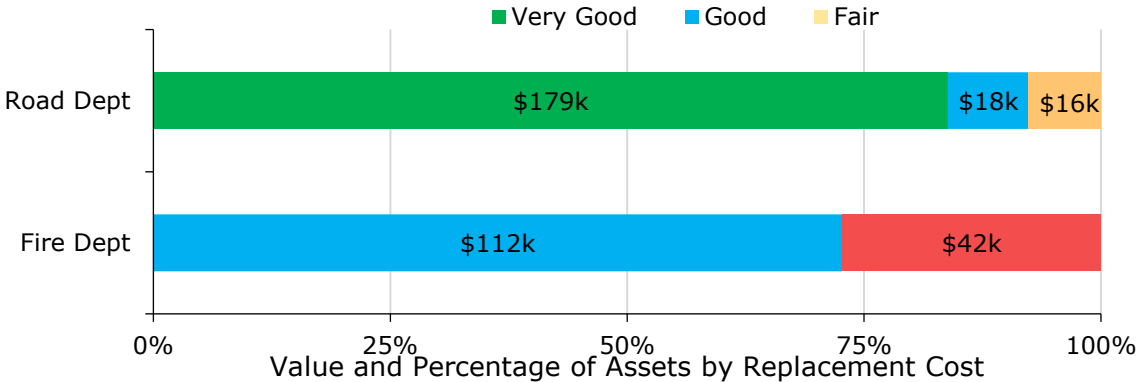


Figure 44 Asset Condition: Vehicles by Segment

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.

Figure 45 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.

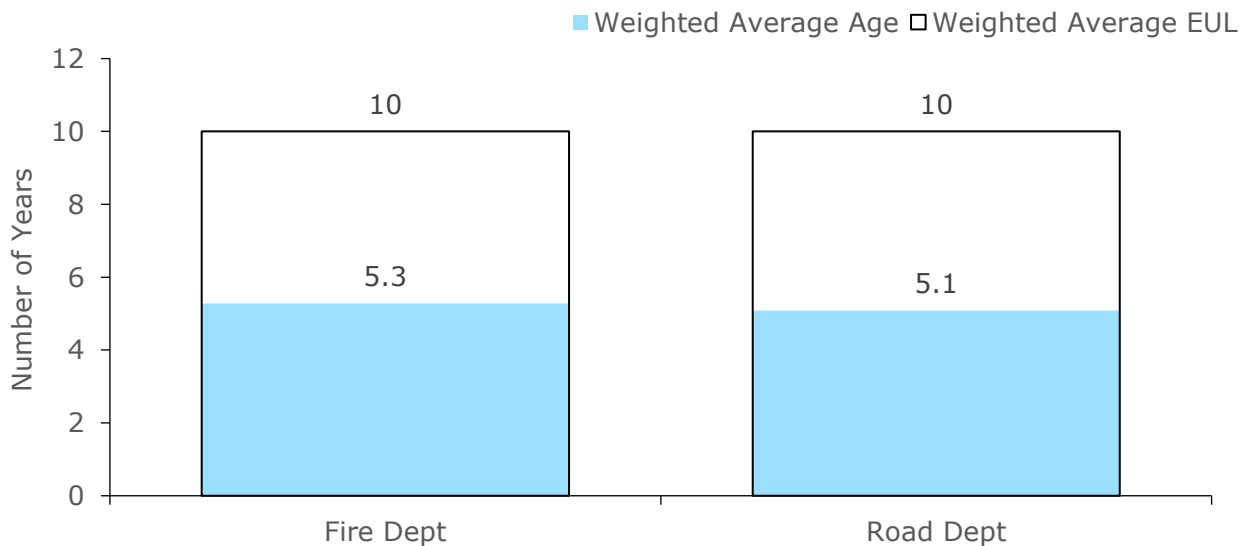


Figure 45 Estimated Useful Life vs. Asset Age: Vehicles

Age analysis reveals that, on average, most vehicles are in moderate stages of their expected life. Vehicles in environmental services remain in service beyond their established useful life.

8.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
	Oil changes and routine maintenance is completed as needed
Maintenance	All other maintenance activities are completed on a reactive basis when operational issues are identified (e.g., mechanical breakdown, deficiencies identified during daily inspections)
Replacement	Replacements are considered on an as-needed basis and when maintenance is no longer cost effective
Inspection	Vehicles are inspected by the operator daily before use, however, these inspections identify deficiencies but do not provide overall condition ratings External contractors assess vehicles on an annual basis for safety inspections

Table 29 Lifecycle Management Strategy: Vehicles

8.5 Forecasted Long-Term Replacement Needs

Figure 46 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s vehicles portfolio. This analysis was run until 2033 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Township’s average annual requirements (red dotted line) total \$37,000 (\$183,000 per 5-year bucket) 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.

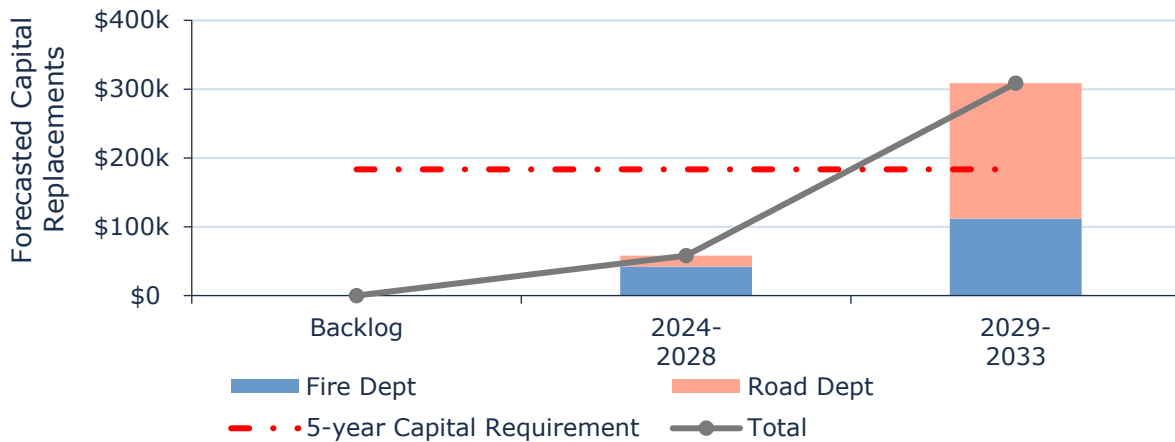


Figure 46 Forecasted Capital Replacement Needs: Vehicles 2024-2033

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 detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

8.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition and replacement costs.

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 Municipality 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 *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

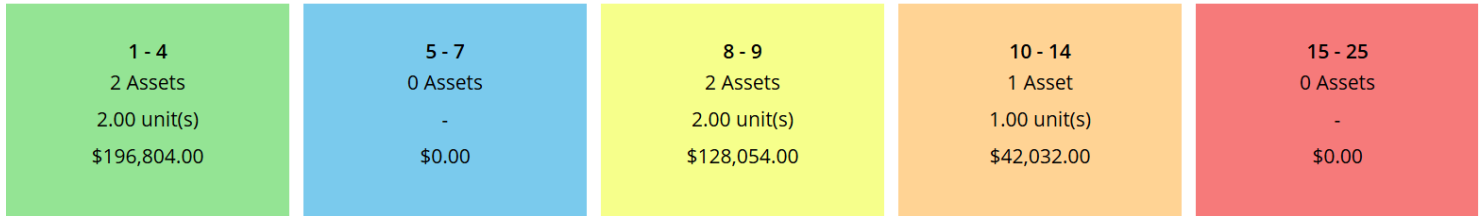


Figure 47 Risk Matrix: Vehicles

8.7 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

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include images, of the types of vehicles (i.e. light, medium, and heavy duty) that the municipality operates and the services that they help to provide to the community	Fire department vehicles include a fire pumper and fire tanker, ensuring readiness for emergency response. Roads department vehicles include light and heavy duty trucks ranging from pick-up trucks to snow plows to ensure safe road conditions and managing infrastructure during inclement weather and construction projects.

Table 30 Community Levels of Service: Vehicles

8.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of vehicles	Good

Table 31 Technical Levels of Service: Vehicles

8.8 Proposed Levels of Service

As per O. Reg. 588/17, Burpee and Mills is mandated to document its proposed levels of service for Vehicles. The table that follows summarizes the Municipality’s proposed levels of service for Vehicles, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Average condition of vehicles	Good	Good	↔

Table 32 O. Reg. 588/17 Proposed Levels of Service: Vehicles

8.8.1 Background

Burpee and Mills vehicles are in good condition. The current lifecycle management strategies applied to the vehicles, including regular review of the vehicles condition, have been successful in ensuring the vehicles remain in an adequate state of repair.

8.8.2 Achievability

While vehicles deteriorate at a faster rate compared to other asset classes (10 years), historically, vehicles within the Township are used well beyond their intended useful life.

The Township’s target level of service is achievable if it continues its current lifecycle management strategies.

8.8.3 Affordability

The Township will continue to follow its current lifecycle management/ financial strategy in order to achieve its target level of service. Operating efficiency is expected to decrease as the assets age, and operation and maintenance associated costs increase.

For more information, refer to the financial strategy portion of this AMP in Section 11. A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

8.8.4 Growth

Please refer to section 10 of this AMP for information on the effects of growth on proposed levels of service.

8.8.5 Risks

The following risks are associated with the defined proposed levels of service:

- Increase in operation and maintenance costs
- The fire pumper and tanker provide critical services for the Township. Failure of either of these assets, as they approach the end of their estimated useful life, would have numerous negative impacts on the community (safety, financial, etc.)

9. Machinery & Equipment

The Township’s machinery and equipment portfolio includes a variety of assets that support a combination of general and essential services, including public works and fire. The total current replacement of vehicles is estimated at approximately \$750,000.

9.1 Inventory & Valuation

Table 28 summarizes the quantity and current replacement cost of all machinery & equipment assets available in the Township’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire Department	1	Quantity	\$72,000	CPI
Municipal Office	1	Quantity	\$49,000	CPI
Public Works	13	Quantity	\$628,000	CPI
TOTAL			\$750,000	

Table 33 Detailed Asset Inventory: Machinery & Equipment

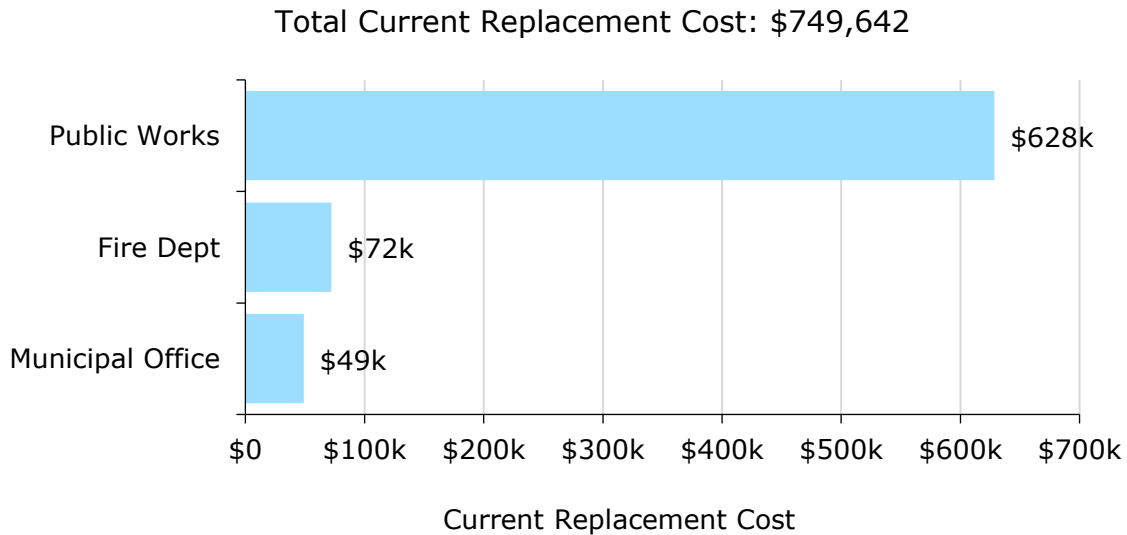


Figure 48 Portfolio Valuation: Machinery & Equipment

9.2 Asset Condition

Figure 49 summarizes the replacement cost-weighted condition of the Township’s machinery and equipment portfolio. Based on a combination of assessed conditions and age data, 63% of assets are in fair or better condition; the remaining 37% are in poor or worse 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.

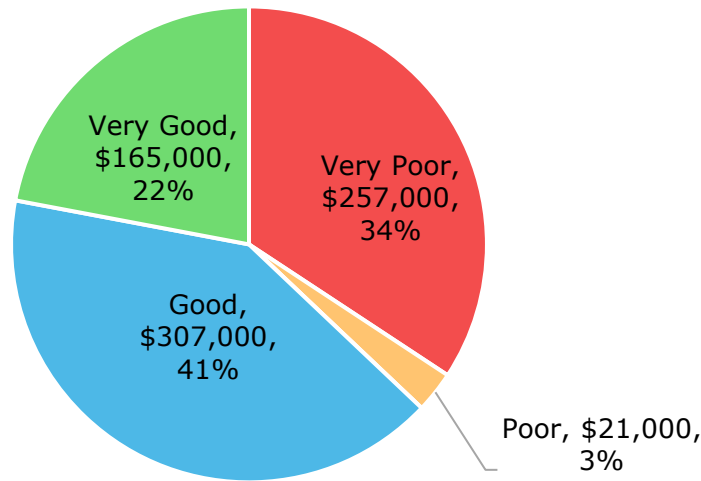


Figure 49 Asset Condition: Machinery & Equipment Overall

Figure 50 summarizes the age-based condition of machinery & equipment by each department. The majority of assets all assets are in poor or worse condition are concentrated primarily administration and the fire department.

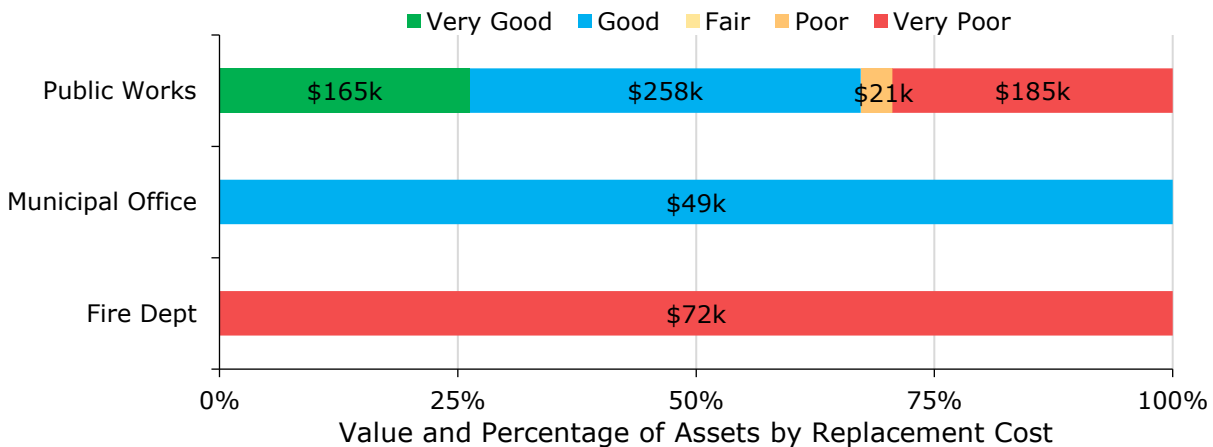


Figure 50 Asset Condition: Machinery & Equipment by Segment

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.

Figure 51 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.

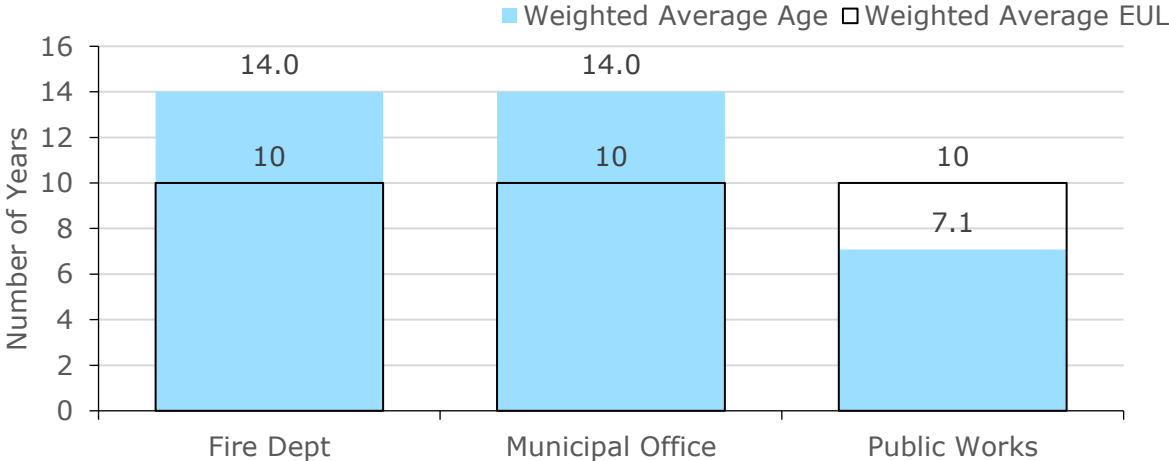


Figure 51 Estimated Useful Life vs. Asset Age: Machinery & Equipment

9.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that 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.

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

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities vary by department and are specific to each piece of equipment, but typically as per manufacturer recommendations <hr/> Fire Protection Services equipment is subject to a much more rigorous inspection and maintenance program compared to most other departments
Replacement	The replacement of machinery & equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks

Table 34 Lifecycle Management Strategy: Machinery & Equipment

9.5 Forecasted Long-Term Replacement Needs

Figure 52 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township’s machinery and equipment portfolio. This analysis was run until 2033 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Township’s average annual requirements (red dotted line) total \$75,000 (\$375,000 per 5-year bucket) 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.

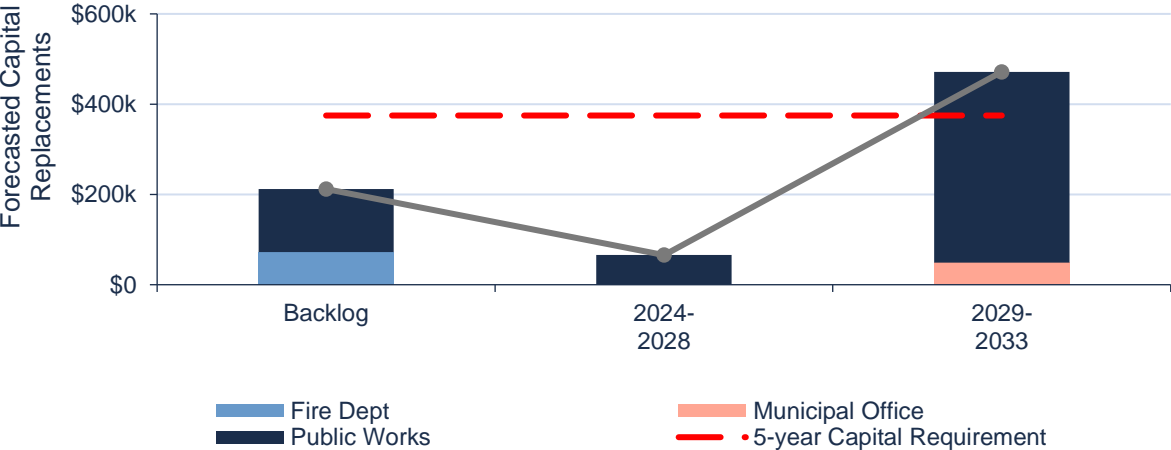


Figure 52 Forecasted Capital Replacement Needs: Machinery & Equipment 2024-2033

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 detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

9.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition and replacement costs.

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 *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

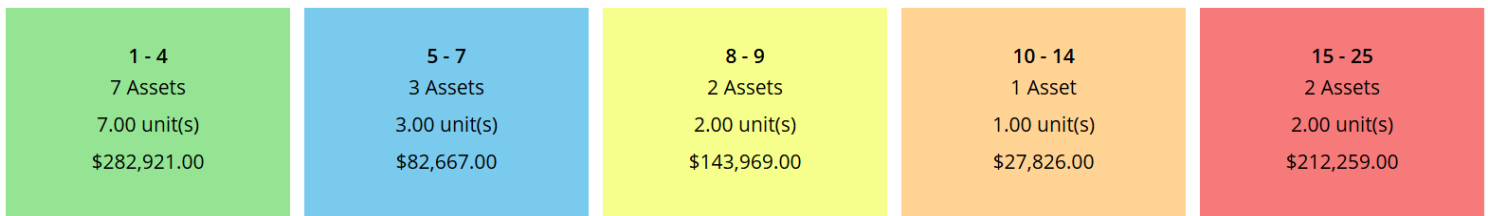


Figure 53 Risk Matrix: Machinery & Equipment

9.7 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

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include images, of the types of equipment that the municipality operates and the services that they help to provide to the community	Public Works is supported by equipment such as graders, snowplows, trailers, mowers, and heavy equipment. Other equipment includes fire fighting equipment, and equipment for the municipal office.

Table 35 Community Levels of Service: Machinery & Equipment

9.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of equipment	Fair

Table 36 Technical Levels of Service: Machinery & Equipment

9.8 Proposed Levels of Service

As per O. Reg. 588/17, Burpee and Mills is mandated to document its proposed levels of service for Machinery & Equipment. The table that follows summarizes the Municipality’s proposed levels of service for Machinery & Equipment, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Average condition of equipment	Fair	Fair	↔

Table 37 O. Reg. 588/17 Proposed Levels of Service: Machinery & Equipment

9.8.1 Background

Burpee and Mill’s machinery and equipment is in fair condition, with majority of public works equipment in good or very good condition.

The target level of service reflects the fact that Burpee and Mills has a small taxpayer base, along with the necessary reliance on grants. The Township has indicated that the current lifecycle management strategies have been

successfully implemented, keeping the machinery and equipment in an adequate state of repair.

9.8.2 Achievability

The lifecycle management strategies currently in place for machinery and equipment have been successful in ensuring that machinery and equipment remains in an adequate state of repair. Continuing to follow the defined lifecycle management strategy should allow Burpee and Mills to achieve its target level of service.

9.8.3 Affordability

The Township will continue to follow its current lifecycle management/financial strategy in order to achieve its target level of service. Operating efficiency is expected to decrease as the assets age, and operation and maintenance associated costs increase.

For more information, refer to the financial strategy portion of this AMP in Section 11. A detailed 10-year capital replacement forecast can be found in Appendix B – 10-Year Capital Requirements.

9.8.4 Growth

Please refer to section 10 of this AMP for information on the effects of growth on proposed levels of service.

9.8.5 Risks

The following risks are associated with the defined proposed levels of service:

- Increase in operation and maintenance costs
- Higher likelihood of catastrophic asset failure
- Negative impact on community (financial, safety, etc.)

Strategies



Growth



Financial Strategy



Recommendations

10. 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.

10.1 District of Manitoulin Official Plan

The District of Manitoulin Official Plan has been adopted by the Manitoulin Planning Board on October 29, 2018. As a member municipality of the Manitoulin Planning Board, the Township of Burpee and Mills has adopted the plan to guide and manage a pattern of development over the life of the Plan.

The Official Plan is a planning document that directs future growth, guides the development, and improve community sustainability by establishing clear and resilient policies and principles. The Official Plan was prepared based on the changing demographic, economic and environmental condition since the last provincially approved Official Plan of 1979.

The goal of the Official Plan is to support the member municipality to remain healthy, vibrant and sustainable with quality services, amenities and a strong economy. The policies of the Plan provide direction for not only the physical infrastructure but also the environmental features in the planning area. The planning horizon for the plan spans 20 years, covering to 2036.

In order to develop a resilient community, the Plan intends to direct 60% or more of residential lot creation to Settlement Areas which including urban areas and village areas. The Township are intended to experience limited growth through the development or redevelopment of existing vacant or under-utilized lots to maintain its rural character and protect the environment and natural features. The Plan indicate the importance of maintaining the district's agriculture industry, expanding on tourism industry and encouraging other sustainable economic development.

The population of the Manitoulin District is projected to reach 8,900 in 2036. However, the working population (ages 15-69 years) and employment of the District is projected to decrease slightly. With respect to these projections, the Township is expected to experience similar trends. According to Statistics Canada, 20% of the population of the Township will reach their retirement ages in the next 10 years. To accommodate anticipated population growth and address the accessibility needs of the aging population, sufficient land is to be designated for special needs housing,

employment uses and provide a variety of opportunities throughout the Township.

The following table outlines population, private dwellings and working population changes to Burpee and Mills between 2011 and 2021 from Statistics Canada, for which the Township will be required to provide services.

Year	Population	Private Dwellings	Working Population (age 15-69)
2011	308	255	240
2016	343	274	250
2021	382	292	245

Table 38 Population, Private Dwellings, and Working Population

10.2 Regional Growth (Manitoulin Island)

In 2021 the Come North Conference Report was produced by FedNor and Government of Canada. The document describes short, medium, and long-term objectives for all communities in Northern Ontario as it relates to population growth.

According to the report all 11 Census Districts in Northern Ontario (Nipissing, Parry Sound, Manitoulin, Sudbury, Greater Sudbury, Timiskaming, Cochrane, Algoma, Thunder Bay, Rainy River, Kenora) are currently experiencing the following trends: population decline, population aging, or labour shortages. The report highlights a risk of these communities becoming economically unsustainable unless population retention and attraction numbers improve. The risk is the result of the dependency ratio increasing. The dependency ratio is the ratio of people unable to support themselves without assistance; people between the ages of 0 and 14 and 64 and older.

The goal is to achieve a dependency ratio of 0.5. In 1996, every Census District was at or near the goal but by 2016, none were below and more than half had a ratio in excess of 0.6. The following graph displays the dependency ratio for each Census District in 1996 and 2016 along with a projected ratio for the year 2036.

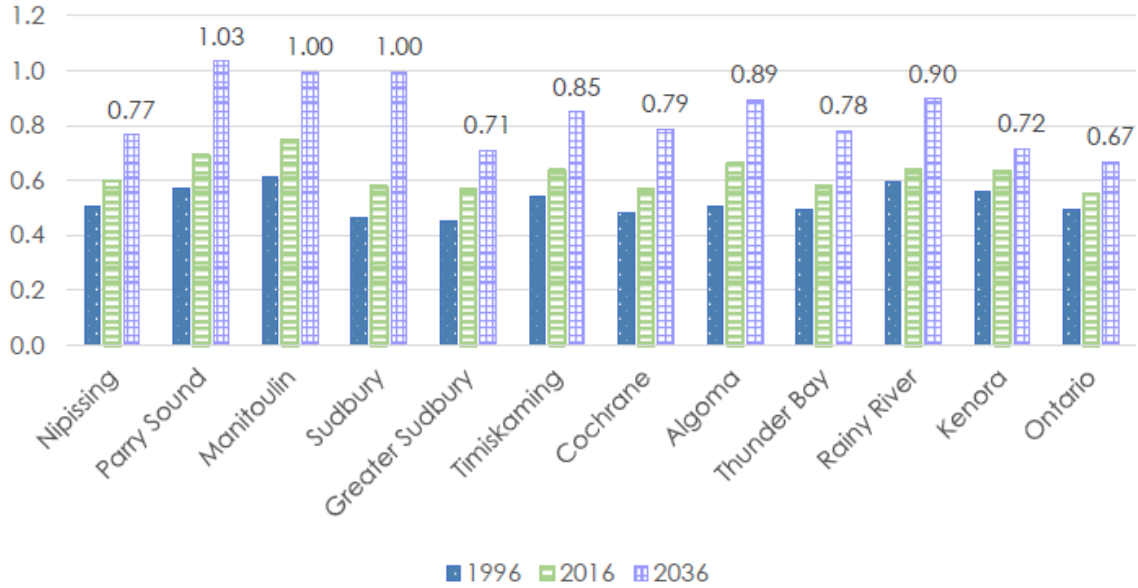


Figure 54 Northern Ontario Population Projections

The Township of Burpee and Mills is found in the Manitoulin District, which is expected to reach a dependency ratio of 1.00 by 2036.

The population in the Manitoulin District remains relatively constant since 2006. The following graph from the 2017 Manitoulin District Report by the Northern Policy Institute, displays the population and employment trends from 1986 to 2016.

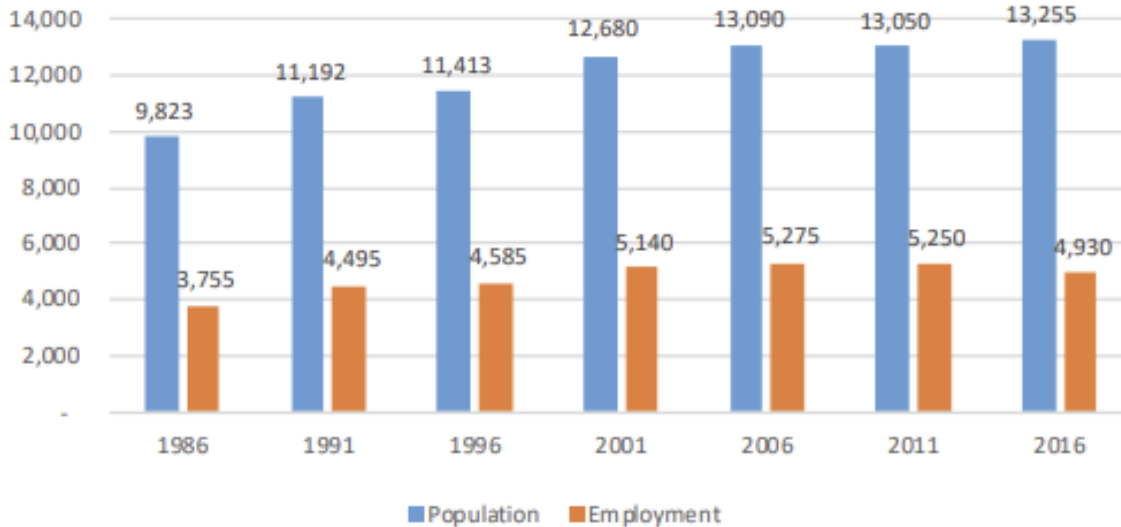


Figure 55 Manitoulin District Population and Employment Trends

Population growth in the region is the result of interprovincial in-migration; net interprovincial in-migration equaled 730 between 2001 and 2016.

The following table, found in the same report, shows population projections in Manitoulin District for the years 2013 to 2041.

Year	Ages 0-19	Ages 20-64	Ages 65+	Total
2017	2,936	7,304	3,198	13,438
2022	2,881	7,051	3,653	13,585
2030	2,856	6,408	4,460	13,724
2041	2,831	6,127	4,831	13,789

Table 39 Manitoulin District Population Projects: 2013-2041

According to the census data, the population is projected to remain constant similar to the projection in the above report. Given the upward trends of population and employment, Manitoulin District and the communities within the region, are likely to experience continuous growth.

10.3 Impact of Growth on Lifecycle Activities

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

The growth of Manitoulin Island and its townships will present challenges to service delivery and service delivery assets across the region. The Island and its communities recognize this and have detailed strategies in their plans and communication documents to mitigate the impact on services and ensure long-term viability for residents. This includes a commitment to developing existing townships and population centers, leveraging current infrastructure, staff, and processes to reduce the cost of expanding capacity. Additionally, there will be long-term funding obligations to maintain and enhance lifecycle activities in response to a growing population.

To accommodate growth while maintaining fiscal responsibility, Burpee and Mills asset management strategies should include:

- Data Driven Planning: Utilizing updated growth forecasts to prioritize infrastructure investments based on long-term needs.
- Lifecycle Cost Analysis: Ensuring that new infrastructure investments consider long-term maintenance and renewal costs to optimize service delivery.

11. 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 Township of Burpee and Mills to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

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

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

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

If the financial plan component results in a funding shortfall, the Province requires the inclusion of a specific plan as to how the impact of the shortfall

will be managed. In determining the legitimacy of a funding shortfall, the Province may evaluate a Township’s approach to the following:

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

11.1 Annual Requirements & Capital Funding

11.1.1 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 \$668,000 annually to address capital requirements for the assets included in this AMP.

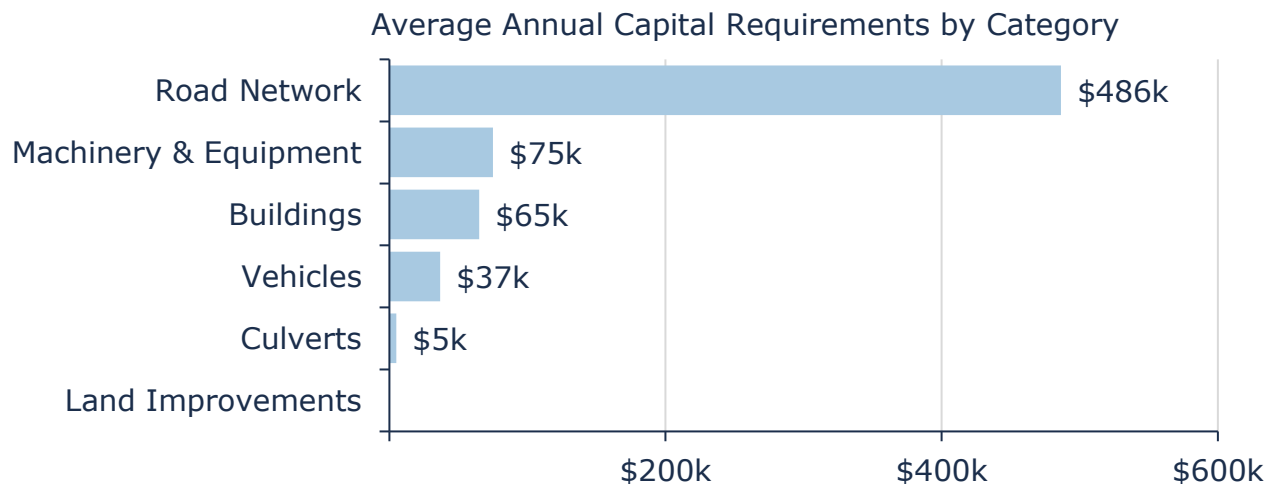


Figure 56 Annual Capital Funding Requirements by Asset Category

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

However, for the Road Network, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Township’s 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 two scenarios for the Road Network:

1. **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.
2. **Lifecycle Strategy Scenario:** Based on the assumption that lifecycle activities are performed at strategic intervals to extend the service life of assets until replacement is required.

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	\$1,406,000	\$486,000	\$920,000

Table 40 Lifecycle Strategies Annual Savings

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of \$920,000 for the Road Network. This represents an overall reduction of the annual requirements by 35%. As the lifecycle strategy scenario represents the lowest cost option available to the Township, we have used these annual requirements in the development of the financial strategy.

11.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$179,000 towards capital projects per year. Given the annual capital requirement of \$668,000, there is currently a funding gap of \$489,000 annually.

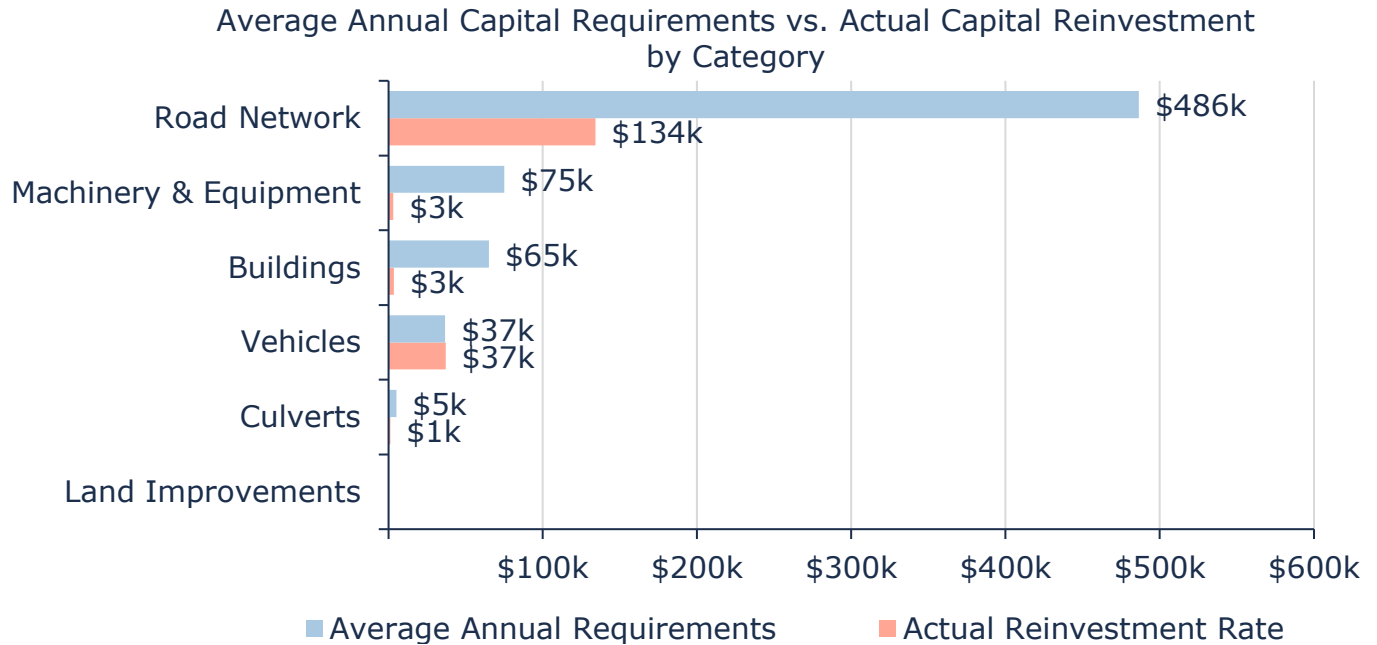


Figure 57 Annual Requirements vs. Capital Funding Available

11.2 Funding Objective

We have developed a scenario that would enable Burpee and Mills to achieve full funding within 20 years for the following assets:

1. **Tax Funded Assets:** Road Network, Culverts, Buildings, Machinery & Equipment, Land Improvements, 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.

11.3 Financial Profile: Tax Funded Assets

11.3.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available			Total Available	Annual Deficit
		Taxes	CCBF	OCIF		
Road Network	486,000	12,604	22,471	98,982	134,057	351,943
Culverts	5,000		231	1,018	1,249	3,751
Buildings	65,000	3,437			3,437	61,563
Machinery & Equipment	75,000	3,000			3,000	72,000
Land Improvements	0				0	0
Vehicles	37,000	37,000			37,000	0
Total	668,000	56,041	22,702	100,000	178,743	489,257

Table 41 Annual Available Funding for Tax Funded Assets

The average annual investment requirement for the above categories is \$668,000. Annual revenue currently allocated to these assets for capital purposes is \$179,000 leaving an annual deficit of \$489,000. Put differently, these infrastructure categories are currently funded at 26.8% of their long-term requirements.

11.3.2 Full Funding Requirements

In 2023, the Township of Burpee and Mills had budgeted annual tax revenues of approximately \$832,242. 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:

Asset Category	Tax Change Required for Full Funding
Road Network	42.3%
Culverts	0.5%
Buildings	7.4%
Machinery & Equipment	8.7%
Land Improvements	0%
Vehicles	0%
Total	58.9%

Table 42 Tax Increase Requirements for Full Funding

The table below presents several options:

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	489,257	489,257	489,257	489,257
Change in Debt Costs	N/A	N/A	N/A	N/A
Resulting Infrastructure Deficit:	489,257	489,257	489,257	489,257
Tax Increase Required	58.8%	58.8%	58.8%	58.8%
Annually:	9.7%	4.8%	3.2%	2.4%

Table 43 Tax Increase Options 5-20 Years

11.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 20-year option. This involves full funding being achieved over 20 years by:

- a) increasing tax revenues by 2.4% each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- b) allocating the current CCBF and OCIF revenue as outlined previously.
- c) 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 commitment³.
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 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of \$212,00 for Machinery & Equipment.

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.

³ 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.

11.4 Use of Reserves

11.4.1 Available Reserves

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

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

By asset category, the table below outlines the details of the reserves currently available to Burpee and Mills.

Category	Balance at December 31, 2023
Road Network	71,680
Culverts	
Buildings	24,200
Machinery & Equipment	93,000
Land Improvements	
Vehicles	87,345
Total Tax Funded:	276,225

Table 44 Burpee and Mills Reserve Balances

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:

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

These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with Burpee and Mills'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.

11.4.2 Recommendation

In 2025, Ontario Regulation 588/17 required Burpee and Mills 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.

12. Recommendations & Key Considerations

12.1 Financial Strategies

1. Review the feasibility of adopting a full-funding scenario to achieve 100% of average annual funding requirement for the asset categories analyzed. This includes:
 - a. Increasing taxes by 2.4% per year over a period of 20 years;
2. Continued allocation of OCIF and CCBF funding as previously outlined.
3. Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
4. Continue to apply for project specific grant funding to supplement sustainable funding sources.

12.2 Asset Data

1. Continuously review, refine, and calibrate lifecycle and risk profiles to better reflect actual practices and improve capital projections. In particular:
 - a. the timing of various lifecycle events, the triggers for treatment, anticipated impacts of each treatment, and costs
 - b. the various attributes used to estimate the likelihood and consequence of asset failures, and their respective weightings
2. 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 labour 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.
3. 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.

12.3 Risk & Levels of Service

1. 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.
2. Available data on current performance should be centralized and tracked to support any calibration of service levels aligning with O. Reg. 588's 2025 requirements on proposed levels of service.
3. 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.

Appendices

Appendix A – Infrastructure Report Card

Appendix B – 10-Year Capital Requirements

Appendix C – Level of Service Maps

Appendix D – Risk Rating Criteria

1. Appendix A – Infrastructure Report Card

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Road Network	\$31 m	Good	Annual Requirement:	\$486,000
			Funding Available:	\$134,000
			Annual Deficit:	\$352,000
Culverts	\$176 k	Good	Annual Requirement:	\$5,000
			Funding Available:	\$1,200
			Annual Deficit:	\$3,800
Buildings	\$1.6 m	Fair	Annual Requirement:	\$65,000
			Funding Available:	\$3,000
			Annual Deficit:	\$62,000
Land Improvements	\$10k	Very Poor	Annual Requirement:	\$0
			Funding Available:	\$0
			Annual Deficit:	\$0
Vehicles	\$367k	Good	Annual Requirement:	\$37,000
			Funding Available:	\$37,000
			Annual Deficit:	\$0
Machinery & Equipment	\$750k	Fair	Annual Requirement:	\$75,000
			Funding Available:	\$3,000
			Annual Deficit:	\$72,000

2. Appendix B – 10-Year Capital Requirements

The tables below summarize the projected cost of lifecycle activities (rehabilitation and replacements) that may be undertaken over the next 10 years to support current levels of service.

These projections are generated in Citywide and rely on the data available in the asset register. Assessed condition data and replacement costs were used to assist in forecasting replacement needs for roads. For all remaining assets, only age was used to determine forthcoming replacement needs.

The projections can be different from actual capital forecasts. Consistent data updates, particularly condition, replacement costs, and regular upkeep of lifecycle models, will improve the alignment between the system generated expenditure requirements, and the Township’s capital expenditure forecasts.

Note: These projections are generated in Citywide and rely on the data available in the asset register. As assessed condition data was not available for many buildings assets, age was used to determine forthcoming replacement needs. Buildings and facilities often contain thousands of assets, each with its own estimated useful life. Currently, however, as the Township’s buildings are not fully componentized. Over time, with improved and effective componentization, the alignment between the system generated expenditure requirements, and the Township’s capital expenditure forecasts will also increase.

a. Road Network

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
LCB	\$0	\$0	\$0	\$0	\$0	\$34k	\$33k	\$0	\$0	\$290k	\$320k
Signs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$34k	\$33k	\$0	\$0	\$290k	\$320k

Table 45 System Generated 10-Year Capital Replacement Forecast: Road Network

b. Culverts

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Culverts	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9k	\$7k	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9k	\$7k	\$0

Table 46 System Generated 10-Year Capital Replacement Forecast: Culverts

c. Buildings

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Cemetery Storage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Municipal Office	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Public Works Garage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sand Shed	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table 47 System Generated 10-Year Capital Replacement Forecast: Buildings

d. Land Improvements

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Outdoor Rink	\$0	\$0	\$0	\$0	\$0	\$10k	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$10k	\$0	\$0	\$0	\$0	\$0

Table 48 System Generated 10-Year Capital Replacement Forecast: Land Improvements

e. Vehicles

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Fire Department	\$0	\$0	\$42k	\$0	\$0	\$0	\$0	\$112k	\$0	\$0	\$0
Road Department	\$0	\$0	\$0	\$0	\$16k	\$0	\$0	\$18k	\$0	\$179k	\$0
Total	\$0	\$0	\$42k	\$0	\$16k	\$0	\$0	\$130k	\$0	\$179k	\$0

Table 49 System Generated 10-Year Capital Replacement Forecast: Vehicles

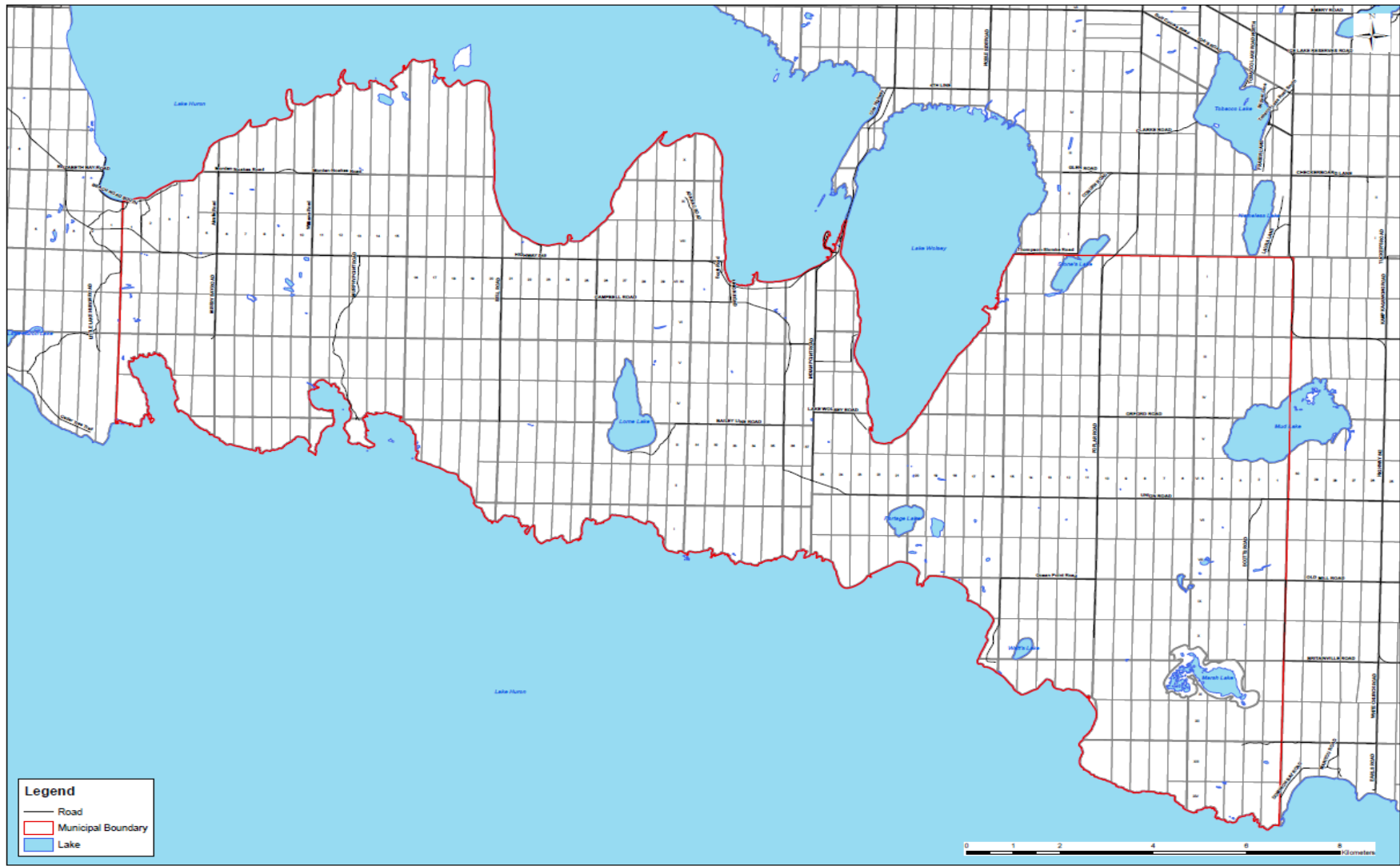
f. Machinery & Equipment

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Fire Department	\$72k	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Municipal Office	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49k	\$0	\$0	\$0
Public Works	\$140k	\$0	\$45k	\$0	\$21k	\$0	\$0	\$258k	\$0	\$165k	\$0
Total	\$212k	\$0	\$45k	\$0	\$21k	\$0	\$0	\$307k	\$0	\$165k	\$0

Table 50 System Generated 10-Year Capital Replacement Forecast: Machinery & Equipment

3. Appendix C – Level of Service Maps & Photos

Road Network Map



4. Appendix D – Risk Rating Criteria

a. Probability of Failure

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
Road Network (Roads)	Condition	100%	4-5	1
			3-4	2
			2-3	3
			1-2	4
			0-1	5
Buildings Machinery & Equipment Vehicles Land Improvements	Condition	100%	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
Culverts	Condition	80%	4-5	1
			3-4	2
			2-3	3
			1-2	4
			0-1	5
	Pipe Material	20%	Poly	2
			Steel	3

b. Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Road Network	Economic (100%)	Replacement Cost (100%)	\$0-\$10,000	1
			\$10,000-\$50,000	2
			\$50,000-\$100,000	3
			\$100,000-\$500,000	4
			\$500,000+	5
Buildings Land Improvements Vehicles Machinery & Equipment	Economic (100%)	Replacement Cost (100%)	\$0-\$10,000	1
			\$10,000-\$50,000	2
			\$50,000-\$100,000	3
			\$100,000-\$500,000	4
			\$500,000+	5
Culvers	Economic (70%)	Replacement Cost (100%)	\$0-\$50	1
			\$50-\$100	2
			\$100-\$200,000	3
			\$200,000-\$300,000	4
			\$300,000+	5
	Operational (30%)	Surface Type (100%)	Gravel	2
		LCB	4	