Asset Management Plan 2025

Town of Laurentian Hills

October 2025

psdcitywide

This Asset Management Plan was prepared by:

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

Key Statistics

$81.0 m	2024 Replacement Cost of Asset Portfolio
$58.1 k	Replacement Cost of Infrastructure Per Household
48%	Percentage of Assets in Fair or Better Condition
35%	Percentage of Assets with Assessed Condition Data
$2.24 m	Annual Capital Infrastructure Deficit
0.82%	Actual Investment Rate

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1. Executive Summary

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

1.1 Scope

This Asset Management Plan (AMP) identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Town of Laurentian Hills 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 Compliance

With the development of this AMP, the Town of Laurentian Hills has achieved compliance with 2025 requirements under O. Reg. 588/17. This includes requirements for proposed levels of service and inventory reporting for all asset categories.

1.3 Findings

The overall replacement cost of the asset categories included in this AMP totals $81.0 million. 48% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 35% of assets. For the remaining 65% 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 (paved roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Town's average annual capital requirement totals $2.91 million. Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately $666,000 towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $2.24 million.

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 Town. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources.

1.4 Recommendations

To meet the proposed level of service selected for this asset management plan, no financial strategy was needed as the Town is currently meeting the proposed level of service. Therefore, there are no funding increases recommended or required to meet the proposed level of service selected for this asset management plan. This is further detailed throughout the asset management plan within Section 4 and Section 12.

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

- Re-evaluate the current level of investment and current infrastructure needs and consider the Towns risk tolerance, specifically as it relates to critical infrastructure assets
- Review data to update and maintain a complete and accurate dataset
- Develop a condition assessment strategy with a regular schedule
- Review and update lifecycle management strategies
- Development and regularly review short- and long-term plans to meet capital requirements
- Measure current levels of service and identify sustainable proposed levels of service

2. Introduction & Context

2.1 Community Profile

Census Characteristic	Laurentian Hills	Ontario
Population 2021	2,885	14,223,942
Population Change 2016-2021	-2.6%	5.8%
Total Private Dwellings	1,393	5,929,250
Population Density	4.5/km^2	15.9/km^2
Land Area	634.31 km^2	892,411.76 km^2

Table 1 Laurentian Hills Community Profile[1]

The Town of Laurentian Hills, located in Renfrew County in the northwestern part of the Ottawa Valley, was incorporated on January 1, 2000, through the amalgamation of the former Townships of Rolph, Buchanan, Wylie & McKay and the Village of Chalk River. Nestled along the Ottawa River, the municipality surrounds the Town of Deep River to the north, west, and south, and lies approximately 200 kilometres northwest of Ottawa and 147 kilometres south of North Bay.

Covering a land area of 634.3 square kilometres, Laurentian Hills includes the communities of Chalk River, Point Alexander, Rolphton, Meilleurs Bay, Moor Lake, and Wylie. A significant portion of the municipality—approximately 51.8%—consists of Crown or federally owned land, which is primarily used for military purposes and forestry research, including areas adjacent to the Chalk River Laboratories.

The local economy is supported by a combination of forestry, tourism, recreation, and nuclear research. Historically, Laurentian Hills was home to the Nuclear Power Demonstration (NPD) reactor, and the nearby Chalk River Laboratories continue to play a significant role in the region's economic base. The municipality also benefits from its natural amenities, which support seasonal tourism and outdoor activities.

The town offers a range of community and recreational services that contribute to residents' quality of life. Public beaches such as Tee Lake Beach, Burke's Beach, and Corry Lake Beach provide access to local lakes, while multiple playgrounds in subdivisions like Point Alexander, McKee, Glenfiddich, and Mountain View offer family-friendly spaces for children. Outdoor skating rinks are maintained by community volunteers in several subdivisions during the winter months. The town also features parks such as Tenna-Brise Park, Anne Crosson Park, and the Chalk River Ball Park, which serve as gathering spaces for events, sports, and recreation throughout the year.

[1] Information obtained from Statistics Canada- 2021 census of population

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, 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 Laurentian Hills Climate Profile

Laurentian Hills is expected to experience notable effects of climate change which include higher average annual temperatures, and an increase in total annual precipitation. According to Climatedata.ca, a collaboration supported by Environment and Climate Change Canada (ECCC), the Municipality may experience the following trends:

Higher Average Annual Temperature

- Between the years 1971 and 2000 the annual average temperature was 4.6ºC
- Under a high emissions scenario, the annual average temperatures are projected to be 7.5ºC by the year 2050, 9.6ºC for the 2051-2080 period, and 11.4ºC by the end of this century.

Increase in Total Annual Precipitation

- Under a high emissions scenario, Laurentian Hills is projected to experience a 12% increase in precipitation by the year 2080 and an 18% increase by the end of the century.

2.2.2 Consideration of Climate Change with Asset Management Strategies

Asset management practices aim to deliver sustainable service delivery - providing 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 assets and increasing the risk of asset failure. Achieving desired levels of service can become more challenging due to climate change impacts such as flooding, high heat, drought, and more frequent and intense storms.

To achieve sustainable service delivery, climate change considerations should be incorporated into asset management practices. Integrating asset management and climate change adaptation adheres to 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.

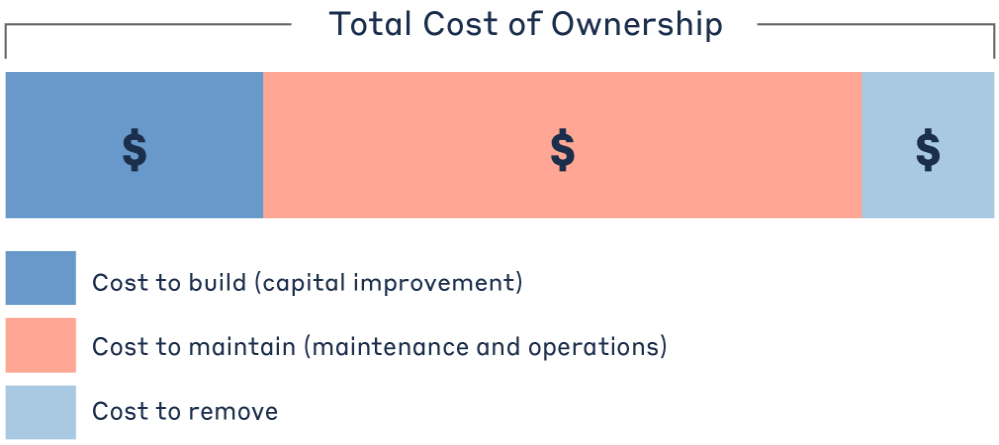


Figure 2 Total Cost of Asset Ownership

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.

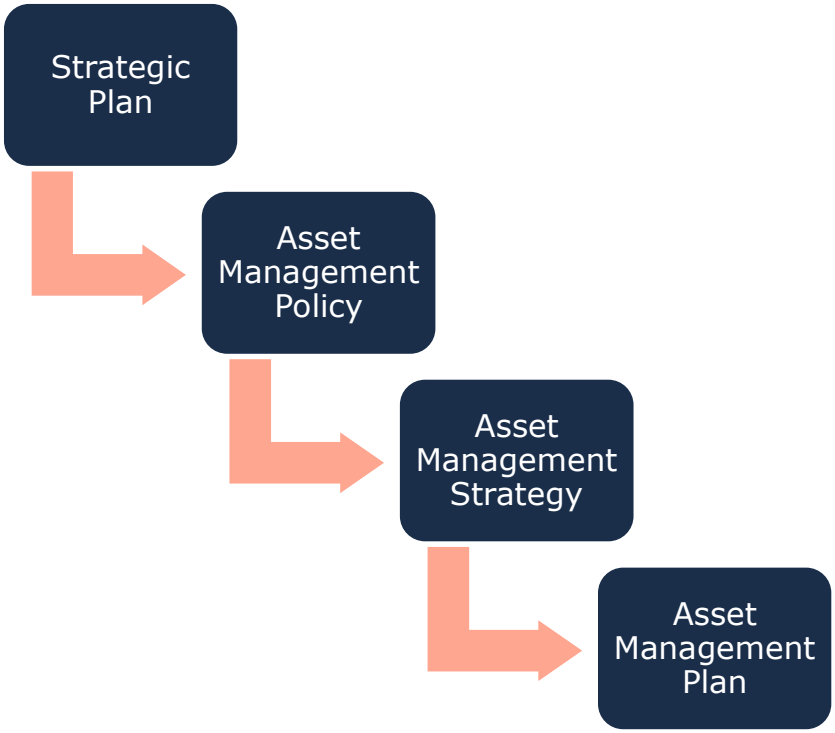


Figure 3 Foundational Asset Management Documents

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

Asset Management Policy

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

The Town of Laurentian Hills adopted the Strategic Asset Management Policy (Bylaw 30-19) on October 16, 2019, in accordance with Ontario Regulation 588/17. The policy outlines the Towns'

commitment to providing services to residents in a fiscally responsible manger that supports and healthy and vibrant community and is built upon the following principles:

- **Forward Looking:** The Town will take a long term view while considering demographic and economic trends.
- **Budgeting and Planning:** The Town shall take into account any applicable budgets or fiscal plans.
- **Prioritizing:** The Town will clearly identify infrastructure priorities which will drive investment decisions.
- **Transparency:** The Town shall be evidence-based and transparent.
- **Consistency:** The Town shall ensure the continued provision of core public services.
- **Environmentally Consciousness:** The Town shall minimize the impact of infrastructure on the environment.
- **Health and Safety:** The Town shall ensure that the health and safety of workers in the construction and maintenance of infrastructure assets is protected.
- **Community Focused:** The Town shall promote community benefits, being the supplementary social and economic benefits arising from and infrastructure project.

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 Town plans to achieve asset management objectives through planned activities and decision-making criteria.

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

Asset Management Plan

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

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
Maintenance Activities that prevent defects or deteriorations from occurring	**$**	♦ 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;
Rehabilitation/ Renewal Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	**$$$**	♦ Useful life may not be extended as expected; ♦ May be costlier in the long run when assessed against full reconstruction or replacement; ♦ Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction Asset end-of-life activities that often involve the	**$$$$$**	♦ Incorrect or unsafe disposal of existing asset; ♦ Costs associated with asset retirement obligations; ♦ Substantial exposure to high inflation and cost overruns;

complete replacement of assets	♦ 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 Town'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.

Figure 4 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
Direct Financial	Direct financial consequences are typically measured as the replacement costs of the asset(s) affected by the failure event, including interdependent infrastructure.
Economic	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.
Socio-political	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.
Environmental	Environmental consequences can include pollution, erosion, sedimentation, habitat damage, etc.
Public Health and Safety	Adverse health and safety impacts may include injury or death, or impeded access to critical services.
Strategic	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 Town 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 Town measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories as applicable (Roads, Water and Wastewater) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP.

Technical Levels of Service

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

For core asset categories as applicable, the province, through O. Reg. 588/17, has also provided technical metrics that are required to be included in this AMP.

Current and Proposed Levels of Service

Current LOS are the past performance metrics of an asset category up until present day. In contrast, Proposed LOS looks toward the municipality's goal for asset performance by a defined future date.

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

2.4 Scope & Methodology

2.4.1 Asset Categories for this AMP

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

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

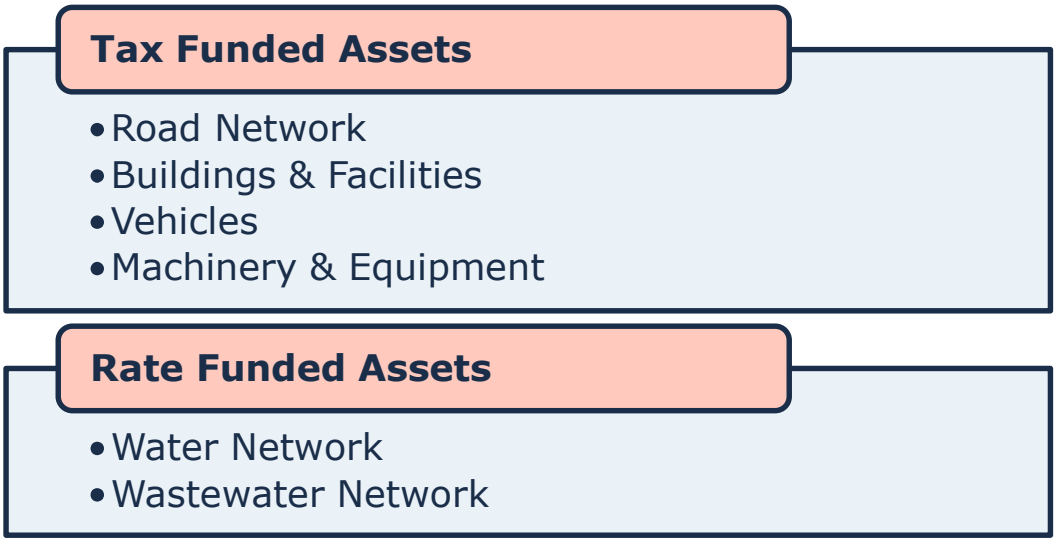


Figure 5 Tax Funded and Rate Funded Asset Categories

2.4.2 Data Effective Date

It is important to note that this plan is based on data as of **December 2024**; therefore, it represents a snapshot in time using the best available processes, data, and information at the Town. 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 Town 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 Town 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 Town can determine the service life remaining (SLR) for each asset. Using condition data and the asset's SLR, the Town can more accurately forecast when it will require replacement. The SLR is calculated as follows:

Figure 6 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 Town can determine the extent of any existing funding gap. The reinvestment rate is calculated as follows:

Figure 7 Target Reinvestment Rate Calculation

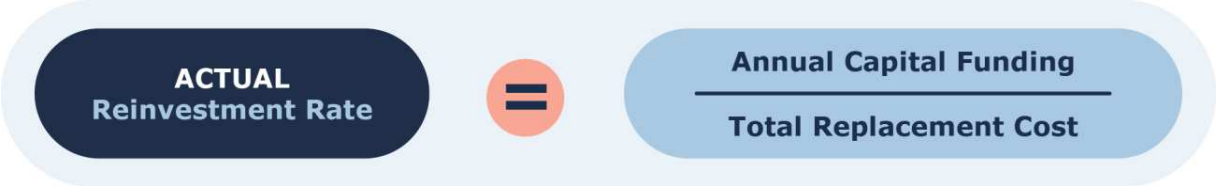


Figure 8 Actual Reinvestment Rate Calculation

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 Town'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.

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)[2]. Along with creating better performing organizations, more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

Figure 9 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

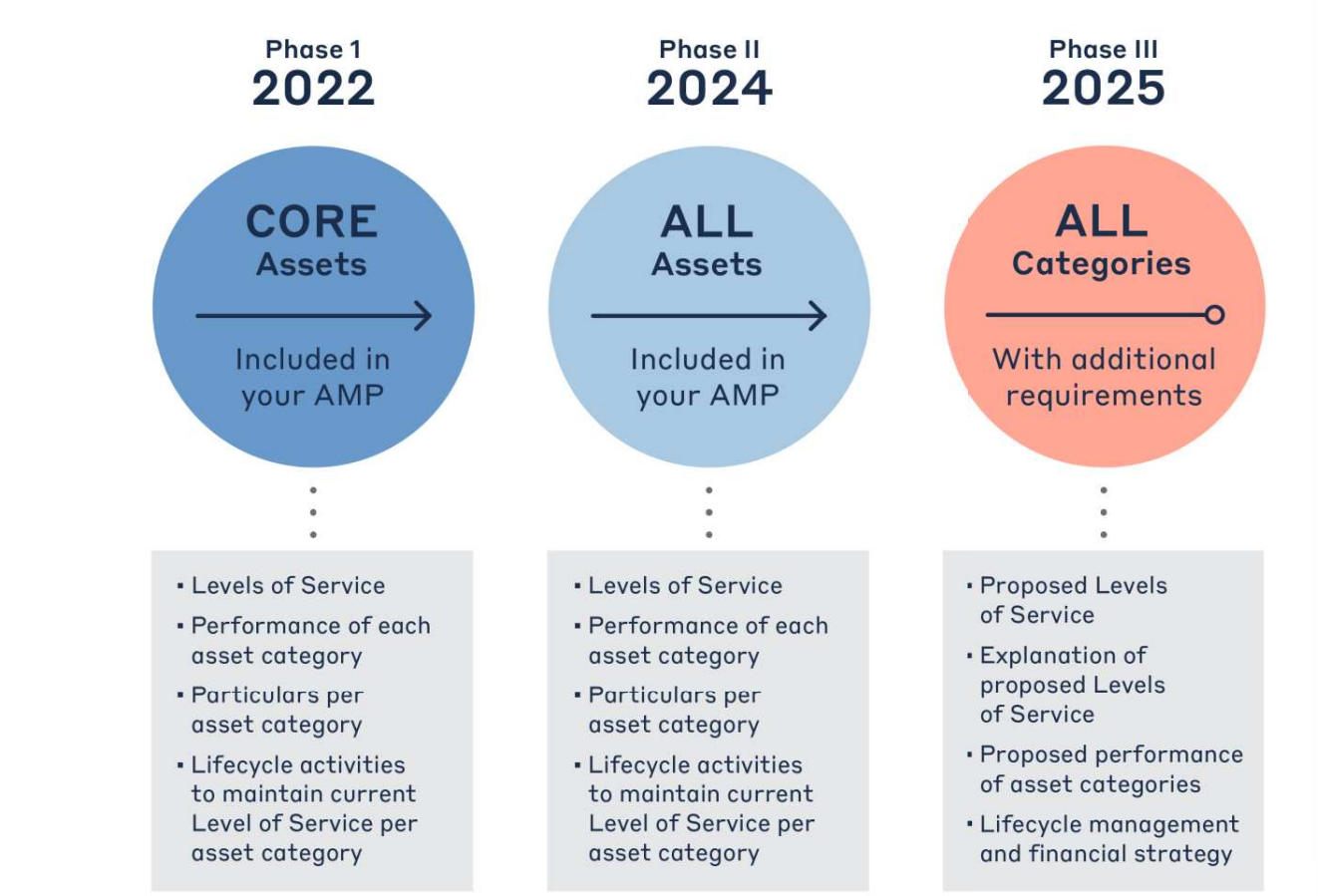


Figure 9 O. Reg. 588/17 Requirements and Reporting Deadlines

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

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)	5.1 – 10.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	5.1 – 10.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	5.3 – 10.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	5.2 – 10.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	5.4 – 10.4	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	5.7 – 10.7	Complete
Current performance measures in each category	S.5(2), 2	5.7 – 10.7	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	5.4 – 10.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	5.5 – 10.5	Complete
Growth considerations	S.6(1), 5	11.1 – 11.2	Complete
Proposed levels of service for each category for next 10 years	S.6(1), 1(i-ii)	5.8 – 10.8	Complete
Explanation of appropriateness of proposed levels of service	S.6(1), 2(i-iv)	4.2	Complete
Lifecycle management activities for proposed levels of service	S.6(1), 4(i)	4.2	Complete
10-year capital costs for proposed levels of service	S.6(1), 4(ii)	Appendix B	Complete
Annual funding availability projections	S.6(1), 4(iii)	4.2	Complete

Table 5 O. Reg. 588/17 Compliance Review

Portfolio Overview

3. State of the Infrastructure

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

3.1 Asset Hierarchy & Data Classification

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Key category details are summarized at asset segment level.

Figure 10 Asset Hierarchy and Data Classification

3.2 Portfolio Overview

3.2.1 Total Replacement Cost of Asset Portfolio

The six asset categories analyzed in this Asset Management Plan have a total current replacement cost of $81.0 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 34% of the total portfolio, wastewater network forms the largest share of the Town's asset portfolio, followed by water network at 30%.

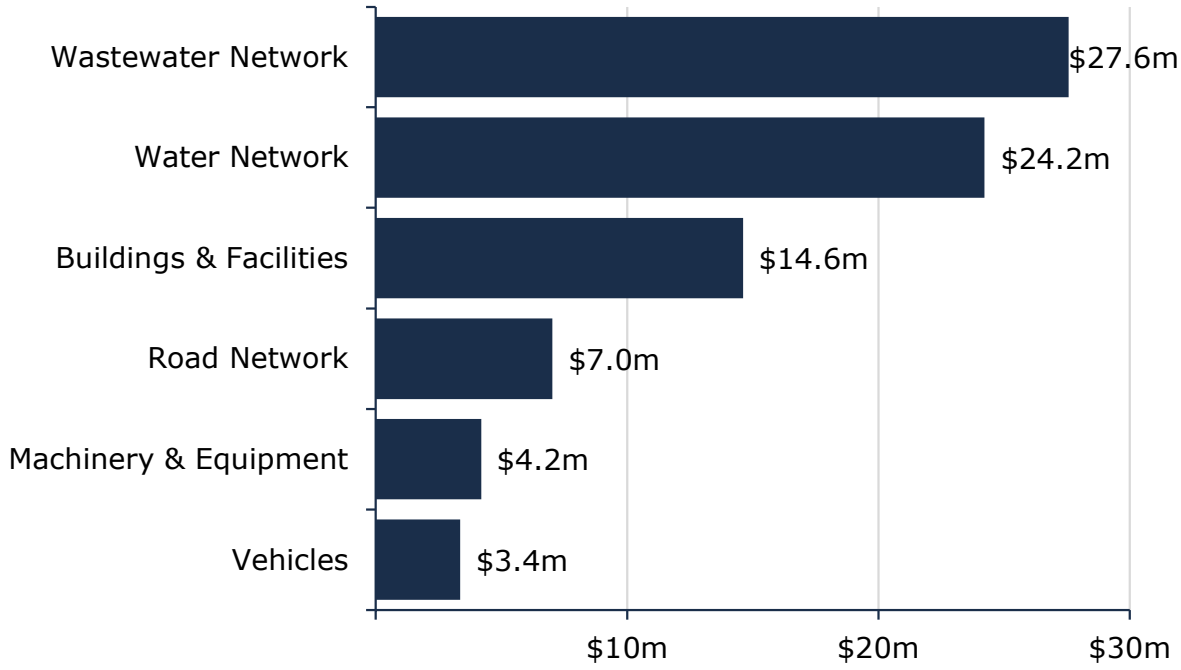


Figure 11 Current Replacement Cost by Asset Category

3.2.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps by comparing the target to the current reinvestment rate. To meet the existing long-term capital requirements, the Town requires an annual capital investment of $2.91 million, for a target portfolio reinvestment rate of 3.59%. Currently, annual investment from sustainable revenue sources is $666 thousand, for a current portfolio reinvestment rate of 0.82%. Target and current re-investment rates by asset category are detailed below.

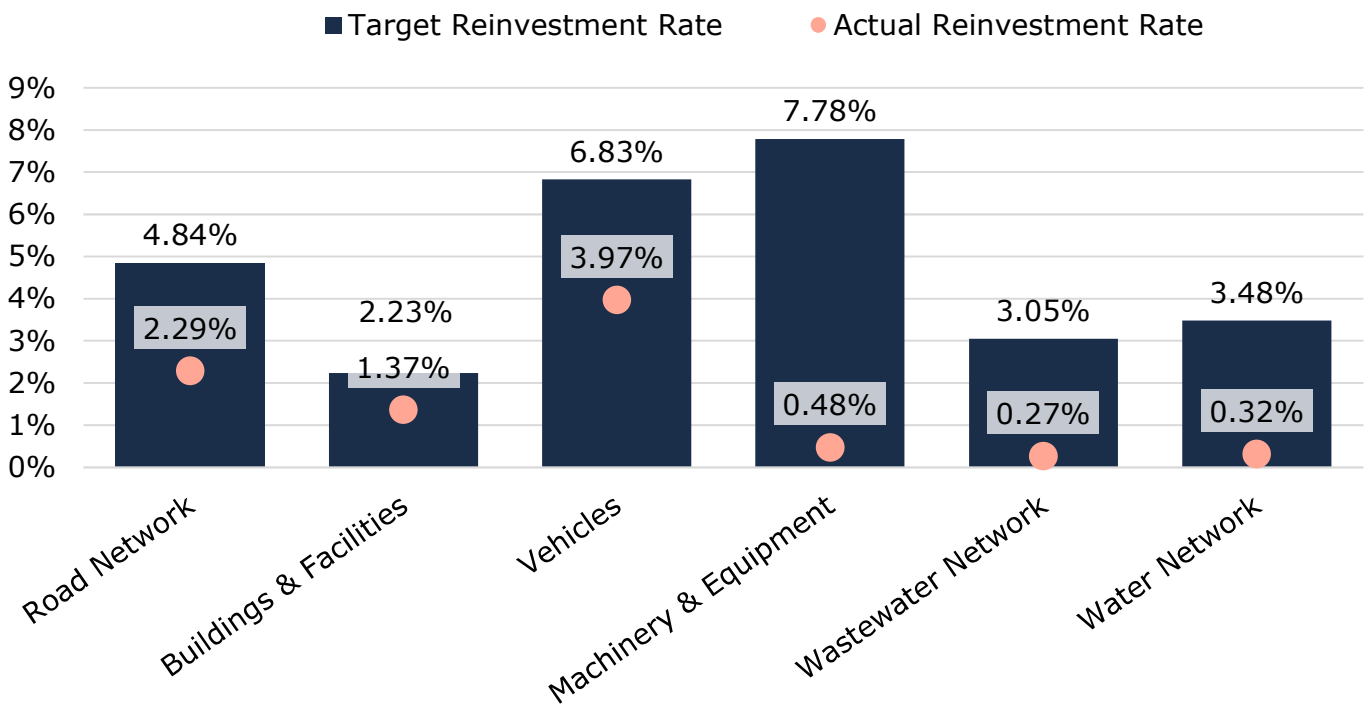


Figure 12 Current Vs. Target Reinvestment Rate

3.2.3 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, 48% of the Town's infrastructure portfolio is in fair or better condition, with the remaining 52% 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 all the asset categories including for the majority of the road network and vehicles. For all remaining assets, age was used as an approximation of condition for these assets. Age-based condition estimations can skew data and lead to potential under- or overstatement of asset needs.

Further, when past assessed condition data was available, it was projected to the current year-end (2024). This 'projected condition' can generate lower condition ratings than those established at the time of the original condition assessment. The rate of this deterioration will also depend on lifecycle curves used to project condition over time.

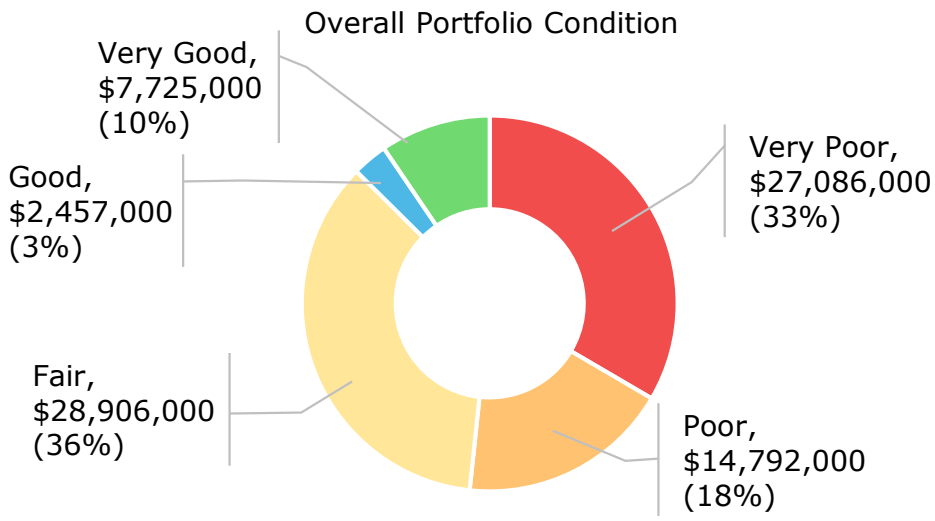


Figure 13 Asset Condition: Portfolio Overview

As further illustrated in Figure 14 at the category level, the majority of major, core infrastructure including road, water and wastewater are in poor or worse condition, based on in-field condition assessment data and aged-based condition data. The majority of vehicles are in fair or better condition, based on recent condition assessments. See Table 6 for details on how condition data was derived for each asset segment.

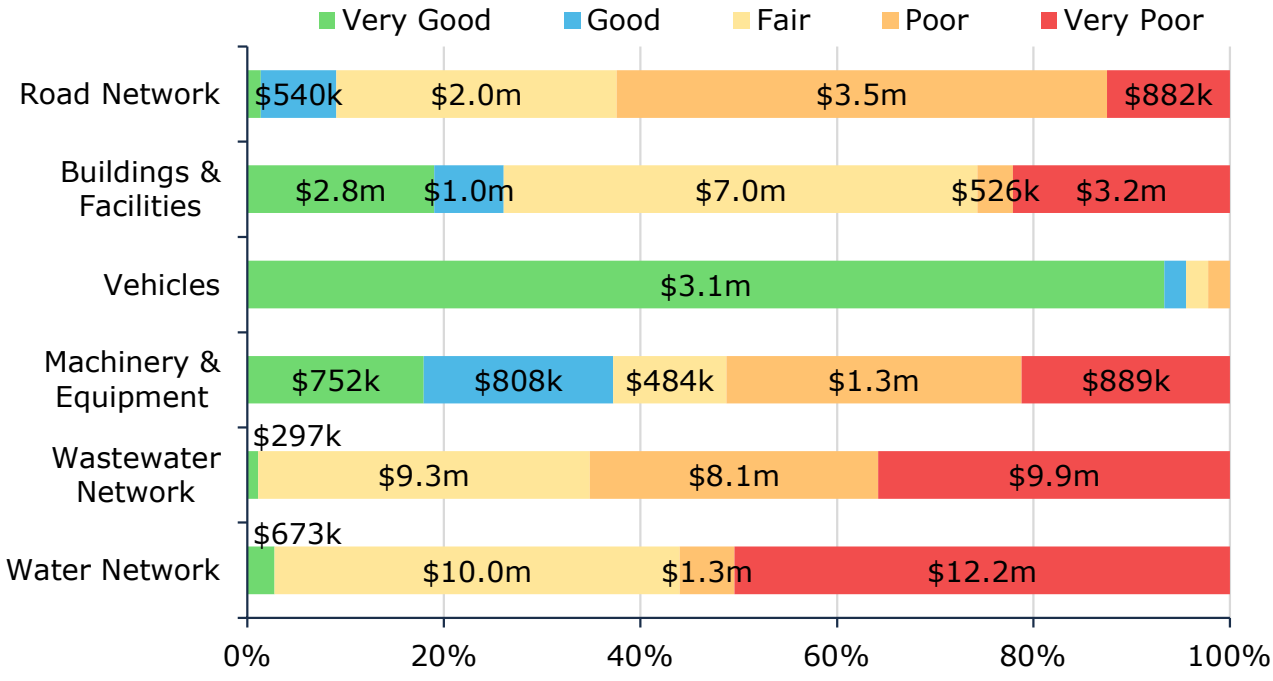


Figure 14 Asset Condition by Asset Category

As outlined previously, 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 'Fire Hall, or 'Municipal Building'.

Source of Condition Data

This AMP relies on assessed condition for 35% of assets, based on and weighted by replacement cost. For the remaining assets, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. Table 6 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	Paved Roads (HCB) Paved Roads (LCB)	97% 100%	2017 McIntosh Perry & 2024 Staff Assessments
Water Network	Water Mains	100%	Staff Assessments
Wastewater Network	Sewer Mains	100%	Staff Assessments
Buildings & Facilities	Fire Land Improvements Public Works Recreation	38% 26% 6% 27%	Staff Assessments
Vehicles	Fire Vehicles Public Works Vehicles	79% 67%	Staff Assessments
Machinery & Equipment	Fire Public Works Recreation	17% 64% 67%	Staff Assessments

Table 6 Source of Condition Data

3.2.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 44% of the Town's assets will require replacement within the next 10 years. Refer to Appendix B – 10-Year Capital Requirements.

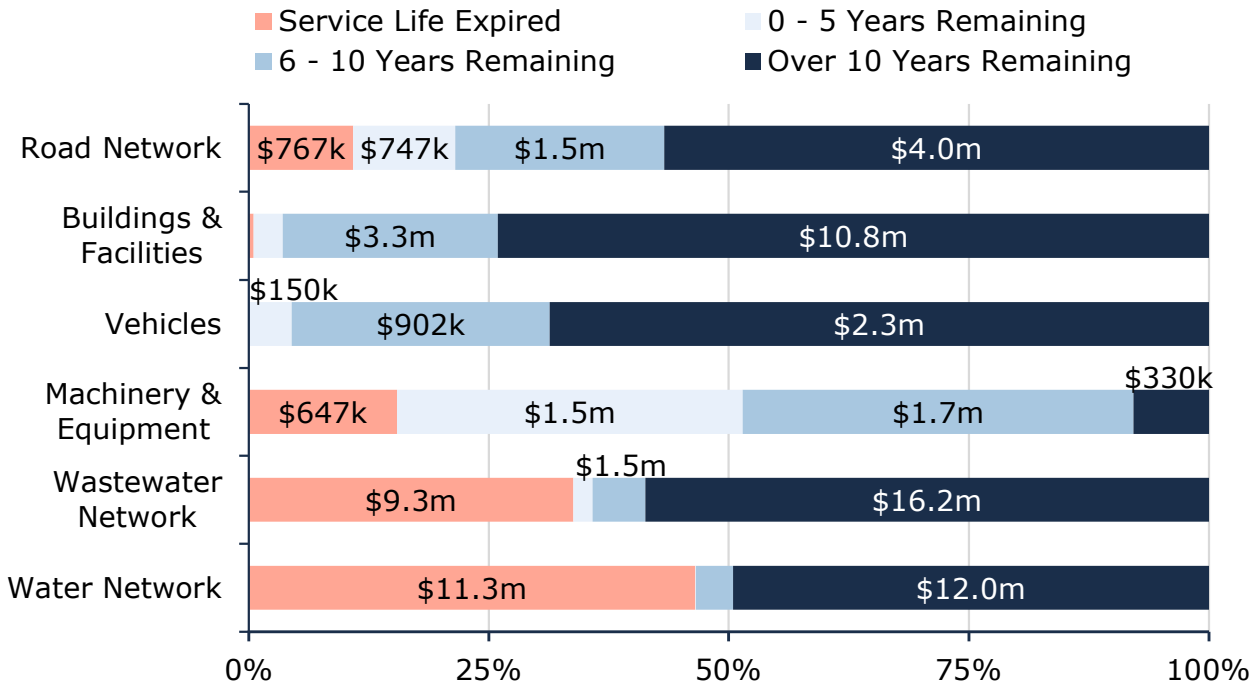


Figure 15 Service Life Remaining by Asset Category

3.2.5 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 51% of the Town's assets, with a current replacement cost of approximately $41.0 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 Town.

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 Town based on their costs, economic importance, social significance, and other factors. Continued calibration of an asset's criticality and regular data updates are needed to ensure these models more accurately reflect an asset's actual risk profile.

3.2.6 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 50-year time horizon. On average, $2.9 million is required each year to remain current with capital replacement needs for the Town's asset portfolio (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.

The chart also illustrates a backlog of $22.1 million, comprised of 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.

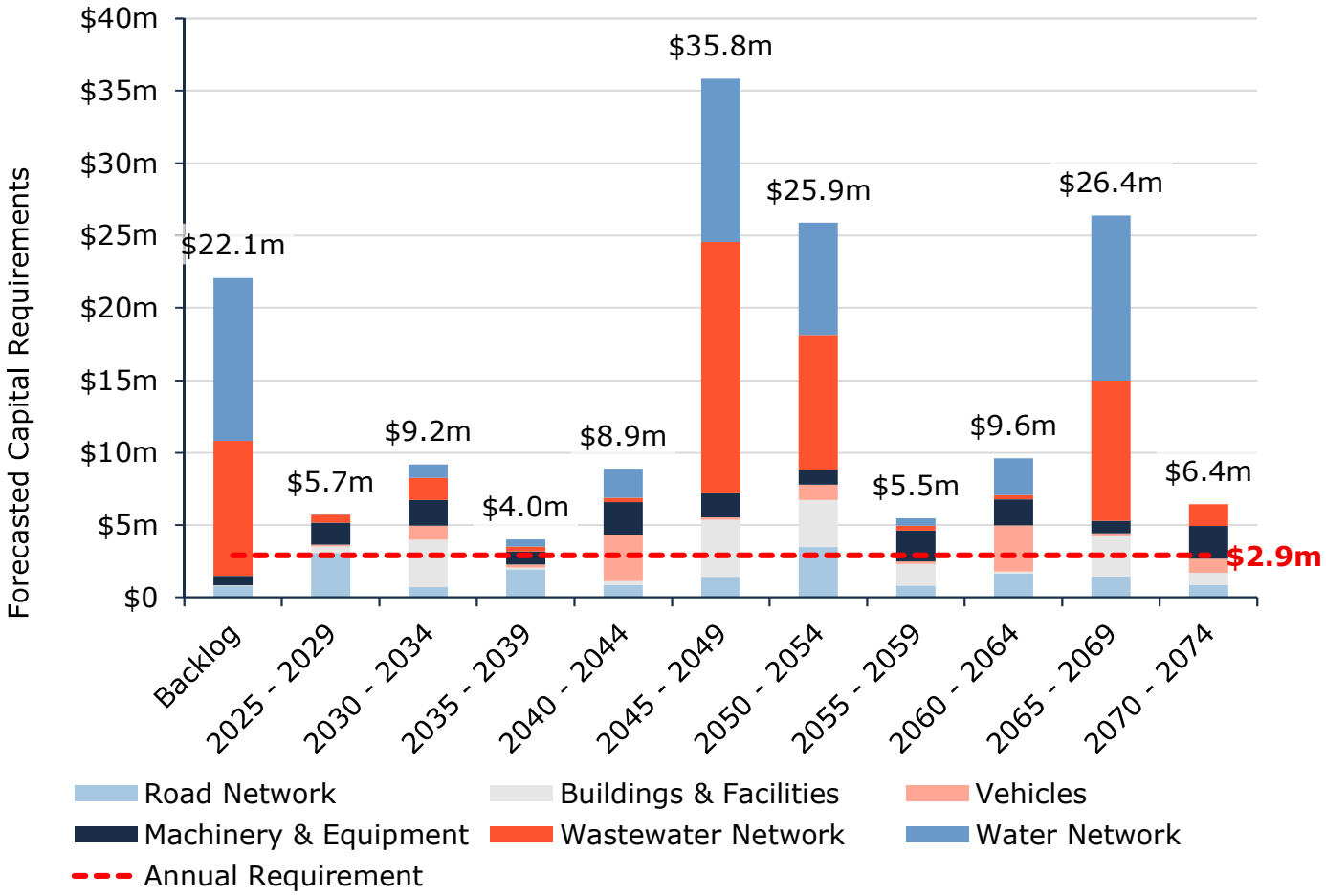


Figure 17 Capital Replacement Needs: Portfolio Overview 2025-2074

Proposed Levels of Service

4. Proposed Levels of Service Analysis

4.1 Overview

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

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

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

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

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

4.1.2 Considerations

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

Financial Impact Assessments

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

Infrastructure Condition Assessments

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

Service Metrics

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

Service Impact Assessments

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

Key Lifecycle Activities

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

Risk Management

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

Infrastructure Condition Enhancements

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

Timelines

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

Stakeholder Engagement

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

Flexibility

- Priorities may change over time due to a variety of factors, such as:
  - Financial state of the municipality
  - Availability of grants
  - Significant increases or decreases in population
  - Changes in political priorities
  - Changes in resident priorities
  - New technologies
  - Changes in legislation
- Any proposed changes to LOS should be flexible and able to adapt to changes listed above, and other unforeseen circumstances

4.2 Proposed Levels of Service Scenarios

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

While all three scenarios were reviewed, ***the Town of Laurentian Hills selected Scenario 1 as their preferred path forward regarding proposed levels of service***, which is reflected in the financial strategy and 10-year capital replacement forecasts.

4.2.1 Scenario 1: Maintain Current Investment (Preferred Scenario)

This scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the projected condition and risk was determined. This scenario assumes no tax or rate increases.

Lifecycle Changes Required for Scenario 1

For all asset categories, no changes to lifecycle strategies are required in order to achieve Scenario 1. For the Town's current approach to lifecycle management of each category, refer to the lifecycle management approach section for each asset category

In future iterations of the AMP, it is recommended to more closely analyze changes to lifecycle management strategies to find long-term cost savings and efficiencies.

Affordability/Achievability of Scenario 1

Of the three scenarios analyzed, Scenario 1 is the least expensive option as maintaining existing funding levels would require no tax or rate increases. The available capital funding over the next 10 years would remain consistent as indicated in the table below:

Categories	Available Capital Funding									
	2026	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Tax-Funded	$515k	$515k	$515k	$515k	$515k	$515k	$515k	$515k	$515k	$515k
Rate-Funded (Water)	$73k	$73k	$73k	$73k	$73k	$73k	$73k	$73k	$73k	$73k
Rate-Funded (Waste-water)	$78k	$78k	$78k	$78k	$78k	$78k	$78k	$78k	$78k	$78k
Total	**$666k**	**$666k**	**$666k**	**$666k**	**$666k**	**$666k**	**$666k**	**$666k**	**$666k**	**$666k**

Table 7 Scenario 1 Available Capital Funding Over Next 10 Years

As the Town of Laurentian Hills selected Scenario 1 as their preferred proposed level of service, a further breakdown of projected capital expenditures by asset category can be found in Appendix B – 10-Year Capital Requirements.

It is important to note that an AMP is a dynamic document which should be reviewed regularly to ensure up-to-date information is incorporated including accurate replacement costs, changes in inventory, changes in available funding sources, and reflection on progress made on previous recommendations.

Changes to Community and Technical Levels of Service for Scenario 1

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

Risks Associated with Scenario 1

There are pros and cons associated with each scenario analyzed, and each benefit is counter-balanced with consequences. For Scenario 1, the following risks have been identified:

- Increased infrastructure backlog
  - While modeling scenarios without financial increases may appear favorable for the short-term financial well-being of residents and businesses, proceeding with insufficient infrastructure funding compels the Municipality to adopt sub-optimal lifecycle management practices. The inability to implement timely and strategic interventions and asset replacements may lead to increased asset failures, reduced service reliability, a rise in resident complaints, and a greater likelihood of costly, unplanned repairs to sustain service levels.

- Reliance on Grants
  - Scenario 1 maintains funding at approximately 43% of the recommended levels, increasing the Municipality's reliance on conditional grants as they become available. While such grants help alleviate the tax and rate burden on residents, they are not a sustainable or guaranteed source of revenue. As a result, the

Municipality remains vulnerable to changes in provincial and federal policies and funding programs.

- Missed opportunities for efficiencies
  - While analyzing Scenario 1, no alternative lifecycle strategies were proposed. Mid-lifecycle interventions, such as asphalt overlays and sewer lining, can result in extended lifespans of assets and reduced costs over the lifetime of the assets. By relying on existing lifecycle strategies, the Municipality risks paying more than necessary to maintain their asset inventory.

Appropriateness of Scenario 1 to Meet the Town's Needs

Town staff recommended maintaining the current level of infrastructure investment as outlined in Scenario 1, until further direction is received from Council. While full funding remains the ideal long-term objective, achieving it would require substantial increases in annual investment, which may not be financially feasible for residents in the short term. Town staff recognize the need for increased investment, however, they also recognize the need to balance affordability and service delivery.

4.2.2 Scenario 2: Achieving 100% Funding

This scenario assumes gradual tax and rate increases, stabilizing at 100% of recommended funding in 10 years for tax funded assets and 20 years for rate funded assets.

- Annual Tax Increase ~1.9%
- Annual Water Rate Increase ~6.5%
- Annual Wastewater Rate Increase ~6.7%

While this scenario was modelled for consideration, the Town did not elect to move forward with this scenario.

Lifecycle Changes Required for Scenario 2

For all asset categories, no changes to lifecycle strategies are required in order to achieve Scenario 2. In future iterations of the AMP, it is recommended to more closely analyze changes to lifecycle management strategies to find long-term cost savings and efficiencies.

Affordability/Achievability of Scenario 2

Of the three scenarios analyzed, Scenario 2 is the most expensive option. Reaching full funding immediately would require an increase of 19.5% in tax revenue. This is not reasonable or realistic to achieve in a short period of time. With the recommended implementation timeframe of 10 years for tax funded assets, tax revenue would be increased gradually from $3.6 million to $4.2 million. For rate funding assets, over a 20 year recommended period, water revenue would increase from $309 thousand to $648 thousand, and wastewater revenue from $291 thousand to $636 thousand. Based on these gradual proposed increases, while maintaining existing sustainable grant funding, the available capital funding over the next 10 years for Scenario 1 is indicated in the table below:

Categories	Available Capital Funding									
	2026	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Tax-Funded	$588k	$660k	$727k	$795k	$864k	$934k	$1.0m	$1.1m	$1.2m	$1.2m
Rate-Funded (Water)	$93k	$115k	$137k	$162k	$187k	$215k	$244k	$275k	$309k	$344k
Rate-Funded (Waste-water)	$98k	$118k	$141k	$164k	$189k	$216k	$245k	$276k	$309k	$344k
Total	**$778k**	**$893k**	**$1.0m**	**$1.1m**	**$1.2m**	**$1.4m**	**$1.5m**	**$1.6m**	**$1.8m**	**$1.9m**

Table 8 Scenario 2 Available Capital Funding Over Next 10 Years

It is important to note that an AMP is a dynamic document which should be reviewed regularly to ensure up-to-date information is incorporated including accurate replacement costs, changes in inventory, changes in available funding sources, and reflection on progress made on previous recommendations.

Changes to Community and Technical Levels of Service for Scenario 2

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

Risks Associated with Scenario 2

There are pros and cons associated with each scenario analyzed, and each benefit is counter-balanced with consequences. For Scenario 2, the following risks have been identified:

- Increased infrastructure backlog
  - While mitigating the impact of financial increases on residents and businesses, taking 10 years for tax funded assets and 20 years for rate funded, to reach the targeted funding levels means years of sub-optimal lifecycle management of assets. Being unable to complete strategic lifecycle interventions and replacements may result in increased asset failures, reduced reliability, and the potential for costly unbudgeted repairs to maintain services.
- Financial Impact
  - While reaching a full funding scenario supports long-term asset sustainability and reduces infrastructure risk, it can also introduce short- and medium-term challenges. The primary risk lies in the financial impact on residents and businesses, as rapidly increasing tax rates, utility fees, or other revenue sources to close the funding gap may cause affordability concerns.
- Missed opportunities for efficiencies
  - While analyzing Scenario 2, no alternative lifecycle strategies were proposed. This creates a potential risk of overcommitting financial resources without the administrative or operational capacity to effectively deliver infrastructure projects.

Accelerated funding, if not guided by a clear understanding of asset lifecycle events and priority activities, may outpace the municipality's ability to plan, design, and implement capital works efficiently. Without a strategic approach that identifies the right interventions at the right time—such as maintenance, renewal, and replacement—funding may be used inefficiently, leading to delays, cost overruns, or underutilized budgets.

4.2.3 Scenario 3: Achieving 75% Funding

This scenario assumes gradual tax and rate increases, stabilizing at 75% of recommended funding in 10 years for tax funded assets and 20 years for rate funded assets.

- Annual Tax Increase ~1.1%
- Annual Water Rate Increase ~5.4%
- Annual Wastewater Rate Increase ~5.5%

While this scenario was modelled for consideration, the Town did not elect to move forward with this scenario.

Lifecycle Changes Required for Scenario 3

For all asset categories, no changes to lifecycle strategies are required in order to achieve Scenario 3. In future iterations of the AMP, it is recommended to more closely analyze changes to lifecycle management strategies to find long-term cost savings and efficiencies.

Affordability/Achievability of Scenario 3

Of the three scenarios analyzed, Scenario 3 represents a potential compromise between maintaining the current investment level and achieving 100% funding. Achieving 75% full funding would require an 11.0% increase in tax revenue if implemented immediately. However, under the recommended 10-year phased approach for tax funded assets, tax revenue would gradually increase from $3.6 million to $3.9 million.

For rate funded assets, water revenue would gradually increase from $309 thousand to $884 thousand and wastewater revenue from $291 thousand to $849 thousand.

This scenario provides a practical path forward—improving funding levels significantly without the greater financial impact of full funding. With these gradual increases and continued reliance on sustainable grant funding, the total projected capital funding that would be available over the next 10 years for Scenario 3 is summarized in the table below:

Categories	Available Capital Funding									
	2026	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Tax-Funded	$556k	$595k	$628k	$661k	$69k	$728k	$762k	$796k	$830k	$881k
Rate-Funded (Water)	$90k	$107k	$126k	$145k	$166k	$188k	$211k	$235k	$260k	$287k
Rate-Funded (Waste-water)	$94k	$111k	$129k	$148k	$167k	$188k	$210k	$234k	$258k	$284k
Total	**$739k**	**$814k**	**$883k**	**$954k**	**$403k**	**$1.1m**	**$1.2m**	**$1.3m**	**$1.3m**	**$1.5m**

Table 9 Scenario 3 Available Capital Funding Over Next 10 Years

It is important to note that an AMP is a dynamic document which should be reviewed regularly to ensure up-to-date information is incorporated including accurate replacement costs, changes in inventory, changes in available funding sources, and reflection on progress made on previous recommendations.

Changes to Community and Technical Levels of Service for Scenario 3

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

Risks Associated with Scenario 3

There are pros and cons associated with each scenario analyzed, and each benefit is counter-balanced with consequences. For Scenario 3, the following risks have been identified:

- Increased infrastructure backlog
  - Although the gradual 10-year approach helps ease the financial burden on residents and businesses, it also extends the period of sub-optimal lifecycle management. Delays in strategic interventions and asset replacements may lead to increased asset failures, reduced reliability, and costly unplanned repairs.
  - In addition to the risks of reaching the desired funding levels gradually, Scenario 3 only targets 75% funding. By intentionally underfunding the Municipality's asset portfolio, there is an increased risk of services being impacted by deteriorating asset conditions.
- Impact of Intentional Underfunding
  - By targeting only 75% of the recommended funding levels, Scenario 3 inherently accepts some level of underfunding. This increases the risk that deteriorating asset conditions will negatively affect service delivery over time.
- Reliance on Conditional Grants
  - With partial funding, the Municipality becomes more dependent on conditional grants to bridge the gap. While grants help alleviate tax and rate pressures, they are inherently unpredictable and considered an unsustainable revenue source. This reliance exposes the Municipality to vulnerabilities stemming from changes in provincial and federal policies or funding programs.

- Missed opportunities for Cost Efficiencies
  - While analyzing Scenario 3, no alternative lifecycle strategies were proposed. Mid-lifecycle interventions, such as asphalt overlays and sewer lining, can result in extended lifespans of assets and reduced costs over the lifetime of the assets. By relying on existing lifecycle strategies, the Town risks paying more than necessary to maintain their asset inventory.

Category Analysis: Core Assets

5. Road Network

The Town's road network forms an important component of its overall infrastructure portfolio, with a present replacement cost valued at $7.0 million. The road network consists of paved roads, culverts, a pedestrian bridge and supporting infrastructure such as streetlighting contributing to community safety and accessibility.

5.1 Inventory & Valuation

Table 10 summarizes the quantity and current replacement cost of the Town's various road network assets as managed in its primary asset management register, Citywide.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Culverts	40	Assets	$504,068	CPI
Paved Surface (HCB)	21	Length (km)	$3,374,275	Cost per Unit
Paved Surface (LCB)	26	Length (km)	$2,434,950	Cost per Unit
Pedestrian Bridges	1	Quantity	$32,881	CPI
Streetlighting	490	Quantity	$685,470	CPI
TOTAL			**$7,031,644**	

Table 10 Detailed Asset Inventory: Road Network

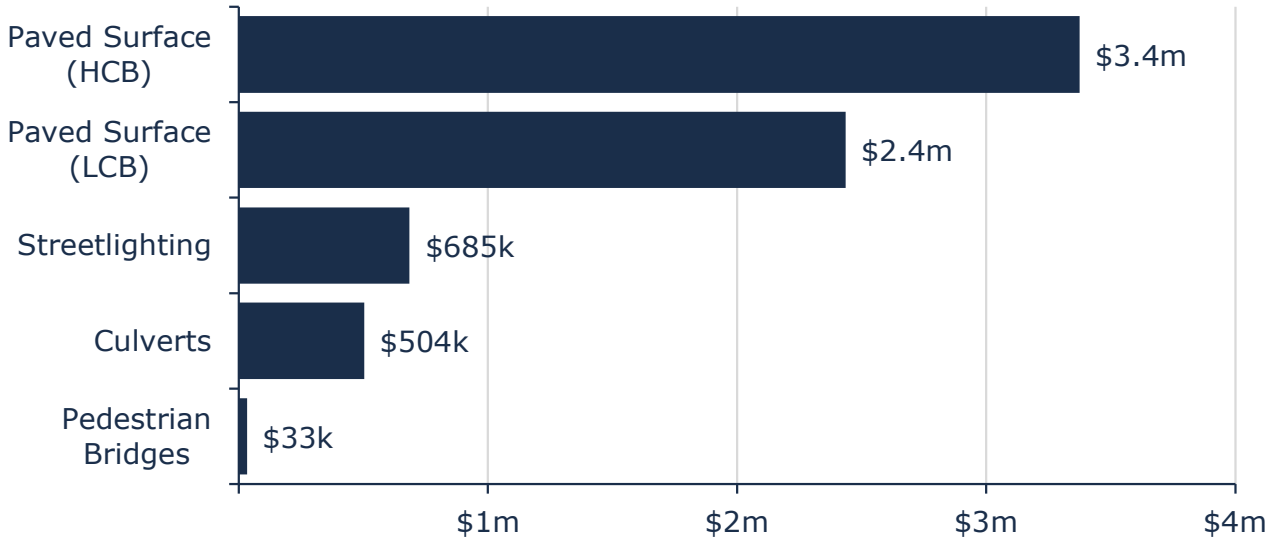


Figure 18 Portfolio Valuation: Road Network

5.2 Asset Condition

Figure 19 summarizes the replacement cost-weighted condition of the Town's road network. Based on a combination of field inspection data and age, 38% of assets are in fair or better condition; the remaining 62% of assets are in poor to very poor condition. Condition assessments were available for 81% of road assets, based on replacement cost. This condition data was projected from inspection date to current year to estimate their condition today.

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 19, the majority of the Town's road network assets are in poor or worse condition.

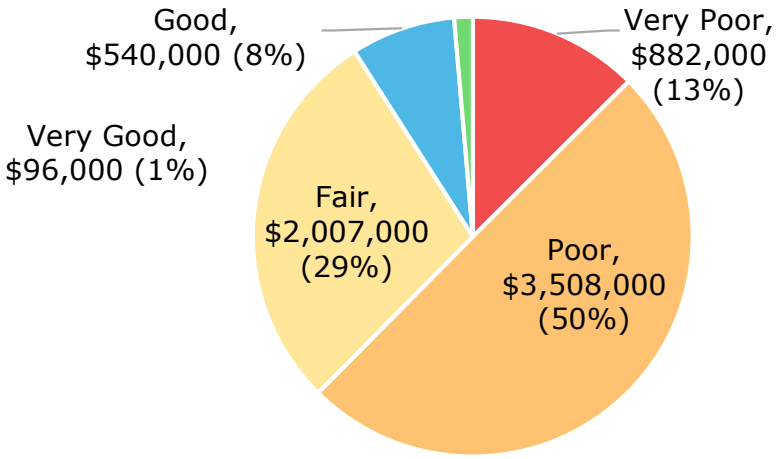


Figure 19 Asset Condition: Road Network Overall

As illustrated in Figure 20, based on condition assessments, the majority of the Town's pedestrian bridges and culverts are in fair or better condition; however, 93% of paved roads (LCB) are in poor or worse condition.

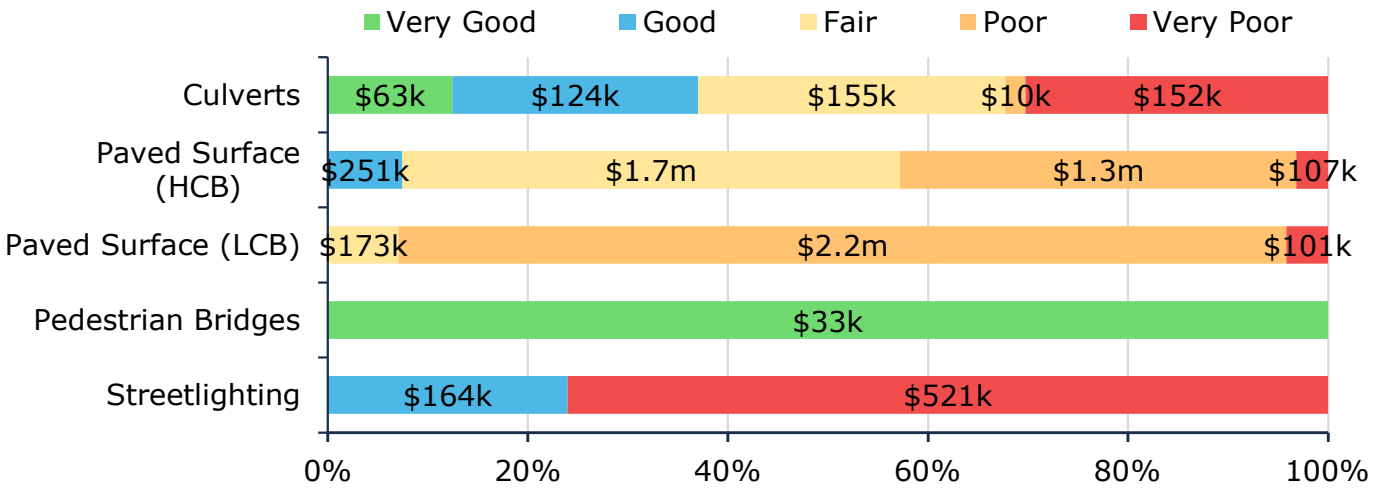


Figure 20 Asset Condition: Road Network by Segment

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 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.

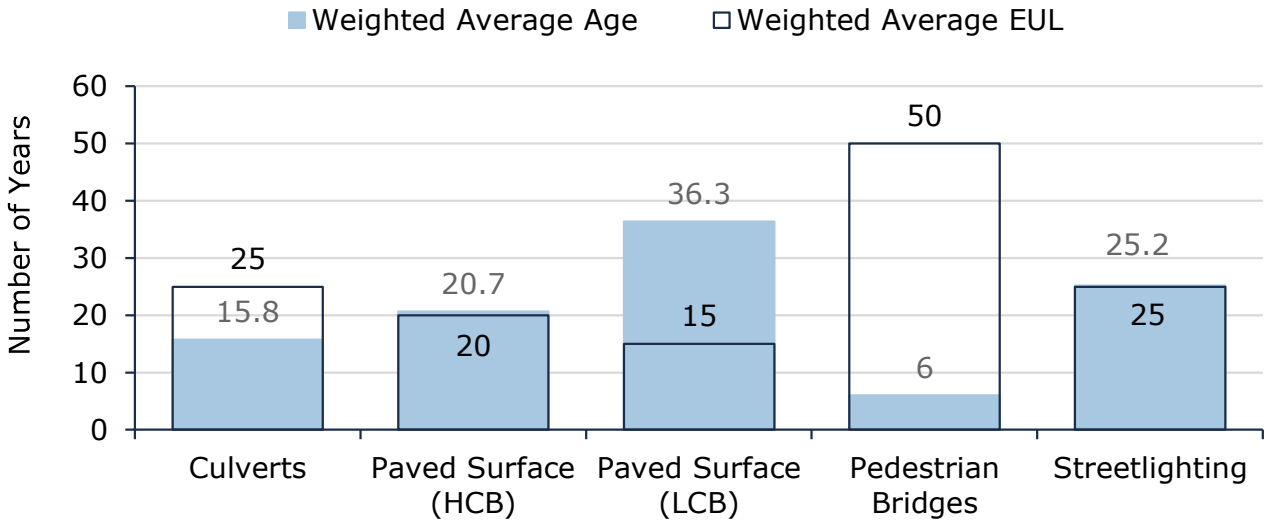


Figure 21 Estimated Useful Life vs. Asset Age: Road Network

Age analysis shows that the majority of paved roads have exceeded their expected useful life. Pedestrian bridges and culverts are operating within their expected useful life.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

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

Paved Roads (HCB)		
Event Name	**Event Class**	**Event Trigger**
Mill & Pave- Spot treatment	Rehabilitation	Repeated every 5 years
Pulverize and Pave	Rehabilitation	At condition of 2.0
Full Reconstruction	Replacement	At condition of 0.0

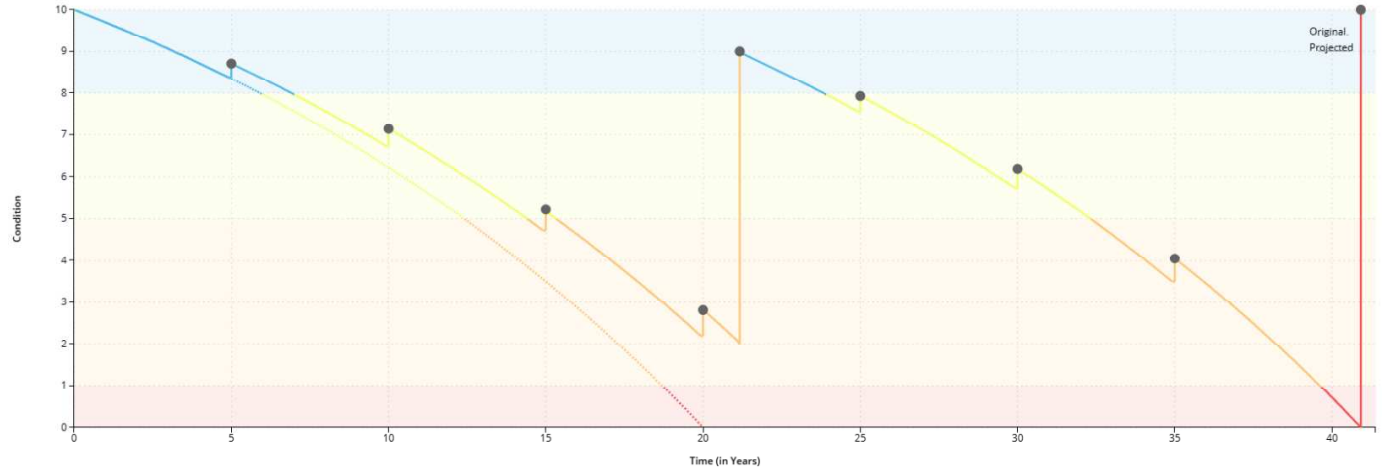


Table 11 Lifecycle Management Strategy: Road Network (HCB Roads)

Paved Roads (LCB)		
Event Name	**Event Class**	**Event Trigger**
Single Surface Treatment	Rehabilitation	At condition of 2.0
Full Reconstruction	Replacement	At condition of 0.0

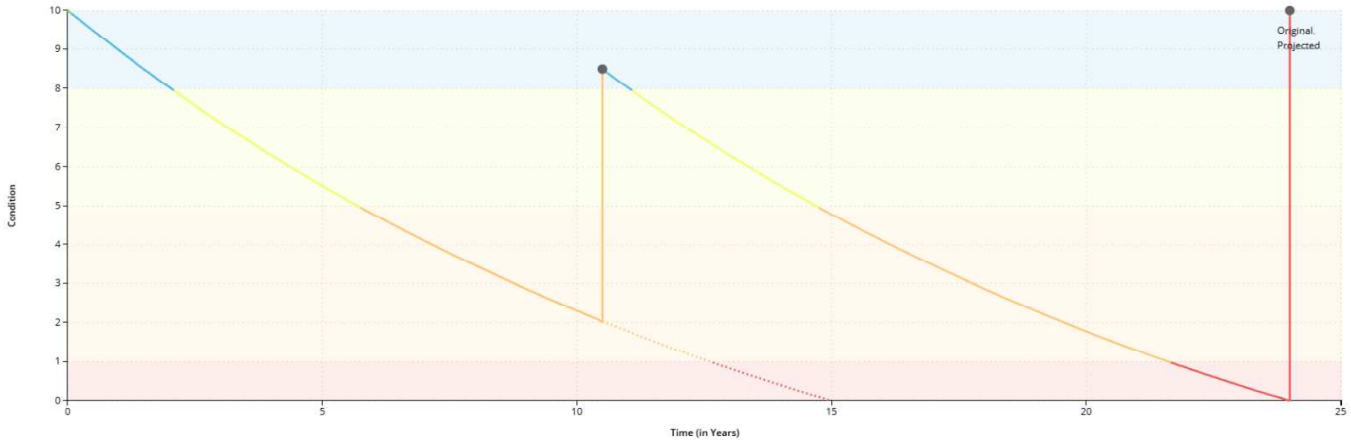


Table 12 Lifecycle Management Strategy: Road Network (LCB Roads)

The following table outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities for roads include winter maintenance such as snow removal and salt/sand for ice removal as needed. Gravel roads are graded and new gravel is added as needed. Most gravel roads are treated with calcium chloride on an annual basis. Road culverts and the pedestrian bridge are cleaned as needed.
Replacement	Replacement activities are prioritized based on asset condition and health and safety risks.
Inspection	Culverts, road appurtenances, and the pedestrian bridge are visually inspected on an ad-hoc basis. Deficiencies are noted to inform rehabilitation and replacement activities.

Table 13 Lifecycle Management Strategy: Road Network

5.5 Forecasted Long-Term Replacement Needs

Figure 13 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town's road network. This analysis was run until 2069 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Town's primary asset management system and asset register. The Town's average annual requirements (red dotted line) total $341 thousand 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 through the forecast period. It also shows a backlog $767 thousand, dominated by streetlighting. However, as streetlights are pooled and no

condition data was available, this estimate may not be accurate. These projections are based on asset replacement costs, age analysis, and condition data when available, as well as lifecycle modeling (paved 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.

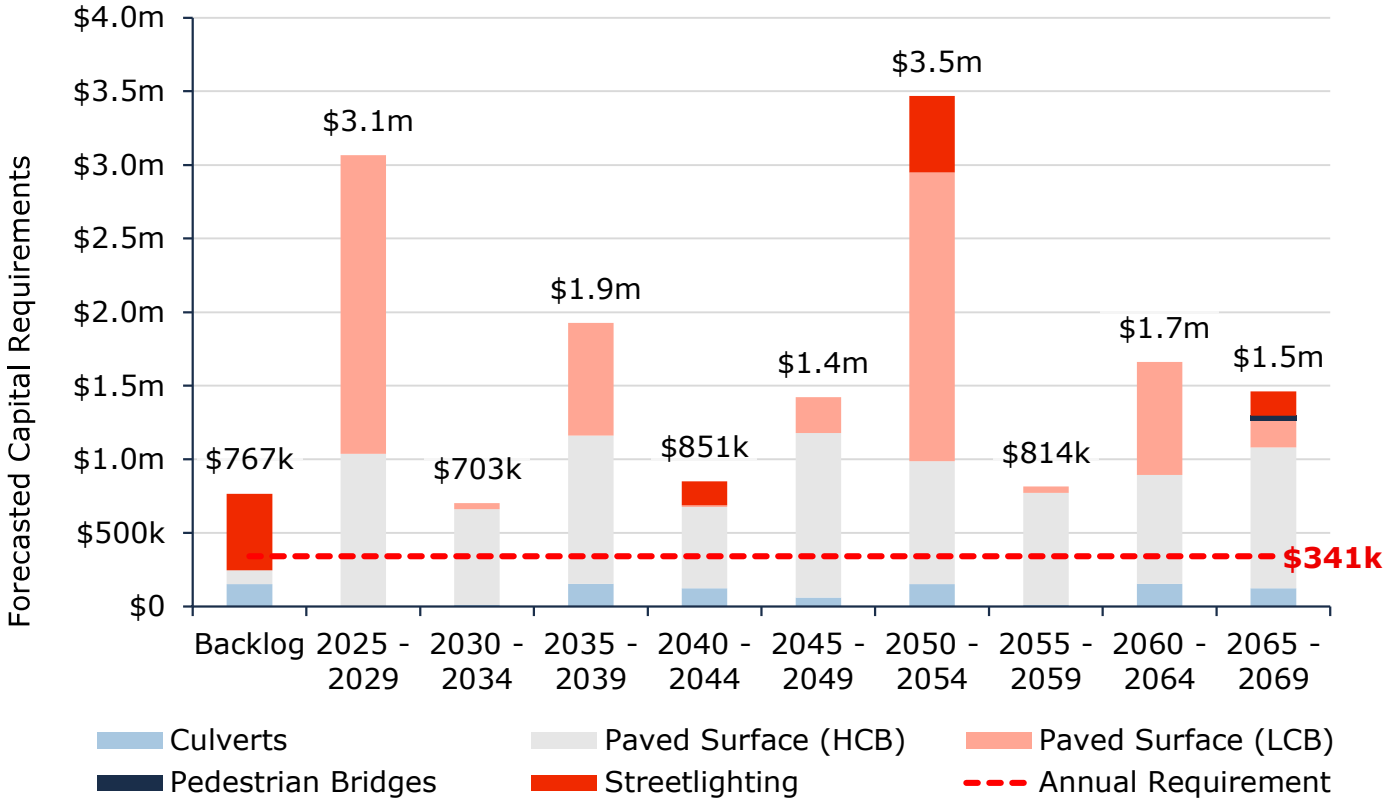


Figure 22 Forecasted Capital Replacement Needs: Road Network 2025-2069

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

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

5.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, drainage and replacement costs. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their 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 Town 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 Town's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** $384,422 (5%)	5 - 7 **Low** $1,173,188 (17%)	8 - 9 **Moderate** $998,953 (14%)	10 - 14 **High** $2,643,916 (38%)	15 - 25 **Very High** $1,831,165 (26%)

Figure 23 Risk Matrix: Road Network

5.7 Levels of Service

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

5.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps of the road network in the municipality and its level of connectivity	See Appendix C – Level of Service Maps & Photos
Quality	Description or images that illustrate the different levels of road class pavement condition	The pavement conditions are described as follows: Very Poor: Widespread signs of deterioration. Requires remedial work to bring road up to standard. Service is affected Poor: Large portions of road exhibiting deterioration with rutting, potholes, distortions, longitude and lateral cracking. Road is mostly below standard. Fair: Some sections of road starting to deteriorate. Requires some remedial work and surface upgrade in near future.

	Good: Road is in overall good condition. Few sections are starting to show signs of minimal deterioration. Very Good: Road is well maintained and in excellent condition. Surface was newly or recently upgraded. No signs of deterioration or remedial work required.

Table 14 O. Reg. 588/17 Community Levels of Service: Road Network

5.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2024)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0 km/ 634 km^2
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	0 km/ 634 km^2
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	0.27 km/ 634 km^2
Quality	Average pavement condition index for paved roads in the Town	HCB Roads: 53%
		LCB Roads: 22%
	Average condition of unpaved roads in the Town	Fair to good condition
Performance	Capital reinvestment rate	2.29%

Table 15 O. Reg. 588/17 Technical Levels of Service: Road Network

5.8 Proposed Levels of Service

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

The tables below and graphs explain the proposed levels of service scenarios that were analyzed for the road network. Further PLOS analysis at the portfolio level can be found in Section *4. Proposed Levels of Service Analysis.*

5.8.1 PLOS Scenarios Analyzed and Results

Scenario	Replacement Cost	Projected Average Condition	Projected Average Risk	Average Annual Investment
Scenario 1 (Maintain)	$7,032,000	32%	12.1	$161,000
Scenario 2 (100% Funded)	$7,032,000	52%	10.1	$341,000
Scenario 3 (75% Funded)	$7,032,000	46%	10.8	$255,750

Table 16 Road Network PLOS Scenarios: Analysis Result

5.8.2 Projected Condition and Risk Impact Comparison

The graphs below present and compare the projected condition and risk impact for each scenario analyzed.

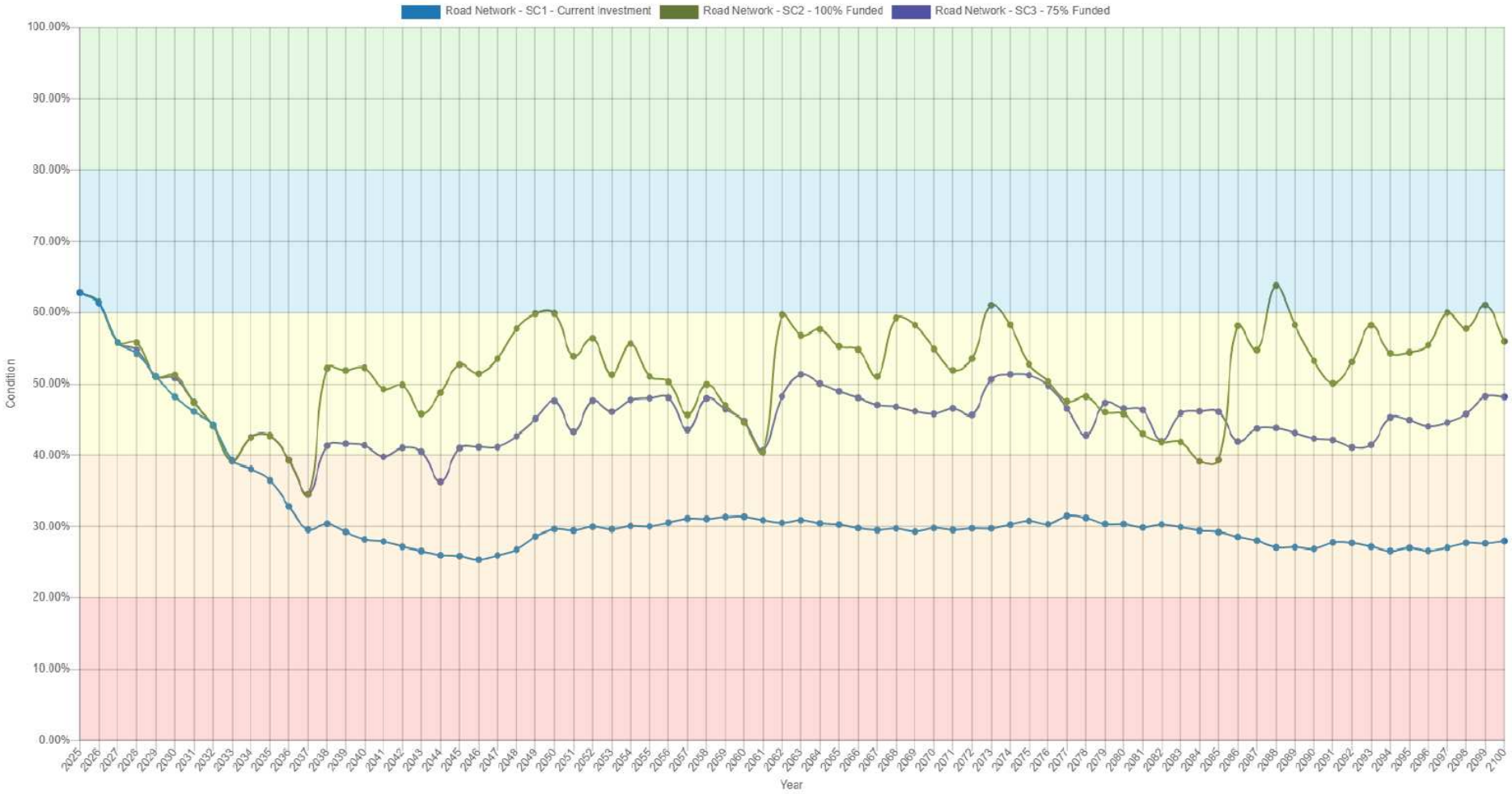


Figure 24: Road Networks PLOS Scenarios: Condition Results

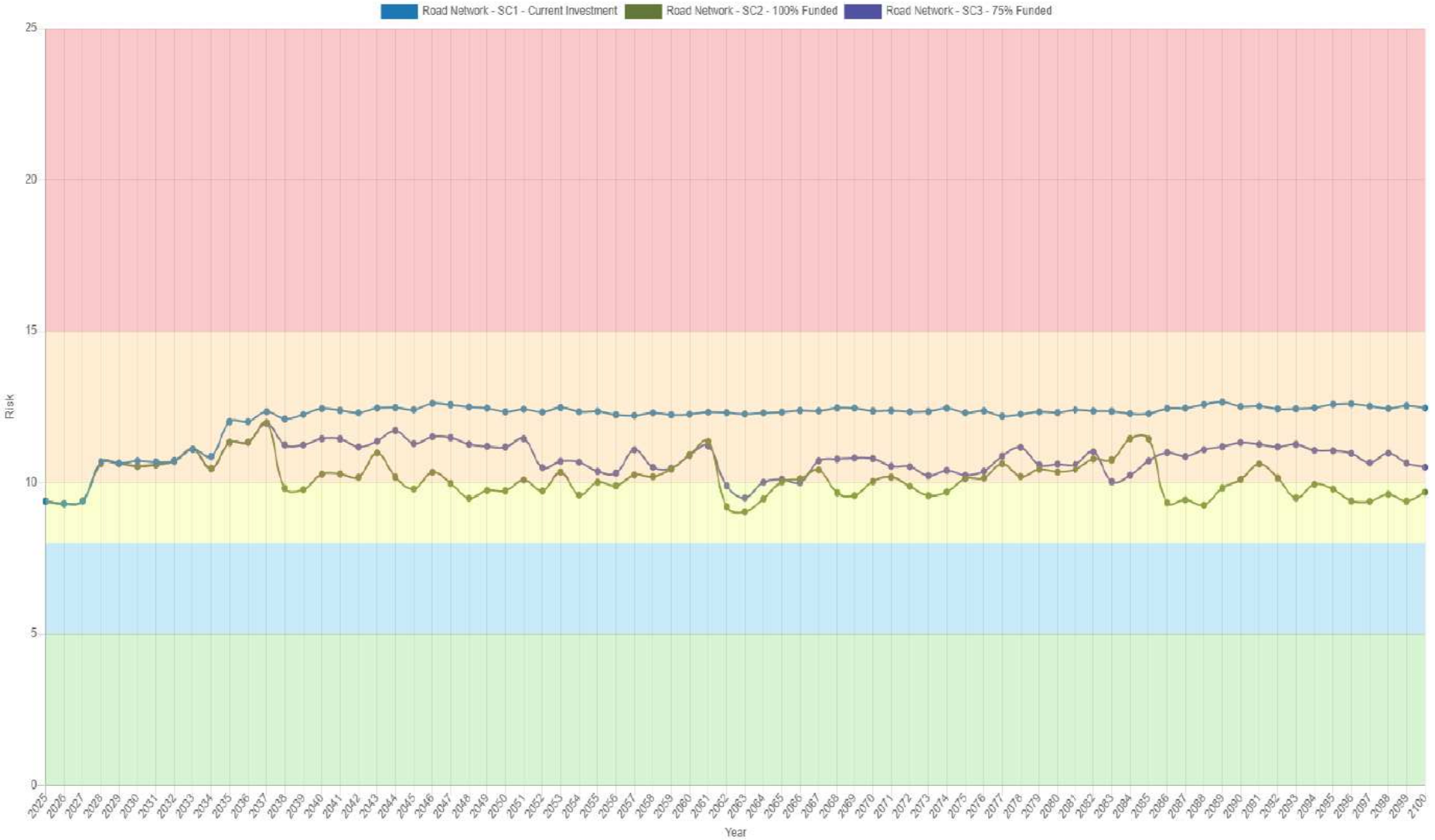


Figure 25: Road Network PLOS Scenarios: Risk Results

5.8.3 10-Year PLOS Financial Projections

As outlined in Section *4. Proposed Levels of Service Analysis*, the Town of Laurentian Hills selected Scenario 1 as their preferred proposed levels of service. The main objective is to increase spending gradually to reach a more sustainable funding level to manage the Town's current inventory of assets. In scenario 1, the current level of investment is maintained, with no increases applied. The following table shows this result with the investment remaining constant year over year if scenario 1 is implemented and increase investment is not made.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Targeted Capital Spending	**$341k**	**$341k**	**$341k**	**$341k**	**$341k**	**$341k**	**$341k**	**$341k**	**$341k**	**$341k**
Projected Capital Spending	$161k	$161k	$161k	$161k	$161k	$161k	$161k	$161k	$161k	$161k
Funding Deficit	$180k	$180k	$180k	$180k	$180k	$180k	$180k	$180k	$180k	$180k
Target Reinvestment Rate	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**
Projected Reinvestment Rate	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%

Table 17 Road Network 10-Year PLOS Financial Projections

6. Water Network

The Town's water network is operated and maintained by Veolia Water Canada Inc. The network consists of 12 km of water mains, a water treatment plant and pump stations.

6.1 Inventory & Valuation

Table 18 summarizes the quantity and current replacement cost of the Town's various water network assets as managed in its primary asset management register, Citywide Assets.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Equipment	3	Quantity	$970,139	CPI
Pumping Stations	2	Quantity	$772,512	CPI
Water Mains	12	Kilometers	$7,740,000	Cost per Unit
Water Tower	1	Quantity	$1,340,461	CPI
Water Treatment Plant	8	Quantity	$13,398,678	CPI
TOTAL			**$24,221,790**	

Table 18 Detailed Asset Inventory: Water Network

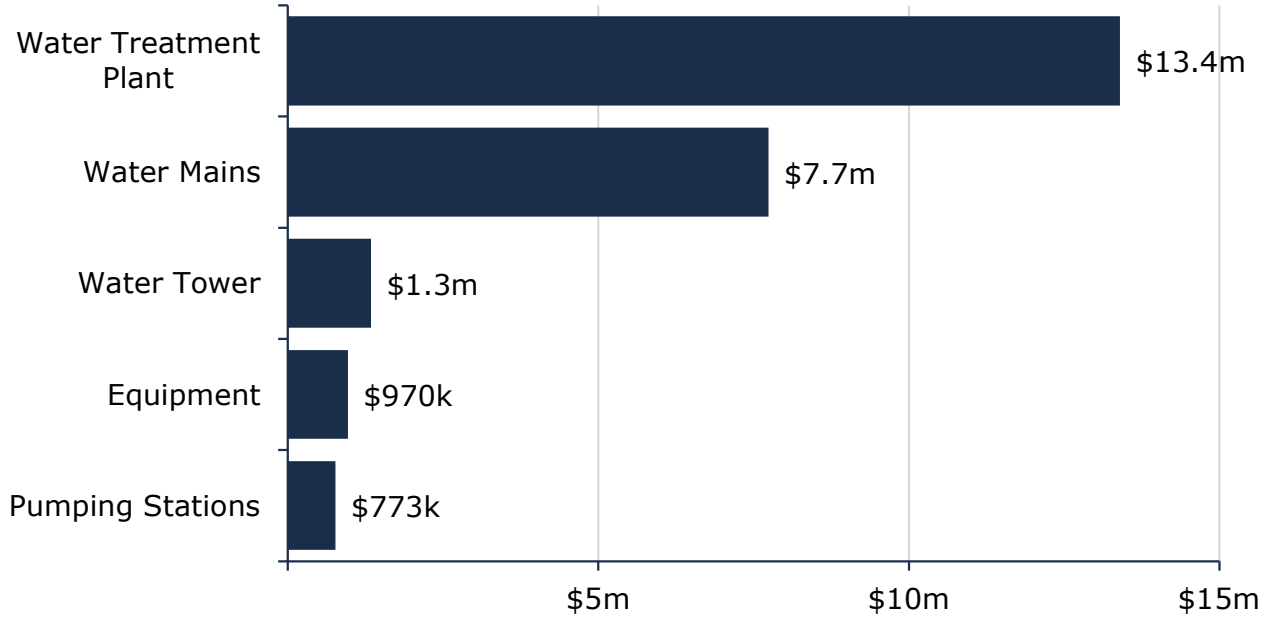


Figure 26 Portfolio Valuation: Water Network

6.2 Asset Condition

Figure 27 summarizes the replacement cost-weighted condition of the Town's water network. Based on a combination of field inspection data and age, 44% of assets are in fair or better condition; the remaining 56% of assets are in poor to very poor condition. Condition assessments were available for 100% of water mains. This condition data was projected from inspection date to current year to estimate their condition today. No condition data was available for the other water assets.

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 27, the majority of the Town's water network assets are in fair or better condition.

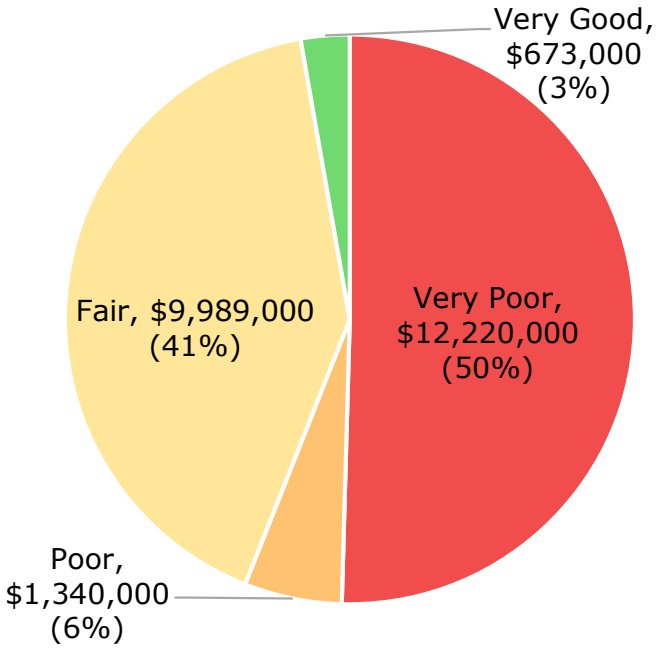


Figure 27 Asset Condition: Water Network Overall

As illustrated in Figure 28, based on condition assessments and age-based conditions, the Town's water mains are in fair condition; however, except for equipment, the remaining assets are in poor or worse condition.

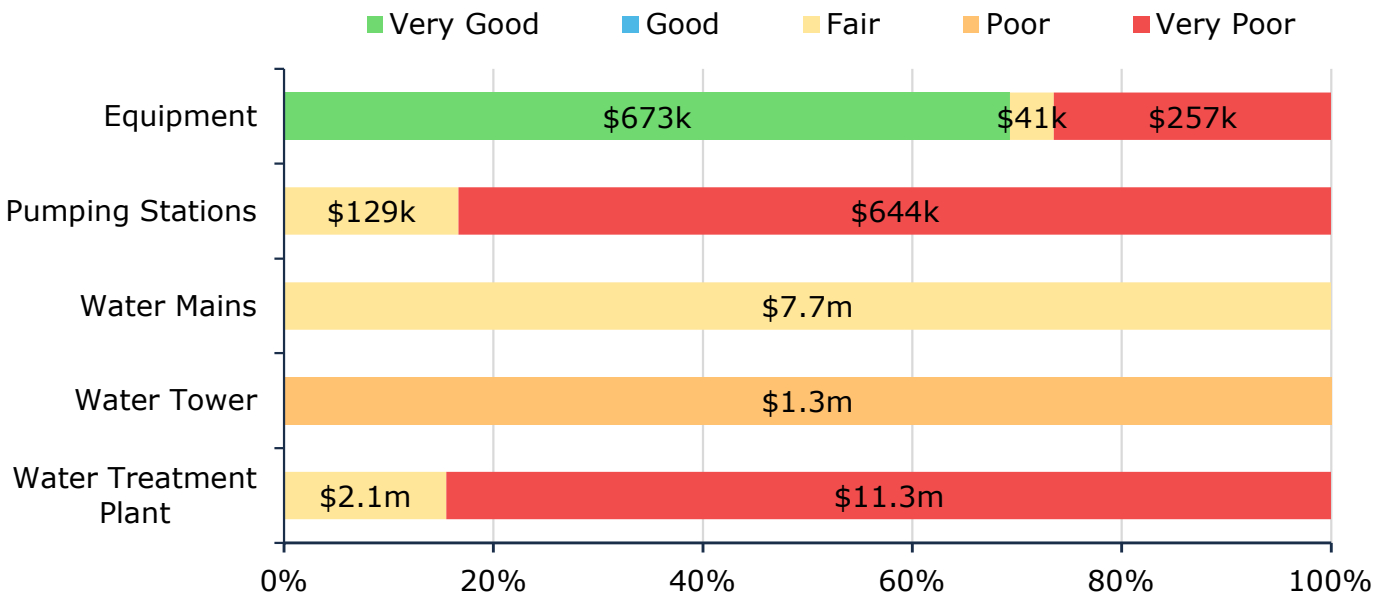


Figure 28 Asset Condition: Water Network by Segment

6.3 Age Profile

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

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

Figure 29 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.

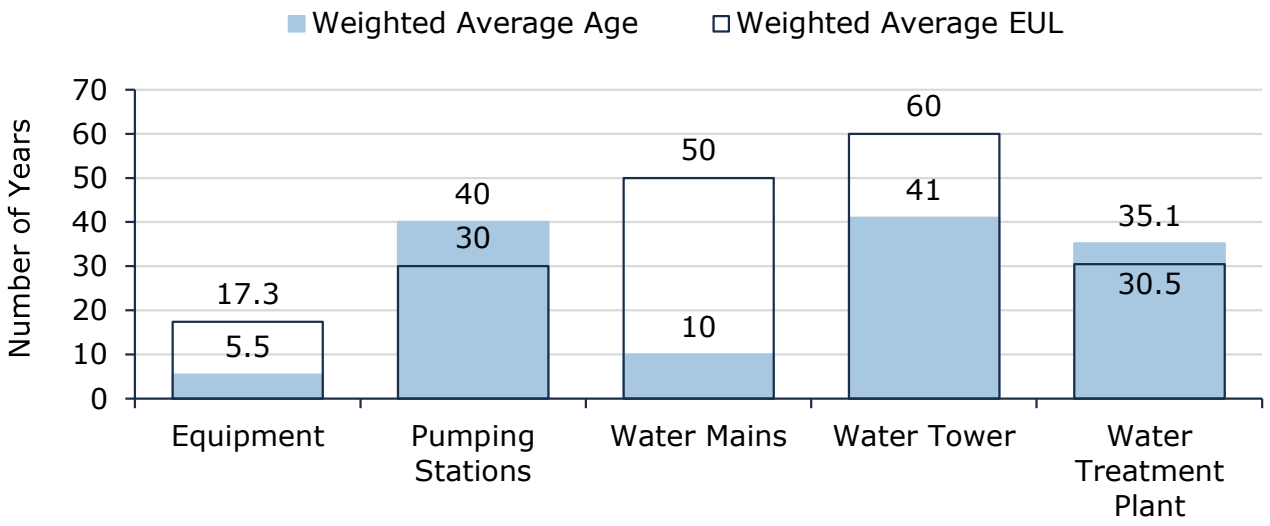


Figure 29 Estimated Useful Life vs. Asset Age: Water Network

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.

The following table outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Main flushing and valve turning exercises are completed on the network on an annual or biannual basis using in-house resources.
	Periodic pressure testing is conducted to identify deficiencies and potential leaks.
Inspection	Staff primarily rely on the age, material, pipe size, and breaks per segment of water mains to determine the projected condition of water mains.
	Fire hydrants are assessed in accordance with NFPA guidelines.
	The water treatment plant, water tower, and pumping stations are inspected by Veolia staff on a regular basis and includes a comprehensive annual assessment.
Rehabilitation	Trenchless re-lining of water mains presents significant challenges and is not always a viable option.
Replacement	In the absence of mid-lifecycle rehabilitative events, most mains are simply maintained with the goal of full replacement once it reaches its end-of-life.

Activity Type	Description of Current Strategy
	Replacement activities are identified based on an analysis of the main break rate as well as any issues identified during regular maintenance activities.

Table 19 Lifecycle Management Strategy: Water Network

6.5 Forecasted Long-Term Replacement Needs

Figure 30 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town's water network. This analysis was run until 2069 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Town's primary asset management system and asset register. The Town's average annual requirements (red dotted line) total $844 thousand for all assets in the water 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. It also shows a backlog $11.3 million, dominated by the water treatment plant. These projections are based on asset replacement costs, age analysis, and condition data when available. 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.

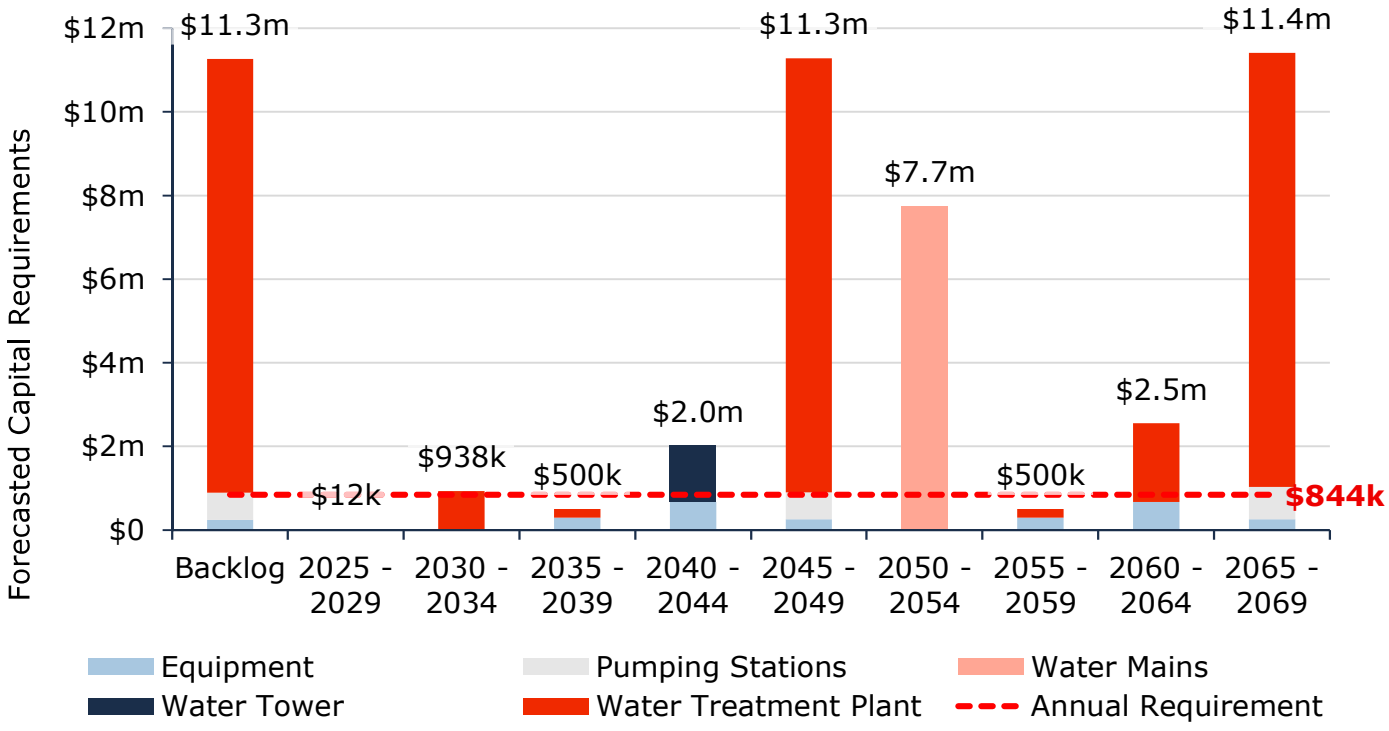


Figure 30 Forecasted Capital Replacement Needs: Water Network 2025-2069

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 condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

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

6.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, traffic data, and road class. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their 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 Town 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 Town's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** - (0%)	**5 - 7** **Low** $725,139 (3%)	**8 - 9** **Moderate** $128,752 (<1%)	**10 - 14** **High** $7,942,586 (33%)	**15 - 25** **Very High** $15,425,313 (64%)

Figure 31 Risk Matrix: Water Network

6.7 Levels of Service

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

6.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	All water users are located in the Village of Chalk River. However, not all properties located in Chalk River are connected to the network. See Appendix C for a map of Chalk River.
	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	Access to fire flow is limited to the Village of Chalk River. However, not all properties located in Chalk River are connected to the network. See Appendix C for a map of Chalk River.
Reliability	Description of boil water advisories and service interruptions	The Town has not experienced any service interruptions in 2024. The Town follows Ontario's Drinking Water Quality Management Standard (DWQMS). The Town delivers boil water advisories to affected households.

Table 20 O. Reg. 588/17 Community Levels of Service: Water Network

6.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2024)
Scope	% of properties connected to the municipal water system	24.1%
	% of properties where fire flow is available	24.1%
Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0
Performance	Capital reinvestment rate	0.32%

Table 21 O. Reg. 588/17 Technical Levels of Service: Water Network

6.8 Proposed Levels of Service

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

The tables and graphs below explain the proposed levels of service scenarios that were analyzed for the water network. Further PLOS analysis at the portfolio level can be found in section *4. Proposed Levels of Service Analysis.*

6.8.1 PLOS Scenarios Analyzed

Scenario	Replacement Cost	Projected Average Condition	Projected Average Risk	Average Annual Investment
Scenario 1 (Maintain)	$24,222,000	8%	23.4	$73,000
Scenario 2 (100% Funded)	$24,222,000	36%	17.5	$844,000
Scenario 3 (75% Funded)	$24,222,000	27%	19.4	$633,000

Table 22 Water Network PLOS Scenario Analysis Result

6.8.2 Projected Condition and Risk Impact Comparison

The graphs below present and compare the projected condition and risk impact for each scenario analyzed.

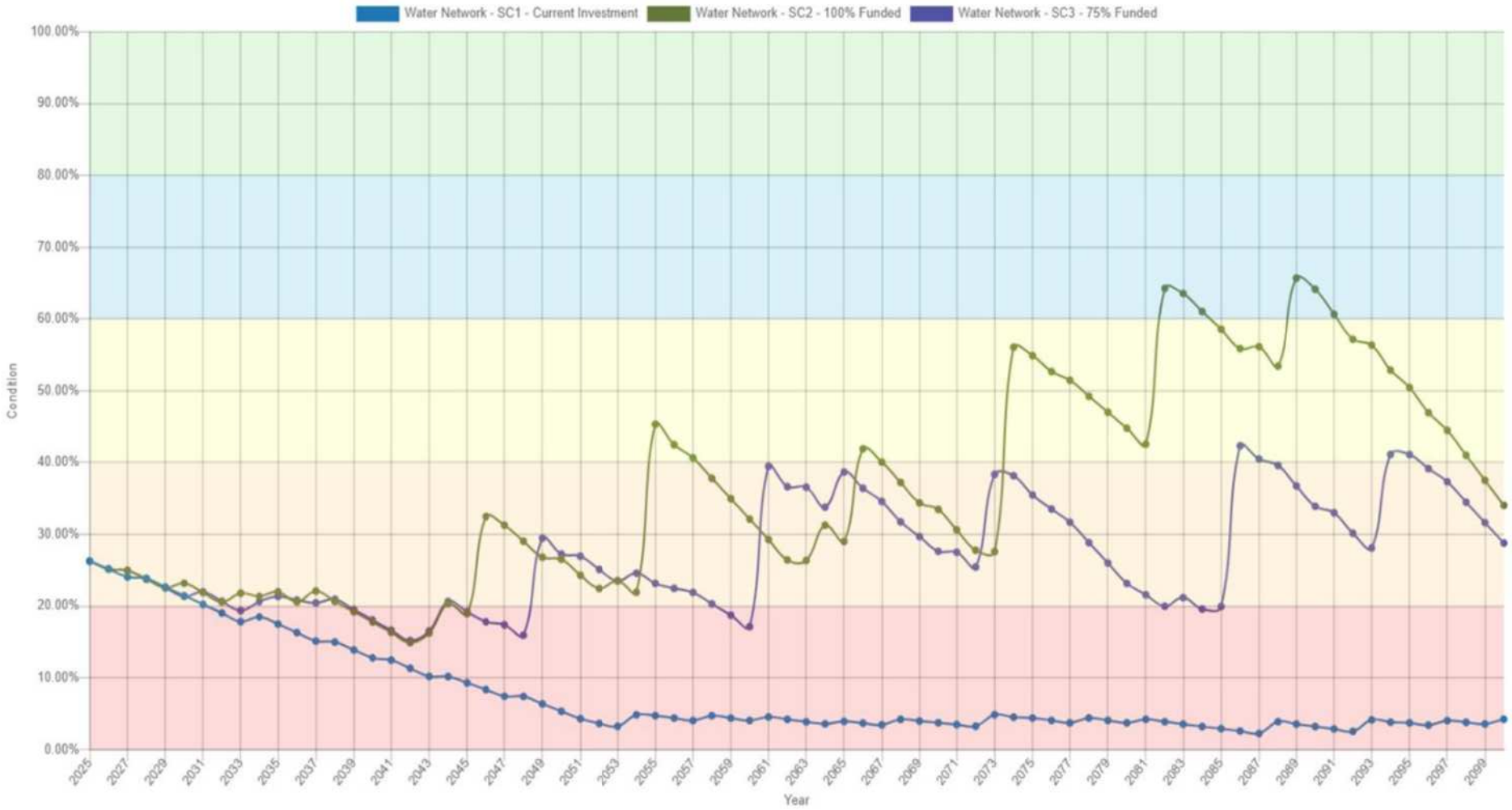


Figure 32: Water Network PLOS Scenario: Condition Results

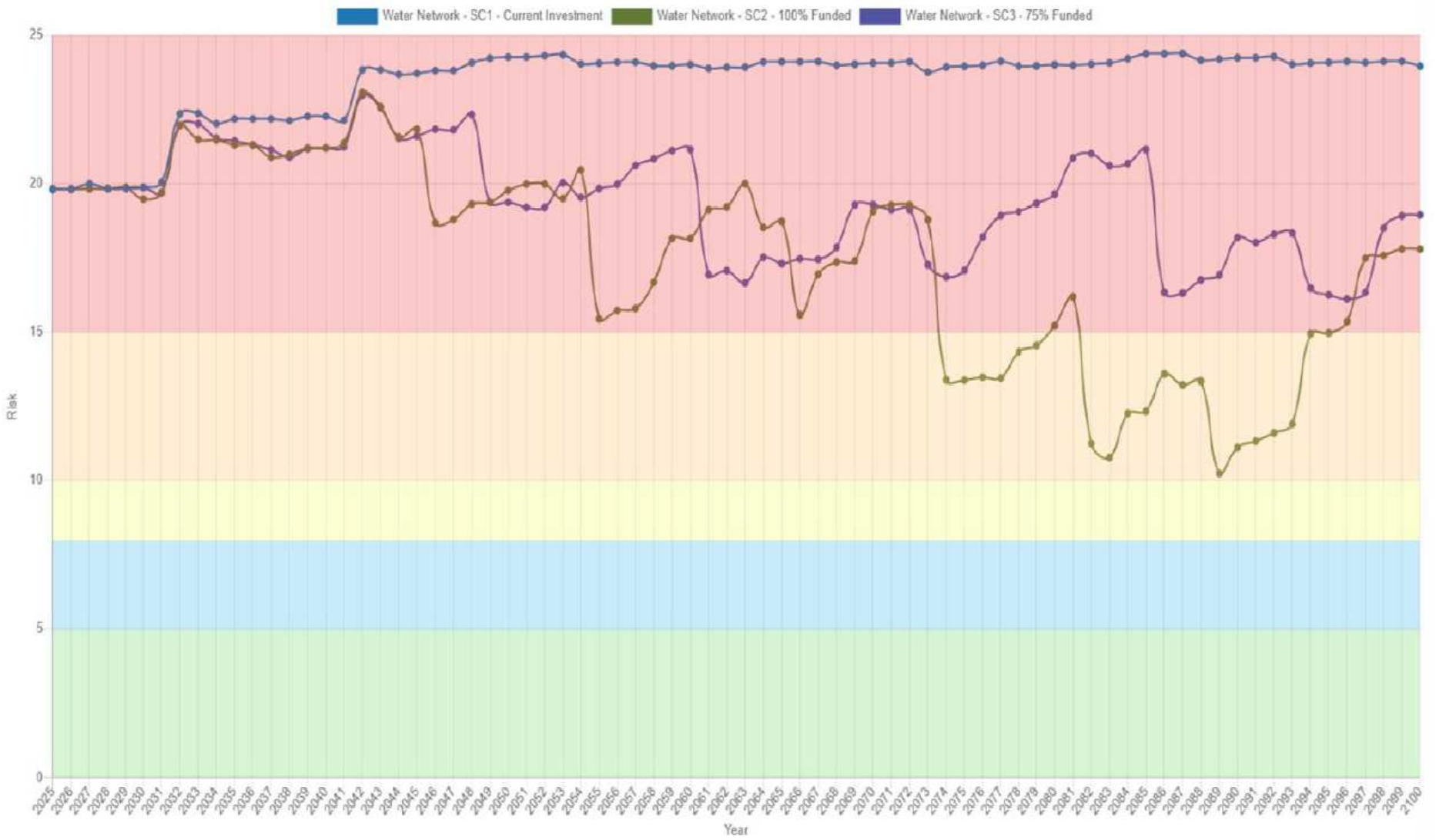


Figure 33: Water Network PLOS Scenarios: Risk Results

6.8.3 10-Year PLOS Financial Projections

As outlined in Section *4. Proposed Levels of Service Analysis*, the Town Laurentian Hills selected Scenario 1 as their preferred proposed levels of service. The main objective is to increase spending gradually to reach a more sustainable funding level to manage the Town's current inventory of assets. In scenario 1, the current level of investment is maintained, with no increases applied. The following table shows this result with the investment remaining constant year over year if scenario 1 is implemented and increase investment is not made.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Targeted Capital Spending	**$844k**	**$844k**	**$844k**	**$844k**	**$844k**	**$844k**	**$844k**	**$844k**	**$844k**	**$844k**
Projected Capital Spending	$73k	$73k	$73k	$73k	$73k	$73k	$73k	$73k	$73k	$73k
Funding Deficit	$771k	$771k	$771k	$771k	$771k	$771k	$771k	$771k	$771k	$771k
Target Reinvestment Rate	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**
Projected Reinvestment Rate	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

Table 23 Water Network 10-Year PLOS Financial Projections

Currently the Towns water treatment plant is undergoing significant upgrades and improvements. These improvements are not factored into the analysis within this asset management plan. It is important to note that the improvements carried out will have impact on both value and condition.

7. Wastewater Network

The sanitary services provided by the Town are managed and operated by Veolia and municipal staff. Veolia manages the sewage treatment plant and pumping station, and municipal staff are responsible for 12 km of sewer mains.

7.1 Inventory & Valuation

Table 24 summarizes the quantity and current replacement cost of the Town's various wastewater network assets as managed in its primary asset management register, Citywide Assets.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Pumping Stations	5	Quantity	$515,425	CPI
Sewage Treatment Plant	11	Quantity	$19,245,137	User-Defined
Sewer Mains	12	Kilometers	$7,800,000	Cost per Unit
TOTAL			**$27,560,562**	

Table 24 Detailed Asset Inventory: Wastewater Network

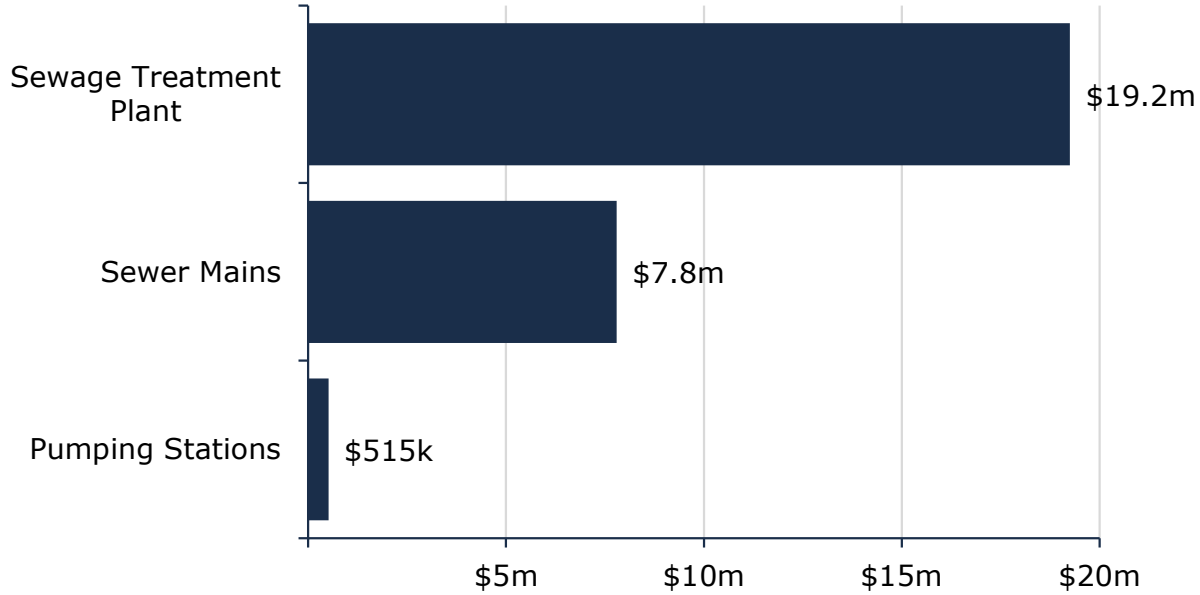


Figure 34 Portfolio Valuation: Wastewater Network

7.2 Asset Condition

Figure 35 summarizes the replacement cost-weighted condition of the Town's wastewater network. Based on a combination of field inspection data and age, 35% of assets are in fair or better condition; the remaining 65% of assets are in poor to very poor condition. Condition assessments were available for 100% of sanitary mains. This condition data was projected from inspection date to current year to estimate their condition today. No condition data was available for pumping stations and sewage treatment plant.

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 35 the majority of the Town's wastewater network assets are in poor or worse condition.

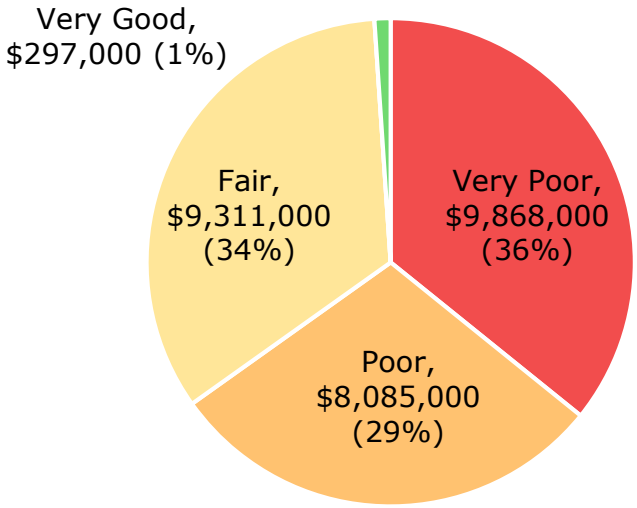


Figure 35 Asset Condition: Wastewater Network Overall

As illustrated in Figure 36, based on condition assessments and age-based conditions, the Town's sanitary sewer mains are in fair condition however, 91% of Sewage treatment plant are in poor or worse condition.

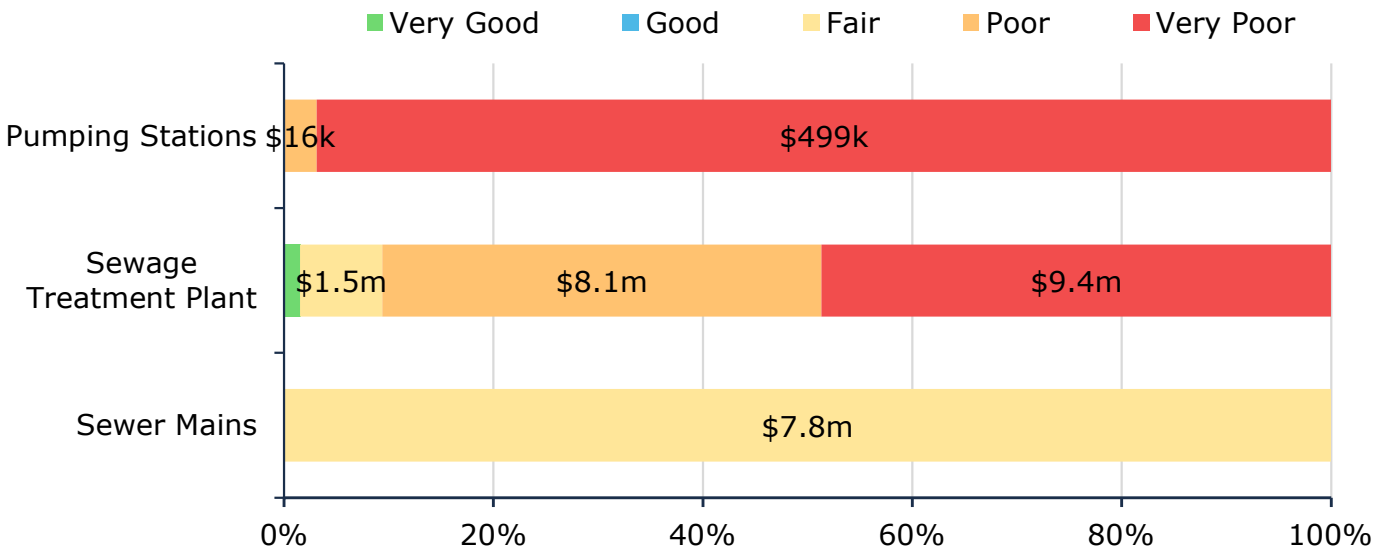


Figure 36 Asset Condition: Wastewater Network by Segment

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 long-term replacement spikes.

Figure 37 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.

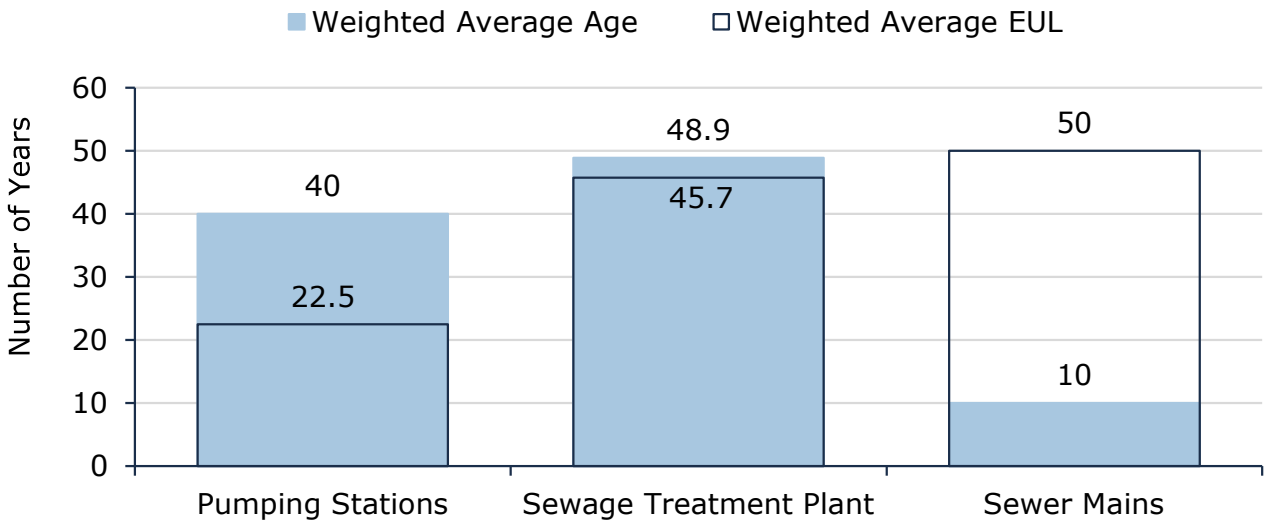


Figure 37 Estimated Useful Life vs. Asset Age: Wastewater Network

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.

The following table outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Main flushing is completed on 100% of the wastewater network annually using in-house resources.
	Periodic pressure testing may be employed to identify deficiencies and potential leaks.
Inspection	CCTV inspections are completed for wastewater mains on a regular cycle (100% of the network is inspected every 3 years). The Town receives video footage, but the consultant does not provide a detailed report with condition ratings.
	The wastewater treatment plant and pumping stations are inspected by Veolia staff on a regular basis which includes a comprehensive annual assessment.
Rehabilitation	Trenchless re-lining of wastewater mains is considered for viable pipe candidates as budget and resources allow.
Replacement	In the absence of mid-lifecycle rehabilitative events, most assets are simply maintained with the goal of full replacement once they reach their end-of-life.

Table 25 Lifecycle Management Strategy: Wastewater Network

7.5 Forecasted Long-Term Replacement Needs

Figure 38 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town's wastewater network. This analysis was run until 2054 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Town's primary asset management system and asset register. The Town's average annual requirements (red dotted line) total $842 thousand for all assets in the sanitary sewer 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. It also shows a backlog of $9.3 million primarily for sanitary treatment plant. These projections are based on asset replacement costs, age analysis, and condition data when available. 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.

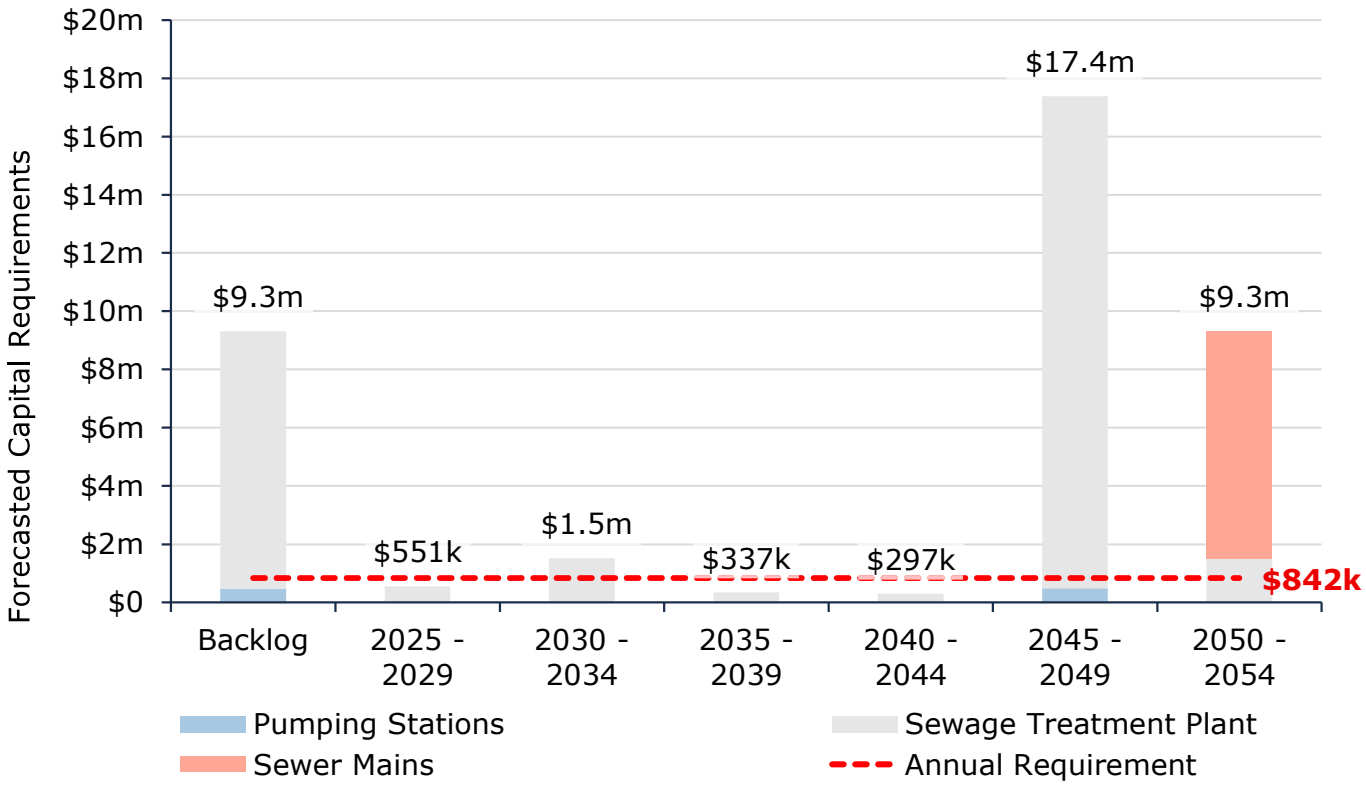


Figure 38 Forecasted Capital Replacement Needs: Wastewater Network 2025-2054

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 condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

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

7.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, traffic data, and road class. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their 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 Town 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 Town's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** $312,849 (1%)	**5 - 7** **Low** $16,511 (<1%)	**8 - 9** **Moderate** - (0%)	**10 - 14** **High** $8,095,095 (29%)	**15 - 25** **Very High** $19,136,108 (69%)

Figure 39 Risk Matrix: Wastewater Network

7.7 Levels of Service

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

7.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system	All wastewater users are located in the Village of Chalk River. However, not all properties located in Chalk River are connected to the network. See Appendix C for a map of Chalk River.
Reliability	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow	The Town does not own any combined sewers

Service Attribute	Qualitative Description	Current LOS (2024)
	overflow during storm events to prevent backups into homes	
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	The Town does not own any combined sewers
	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter into wastewater sewers due to cracks in wastewater mains or through indirect connections (e.g. weeping tiles). In the case of heavy rainfall events, wastewater sewers may experience a volume of water and sewage that exceeds its designed capacity. In some cases, this can cause water and/or sewage to overflow backup into homes. the disconnection of weeping tiles from wastewater mains and the use of sump pumps and pits directing storm water to the storm drain system can help to reduce the chance of this occurring.
	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration	The Town follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing wastewater sewers. These standards have been determined with consideration of the minimization of sewage overflows and backups.
	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.

Table 26 O. Reg. 588/17 Community Levels of Service: Wastewater Network

7.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2024)
Scope	% of properties connected to the municipal wastewater system	22.4%
Reliability	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	0
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0
Performance	Capital reinvestment rate	0.27%

Table 27 O. Reg. 588/17 Technical Levels of Service: Wastewater Network

7.8 Proposed Levels of Service

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

The below tables and graphs explain the proposed levels of service scenarios that were analyzed for the wastewater network. Further PLOS analysis at the portfolio level can be found in Section *4. Proposed Levels of Service Analysis.*

7.8.1 PLOS Scenarios Analyzed

Scenario	Replacement Cost	Projected Average Condition	Projected Average Risk	Average Annual Investment
Scenario 1 (Maintain)	$27,561,000	7%	23.4	$78,000
Scenario 2 (100% Funded)	$27,561,000	32%	18.1	$842,000
Scenario 3 (75% Funded)	$27,561,000	19%	20.8	$631,500

Table 28 Wastewater Network PLOS Scenario Analysis Results

7.8.2 Projected Condition and Risk Impact Comparison

The graphs below present and compare the projected condition and risk impact for each scenario analyzed.

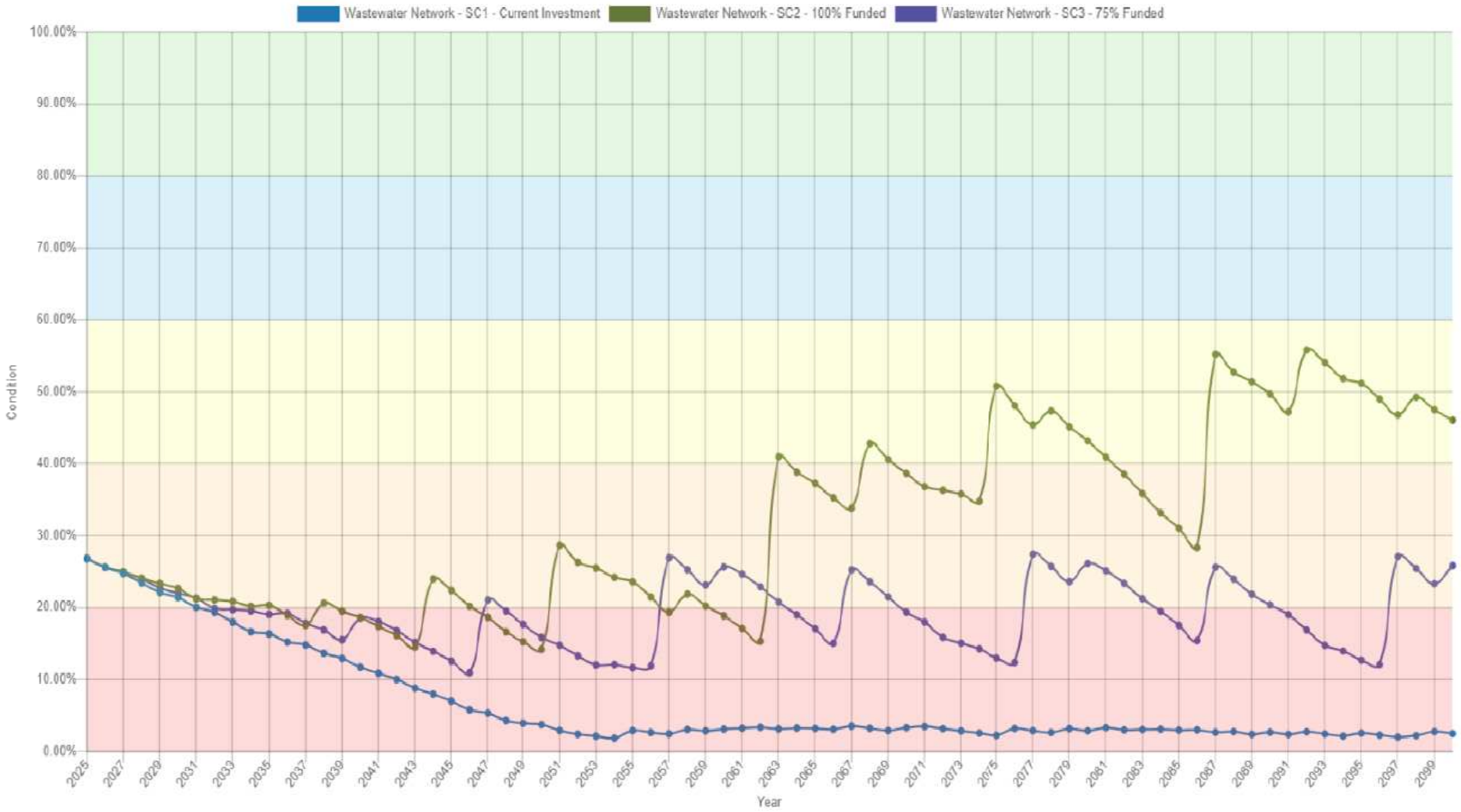


Figure 40: Wastewater Network PLOS Scenarios: Condition Results

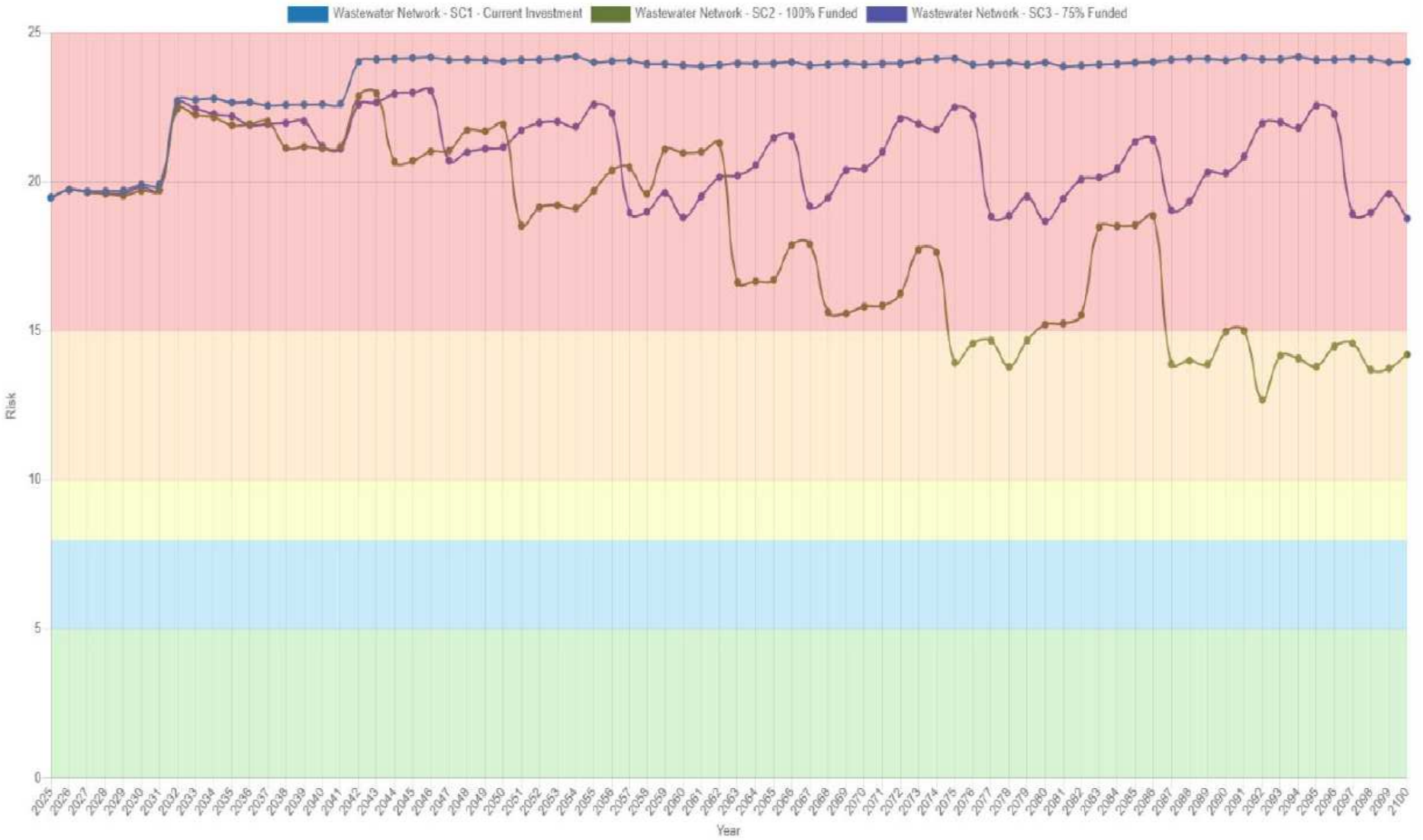


Figure 41: Wastewater Network PLOS Scenarios: Risk Results

7.8.3 10-Year PLOS Financial Projections

As outlined in Section *4. Proposed Levels of Service Analysis*, the Town of Laurentian Hills selected Scenario 1 as their preferred proposed levels of service. The main objective is to increase spending gradually to reach a more sustainable funding level to manage the Town's current inventory of assets. In scenario 1, the current level of investment is maintained, with no increases applied. The following table shows this result with the investment remaining constant year over year if scenario 1 is implemented and increase investment is not made.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Targeted Capital Spending	**$842k**	**$842k**	**$842k**	**$842k**	**$842k**	**$842k**	**$842k**	**$842k**	**$842k**	**$842k**
Projected Capital Spending	$78k	$78k	$78k	$78k	$78k	$78k	$78k	$78k	$78k	$78k
Funding Deficit	$764k	$764k	$764k	$764k	$764k	$764k	$764k	$764k	$764k	$764k
Target Reinvestment Rate	**3.1%**	**3.1%**	**3.1%**	**3.1%**	**3.1%**	**3.1%**	**3.1%**	**3.1%**	**3.1%**	**3.1%**
Projected Reinvestment Rate	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

Table 29 Wastewater Network 10-Year PLOS Financial Projections

Currently the Towns sewage treatment plant is undergoing major upgrades and improvements that are being funded through a $2.5million dollar grant. It is important to note that as the project is ongoing, these upgrades and improvements are not captured within the analysis of this asset management plan.

8. Buildings & Facilities

The Town of Laurentian Hills owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- Administrative offices
- Public libraries
- Fire stations and associated offices and facilities
- Public works garages and storage sheds
- Arenas

8.1 Inventory & Valuation

Table 30 summarizes the quantity and current replacement cost of all buildings & facility assets available in the Town's asset register. The buildings and facilities 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
Fire	6	Quantity	$5,289,759	User-Defined
Land Improvements	16	Quantity	$1,117,472	CPI
Landfill	2	Quantity	$24,226	User-Defined
Libraries	4	Quantity	$621,520	CPI
Municipal	5	Quantity	$1,647,973	User-Defined
Public Works	4	Quantity	$5,341,335	User-Defined
Recreation	3	Quantity	$561,742	CPI
TOTAL			**$14,604,027**	

Table 30 Detailed Asset Inventory: Buildings & Facilities

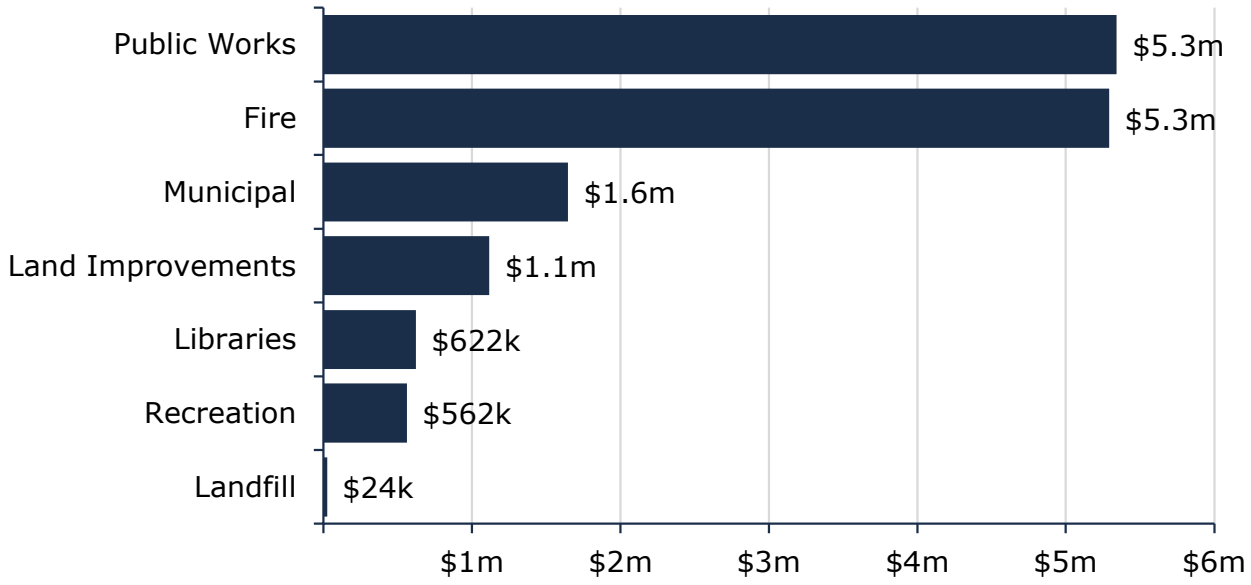


Figure 42 Portfolio Valuation: Buildings & Facilities

8.2 Asset Condition

Figure 43 summarizes the replacement cost-weighted condition of the Town's buildings and facilities portfolio. Based on assessed condition and age data, 74% of buildings and facilities assets are in fair or better condition; however, 26%, with a current replacement cost of more than $3.8 million 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. As buildings and facilities are not componentized, condition data is presented only at the site level, rather than at the individual element or component level within each building.

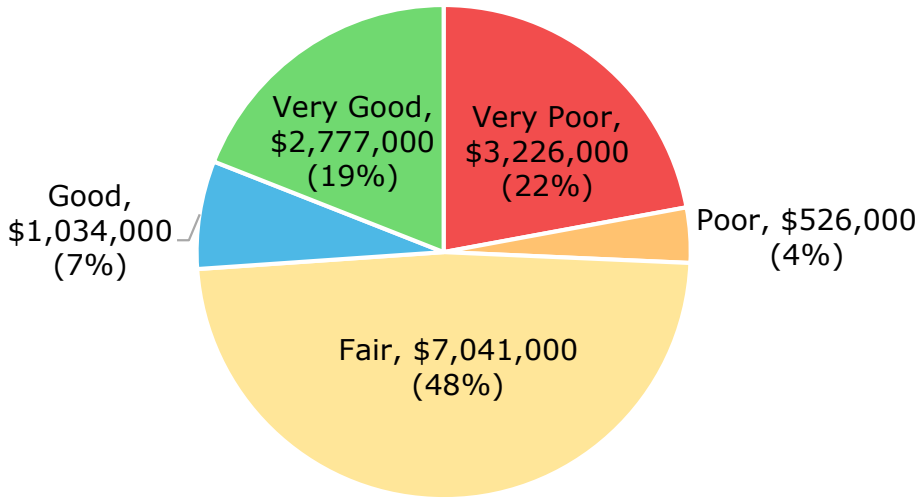


Figure 43 Asset Condition: Buildings & Facilities Overall

Figure 44 summarizes the age-based condition of buildings and facilities by each department. A substantial portion of recreation assets and the majority of library assets are in poor to worse condition. However, in the absence of componentization, this data has limited value. Componentization of assets and integration of condition assessments will provide a more accurate and reliable estimation of the condition of various facilities.

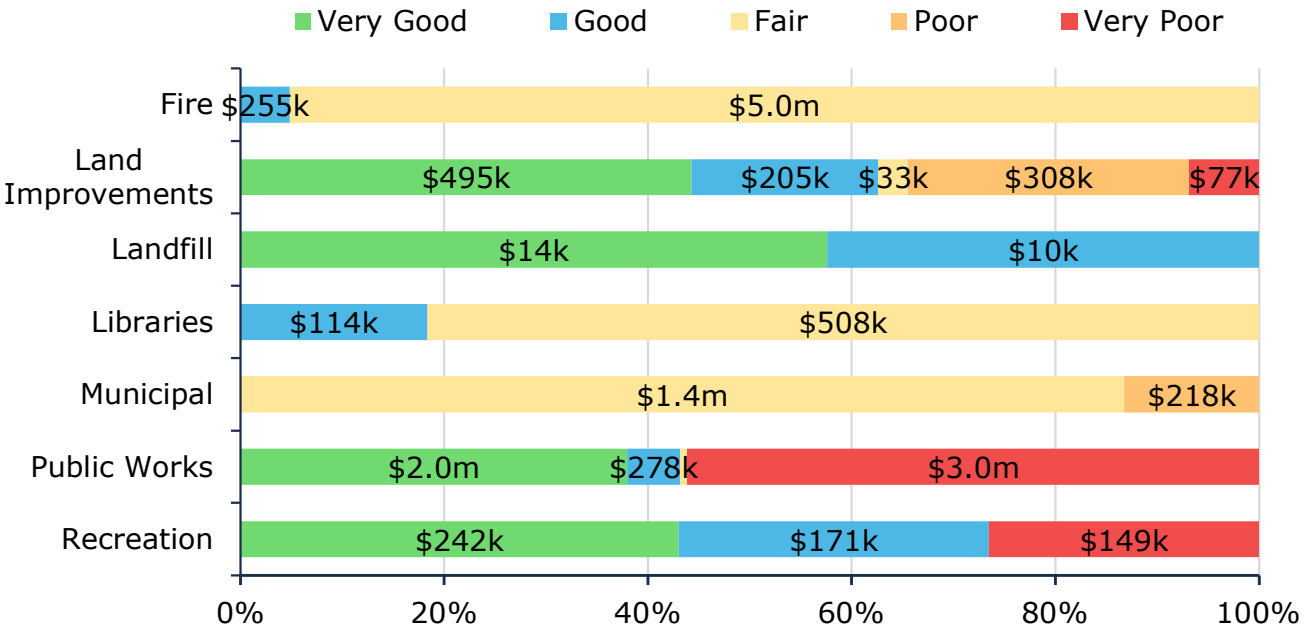


Figure 44 Asset Condition: Buildings & Facilities by Segment

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.

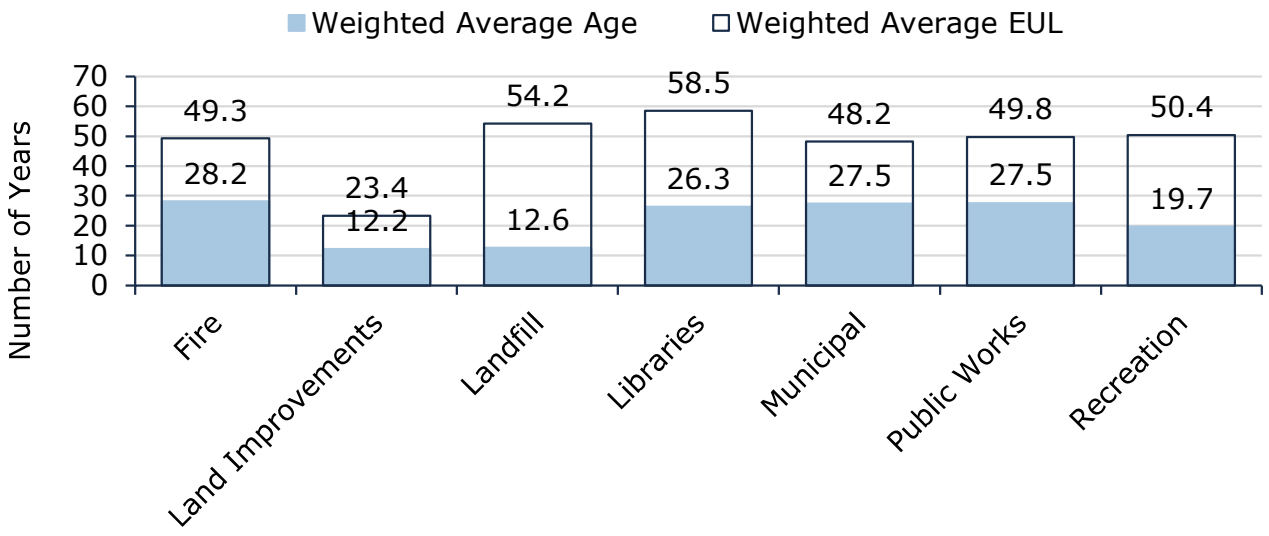


Figure 45 Estimated Useful Life vs. Asset Age: Buildings & Facilities

Age analysis reveals that, on average, buildings and facilities assets are in the earlier stages of their serviceable life. Once again, this analysis presented only at the site level, rather than at the individual element or component level. Useful and meaningful age analysis for buildings is entirely predicated on effective componentization.

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.

Table 31 outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Municipal buildings are subject to regular inspections to identify health & safety requirements as well as structural deficiencies that require additional attention.
	Critical buildings, including the Fire Stations, have a detailed maintenance and rehabilitation schedule, while the maintenance of other facilities are dealt with on a case-by-case basis.
Replacement	As a supplement to the knowledge and expertise of municipal staff the Town occasionally works with contractors to complete Facility Needs Assessment Studies.
	Assessments are completed strategically as buildings approach their end-of-life to determine whether replacement or rehabilitation is appropriate

Table 31 Lifecycle Management Strategy: Buildings & Facilities

8.5 Forecasted Long-Term Replacement Needs

Figure 46 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town's buildings and facilities portfolio. This analysis was run until 2074 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Town's primary asset management system and asset register. The Town's average annual requirements (red dotted line) total $326 thousand for all buildings and facilities. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Replacement needs are forecasted to fluctuate over the next 50 years, with frequent requirements of around $3 million. The chart also illustrates a backlog of $77 thousand, dominated by land improvements, and comprising assets that have reached the end of their useful life but still remain in operation. These projections and estimates are based on current asset records, their replacement costs, and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

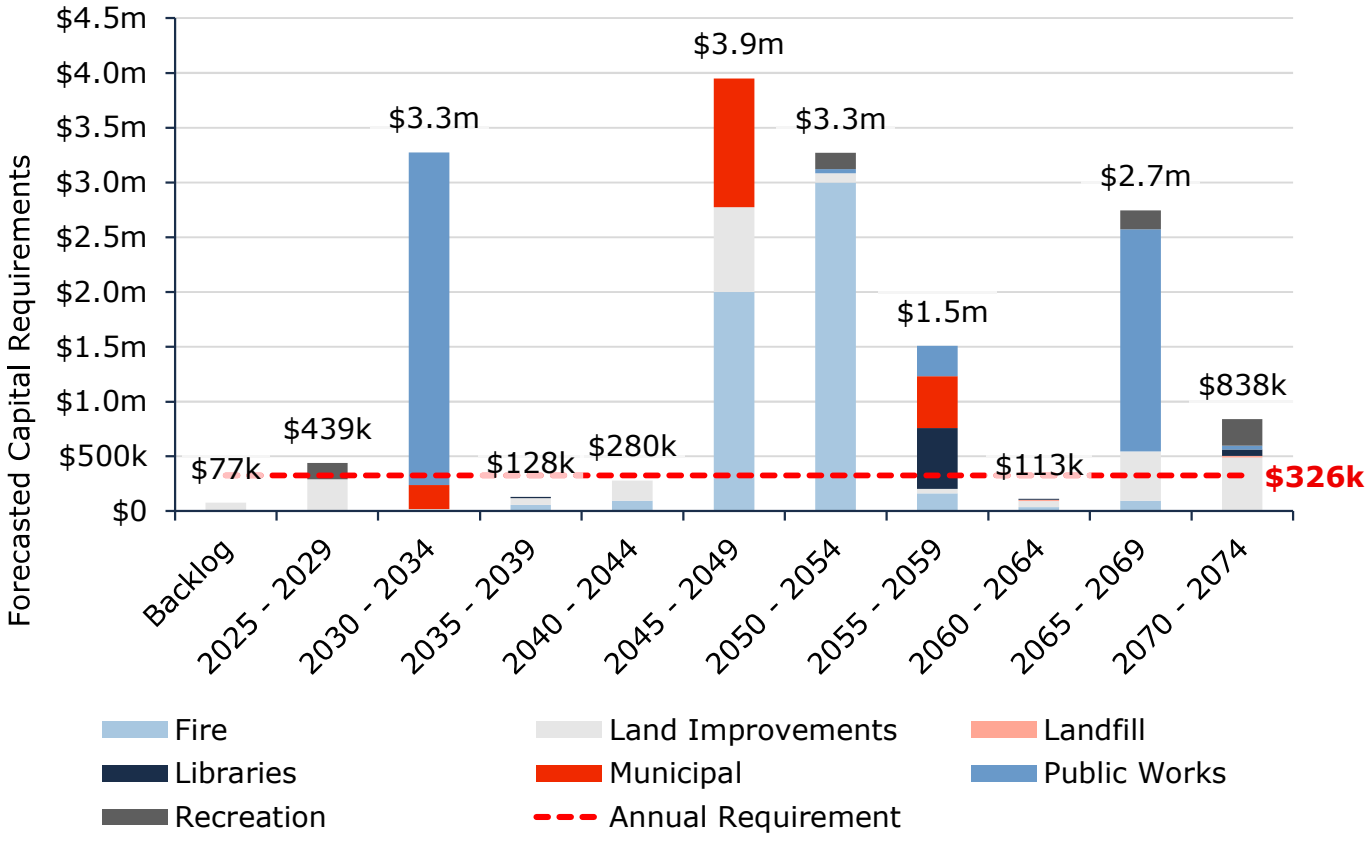


Figure 46 Forecasted Capital Replacement Needs Buildings & Facilities 2025-2074

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

receive proper and timely lifecycle intervention, including replacements. In the case of buildings and facilities, detailed componentization is necessary to develop more reliable lifecycle forecasts that reflect the needs of individual elements and components.

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

8.6 Risk Analysis

The risk matrix below is generated using available asset data, including service life remaining, replacement costs, and building department. The risk ratings for assets without useful attribute data were calculated using only age, service life remaining, and their 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 Town 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 Town's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low**	5 - 7 **Low**	8 - 9 **Moderate**	10 - 14 **High**	15 - 25 **Very High**
$3,281,857 (22%)	$1,551,910 (11%)	$1,389,206 (10%)	$5,381,054 (37%)	$3,000,000 (21%)

Figure 47 Risk Matrix: Buildings & Facilities

8.7 Levels of Service

The tables that follow summarize the Town'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 Town has selected for this AMP.

8.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps, of the types of facilities that the municipality operates and maintains	See Appendix C

Table 32 Community Levels of Service: Buildings & Facilities

8.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2024)
Quality	Average facility condition index value for facilities in the municipality	51%
Performance	Capital reinvestment rate	1.37%

Table 33 Technical Levels of Service: Buildings & Facilities

8.8 Proposed Levels of Service

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

The tables below and graphs explain the proposed levels of service scenarios that were analyzed for buildings and facilities. Further PLOS analysis at the portfolio level can be found in Section *4. Proposed Levels of Service Analysis.*

8.8.1 PLOS Scenarios Analyzed

Scenario	Replacement Cost	Projected Average Condition	Projected Average Risk	Average Annual Investment
Scenario 1 (Maintain)	$14,604,000	30%	15.7	$200,000
Scenario 2 (100% Funded)	$14,604,000	45%	12.9	$326,000
Scenario 3 (75% Funded)	$14,604,000	35%	14.8	$244,500

Table 34 Buildings & Facilities PLOS Scenario Analysis Results

8.8.2 Projected Condition and Risk Impacts Comparison

The graphs below present and compare the projected condition and risk impact for each scenario analyzed.

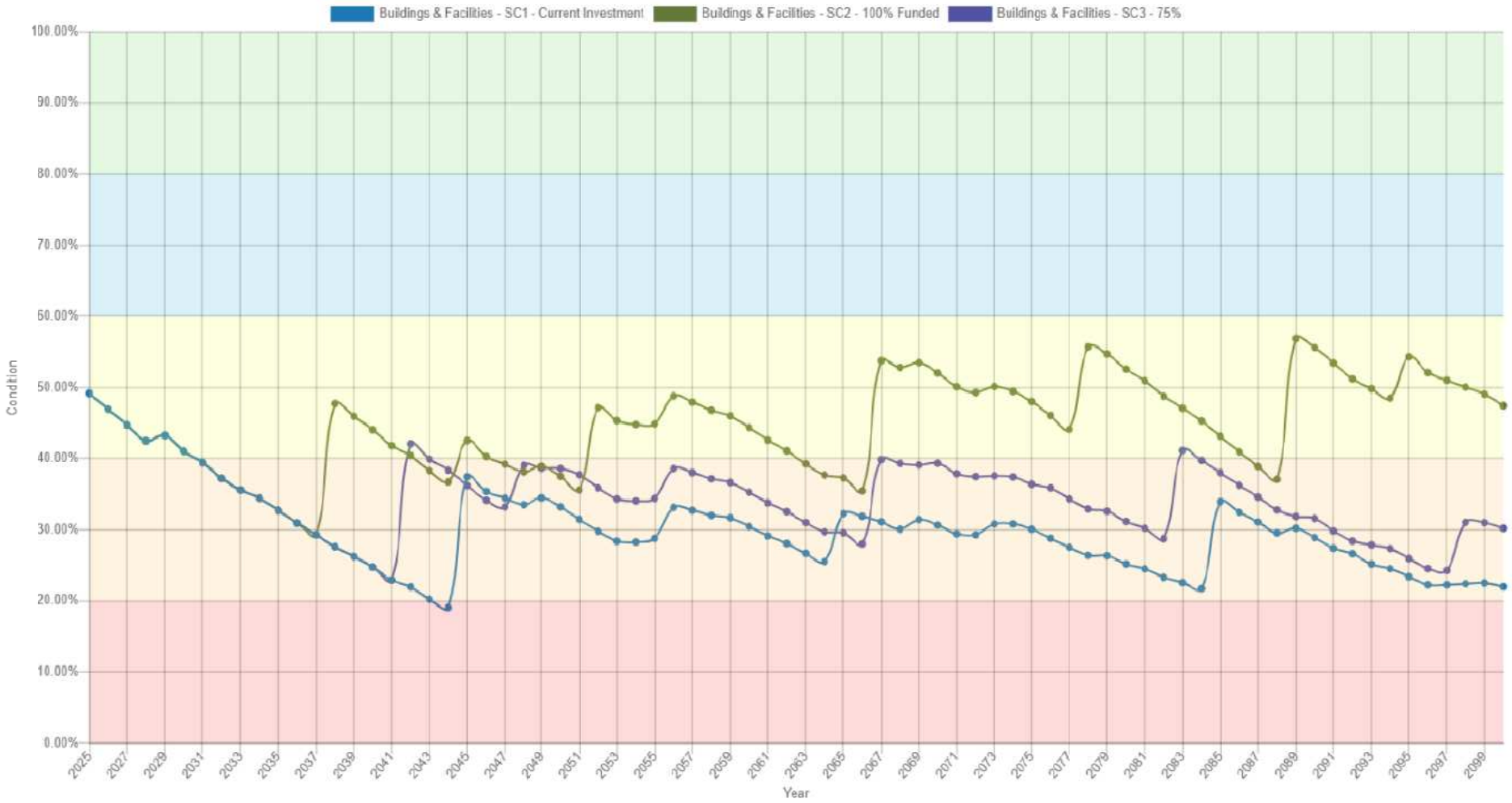


Figure 48: Buildings & Facilities PLOS Scenarios: Condition Results

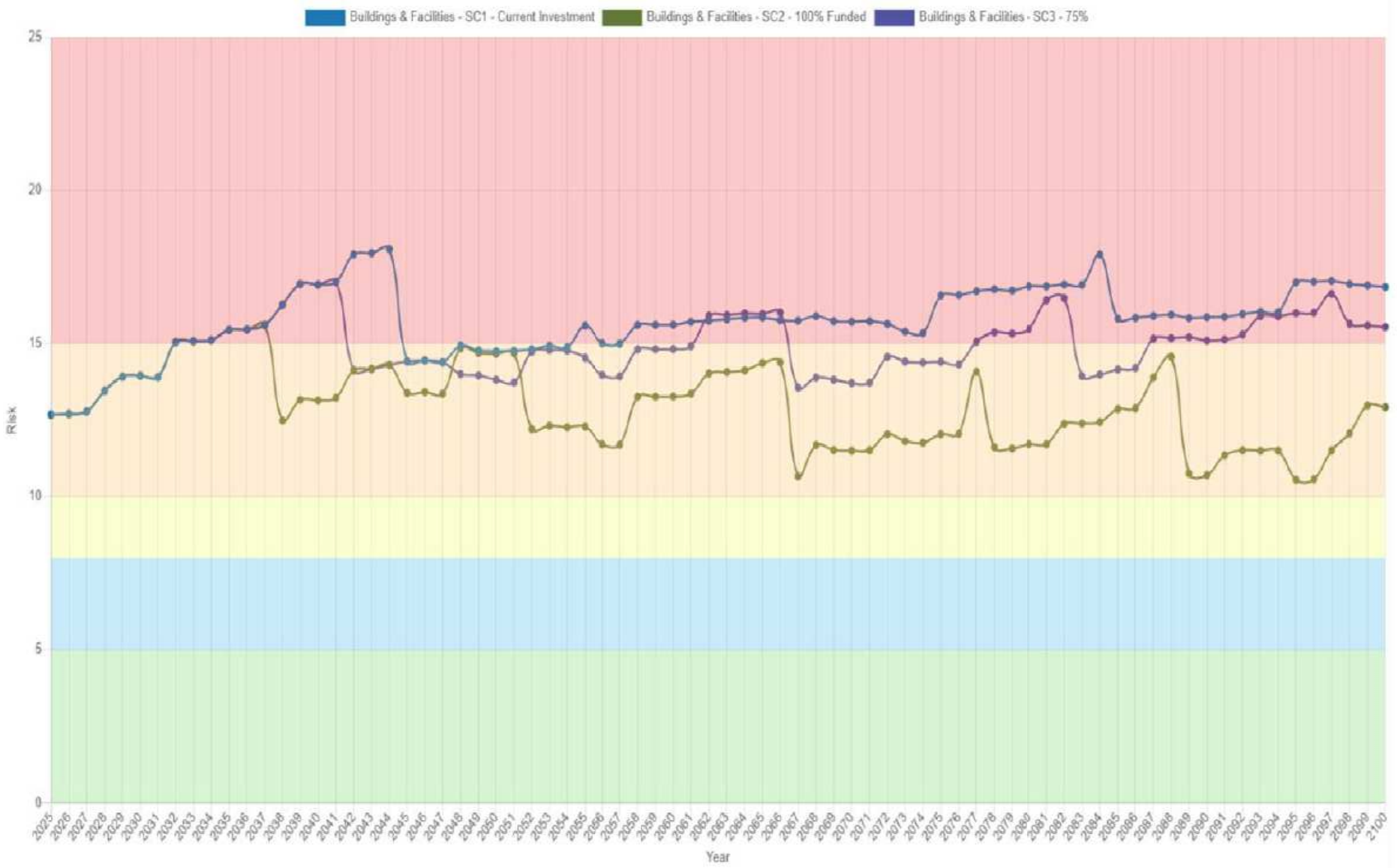


Figure 49: Buildings & Facilities PLOS Scenarios: Risk Results

8.8.3 10-Year PLOS Financial Projections

As outlined in Section *4. Proposed Levels of Service Analysis*, the Town of Laurentian Hills selected Scenario 1 as their preferred proposed levels of service. The main objective is to increase spending gradually to reach a more sustainable funding level to manage the Town's current inventory of assets. In scenario 1, the current level of investment is maintained, with no increases applied. The following table shows this result with the investment remaining constant year over year if scenario 1 is implemented and increase investment is not made.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Targeted Capital Spending	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**
Projected Capital Spending	$200k	$200k	$200k	$200k	$200k	$200k	$200k	$200k	$200k	$200k
Funding Deficit	$126k	$427k	$397k	$367k	$339k	$309k	$279k	$247k	$215k	$181k
Target Reinvestment Rate	**2.2%**	**2.2%**	**2.2%**	**2.2%**	**2.2%**	**2.2%**	**2.2%**	**2.2%**	**2.2%**	**2.2%**
Projected Reinvestment Rate	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%

Table 35 Buildings & Facilities 10-Year PLOS Financial Projections

9. Vehicles

The Town of Laurentian Hills maintains a fleet of municipal vehicles that enable staff to deliver essential services effectively and respond promptly to community needs. These assets support a range of operations, including fire protection, snow removal and other public works activities.

9.1 Inventory & Valuation

Table 36 summarizes the quantity and current replacement cost of all vehicles assets available in the Town's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire Vehicles	6	Quantity	$2,303,284	User-Defined
Public Works Vehicles	6	Quantity	$1,052,395	User-Defined
TOTAL	12		**$3,355,679**	

Table 36 Detailed Asset Inventory: Vehicles

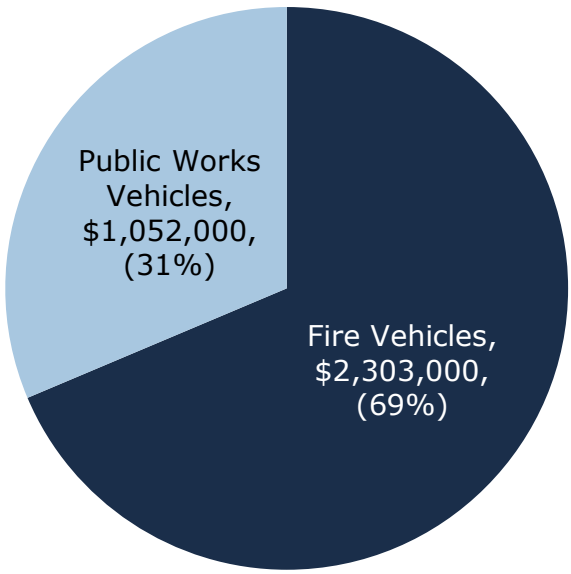


Figure 50 Portfolio Valuation: Vehicles

9.2 Asset Condition

Figure 51 summarizes the replacement cost-weighted condition of the Town's vehicles portfolio. Based primarily on assessed condition data, 98% of vehicles are in fair or better condition, with the remaining 2% 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. Condition data was available for 75% of vehicles, based on replacement costs; age was used to estimate condition for the remaining 25% of assets.

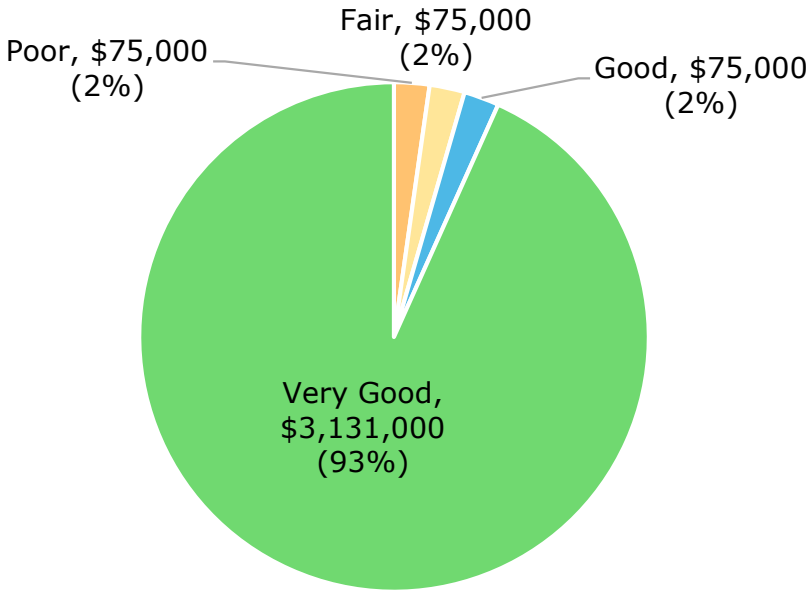


Figure 51 Asset Condition: Vehicles Overall

Figure 52 summarizes the condition of vehicles by each department. 100% of fire vehicles and 93% of public works vehicles are in fair or better condition.

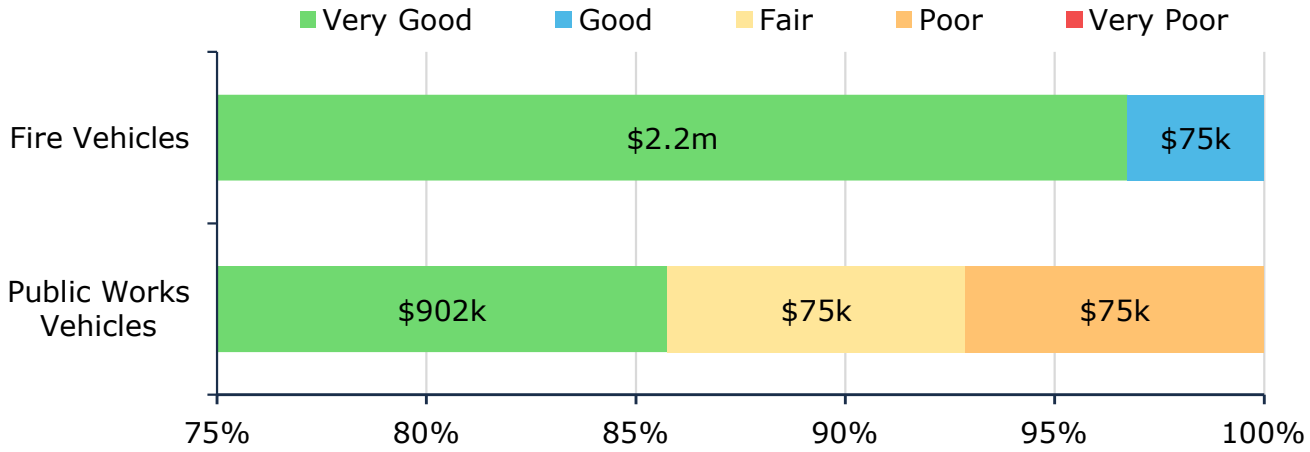


Figure 52 Asset Condition: Vehicles by Segment

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 53 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.

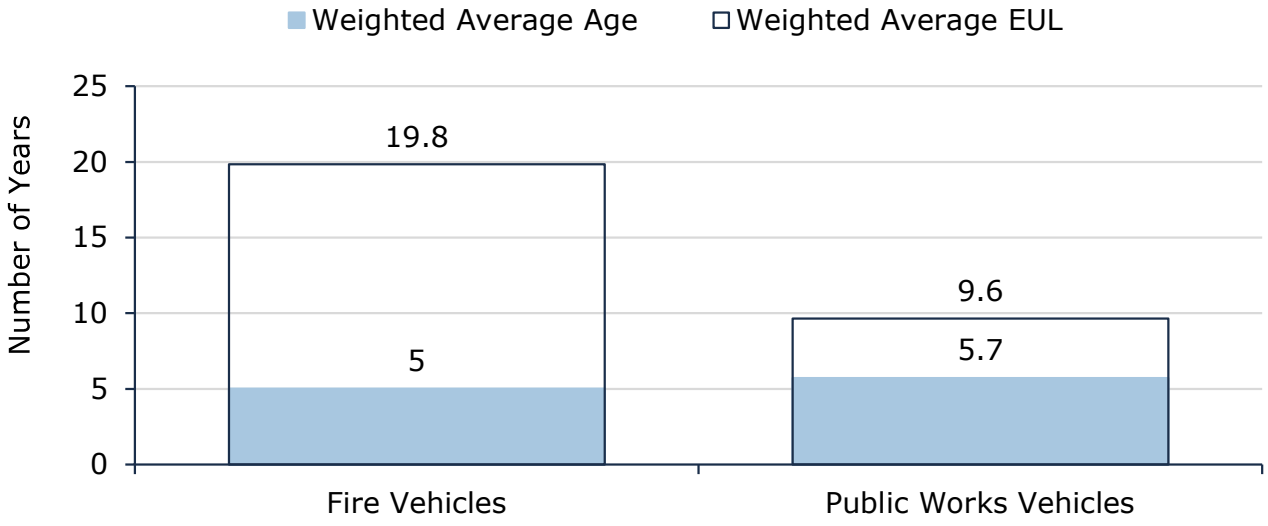


Figure 53 Estimated Useful Life vs. Asset Age: Vehicles

Age analysis reveals that, on average, most vehicles are in the early to middle stages of their expected life.

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 Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Tire, fluid, and minor component changes are completed when required in accordance with the vehicle manuals inspections.
	Fire vehicles are maintained in reference to vehicle manuals and in accordance with the guidelines set by the National Fire Protection Association (NFPA).
Replacement	Vehicle age, mileage and annual repair costs are taken into consideration when determining appropriate lifecycle activities. Most vehicles have a replacement schedule of 10 years, but Staff try to maximize the service life of the assets, where possible, based on performance and function.
Inspections	Staff complete regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation. Commercial Vehicle Operator's Registration (CVOR) vehicles are inspected and maintained by an external, certified mechanic. Fire vehicles are inspected in reference to vehicle manuals and in accordance with the guidelines set by the National Fire Protection Association (NFPA).

Table 37 Lifecycle Management Strategy: Vehicles

9.5 Forecasted Long-Term Replacement Needs

Figure 54 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town's vehicles portfolio. This analysis was run until 2044 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Town's primary asset management system and asset register. The Town's average annual requirements (red dotted line) total $229 thousand for all vehicles. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Replacement needs are forecasted to rise considerably, peaking at $3.2 million by 2044 as vehicles reach the end of their useful life. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

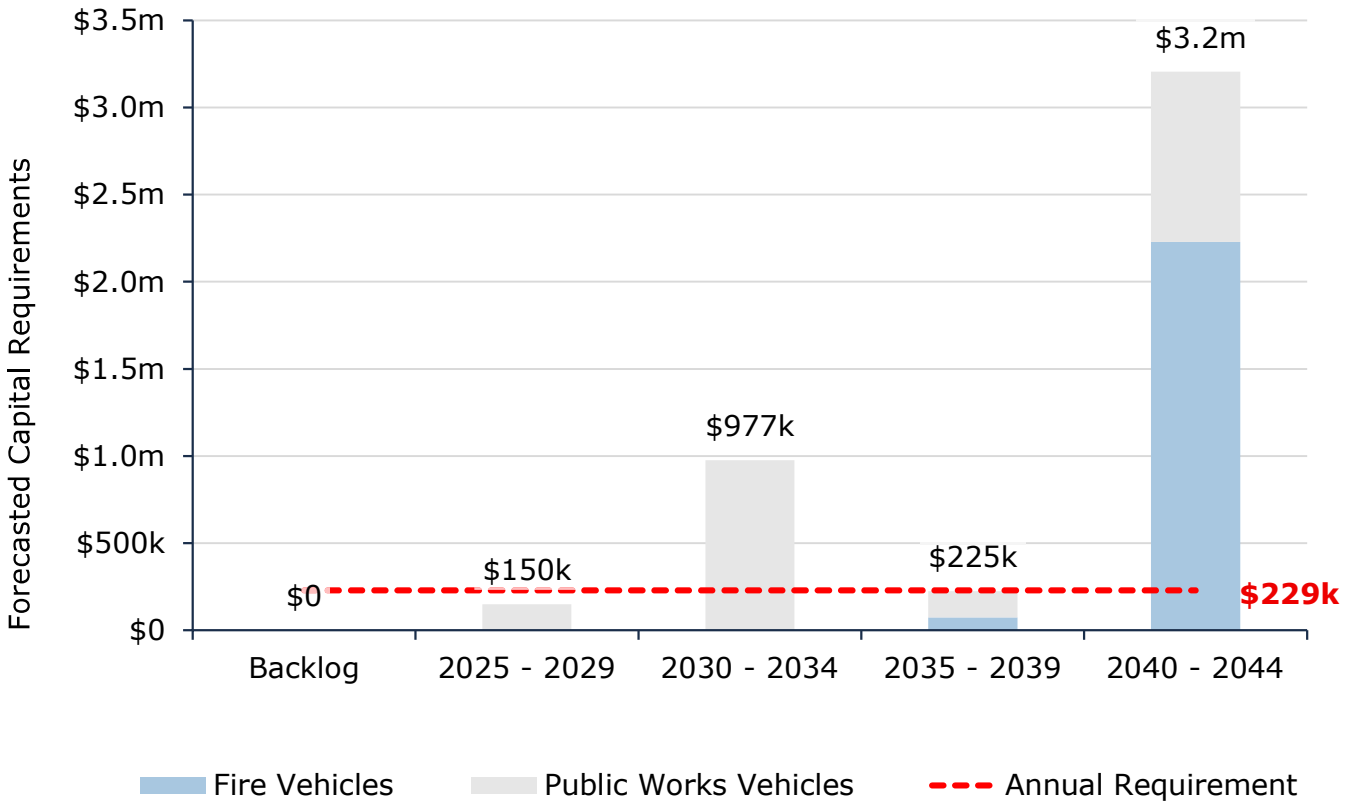


Figure 54 Forecasted Capital Replacement Needs: Vehicles 2025-2044

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

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

9.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and department or service area. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their 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 Town 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 Town's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low**	5 - 7 **Low**	8 - 9 **Moderate**	10 - 14 **High**	15 - 25 **Very High**
$1,205,679 (36%)	$2,075,000 (62%)	$75,000 (2%)	- (0%)	- (0%)

Figure 55 Risk Matrix: Vehicles

9.7 Levels of Service

The tables that follow summarize the Town'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 Town has selected for this AMP.

9.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2024)
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	The Town owns 12 vehicles which have an average condition of 89% (Very good) for fire and public works services.

Table 38 Community Levels of Service: Vehicles

9.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2024)
Reliability	Percentage of volunteer fire fighters with required licenses for fire trucks/pumpers/tankers	46%
Quality	Average condition of vehicles	Very Good
Performance	Capital reinvestment rate	3.97%

Table 39 Technical Levels of Service: Vehicles

9.8 Proposed Levels of Service

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

The tables below and graphs explain the proposed levels of service scenarios that were analyzed for vehicles. Further PLOS analysis at the portfolio level can be found in section *4. Proposed Levels of Service Analysis.*

9.8.1 PLOS Scenarios Analyzed

The scenarios and analysis for the Vehicles asset portfolio was modelled over a 50 year time period to reflect the short lifecycle or estimated useful life of this category.

Scenario	Replacement Cost	Projected Average Condition	Projected Average Risk	Average Annual Investment
Scenario 1 (Maintain)	$3,356,000	35%	15.5	$133,000
Scenario 2 (100% Funded)	$3,356,000	51%	12.4	$229,000
Scenario 3 (75% Funded)	$3,356,000	42%	14.2	$171,750

Table 40 Vehicles PLOS Scenario Descriptions

9.8.2 Projected Condition and Risk Impact Comparison

The graphs below present and compare the projected condition and risk impact for each scenario analyzed.

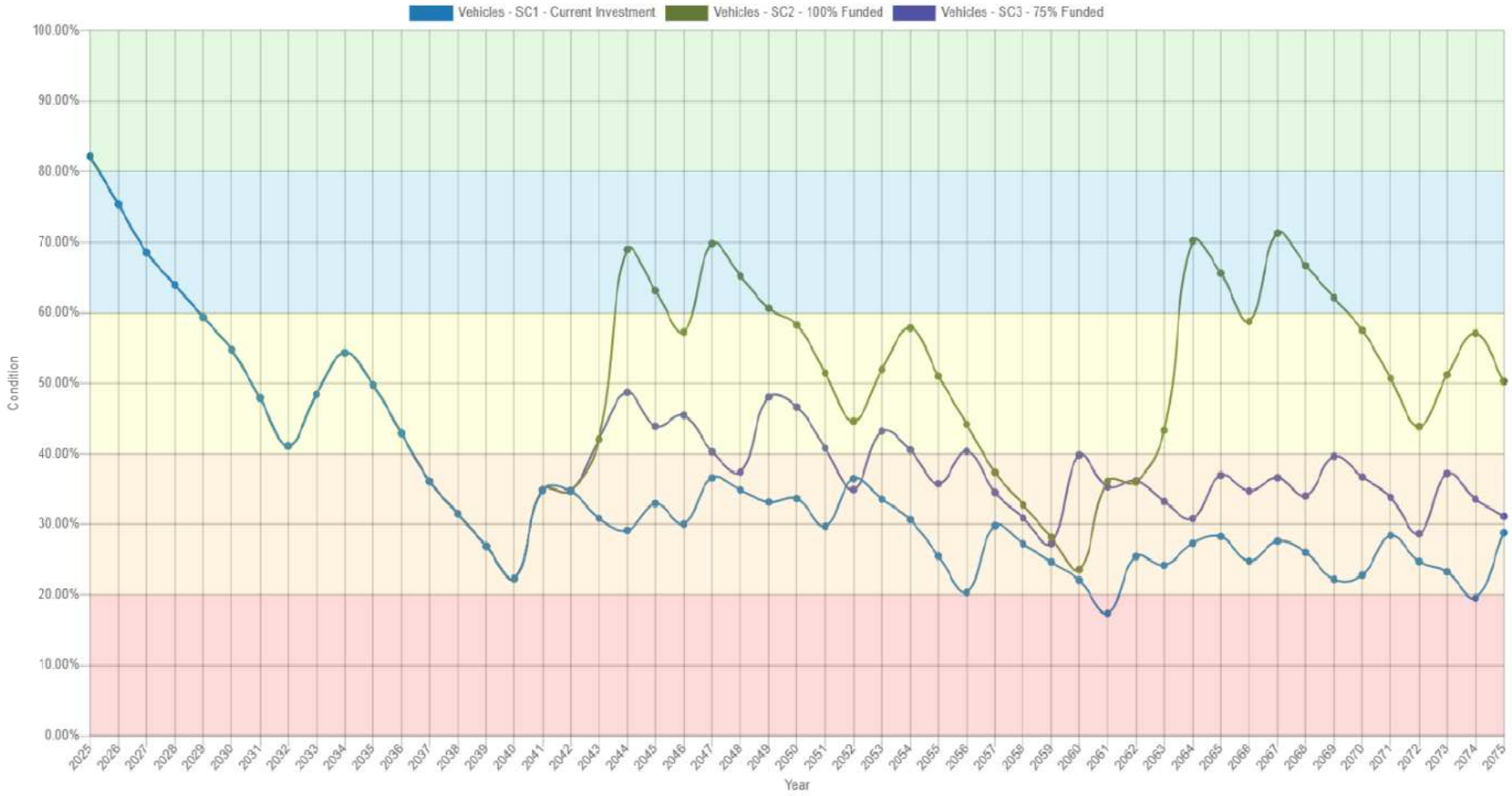


Figure 56: Vehicles PLOS Scenario: Condition Results

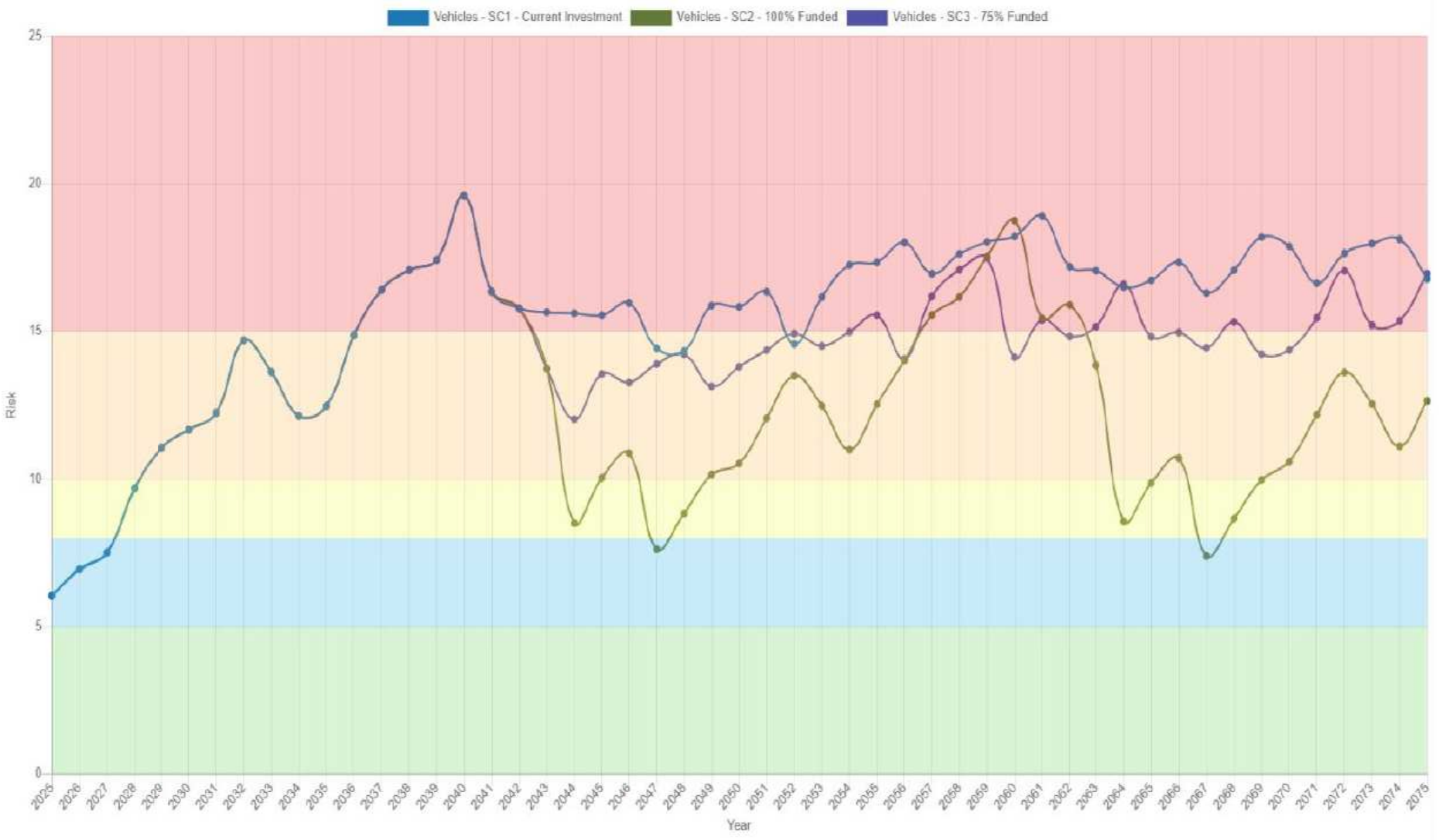


Figure 57: Vehicles PLOS Scenario: Risk Results

9.8.3 10-Year PLOS Financial Projections

As outlined in Section *4. Proposed Levels of Service Analysis*, the Town of Laurentian Hills selected Scenario 1 as their preferred proposed levels of service. The main objective is to increase spending gradually to reach a more sustainable funding level to manage the Town's current inventory of assets. In scenario 1, the current level of investment is maintained, with no increases applied. The following table shows this result with the investment remaining constant year over year if scenario 1 is implemented and an increased investment is not made.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Targeted Capital Spending	**$229k**	**$229k**	**$229k**	**$229k**	**$229k**	**$229k**	**$229k**	**$229k**	**$229k**	**$229k**
Projected Capital Spending	$133k	$133k	$133k	$133k	$133k	$133k	$133k	$133k	$133k	$133k
Funding Deficit	$96k	$96k	$96k	$96k	$96k	$96k	$96k	$96k	$96k	$96k
Target Reinvestment Rate	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**	**6.8%**
Projected Reinvestment Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%

Table 41 Vehicles 10-Year PLOS Financial Projections

10. Machinery & Equipment

To maintain the high quality of public infrastructure and ensure the effective delivery of core municipal services, the Town utilizes a range of specialized machinery and equipment across its departments. These assets enable staff to perform essential functions efficiently and safely, from road maintenance and snow removal to facility servicing and emergency response.

Regular maintenance and timely repairs are essential to keeping machinery and equipment in optimal condition, ensuring reliability, extending service life, and sustaining a consistent level of service for the community.

10.1 Inventory & Valuation

Figure 58 summarizes the quantity and current replacement cost of all machinery and equipment assets available in the Town's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire	210	Quantity	$916,483	CPI
Municipal	2	Quantity	$129,277	CPI
Public Works	13	Quantity	$2,360,496	User-Defined
Recreation	20	Quantity	$785,222	CPI
TOTAL			**$4,191,478**	

Table 42 Detailed Asset Inventory: Machinery & Equipment

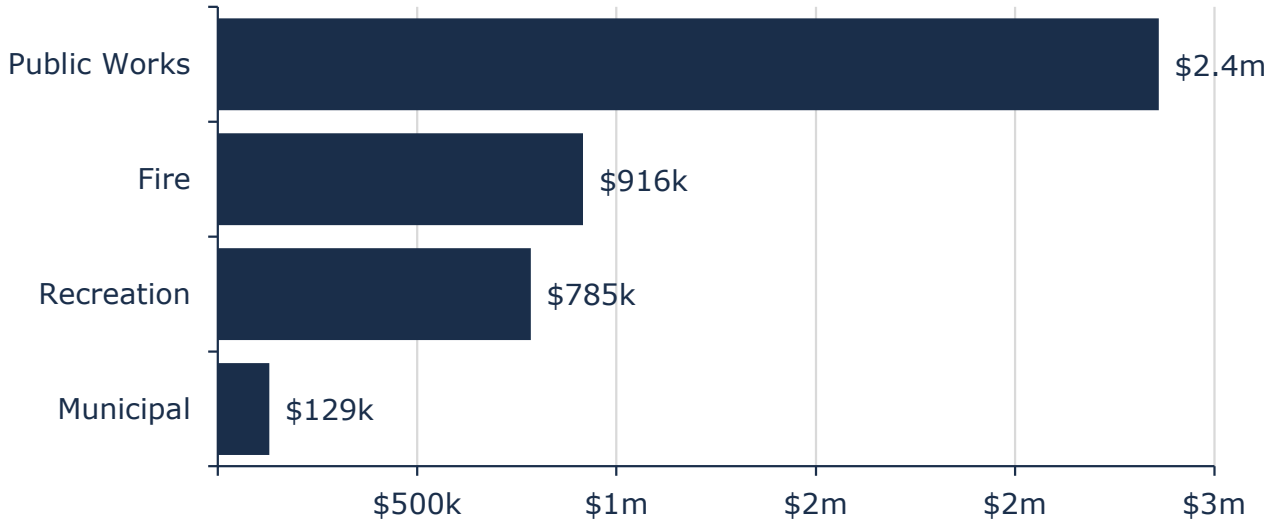


Figure 58 Portfolio Valuation: Machinery & Equipment

10.2 Asset Condition

Figure 59 summarizes the replacement cost-weighted condition of the Town's machinery and equipment portfolio. Based on assessed condition and age data, 49% of assets are in fair or better condition; the remaining 51% 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.

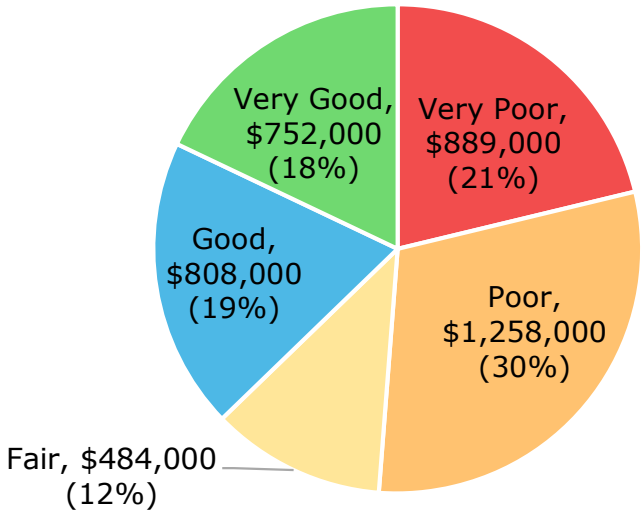


Figure 59 Asset Condition: Machinery & Equipment Overall

Figure 60 summarizes the age-based condition of machinery and equipment by each department. The majority of assets that support recreation services are in fair or better condition. Assets in poor or worse condition are concentrated primarily in fire services.

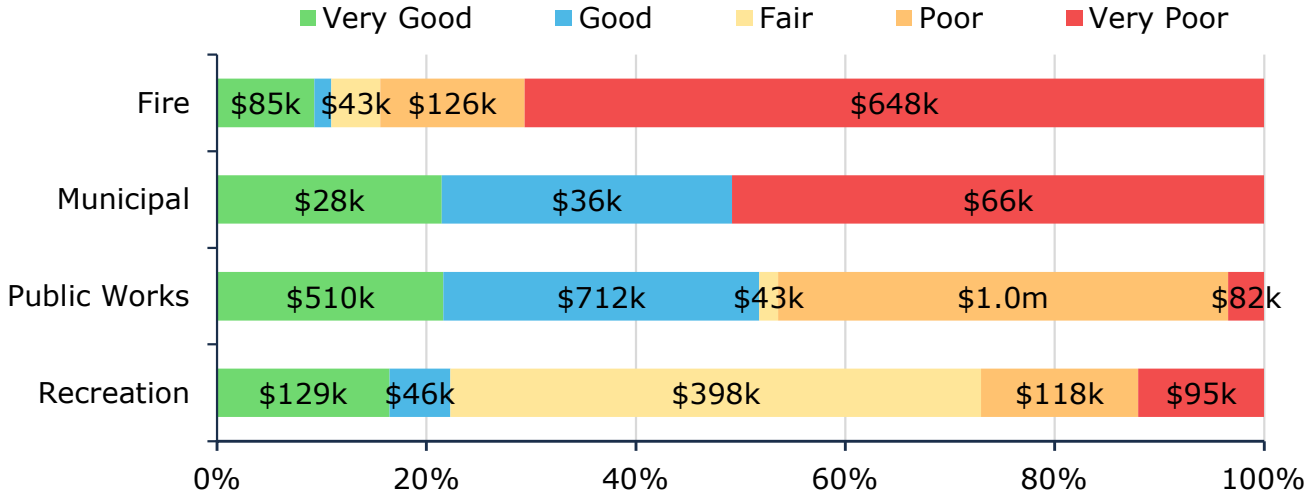


Figure 60 Asset Condition: Machinery & Equipment by Segment

10.3 Age Profile

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

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

Figure 61 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.

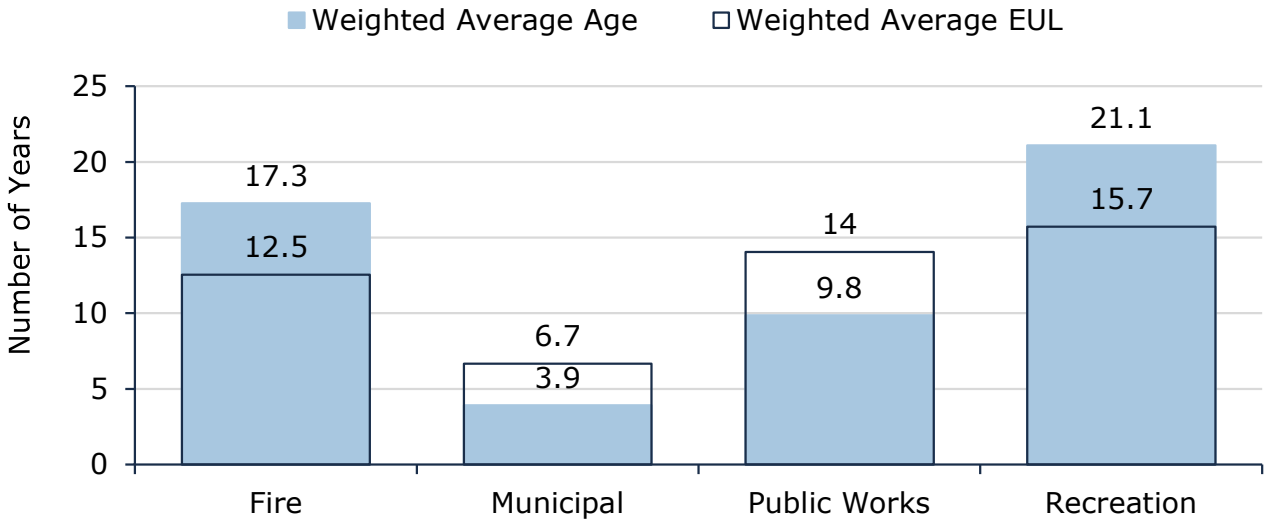


Figure 61 Estimated Useful Life vs. Asset Age: Machinery & Equipment

Age analysis reveals that, on average, fire and recreation assets are still in operation even though they have exceeded their useful life.

10.4 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 Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Maintenance program varies by department and asset type.
	Bunker gear and other machinery and equipment belonging to the fire department is inspected routinely by staff, and every 6 months by the manufacturer, as per NFPA standards. Monthly night maintenance is performed as issues are identified.
	Public works machinery and equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff.
Inspection	Staff complete regular visual inspections of machinery and equipment to ensure they are in state of adequate repair.
Replacement	The replacement of machinery and equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks.

Table 43 Lifecycle Management Strategy: Machinery & Equipment

10.5 Forecasted Long-Term Replacement Needs

Figure 62 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town's machinery and equipment portfolio. This analysis was run until 2054 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Town's primary asset management system and asset register. The Town's average annual requirements (red dotted line) total $326 thousand for all machinery and equipment. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Replacement needs are forecasted to increase slightly over the next 10 year period, peaking at $2.3 million in the next 20 years. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

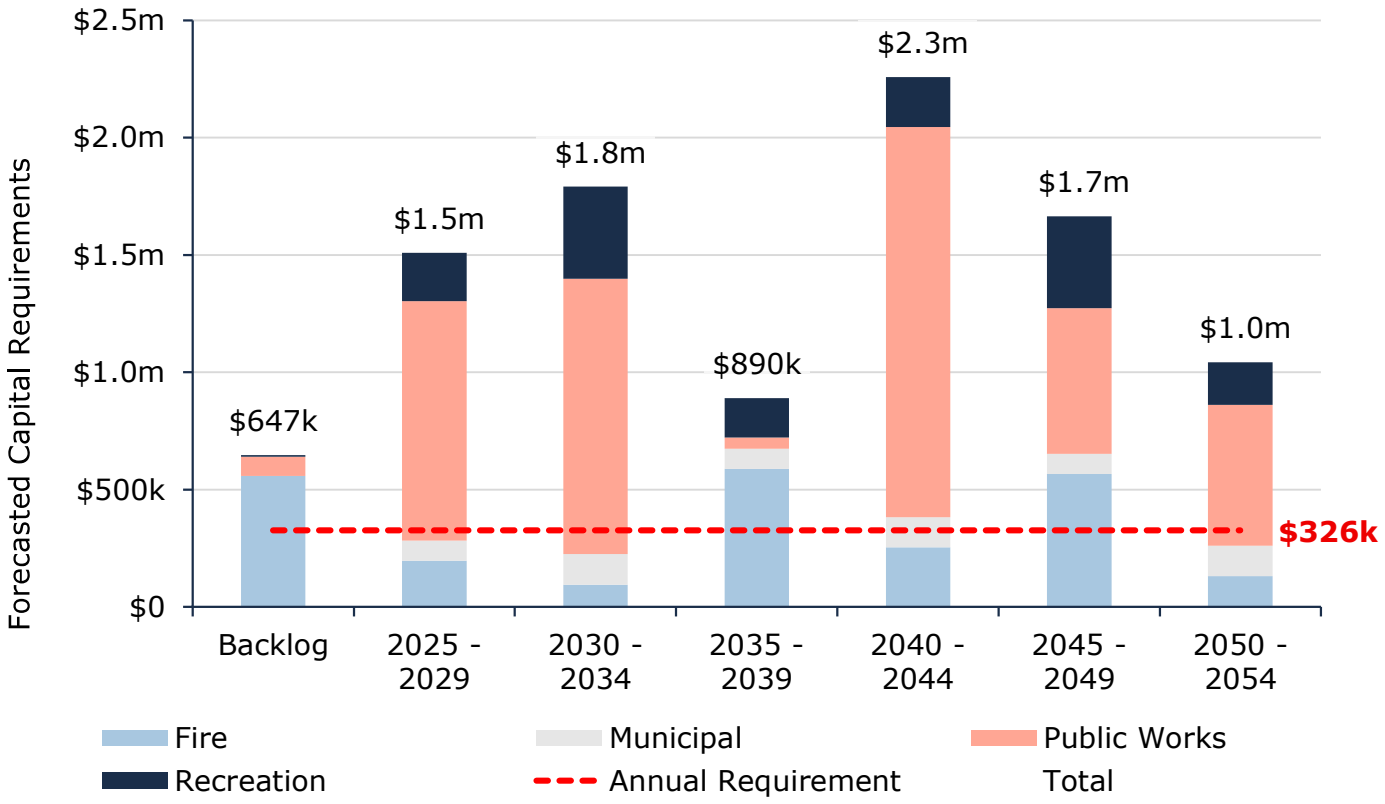


Figure 62 Forecasted Capital Replacement Needs: Machinery & Equipment 2025-2054

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

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

10.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and service criticality. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their 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 Town 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 Town's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** $852,491 (20%)	5 - 7 **Low** $189,087 (5%)	8 - 9 **Moderate** $676,757 (16%)	10 - 14 **High** $908,185 (22%)	15 - 25 **Very High** $1,564,958 (37%)

Figure 63 Risk Matrix: Machinery & Equipment

10.7 Levels of Service

The tables that follow summarize the Town'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 Town has selected for this AMP.

10.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2024)
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	Fire services is supported by equipment such as thermal imaging cameras, bunker gear, fire hose, nozzles, cutter and hydraulic ram. Municipal services is supported by equipment such as computers, phones and livestream equipment. The public works services is supported by brusher, sander, loaders, edger, graders, steamer, roller, compactor, spreader and trailer. Recreation is supported by benches, picnic tables, tractors and playground equipment.

Table 44 Community Levels of Service: Machinery & Equipment

10.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2024)
Quality	Average condition of equipment	41% (Fair)
Performance	Capital reinvestment rate	0.48%

Table 45 Technical Levels of Service: Machinery & Equipment

10.8 Proposed Levels of Service

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

The tables and graphs below explain the proposed levels of service scenarios that were analyzed for machinery and equipment. Further PLOS analysis at the portfolio level can be found in Section *4. Proposed Levels of Service Analysis.*

10.8.1 PLOS Scenarios Analyzed

The scenario for Machinery & Equipment were modelled over a 50 year time period to reflect the typically short lifecycle of this asset category

Scenario	Replacement Cost	Projected Average Condition	Projected Average Risk	Average Annual Investment
Scenario 1 (Maintain)	$4,190,000	5%	18.5	$20,000
Scenario 2 (100% Funded)	$4,190,000	41%	12.8	$326,000
Scenario 3 (75% Funded)	$4,190,000	31%	14.6	$244,500

Table 46 Machinery & Equipment PLOS Scenario Descriptions

10.8.2 Projected Condition and Risk Impact Comparison

The graphs below present and compare the projected condition and risk impact for each scenario analyzed.

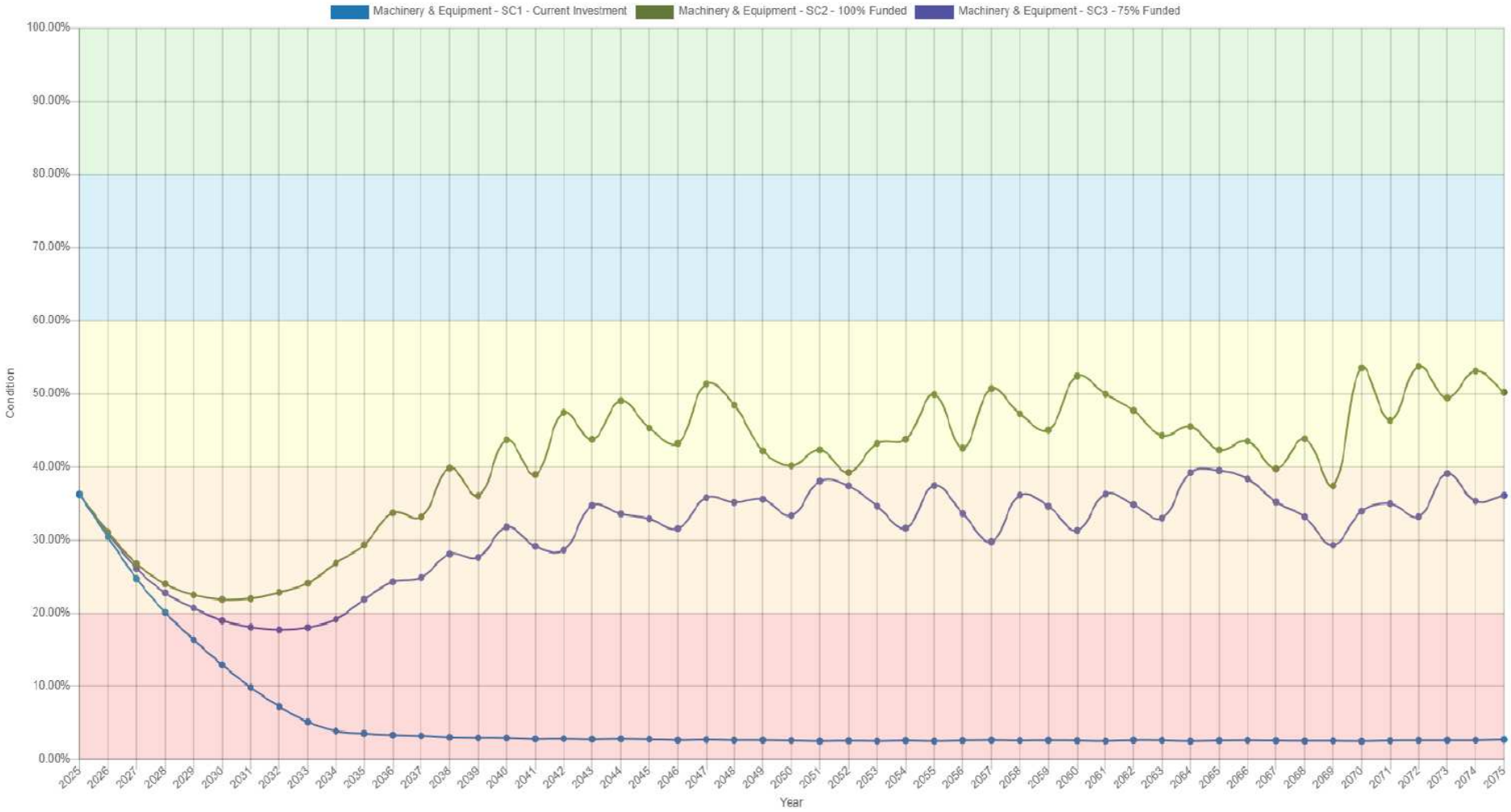


Figure 64: Machinery & Equipment PLOS Scenarios: Condition Results

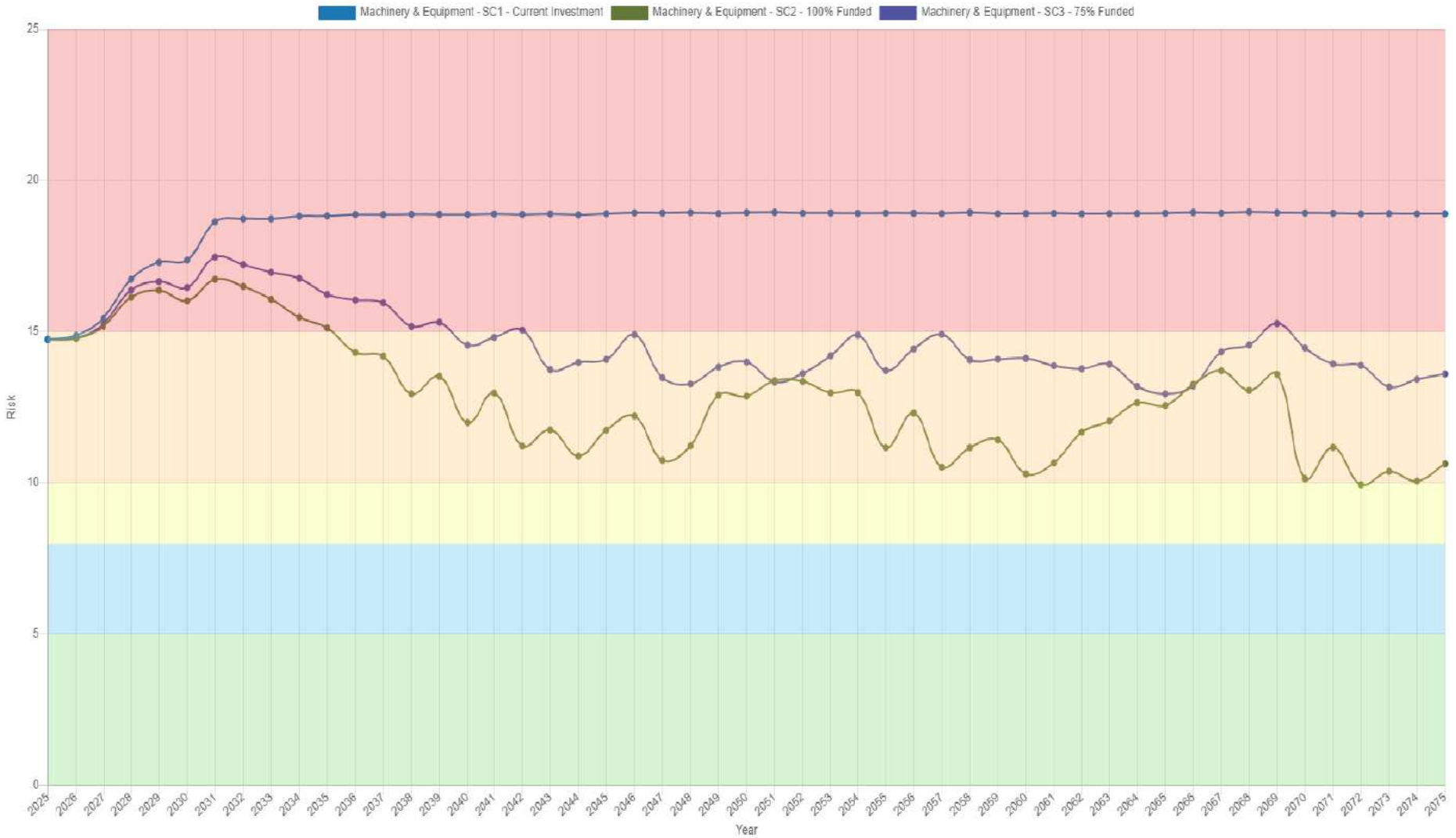


Figure 65: Machinery & Equipment PLOS Scenarios: Risk Results

10.8.4 10-Year PLOS Financial Projections

As outlined in Section *4. Proposed Levels of Service Analysis*, the Town of Laurentian Hills selected Scenario 1 as their preferred proposed levels of service. The main objective is to increase spending gradually to reach a more sustainable funding level to manage the Town's current inventory of assets. In scenario 1, the current level of investment is maintained, with no increases applied. The following table shows this result with the investment remaining constant year over year if scenario 1 is implemented and an investment increase is not made.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Targeted Capital Spending	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**	**$326k**
Projected Capital Spending	$20k	$20k	$20k	$20k	$20k	$20k	$20k	$20k	$20k	$20k
Funding Deficit	$306k	$306k	$306k	$306k	$306k	$306k	$306k	$306k	$306k	$306k
Target Reinvestment Rate	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**	**7.8%**
Projected Reinvestment Rate	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%

Table 47 Machinery & Equipment 10-Year PLOS Financial Projections

Strategies

11. Growth

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

11.1 Growth Assumptions

County of Renfrew Official Plan (March 2020)

The County of Renfrew adopted an Official Plan in 2002 to provide a policy framework for growth and development. Updates to the Official Plan were adopted in 2020. Several municipalities in the county, including Laurentian Hills, have decided to utilize the County Official Plan as their detailed Official Plan.

A key objective defined in the plan includes the promotion of efficient and cost-effective development to sustain long-term financial well-being and ensure the financial viability of infrastructure and public services. The Plan also states that infrastructure and public services shall be provided in a coordinated, efficient, and cost-effective manner through asset management planning.

Efficient and cost-effective development are important in the management of residential, commercial, and industrial growth. The County plans to foster efficient growth through a number of initiatives, including improved telecommunication infrastructure, the development of brownfields, the development of the tourism sector, and the development of new transportation infrastructure to enhance highway access to the county and local municipalities.

Significant population growth is projected in the County of Renfrew. The County is projected to grow by 24% between 2011 and 2036, increasing the population from 86,534 to 107,245, under a high growth scenario. The Town of Laurentian Hills only accounts for 0.6% of the growth in the County. The following table shows the population growth projections for the Town of Laurentian Hills based on the 2011 population of 2,811.

Scenario	2016	2021	2026	2031	2036
Low Growth	2825	2839	2853	2868	2882
High Growth	2853	2896	2940	2985	3030

According to the most recent census data from 2016 and 2021, the growth assumptions in the Official Plan are relatively accurate. The actual population in the Town of Laurentian Hills was recorded as 2,961 in 2016 and 2,885 in 2021.

11.2 Impact of Growth on Lifecycle Activities

For the near- to mid-term, the Town of Laurentian Hills had a population of approximately 2,885 residents in 2021, representing a slight decline from 2,961 in 2016. This indicates a stable or modestly decreasing population without significant growth pressures. The demographic profile shows an aging population, with about 18.9% of residents aged 65 or older as of 2021, implying that future infrastructure planning must increasingly account for the needs of older adults rather than rapid expansion to accommodate new residents.

While current trends suggest limited population growth, planning for potential future increases may still require expanding infrastructure and services. Any growth-related assets constructed or acquired should be integrated into the Town's Asset Management Plan (AMP). Although additional residential units can broaden the assessment base and help offset some costs of growth, the Town will need to evaluate the lifecycle costs of such infrastructure and incorporate them into long-term funding strategies aimed at, at minimum, maintaining current service levels. To support this, the Town imposes development charges under By-law No. 11-12, applied at the time of building permits to recover costs related to growth-driven infrastructure expansions across sectors such as water, wastewater, roads, fire protection, and recreation. These charges ensure that new development pays its proportional share of capital costs, maintaining fairness for existing taxpayers.

The Town's water infrastructure centers on the Chalk River Drinking Water System, drawing from Corry Lake. Recent quarterly capacity reports indicate the system typically operates at about 17% to 18% of maximum capacity during average flows, demonstrating that current water infrastructure sufficiently meets existing demand without strain.

Growth is not a primary driver of infrastructure demand, given a stable or slightly declining population. Infrastructure asset management in the Town will be largely focused on the maintenance, rehabilitation, and upgrading of aging assets to sustain reliable service and safety standards.

12. Financial Strategy

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Town of Laurentian Hills 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 as in indicated in Sec4. Proposed Levels of Service Analysis.
    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.

12.1 Financial Strategy: Proposed Level of Service

The Town of Laurentian Hills has developed and analyzed three scenarios to guide decision-making on the proposed levels of service. These scenarios are outlined in detail in Section 4: Proposed Levels of Service Analysis. Following this review, the Town has selected Scenario 1: Maintain Current Investment as the proposed level of service for the purposes of this report, and until further direction is provided by Council.

Under this scenario, the Town will continue operating at the current level of investment across all asset categories without increasing spending at this time. Because the proposed level of service reflects existing service delivery, there is no immediate requirement to adjust capital budgets, nor are increases to tax rates or utility rates required. In effect, no new financial strategy is necessary to sustain the chosen level of service in the short term.

However, this approach comes with inherent risks. At present, the Town is achieving a funding level of 42% for tax-funded assets and only 9% for rate-funded assets. While this allows the Town to avoid near-term financial impacts to residents, it also means that the community is knowingly operating below the level of funding needed to sustain its infrastructure over the long term. Underfunding increases the likelihood of unexpected failures, accelerated asset deterioration, and ultimately higher costs when emergency repairs or replacements are required. In such situations, the Town may face the need or risk of taking on debt, which carries the added burden of interest payments and may reduce financial flexibility in the future.

At present, the Town has approximately $6.6 million in reserve balances, which could be used to partially address investment needs as they arise. While this reserve provides a measure of security, it is not sufficient to fully offset the funding gap over the long term. A prudent step would be to consider gradually increasing annual reserve contributions to strengthen the Town’s resilience against unforeseen costs, reduce reliance on debt financing, and provide greater stability in managing infrastructure renewal.

In summary, maintaining the current investment level provides short-term financial stability and avoids immediate tax or rate increases. However, it also carries general risks related to deferred investment, including potential service disruptions, higher long-term costs, and reduced financial flexibility. These risks should be carefully weighed by Council as part of future deliberations on funding strategy and service levels.

12.2 Financial Strategy: Ideal Funding Level

As discussed, the Town has chosen to maintain the current level of investment. Presented in this section is an alternate financial strategy for consideration that would allow the Town to achieve the ideal funding levels over a selected period of time based on the current average annual requirements. This is provided to allow for consideration and comparison of the current level of investment and the ideal level of investment.

12.2.1 Annual Requirements & Capital Funding

The annual requirements represent the amount the Town 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 Town would need to allocate approximately $2.9 million annually to address capital requirements for the assets included in this AMP.As discussed in Section 4. Proposed Levels of Service Analysis, the Town has chosen to maintain the current level of funding for the proposed level of service and therefore no increase in spending is required to achieve this level of service. In this case, we have presented a financial strategy that provides a path to the ideal funding level. In essence this strategy compares the current to the ideal.

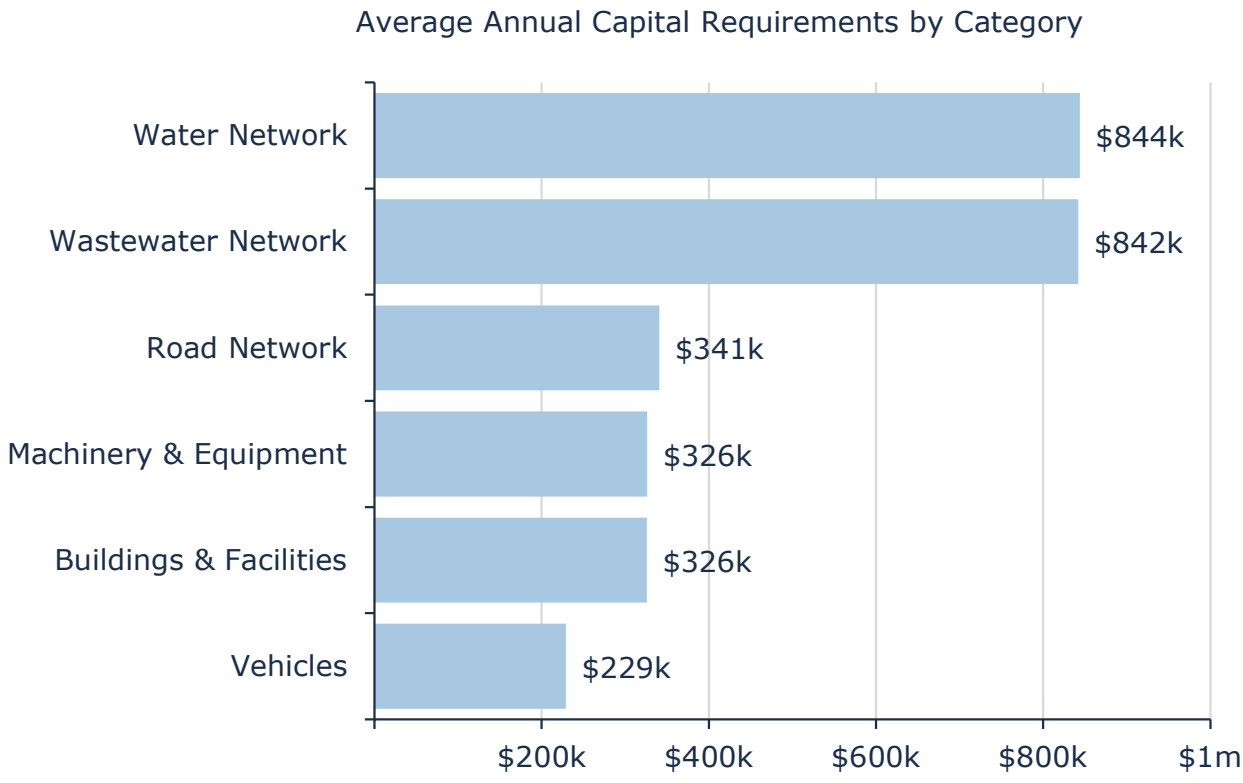


Figure 66 Annual Capital Funding Requirements by Asset Category

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. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table shows this comparison.

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	$379,000	$341,000	$38,000

Table 48 Lifecycle Strategies Annual Savings

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of $38 thousand for the Road Network. This represents an overall reduction of the annual requirements for each category by 10%. As the lifecycle strategy scenario represents the lowest cost option available to the Town, we have used these annual requirements in the development of the financial strategy.

12.2.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately $666 thousand towards capital projects per year. Given the annual capital requirement of $2.9 million, there is currently a funding gap of $2.2 million annually.

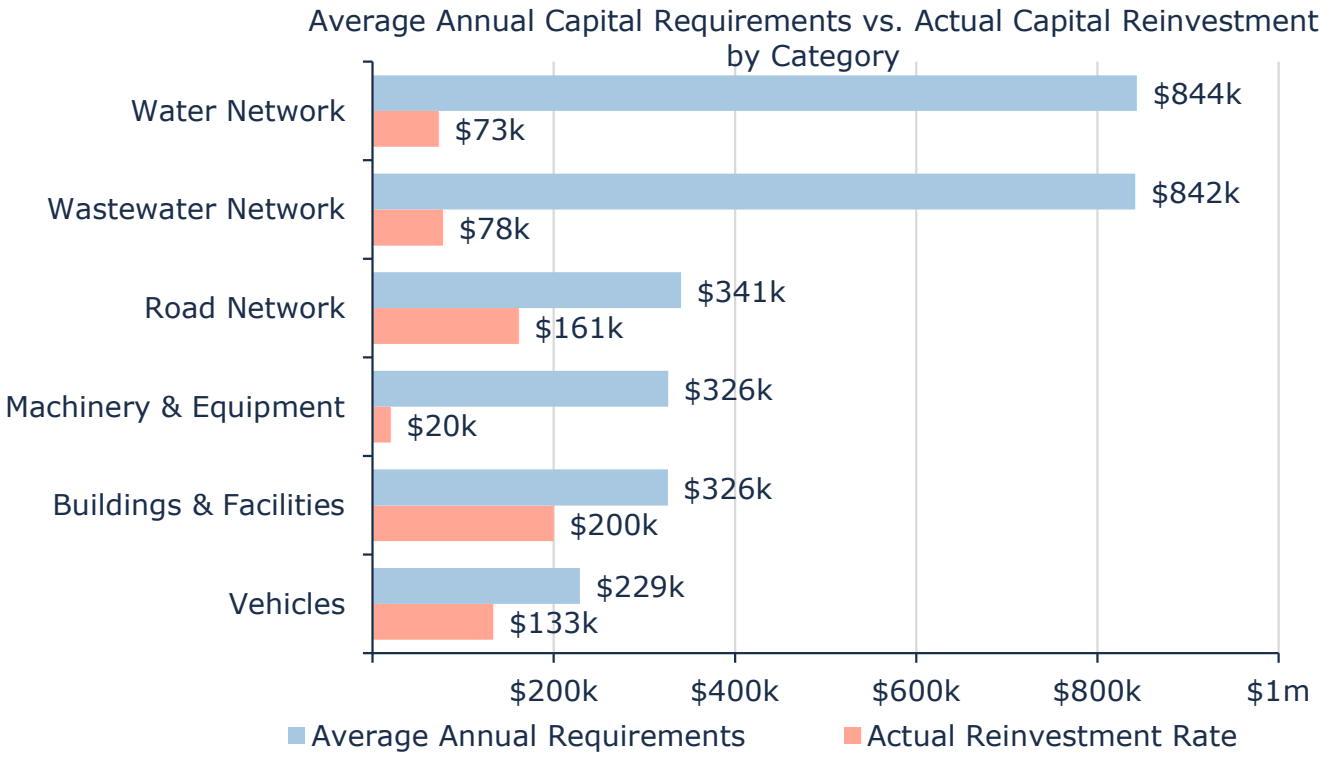


Figure 67 Annual Requirements vs. Capital Funding Available

12.2.3 Funding Objective

The Town has chosen to maintain the current investment rate. For comparison purposes have developed a scenario that would enable the Town of Laurentian Hills to achieve full funding within 10 years for tax funded assets and 20 years for rate funded assets.

1. **Tax Funded Assets:** Road Network, Buildings & Facilities, Machinery & Equipment and Vehicles

2. **Rate-Funded Assets:** Water Network, Wastewater Network

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

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

12.2.4 Financial Profile: Tax Funded Assets

Current Funding Position

The following tables show, by asset category, the Town of Laurentian Hills'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 Require-ment	Annual Funding Available			Annual Deficit
		Taxes	CCBF	Total Available (Current Investment)	
Road Network	341,000	66,667	94,556	161,223	179,777
Buildings & Facilities	326,000	200,000	0	200,000	126,000
Machinery & Equipment	326,000	20,000	0	20,000	306,000
Vehicles	229,000	133,333	0	133,333	95,667
Total	**1,222,000**	**420,000**	**94,556**	**514,556**	**707,444**

Table 49 Annual Available Funding for Tax Funded Assets

The average annual investment requirement for the above categories is $1.2 million. Annual revenue currently allocated to these assets for capital purposes is $515 thousand leaving an annual deficit of $707 thousand. Put differently, these infrastructure categories are currently funded at 42.1% of their long-term requirements.

Full Funding Requirements

In 2024, the Town of Laurentian Hills had budgeted annual tax revenues of approximately $3.5 million. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Road Network	5.0%
Buildings & Facilities	3.5%
Machinery & Equipment	8.6%
Vehicles	2.7%
Total	**19.8%**

Table 50 Tax Increase Requirements for Full Funding

Our scenario modeling includes capturing any values associated with debt payment and allocating them to the infrastructure deficit outlined above. The table below outlines this concept and presents several options. In this case the Town of Laurentian Hills does not currently carry any debt.

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	707,444	707,444	707,444	707,444
Change in Debt Costs	N/A	N/A	N/A	N/A
Resulting Infrastructure Deficit:	**707,444**	**707,444**	**707,444**	**707,444**
Tax Increase Required	19.8%	19.8%	19.8%	19.8%
Annually:	**3.7%**	**1.9%**	**1.3%**	**1.0%**

Table 51 Tax Increase Options 5-20 Years

Financial Strategy Recommendations

Considering all the above information, we recommend the 10-year option. This involves full funding being achieved over 10 years by:

a) increasing tax revenues by 1.9% each year for the next 10 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) reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
d) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment[3].
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 10 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 $777 thousand for the Road Network and $647 thousand 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.

12.2.5 Financial Profile: Rate Funded Assets

Current Funding Position

The following tables show, by asset category, Laurentian Hills's average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by rates.

Asset Category	Avg. Annual Require-ment	Annual Funding Available				Annual Deficit
		Rates	To Operations	OCIF	Total Available (Current Investment)	
Water Network	844,000	308,810	-298,318	62,697	73,189	770,811
Wastewater Network	842,000	290,891	-275,558	62,697	78,030	763,970
Total	**1,686,000**	**599,701**	**-573,876**	**125,393**	**151,219**	**1,534,781**

Table 52 Annual Available Funding for Rate Funded Assets

The average annual investment requirement for the above categories is $1.69 million. Annual revenue currently allocated to these assets for capital purposes is $151 thousand leaving an annual deficit of $1.5 million. Put differently, these infrastructure categories are currently funded at 9% of their long-term requirements.

[3] The Town 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.

Full Funding Requirements

Averaging from 2022-2024, Laurentian Hills had annual sanitary revenues of $309,000 and annual water revenues of $291,000. As illustrated in the table below, without consideration of any other sources of revenue, full funding would require the following changes over time:

Asset Category	Rate Change Required for Full Funding
Water Network	249.6%
Wastewater Network	262.6%

Table 53 Rate Increase Requirements for Full Funding

In the following tables, we have expanded the above scenario to present multiple options. Due to the significant increases required, we have provided phase-in options of up to 20 years:

Water Network				
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	770,811	770,811	770,811	770,811
Rate Increase Required	249.6%	249.6%	249.6%	249.6%
Annually:	**28.5%**	**13.4%**	**8.8%**	**6.5%**

Table 54 Water Rate Increase Options 5-20 Years

Wastewater Network				
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	763,970	763,970	763,970	763,970
Rate Increase Required	262.6%	262.6%	262.6%	262.6%
Annually:	**29.4%**	**13.8%**	**9.0%**	**6.7%**

Table 55 Wastewater Rate Increase Options 5-20 Years

Financial Strategy Recommendations

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

a) increasing rate revenues by 6.5% for water services and 6.7% for wastewater services 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) 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. This periodic funding should not be incorporated into an AMP unless there are firm commitments in place.
2. We realize that raising rate revenues 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.
3. Any increase in rates required for operations would be in addition to the above recommendations.

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 $11.3 million for the Water Network and $9.3 million for the Wastewater Network.

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

12.3 Use of Debt

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

a) the ability to stabilize tax & user rates when dealing with variable and sometimes uncontrollable factors
b) equitable distribution of the cost/benefits of infrastructure over its useful life
c) a secure source of funding
d) flexibility in cash flow management

Debt management policies and procedures with limitations and monitoring practices should be considered when reviewing debt as a funding option. In efforts to mitigate increasing commodity prices and inflation, interest rates have been rising. Sustainable funding models that include debt need to incorporate the now current realized risk of rising interest rates. The strategies presented in this report provide a strategy to achieve sustainable funding without the further use of debt, however we realize the it is likely to be utilized. At the time of this asset management plan the Town of Laurentian Hills did not report having any current debt.

12.4 Use of Reserves

12.4.1 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 Laurentian Hills.

Asset Category	Balance at December 31, 2024
Road Network	576,796
Buildings	2,090,748
Machinery & Equipment	1,610,103
Vehicles	1,055,512
Total Tax Funded:	**5,333,161**
Water Network	520,965
Sanitary Sewer Network	740,551
Total Rate Funded:	**1,261,571**

Table 56 Laurentian Hills Reserve Balances

There is considerable debate in the municipal sector as to the appropriate level of reserves that a Town 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 Laurentian Hills'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.

13. Recommendations & Key Considerations

13.1 Financial Strategies

1. To meet the proposed level of service chosen in this report, there is no increase in investment required as it maintains the current spending levels. However, the Town should 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 1.9% per year over a period of 10 years;
    b. Increasing water rates by 6.5% per year over a period of 20 years; and
    c. Increasing sanitary rates by 6.7% per year over a period of 20 years.

2. Re-evaluate the current infrastructure requirements and the risk that the Town is willing to tolerate, especially considering critical infrastructure funding levels.
    a. Specific review and consideration should be given to the rate funded assets, and the Towns ability and willingness to increase funding levels for these assets.

3. Continued allocation of OCIF and CCBF funding as previously outlined.

4. Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.

5. Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

6. Continue to apply for project specific grant funding to supplement sustainable funding sources.

13.2 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.

13.3 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 ahead of 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

Asset Category	Replacement Cost	Average Condition	Financial Capacity (Current Investment)		% Funded
Road Network	**$7.0 m**	**Poor**	Annual Requirement:	$341,000	47%
			Funding Available:	$161,000	
			Annual Deficit:	**$179,000**	
Water Network	**$24.2 m**	**Fair**	Annual Requirement:	$844,000	9%
			Funding Available:	$78,000	
			Annual Deficit:	**$766,000**	
Wastewater Network	**$27.6 m**	**Very Good**	Annual Requirement:	$842,000	9%
			Funding Available:	$73,000	
			Annual Deficit:	**$769,000**	
Buildings & Facilities	**$14.6 m**	**Fair**	Annual Requirement:	$326,000	61%
			Funding Available:	$200,000	
			Annual Deficit:	**$126,000**	
Vehicles	**$3.4 m**	**Poor**	Annual Requirement:	$229,000	58%
			Funding Available:	$133,000	
			Annual Deficit:	**$96,000**	
Machinery & Equipment	**$4.9 m**	**Poor**	Annual Requirement:	$326,000	6%
			Funding Available:	$20,000	
			Annual Deficit:	**$306,000**	

Appendix B – 10-Year Capital Requirements

Current Levels of Service (No consideration of available capital funding)

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. They do not consider any proposed levels of service, or available funding, and are projected based on ideal conditions.

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.

Road Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Culverts	$152k	-	-	-	-	-	-	-	-	-	$10k
Paved Surface (HCB)	$93k	$31k	$448k	$148k	$316k	$95k	$33k	$48k	$27k	$534k	$9k
Paved Surface (LCB)	-	$71k	$101k	$78k	-	$1.8m	-	-	$42k	-	-
Pedestrian Bridges	-	-	-	-	-	-	-	-	-	-	-
Streetlighting	$521k	-	-	-	-	-	-	-	-	-	-
Total	**$767k**	**$102k**	**$549k**	**$226k**	**$316k**	**$1.9m**	**$33k**	**$48k**	**$69k**	**$534k**	**$20k**

Table 57 10-Year Capital Replacement Forecast: Road Network

Water Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Equipment	$245k	$12k	-	-	-	-	-	-	-	-	-
Pumping Stations	$644k	-	-	-	-	-	-	-	-	-	-
Water Mains	-	-	-	-	-	-	-	-	-	-	-
Water Tower	-	-	-	-	-	-	-	-	-	-	-
Water Treatment Plant	$10.4m	-	-	-	-	-	-	-	-	-	$938k
Total	**$11.3m**	**$12k**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**$938k**

Table 58: 10-Year Capital Replacement Forecast: Water Network

Wastewater Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Pumping Stations	$467k	$32k	-	-	-	-	-	-	-	-	-
Sewage Treatment Plant	$8.8m	$129k	$208k	-	$182k	-	-	-	-	-	$1.5m
Sewer Mains	-	-	-	-	-	-	-	-	-	-	-
Total	**$9.3m**	**$161k**	**$208k**	**-**	**$182k**	**-**	**-**	**-**	**-**	**-**	**$1.5m**

Table 59 10-Year Capital Replacement Forecast: Wastewater Network

Buildings & Facilities

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire	-	-	-	-	-	-	-	-	-	-	-
Land Improvements	$77k	-	-	-	-	$290k	-	$18k	-	-	-
Landfill	-	-	-	-	-	-	-	-	-	-	-
Libraries	-	-	-	-	-	-	-	-	-	-	-
Municipal	-	-	-	-	-	-	-	$75k	-	$79k	$64k
Public Works	-	-	-	-	-	-	-	-	-	$3.0m	$36k
Recreation	-	-	-	-	-	$149k	-	-	-	-	-
Total	**$77k**	**-**	**-**	**-**	**-**	**$439k**	**-**	**$93k**	**-**	**$3.1m**	**$100k**

Table 60 10-Year Capital Replacement Forecast: Buildings & Facilities

Machinery & Equipment

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire	$558k	$17k	$64k	$30k	$87k	-	-	$5k	$27k	$13k	$50k
Municipal	-	$66k	-	-	-	$21k	$66k	$36k	-	$7k	$21k
Public Works	$82k	-	-	-	$1.0m	$6k	-	$36k	-	$450k	$689k
Recreation	$7k	$24k	$47k	$16k	$118k	-	-	$385k	-	-	$7k
Total	**$647k**	**$107k**	**$111k**	**$46k**	**$1.2m**	**$27k**	**$66k**	**$462k**	**$27k**	**$470k**	**$767k**

Table 61: 10-Year Capital Replacement Forecast: Machinery & Equipment

Vehicles

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire Vehicles	-	-	-	-	-	-	-	-	-	-	-
Public Works Vehicles	-	-	-	-	$75k	$75k	$75k	-	-	$475k	$427k
Total	**-**	**-**	**-**	**-**	**$75k**	**$75k**	**$75k**	**-**	**-**	**$475k**	**$427k**

Table 62 10-Year Capital Replacement Forecast: Vehicles

Proposed Level of Service – 10 Year Capital Plan

The following table summarizes the costs of recommended lifecycle events, as generated by the Township's asset management software, Citywide and based on Scenario 1 of the proposed level of service and therefore consider the availability of funding as it is maintained at current levels.

Category	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Buildings & Facilities	-	-	-	$439k	-	$93k	-	$79k	$100k	$10k
Machinery & Equipment	$24k	$20k	$19k	$21k	$20k	$17k	$23k	$18k	$19k	$20k
Road Network	$163k	$36k	$283k	$144k	$141k	$202k	$134k	$28k	$246k	$198k
Vehicles	-	-	$75k	$75k	$75k	-	-	$475k	$427k	$75k
Wastewater Network	$32k	$129k	-	-	$182k	-	$182k	-	-	$231k
Water Network	-	-	$245k	-	-	-	-	-	$469k	$53k
Total	**$219k**	**$186k**	**$622k**	**$679k**	**$418k**	**$312k**	**$338k**	**$600k**	**$1.3m**	**$586k**

Table 63 Proposed LOS 10-Year Capital Replacement Forecast

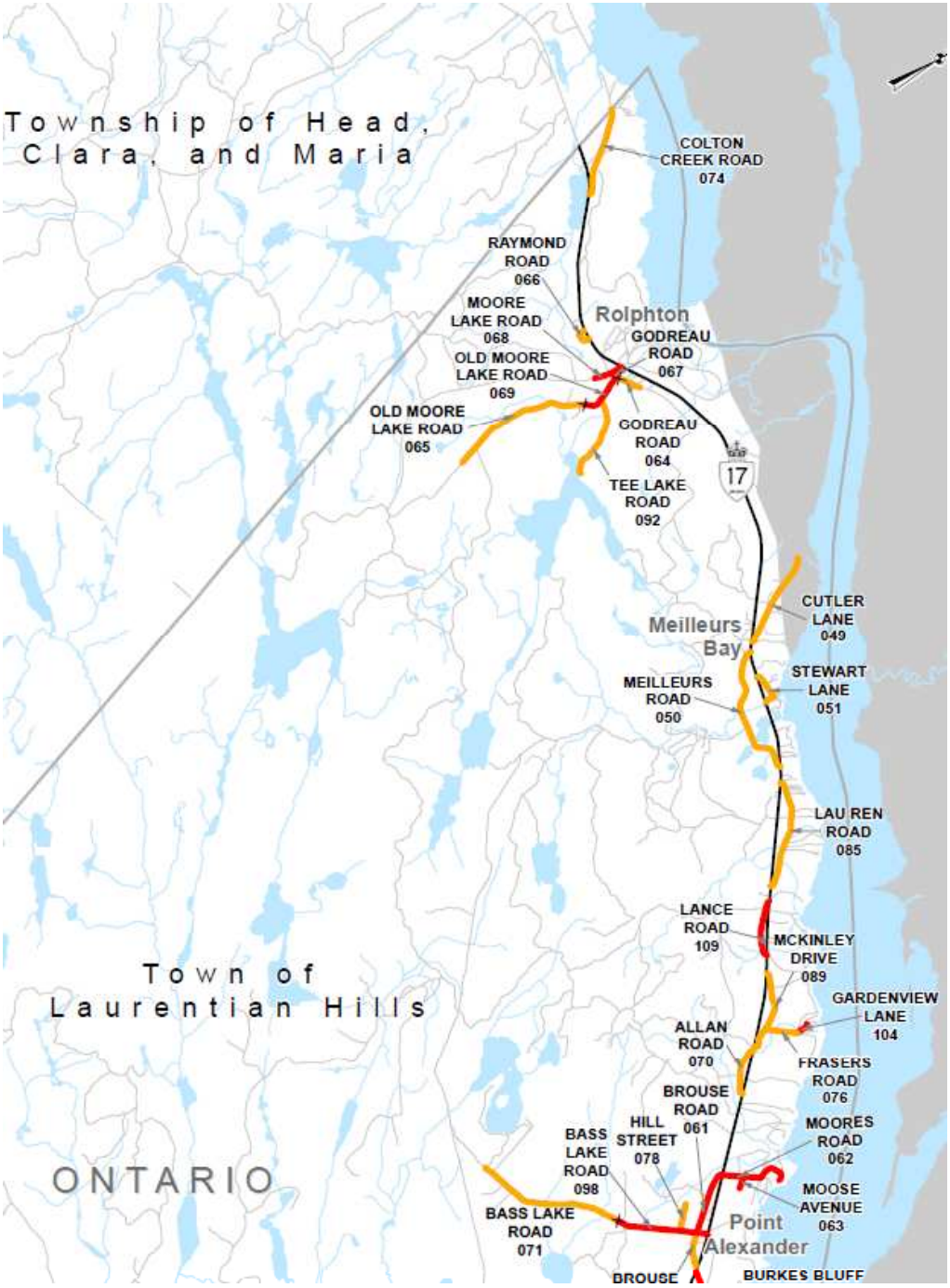
Table 63 provides the projected capital forecast over the next 10 years if the increases to achieve full funding were to be implemented. This forecast considers annual budgets beginning at current funding levels and gradually increasing annually over 10 years for tax funded and 20 years for rate funding assets to reach an ideal funding level of 100%.

Category	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Buildings & Facilities	-	-	-	$439k	-	$93k	-	$79k	$100k	$10k
Machinery & Equipment	$54k	$84k	$112k	$138k	$173k	$200k	$232k	$250k	$306k	$273k
Road Network	$173k	$27k	$382k	$45k	$341k	$90k	$45k	$28k	$539k	$337k
Vehicles	-	-	$75k	$75k	$75k	-	-	$475k	$427k	$75k
Wastewater Network	$32k	$182k	$129k	$182k	$208k	-	$364k	$364k	$231k	$418k
Water Network	-	$245k	-	-	$469k	-	-	$644k	$235k	$490k
Total	**$259k**	**$538k**	**$698k**	**$879k**	**$1.3m**	**$384k**	**$641k**	**$1.8m**	**$1.8m**	**$1.6m**

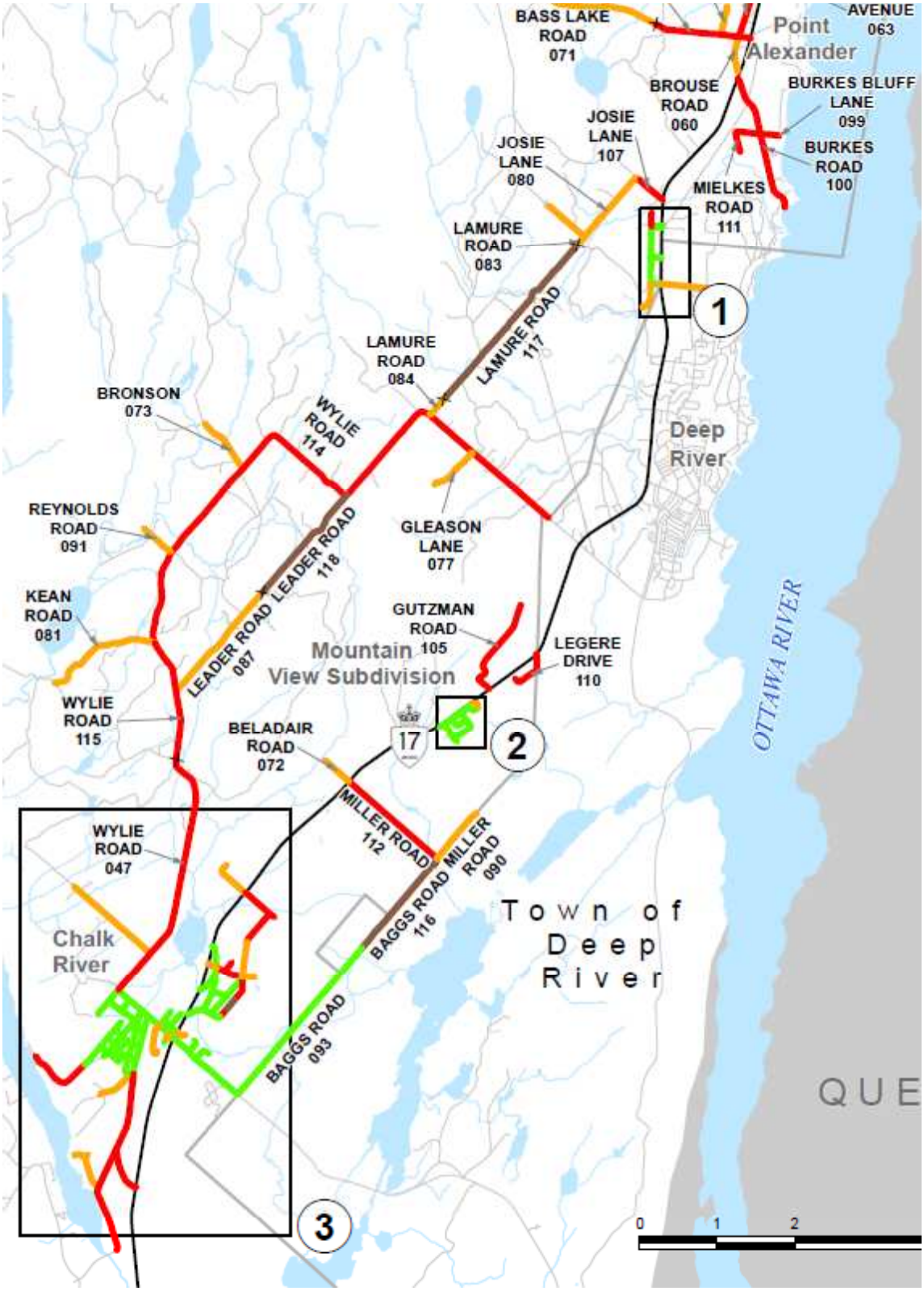
Table 64 Ideal Funding Level 10-Year Capital Forecast

Appendix C – Level of Service Maps & Photos

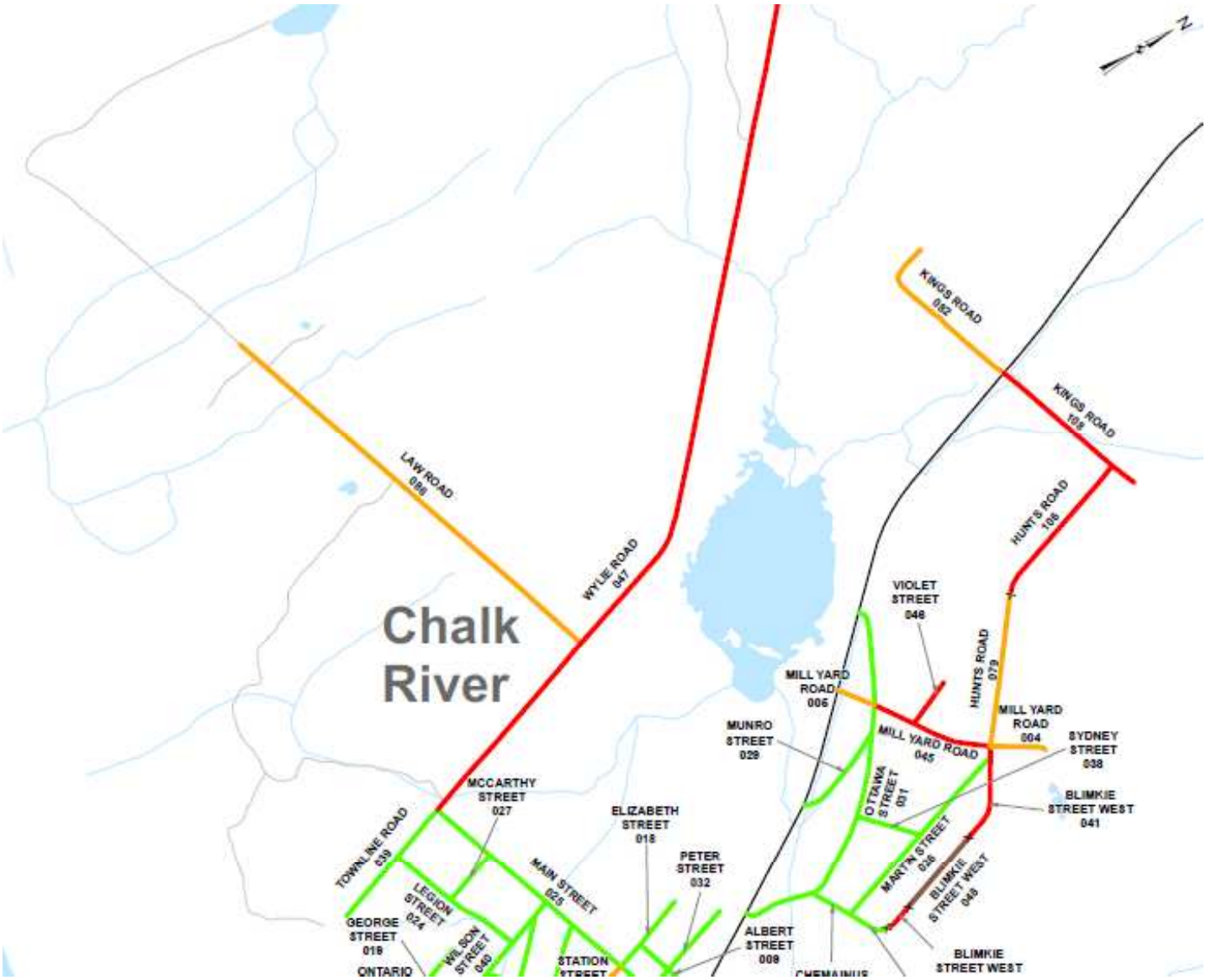
Road Network Map: Town of Laurentian Hills (Part 1)



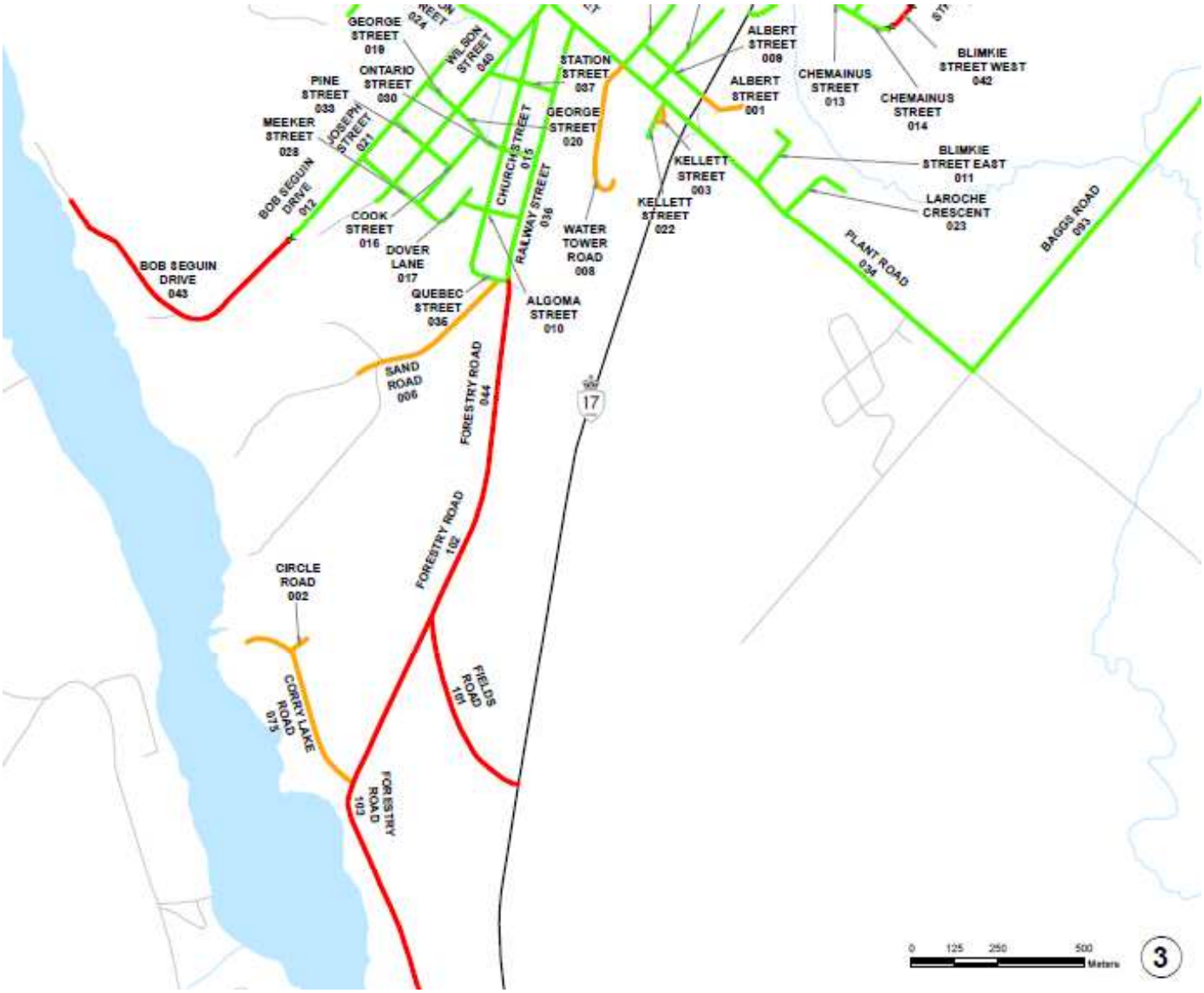
Road Network Map: Town of Laurentian Hills (Part 2)



Road Network Map: Village of Chalk River (Part 1)



Road Network Map: Village of Chalk River (Part 2)



Appendix D – Risk Rating Criteria

Probability of Failure

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
Road Network	Condition	70%	10	1 – Rare
			8-10	2 – Unlikely
			5-8	3 – Possible
			1-5	4 – Likely
			0-1	5 – Almost Certain
	Drainage	20%	Ditch	2 – Unlikely
			No Ditch	4 – Likely
	Service Life Remaining (Years)	10%	>75 Years	1 – Rare
			>55 Years	2 – Unlikely
			>35 Years	3 – Possible
			>20 Years	4 – Likely
			>0 Months	5 – Almost Certain
Water Network Wastewater Network Buildings and Facilities Machinery and Equipment Vehicles	Condition	80%	80-100	1 – Rare
			60-79	2 – Unlikely
			40-59	3 – Possible
			20-39	4 – Likely
			0-19	5 – Almost Certain
	Service Life Remaining (%)	20%	75-100	1 – Rare
			55-75	2 – Unlikely
			30-55	3 – Possible
			15-30	4 – Likely
			0-15	5 – Almost Certain

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 – Insignificant
			$10,000-$50,000	2 – Minor
			$50,000-$200,000	3 – Moderate
			$200,000-$1,000,000	4 – Major
			$1,000,000+	5 – Severe
Water Network Wastewater Network	Economic (100%)	Replacement Cost (100%)	$0-$20,000	1 – Insignificant
			$20,000-$100,000	2 – Minor
			$100,000-$200,000	3 – Moderate
			$200,000-$400,000	4 – Major
			$400,000+	5 – Severe
Buildings and Facilities	Economic (60%)	Replacement Cost (100%)	$0-$20,000	1 – Insignificant
			$20,000-$200,000	2 – Minor
			$200,000-$500,000	3 – Moderate
			$500,000-$1,500,000	4 – Major
			$1,500,000+	5 – Severe
	Operational (40%)	Function (100%)	General Government	2 – Minor
			Recreation and Culture Services	3 – Moderate
			Protection Services, Transportation Services	4 – Major
			Environmental Services	5 – Severe
Machinery and Equipment	Economic (60%)	Replacement Cost (100%)	$0-$10,000	1 – Insignificant
			$10,000-$50,000	2 – Minor
			$50,000-$120,000	3 – Moderate
			$120,000-$300,000	4 – Major
			$300,000+	5 – Severe
	Operational (40%)	Function (100%)	General Government	2 – Minor
			Recreation	3 – Moderate
			Public Works, Roads	4 – Major
			Fire, Sewer, Water	5 – Severe
Vehicles	Economic (80%)	Replacement Cost (100%)	$0-$10,000	1 – Insignificant
			$10,000-$50,000	2 – Minor

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
			$50,000-$120,000	3 – Moderate
			$120,000-$300,000	4 – Major
			$300,000+	5 – Severe
	Operational (20%)	Department (100%)	Public Works	4 – Major
			Fire	5 - Severe